

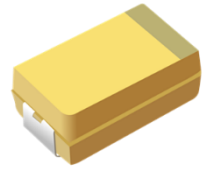
|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                   |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| SPECIFICATION SHEET NO.             | T0104- CA45E010K337TA                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                   |
| ORIGINAL MFG/PART NO                | XiangJiang/CA45-E-10V330/CA45-E010K337T/CA45-E010K337T-E0K9                                                                                                                                                                                                                                                                                                                                                                                      |                                                   |
| NEXTGEN PART CODE                   | CA45E010K337TA                                                                                                                                                                                                                                                                                                                                                                                                                                   | Indicate This Code For <a href="#">RFQ</a> /Order |
| DATE                                | Jan. 4, 2026                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                   |
| REVISION                            | A9                                                                                                                                                                                                                                                                                                                                                                                                                                               | Updated With Most Recent Data                     |
| DESCRIPTION AND<br>MAIN PARAMETRICS | <p>SMD Standard Tantalum Capacitors Industrial Grade MnO<sub>2</sub>, CA45 Series</p> <p>EIA code 7343-43 (2917), Case E, L7.3*W4.3*H4.3mm</p> <p>Rated voltage 10 Vdc, Capacitance 330μF, Tolerance <math>\pm 10\%</math>,<br/>ESR 0.9Ω Max. Operating Temp. Range -55°C ~+125°C</p> <p>Package in Tape/Reel, 500pcs/Reel</p> <p>RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)</p> |                                                   |
| CUSTOMER                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                   |
| CUSTOMER PART NUMBER                |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                   |
| CROSS REF. PART NUMBER              | T489/T490/T491/T493/TAJ/F93/TLJ/293D                                                                                                                                                                                                                                                                                                                                                                                                             |                                                   |
| MEMO                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                   |

|                              |                                                                                     |                                                                                      |                                                                                       |
|------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| VENDOR APPROVE               |                                                                                     |                                                                                      |                                                                                       |
| Issued/Checked/Approved      |  |  |  |
| Effective Date: Jan. 4, 2026 |                                                                                     |                                                                                      |                                                                                       |

|                  |
|------------------|
| CUSTOMER APPROVE |
|                  |
| DATE:            |

## MAIN FEATURE

- Epoxy Molded Encapsulation, Chip, Small In Size, Light In Weight
- Easy For Integration, Heteroploidy
- Lower ESR Than The Standard Chip Tantalum Capacitor
- Stable In Electrical & Storage Performances, Long Life-span
- Executive Technical Standards: QJ/PWV305-2008
- Wide Operating Temperature Range -55 ~ +125°C
- Cross Most Competitors Parts T489/T490/T491/T493/TAJ/F93/TLJ/293D and more
- Moisture Sensitivity Level (MSL) 1 (Unlimited)
- RoHS/RoHS III compliant, RoHS Annex III lead Exemption (Exempt per RoHS EU 2015/863) and Halogen Free (HF)



*Image shown is a representation only.  
Exact specifications should be  
obtained from the product dimension.*



## MAIN APPLICATION

- DC/DC Converters
- Portable Electronics
- Telecommunications And Control Units

## ELECTRICAL CHARACTERISTICS

- See Page 17 ~ Page 46 for Different Part Code
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

## HOW TO ORDER

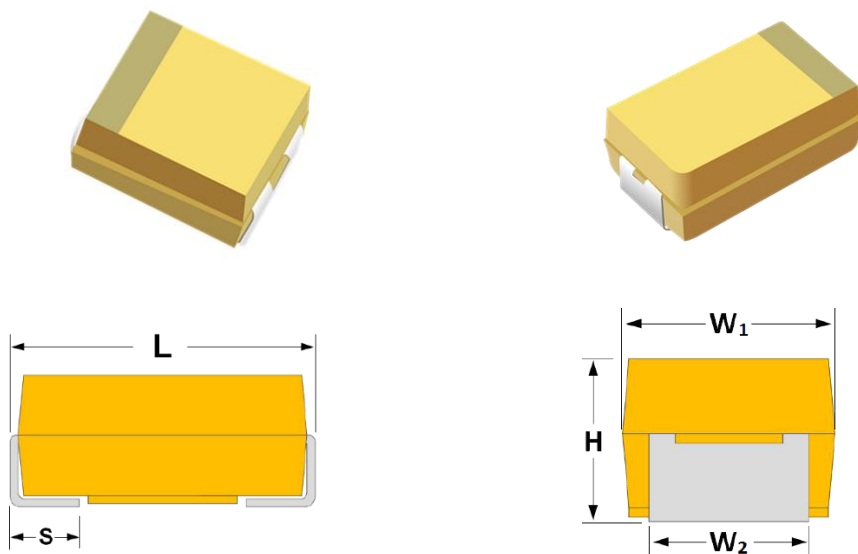
- Please Follow Up Part Code Guide And Indicate NextGen Part Code CA45E010K337TA For RFQ and Order.

## PART CODE GUIDE

**RFQ**  
[Request For Quotation](#)

| CODE | NAME                          | KEY SPECIFICATION OPTION                                                                                                                                                                                                                                                                                                                                                       |
|------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CA45 | Product Series<br>Code        | SMD Low ESR Chip Tantalum Capacitors Industrial Grade MnO <sub>2</sub>                                                                                                                                                                                                                                                                                                         |
| E    | Case Size Code                | A: 3216-16 (1206) L3.2*W1.6*H1.6mm; B: 3528-19 (1210) L3.5*W2.8*H1.9mm<br>C: 6032-15 (2313) L6.0*W3.2*H2.5mm; D: 7343-28 (2917) L7.3*W4.3*H2.8mm<br>E: 7343-43 (2917) L7.3*W4.3*H4.3mm; G: 8R7R-4R (3430) L8.5*W7.5*H4.5mm<br>P:2012-12 (0805)L2.0*W1.25*H1.2mm;T: 1112R-55 (4450) L11*W12.5*H5.5mm<br>V: 7361-36 (2924)L7.3*W6.1*H3.6mm; W: 7361-41 (2924) L7.3*W6.1*H4.1mm   |
| 010  | Rated voltage<br>Code         | 2R5: 2.5V; 004: 4V; 6R3: 6.3V; 010: 10V; 016: 16V; 020: 20V; 025: 25V; 035: 35V;<br>050: 50V 063: 63V 075: 75V 100: 100V                                                                                                                                                                                                                                                       |
| K    | Capacitance<br>Tolerance code | K: ±10% (Standard); M: ±20%                                                                                                                                                                                                                                                                                                                                                    |
| 337  | Capacitance Code              | 1st two digits represent Significant figures, 3rd Digit specifies number of Zeros<br>474: 0.47μF; 684:0.68μF; 105: 1.0μF; 155: 1.5μF; 225: 2.2μF; 335: 3.3μF;<br>475: 4.7μF; 685: 6.8μF; 106: 10μF; 156: 15μF; 226: 22μF; 336: 33μF;<br>476: 47μF; 686: 68μF; 107: 100μF; 157: 150μF; 227: 220μF; 337: 330μF;<br>477: 470μF; 687: 680μF; 108: 1000μF; 158: 1500μF; 228: 2200μF |
| TA   | Internal Control<br>Code      | Letter A~Z, a~z Or Digits (0-9)                                                                                                                                                                                                                                                                                                                                                |
| XX   | Special/<br>Custom Parameters | Blank: N/A;<br>XX: Letter A~Z, a~z or digits (0~9) for Special/Custom Parameters                                                                                                                                                                                                                                                                                               |

DIMENSIONS -- Unit: mm



| CASE SIZE<br>CODE | EIA<br>CODE | EIA<br>METRIC | L         | W <sub>1</sub> | H         | S         | W <sub>2</sub> |
|-------------------|-------------|---------------|-----------|----------------|-----------|-----------|----------------|
| A                 | 1206        | 3216-16       | 3.20±0.20 | 1.60±0.20      | 1.60±0.30 | 0.70±0.20 | 1.20±0.20      |
| B                 | 1210        | 3528-19       | 3.50±0.20 | 2.80±0.20      | 1.90±0.30 | 0.70±0.20 | 2.20±0.20      |
| C                 | 2312        | 6032-25       | 6.00±0.30 | 3.20±0.30      | 2.50±0.30 | 1.30±0.30 | 2.20±0.20      |
| D                 | 2917        | 7343-28       | 7.30±0.30 | 4.30±0.30      | 2.80±0.30 | 1.30±0.30 | 2.40±0.20      |
| E                 | 2917        | 7343-43       | 7.30±0.30 | 4.30±0.30      | 4.3±0.30  | 1.30±0.30 | 2.40±0.20      |
| G                 | 3430        | 8R7R-4R       | 8.50±0.30 | 7.50±0.30      | 4.50±0.30 | 1.80±0.30 | 4.50±0.20      |
| P                 | 0805        | 2012-12       | 2.00±0.20 | 1.25±0.20      | 1.20±0.20 | 0.50±0.10 | 0.90±0.10      |
| T                 | 4450        | 1112R-55      | 11.0±0.30 | 12.5±0.30      | 5.50±0.30 | 2.10±0.30 | 10.5±0.20      |
| V                 | 2924        | 7361-36       | 7.30±0.30 | 6.10±0.30      | 3.60±0.30 | 1.50±0.30 | 3.00±0.20      |
| W                 | 2924        | 7361-41       | 7.30±0.30 | 6.10±0.30      | 4.10±0.30 | 1.50±0.30 | 3.00±0.20      |

## LAND DIMENSIONS

Density Level A: For low-density product applications. Recommended for wave solder applications and provides a wider process window for reflow solder processes.



### Note:

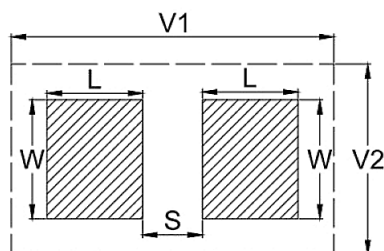
- Height of these chips may create problems in wave soldering.
- Land pattern geometry is too small for silkscreen outline.

| CASE CODE | EIA METRIC | DIMENSION (MM) |      |      |       |      |
|-----------|------------|----------------|------|------|-------|------|
|           |            | W              | L    | S    | V1    | V2   |
| A         | 3216-16    | 1.35           | 2.20 | 0.62 | 6.02  | 2.80 |
| B1        | 3528-12    | 2.35           | 2.21 | 0.92 | 6.32  | 4.00 |
| B         | 3528-19    | 2.35           | 2.21 | 0.92 | 6.32  | 4.00 |
| C         | 6032-25    | 2.35           | 2.77 | 2.37 | 8.92  | 4.50 |
| H1        | 7343-15    | 2.55           | 2.77 | 3.67 | 10.22 | 5.60 |
| L         | 7343-19    | 2.55           | 2.77 | 3.67 | 10.22 | 5.60 |
| H         | 7343-21    | 2.55           | 2.77 | 3.67 | 10.22 | 5.60 |
| D         | 7343-28    | 2.55           | 2.77 | 3.67 | 10.22 | 5.60 |
| Y         | 7343-40    | 2.55           | 2.77 | 3.67 | 10.22 | 5.60 |
| E         | 7343-43    | 2.55           | 2.77 | 3.67 | 10.22 | 5.60 |
| F         | 7361-19    | 3.25           | 2.77 | 3.67 | 10.22 | 7.30 |
| V         | 7361-36    | 3.25           | 2.77 | 3.67 | 10.22 | 7.30 |
| W         | 7361-41    | 3.25           | 2.77 | 3.67 | 10.22 | 7.30 |

## LAND DIMENSIONS

Density Level B: For products with a moderate level of component density. Provides Recommended Profile

Conditions for reflow solder processes.



### Note:

- Height of these chips may create problems in wave soldering.
- Land pattern geometry is too small for silkscreen outline.

| CASE CODE | EIA METRIC | DIMENSION (MM) |      |      |      |      |
|-----------|------------|----------------|------|------|------|------|
|           |            | W              | L    | S    | V1   | V2   |
| A         | 3216-16    | 1.23           | 1.80 | 0.82 | 4.92 | 2.30 |
| B1        | 3528-12    | 2.23           | 1.80 | 1.12 | 5.22 | 3.50 |
| B         | 3528-19    | 2.23           | 1.80 | 1.12 | 5.22 | 3.50 |
| C         | 6032-25    | 2.23           | 2.37 | 2.57 | 7.82 | 4.00 |
| H1        | 7343-15    | 2.43           | 2.37 | 3.87 | 9.12 | 5.10 |
| L         | 7343-19    | 2.43           | 2.37 | 3.87 | 9.12 | 5.10 |
| H         | 7343-21    | 2.43           | 2.37 | 3.87 | 9.12 | 5.10 |
| D         | 7343-28    | 2.43           | 2.37 | 3.87 | 9.12 | 5.10 |
| Y         | 7343-40    | 2.43           | 2.37 | 3.87 | 9.12 | 5.10 |
| E         | 7343-43    | 2.43           | 2.37 | 3.87 | 9.12 | 5.10 |
| F         | 7361-19    | 3.13           | 2.37 | 3.87 | 9.12 | 6.80 |
| V         | 7361-36    | 3.13           | 2.37 | 3.87 | 9.12 | 6.80 |
| W         | 7361-41    | 3.13           | 2.37 | 3.87 | 9.12 | 6.80 |

## LAND DIMENSIONS

Density Level C: For high component density product applications. Before adapting the Min. land pattern variations, the user should perform qualification testing based on the conditions outlined in IPC - 7351).

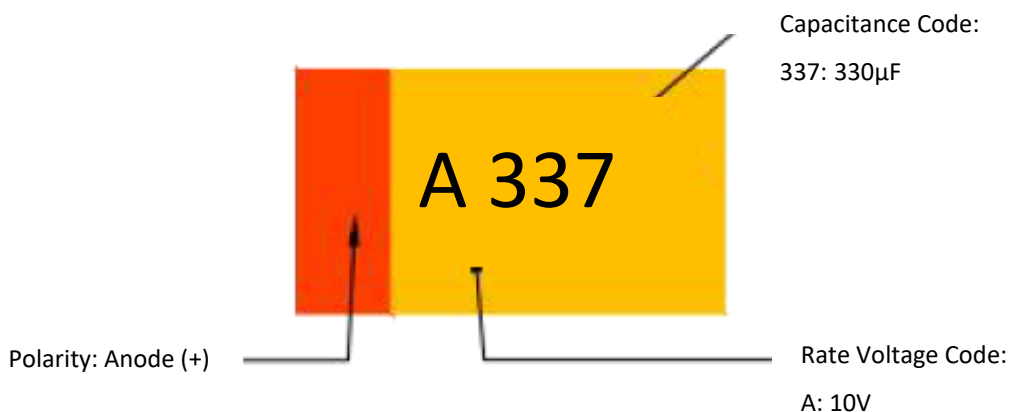


### Note:

- Height of these chips may create problems in wave soldering.
- Land pattern geometry is too small for silkscreen outline.

| CASE CODE | EIA METRIC | DIMENSION (MM) |      |      |      |      |
|-----------|------------|----------------|------|------|------|------|
|           |            | W              | L    | S    | V1   | V2   |
| A         | 3216-16    | 1.13           | 1.42 | 0.98 | 4.06 | 2.04 |
| B1        | 3528-12    | 2.13           | 1.42 | 1.28 | 4.36 | 3.24 |
| B         | 3528-19    | 2.13           | 1.42 | 1.28 | 4.36 | 3.24 |
| C         | 6032-25    | 2.13           | 1.99 | 2.73 | 6.96 | 3.74 |
| H1        | 7343-15    | 2.33           | 1.99 | 4.03 | 8.26 | 4.84 |
| L         | 7343-19    | 2.33           | 1.99 | 4.03 | 8.26 | 4.84 |
| H         | 7343-21    | 2.33           | 1.99 | 4.03 | 8.26 | 4.84 |
| D         | 7343-28    | 2.33           | 1.99 | 4.03 | 8.26 | 4.84 |
| Y         | 7343-40    | 2.33           | 1.99 | 4.03 | 8.26 | 4.84 |
| E         | 7343-43    | 2.33           | 1.99 | 4.03 | 8.26 | 4.84 |
| F         | 7361-19    | 3.03           | 1.99 | 4.03 | 8.26 | 6.54 |
| V         | 7361-36    | 3.03           | 1.99 | 4.03 | 8.26 | 6.54 |
| W         | 7361-41    | 3.03           | 1.99 | 4.03 | 8.26 | 6.54 |

## MARKING



| Voltage Code     | F   | G   | J   | A  | C  | D  | E  | V  | H  | T  | 63V | 75V | 100V |
|------------------|-----|-----|-----|----|----|----|----|----|----|----|-----|-----|------|
| Rate Voltage (V) | 2.5 | 4.0 | 6.3 | 10 | 16 | 20 | 25 | 35 | 40 | 50 | 63  | 75  | 100  |

## MAXIMUM OPERATING AND SURGE VOLTAGES VS. TEMPERATURE

| Rate Voltage (V <sub>R</sub> )     | ≤ 85°C  | 2.5 | 4.0 | 6.3 | 10   | 16   | 20   | 25   |
|------------------------------------|---------|-----|-----|-----|------|------|------|------|
| Category Voltage (V <sub>C</sub> ) | ≤ 125°C | 1.7 | 2.7 | 4.2 | 6.7  | 10.7 | 13.3 | 16.7 |
| Surge Voltage (V <sub>S</sub> )    | ≤ 85°C  | 2.9 | 4.6 | 7.2 | 11.5 | 18.4 | 23.0 | 28.8 |
| Surge Voltage (V <sub>S</sub> )    | ≤ 125°C | 1.9 | 3.1 | 4.8 | 7.7  | 12.3 | 15.3 | 19.2 |

| Rate Voltage (V <sub>R</sub> )     | ≤ 85°C  | 35   | 40   | 50   | 63   | 75   | 100  |
|------------------------------------|---------|------|------|------|------|------|------|
| Category Voltage (V <sub>C</sub> ) | ≤ 125°C | 23.3 | 26.7 | 33.3 | 42   | 50   | 66.7 |
| Surge Voltage (V <sub>S</sub> )    | ≤ 85°C  | 40.3 | 46.0 | 57.5 | 72.5 | 86.3 | 115  |
| Surge Voltage (V <sub>S</sub> )    | ≤ 125°C | 26.8 | 30.7 | 38.3 | 48.3 | 57.5 | 76.7 |

## BASIC INFORMATION

| ITEM               | CHARACTERISTIC                             |
|--------------------|--------------------------------------------|
| Dielectric         | Ta2O5                                      |
| Electrolyte        | MnO2                                       |
| Package Method     | Epoxy Resin Molding (Semi-Seal)            |
| Case Color         | Yellow (std.) or Black                     |
| MSL                | 1                                          |
| Termination Finish | Standard Solder-coated, Gold-plated Option |

## STANDARD CHARACTERISTICS

|                             |                     |
|-----------------------------|---------------------|
| PART CODE                   | CA45E010K337TA      |
| Case Size Code              | E                   |
| Case Dimension              | L7.30*W4.30*H4.30mm |
| EIA Code                    | 7343-43 (2917)      |
| Capacitance Tolerance       | ±10%                |
| Rate Temperature Range      | 85 °C               |
| Category Voltage            | 6.7V                |
| Category Temperature Range  | 125 °C              |
| Operating Temperature Range | -55~ + 125 °C       |

## CASE CODE, RATED VOLTAGE, CAPACITANCE AND ESR LIST

| VOLTAGE CODE |          | F                  | G                                      | J                                               |
|--------------|----------|--------------------|----------------------------------------|-------------------------------------------------|
| Voltage (V)  |          | 2.5                | 4                                      | 6.3                                             |
| Cap. Code    | Cap.(μf) | Case Code (ESR mΩ) |                                        |                                                 |
| 155          | 1.5      |                    |                                        | A(3000)                                         |
| 225          | 2.2      |                    | A(7600)                                | A(9000)                                         |
| 335          | 3.3      |                    | A(8000)                                | A(7000) B (5500)                                |
| 475          | 4.7      |                    | A(8000) B (7000)                       | A (6000) B (4400)                               |
| 685          | 6.8      |                    | A (6000) B (3400)                      | A (6000) B (5000)                               |
| 106          | 10       |                    | A (6000) B (3500)                      | A (4000) B (3500) C (3000)                      |
| 156          | 15       |                    | A (4000) B (3500) C (2800)             | A (3500) B (3000) C (1800)                      |
| 226          | 22       |                    | A (3500) B (3000) C (1800)             | A (3000) B (2500) C (2000)<br>D (2000)          |
| 336          | 33       | A (1700)           | A (3000) B (2800) C(1800)<br>D(2200)   | A (2500) B (2200) C (1800)<br>D (1600)          |
| 476          | 47       | A (3000)           | A (2600) B (2400) C (1800)<br>D (1600) | A (3500) B (2000) C (1600)<br>D (1100) E (1100) |
| 686          | 68       | A (1500)           | A (4000) B (1900) C (1500)<br>D (1100) | A (4000) B (1800) C (1500)<br>E (900)           |

**CASE CODE, RATED VOLTAGE, CAPACITANCE AND ESR LIST**

| VOLTAGE CODE |          | F                       | G                                            | J                                            |
|--------------|----------|-------------------------|----------------------------------------------|----------------------------------------------|
| Voltage (V)  |          | 2.5                     | 4                                            | 6.3                                          |
| Cap. Code    | Cap.(μf) | Case Code (ESR mΩ)      |                                              |                                              |
| 107          | 100      | A (1400) B (1400)       | A (4000) B (1800) C (1300)<br>D (900)        | A (3000) B (2000) C (900)<br>D (800) E (800) |
| 157          | 150      | B (1600)                | B (2000) C (1200) D (800)<br>E (500) V (500) | B (3000) C (1300) D (900)<br>E (700)         |
| 227          | 220      | B (1600) D (300)        | B (1500) C (1200) D (900)<br>E (500)         | B (1600) C (1200) D (700)<br>E (500) V (500) |
| 337          | 330      | D (300)                 | C (900) D (900) E (800)<br>V(600)            | C (1200) D (600) E (500)<br>V (300)          |
| 477          | 470      | C (200) D (200)         | C (300) D (900) E (500)<br>V (300)           | D (500) E (1500) V (400)                     |
| 687          | 680      | C (200) D (200) E (200) | D (500) E (900) V (300)<br>W (350)           | E (600) V (500) W (500)                      |
| 108          | 1000     | D (200) E (400)         | D (200) E (500) V (200)<br>W (200)           | E (600) V (300) W (300)                      |
| 158          | 1500     | D (200) E (200) V (200) | E (200) V (200)                              |                                              |
| 228          | 2200     | V (400)                 |                                              |                                              |

## CASE CODE, RATED VOLTAGE, CAPACITANCE AND ESR LIST

| VOLTAGE CODE |          | A                                               | C                                               | D                                               |
|--------------|----------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| Voltage (V)  |          | 10                                              | 16                                              | 20                                              |
| Cap. Code    | Cap.(μf) | Case Code (ESR mΩ)                              |                                                 |                                                 |
| 474          | 0.47     |                                                 |                                                 | A (14000)                                       |
| 684          | 0.68     |                                                 | A (12000)                                       | A (12000)                                       |
| 105          | 1        | A (10000) B (5000)                              | A (11000) B (5000) C (5000)                     | A (9000) B (9000)                               |
| 155          | 1.5      | A (10000) B (10000)                             | A (8000) B (6400)                               | A (6500) B (5600)                               |
| 225          | 2.2      | A (7000) B (4600)                               | A (6500) B (4600) C(4600)                       | A (6000) B (3500)                               |
| 335          | 3.3      | A (5500) B (5500)                               | A (5000) B (4500)                               | A (5900) B (3000) C (2300)<br>D (2300)          |
| 475          | 4.7      | A (5000) B (4000)                               | A (5000) B (3500) C (2900)                      | A (5000) B (3000) C (2800)                      |
| 685          | 6.8      | A (4200) B (3500) C (1900)                      | A (4200) B (2500) C (2500)                      | A (6000) B (2500) C (2000)<br>D (1400)          |
| 106          | 10       | A (3800) B (3000) C (2500)<br>D (2500)          | A (3000) B (2800) C (2000)<br>D (2000) E (2000) | A (5000) B (2100) C (1700)<br>D (1200) E (1200) |
| 156          | 15       | A (6000) B (2800) C (2000)                      | A (3500) B (2500) C (1800)<br>D (1800)          | B (2300) C (1700) D (1100)                      |
| 226          | 22       | A (3200) B (2400) C (1800)<br>D (1600) E (1600) | A (2300) B (2300) C (1500)<br>D (1000) E (1000) | B (4000) C (1600) D (900)<br>E (900)            |

## CASE CODE, RATED VOLTAGE, CAPACITANCE AND ESR LIST

| VOLTAGE CODE |          | A                                             | C                                            | D                                    |
|--------------|----------|-----------------------------------------------|----------------------------------------------|--------------------------------------|
| Voltage (V)  |          | 10                                            | 16                                           | 20                                   |
| Cap. Code    | Cap.(μf) | Case Code (ESR mΩ)                            |                                              |                                      |
| 336          | 33       | A (6000) B (1900) C (1600)<br>D (1100)        | B (2100) C (1500) D (900)<br>E (900)         | B (4000) C (1500) D (900)<br>E (700) |
| 476          | 47       | A (3000) B (1800) C (1200)<br>D (900) E (900) | B (2500) C (1000) D (900)<br>E (800) V (800) | C (900) D (900) E (900)              |
| 686          | 68       | A (900) B (1800) C (1300)<br>D (900) E (500)  | B (800) C (1300) D (900)<br>E (800)          | C (500) D (700) E (900)<br>V (600)   |
| 107          | 100      | A (4000) B (2500) C (1200)<br>D (900) E (800) | C (1000) D (700) E (900)                     | D (900) E (500) V (500)              |
| 157          | 150      | C (900) D (900) E (900)<br>V (500)            | D (900) E (500) V (400)                      | D (500) E (400) V (400)              |
| 227          | 220      | C (900) D (600) E (500)<br>V (300)            | D (900) E (500) V (900)                      | E (600) V (500) W (500)              |
| 337          | 330      | D (900) E (900) V (500)                       | E (400) V (800) W (800)                      | E (800) V (800) W(800)               |
| 477          | 470      | E (500) V (500)                               | E (400) W (400)                              |                                      |
| 687          | 680      | E (400) W(400)                                |                                              |                                      |

## CASE CODE, RATED VOLTAGE, CAPACITANCE AND ESR LIST

| VOLTAGE CODE |           | E                                             | V                                  | H                          | T                                             |
|--------------|-----------|-----------------------------------------------|------------------------------------|----------------------------|-----------------------------------------------|
| Voltage (V)  |           | 25                                            | 35                                 | 40                         | 50                                            |
| Cap. Code    | Cap. (μf) | Case Code (ESR mΩ)                            |                                    |                            |                                               |
| 474          | 0.47      | A (14000)                                     | A(12000) B(10000)                  | A(9000) B(9000)            | A(12000) B(9500)<br>C(8000)                   |
| 684          | 0.68      | A(10000) B(6000)                              | A(8000) B(8000)                    | B(6000) C(7500)            | A(8000) B(8000)<br>C(7000)                    |
| 105          | 1         | A(8000) B(5000)<br>C(5000)                    | A(7500) B(6500)                    | B(5000) C(6000)            | A(7000) B(7000)<br>C(5500) D(2200)<br>E(2200) |
| 155          | 1.5       | A(7500) B(5000)                               | A(7500) B(5200)<br>C(4500) D(4500) | B(4000) C(4500)            | B(6000) C(4500)<br>D(4000)                    |
| 225          | 2.2       | A(7000) B(4500)<br>C(3500) D(3500)            | A(4500) B(4200)<br>C(3500) D(3500) | C(3000) D(2000)            | B(4500) C(3000)<br>D(2500) E(2000)            |
| 335          | 3.3       | A(7000) B(3500)<br>C(2800)                    | B(3500) C(2500)<br>D(2500)         | C(2000) D(2000)            | C(2500) D(2000)<br>E(1800)                    |
| 475          | 4.7       | A(6000) B(2800)<br>C(2400) D(2400)<br>E(1200) | B(3100) C(2200)<br>D(1500) E(1200) | C(1500) D(1500)<br>E(1500) | C(1500) D(1400)<br>E(1200) V(1200)            |
| 685          | 6.8       | B(2800) C(2000)<br>D(1800) E(1800)            | B(1800) C(1800)<br>D(1300) E(900)  | D(1200) E(1200)            | C(1000) D(1000)<br>E(900)                     |
| 106          | 10        | B(2500) C(1800)<br>D(1200) E(900)             | C(1600) D(1000)<br>E(900)          | D(900) E(900)              | D(800) E(800)<br>V(700)                       |

## CASE CODE, RATED VOLTAGE, CAPACITANCE AND ESR LIST

| VOLTAGE CODE |          | E                                          | V                               | H                       | T                       |
|--------------|----------|--------------------------------------------|---------------------------------|-------------------------|-------------------------|
| Voltage (V)  |          | 25                                         | 35                              | 40                      | 50                      |
| Cap. Code    | Cap.(μf) | Case Code (ESR mΩ)                         |                                 |                         |                         |
| 156          | 15       | B(4000) C(1600)<br>D(1000) E(1000)         | C(1400) D(900)<br>E(900)        | E(700) V(900)           | D(800) E(800)<br>V(700) |
| 226          | 22       | B(1000) C(1400)<br>D(900) E(700)<br>V(700) | C(1400) D(900)<br>E(700) V(500) | E(600) V(600)<br>W(600) | E(600) W(400)<br>V(400) |
| 336          | 33       | C(700) D(900)<br>E(900)                    | D(900) E(900)<br>W(500) V(500)  | W(600)                  | E(900) W(600)           |
| 476          | 47       | D(900) E(900)<br>V(400)                    | D(900) E(900)<br>V(500) W(600)  |                         | T(600)                  |
| 686          | 68       | D(900) E(900)<br>V(500)                    | E(700) V(500)<br>W(600)         |                         |                         |
| 107          | 100      | E (300) V (500)                            | G (600)                         |                         |                         |
| 157          | 150      | E (600) V (400)<br>W (400)                 |                                 |                         |                         |
| 227          | 220      | W (500)                                    |                                 |                         |                         |

## CASE CODE, RATED VOLTAGE, CAPACITANCE AND ESR LIST

| VOLTAGE CODE |           | 63V                  | 75V             | 100V            |
|--------------|-----------|----------------------|-----------------|-----------------|
| Voltage (V)  |           | 63                   | 75              | 100             |
| Cap. Code    | Cap. (μf) | Case Code (ESR mΩ)   |                 |                 |
| 474          | 0.47      | C(7000)              | C(7000)         | C(6500)         |
| 684          | 0.68      | C(6000)              | C(6000)         | C(5000) D(5000) |
| 105          | 1         | C(5000)              | C(4500) D(4500) | D(4500)         |
| 155          | 1.5       | D(3500)              | D(3500)         |                 |
| 225          | 2.2       | D(2000)              | E(1800)         | E(1500) V(1500) |
| 335          | 3.3       | D(1500)              | E(1300)         |                 |
| 475          | 4.7       | D(1000) E(1000)      | E(900) V(900)   |                 |
| 685          | 6.8       | D(900) E(900) V(900) |                 |                 |
| 106          | 10        | D(900) E(900) V(900) |                 |                 |
| 156          | 15        | E(900) V(900)        |                 |                 |
| 226          | 22        | D(900) E(900) W(900) |                 |                 |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 2.5V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45A2R5K336TA | 2.5                       | 33                     | 1                                              | 8                                                    | 1.7                        | 210                 | 189                 | 84                   |
| CA45A2R5K476TA | 2.5                       | 47                     | 1                                              | 6                                                    | 3                          | 158                 | 142                 | 63                   |
| CA45A2R5K686TA | 2.5                       | 68                     | 2                                              | 8                                                    | 1.5                        | 224                 | 201                 | 89                   |
| CA45A2R5K107TA | 2.5                       | 100                    | 3                                              | 30                                                   | 1.4                        | 231                 | 208                 | 93                   |
| CA45B2R5K107TA | 2.5                       | 100                    | 3                                              | 8                                                    | 1.4                        | 246                 | 222                 | 99                   |
| CA45B2R5K157TA | 2.5                       | 150                    | 4                                              | 10                                                   | 1.6                        | 230                 | 207                 | 92                   |
| CA45B2R5K227TA | 2.5                       | 220                    | 6                                              | 16                                                   | 1.6                        | 230                 | 207                 | 92                   |
| CA45D2R5K227TA | 2.5                       | 220                    | 6                                              | 8                                                    | 0.3                        | 707                 | 636                 | 283                  |
| CA45D2R5K337TA | 2.5                       | 330                    | 8                                              | 8                                                    | 0.3                        | 707                 | 636                 | 283                  |
| CA45C2R5K477TA | 2.5                       | 470                    | 12                                             | 12                                                   | 0.2                        | 742                 | 667                 | 297                  |
| CA45D2R5K477TA | 2.5                       | 470                    | 12                                             | 8                                                    | 0.2                        | 866                 | 779                 | 346                  |
| CA45C2R5K687TA | 2.5                       | 680                    | 17                                             | 18                                                   | 0.2                        | 742                 | 667                 | 297                  |
| CA45D2R5K687TA | 2.5                       | 680                    | 17                                             | 16                                                   | 0.2                        | 866                 | 779                 | 346                  |
| CA45E2R5K687TA | 2.5                       | 680                    | 17                                             | 10                                                   | 0.2                        | 908                 | 817                 | 363                  |
| CA45D2R5K108TA | 2.5                       | 1000                   | 25                                             | 20                                                   | 0.2                        | 866                 | 779                 | 346                  |
| CA45E2R5K108TA | 2.5                       | 1000                   | 25                                             | 14                                                   | 0.4                        | 642                 | 578                 | 257                  |
| CA45D2R5K158TA | 2.5                       | 1500                   | 38                                             | 60                                                   | 0.2                        | 866                 | 779                 | 346                  |
| CA45E2R5K158TA | 2.5                       | 1500                   | 38                                             | 20                                                   | 0.2                        | 908                 | 817                 | 363                  |
| CA45V2R5K158TA | 2.5                       | 1500                   | 38                                             | 20                                                   | 0.2                        | 1118                | 1006                | 447                  |
| CA45V2R5K228TA | 2.5                       | 2200                   | 55                                             | 50                                                   | 0.4                        | 791                 | 712                 | 316                  |

ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 4.0V, CAPACITANCE TOL.  $\pm 10\%$  (K)

| Part Code      | Rate Voltage<br>$\leq 85^{\circ}\text{C}$ | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|-------------------------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                                         | $\mu\text{F}$          | $\mu\text{A}$                                  | %                                                    | $\Omega$                   | mA                  |                     |                      |
| CA45A004K225TA | 4                                         | 2.2                    | 1                                              | 6                                                    | 7.6                        | 99                  | 89                  | 40                   |
| CA45A004K335TA | 4                                         | 3.3                    | 1                                              | 6                                                    | 8                          | 97                  | 87                  | 39                   |
| CA45A004K475TA | 4                                         | 4.7                    | 1                                              | 6                                                    | 8                          | 97                  | 87                  | 39                   |
| CA45B004K475TA | 4                                         | 4.7                    | 1                                              | 6                                                    | 7                          | 110                 | 99                  | 44                   |
| CA45A004K685TA | 4                                         | 6.8                    | 1                                              | 6                                                    | 6                          | 112                 | 101                 | 45                   |
| CA45B004K685TA | 4                                         | 6.8                    | 1                                              | 6                                                    | 3.4                        | 158                 | 142                 | 63                   |
| CA45A004K106TA | 4                                         | 10                     | 1                                              | 6                                                    | 6                          | 112                 | 101                 | 45                   |
| CA45B004K106TA | 4                                         | 10                     | 1                                              | 6                                                    | 3.5                        | 156                 | 140                 | 62                   |
| CA45A004K156TA | 4                                         | 15                     | 1                                              | 6                                                    | 4                          | 137                 | 123                 | 55                   |
| CA45B004K156TA | 4                                         | 15                     | 1                                              | 6                                                    | 3.5                        | 156                 | 140                 | 62                   |
| CA45C004K156TA | 4                                         | 15                     | 1                                              | 6                                                    | 2.8                        | 198                 | 178                 | 79                   |
| CA45A004K226TA | 4                                         | 22                     | 1                                              | 6                                                    | 3.5                        | 146                 | 132                 | 59                   |
| CA45B004K226TA | 4                                         | 22                     | 1                                              | 6                                                    | 3                          | 168                 | 151                 | 67                   |
| CA45C004K226TA | 4                                         | 22                     | 1                                              | 6                                                    | 1.8                        | 247                 | 222                 | 99                   |
| CA45A004K336TA | 4                                         | 33                     | 1                                              | 6                                                    | 3                          | 158                 | 142                 | 63                   |
| CA45B004K336TA | 4                                         | 33                     | 1                                              | 6                                                    | 2.8                        | 174                 | 157                 | 70                   |
| CA45C004K336TA | 4                                         | 33                     | 1                                              | 6                                                    | 1.8                        | 247                 | 222                 | 99                   |
| CA45D004K336TA | 4                                         | 33                     | 1                                              | 6                                                    | 2.2                        | 261                 | 235                 | 104                  |
| CA45A004K476TA | 4                                         | 47                     | 2                                              | 14                                                   | 2.6                        | 170                 | 153                 | 68                   |
| CA45B004K476TA | 4                                         | 47                     | 2                                              | 6                                                    | 2.4                        | 188                 | 169                 | 75                   |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 4.0V, CAPACITANCE TOL.  $\pm 10\%$  (K)**

| Part Code      | Rate<br>Voltage<br>$\leq 85^{\circ}\text{C}$ | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|----------------------------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                                              |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                                            | $\mu\text{F}$          | $\mu\text{A}$                                  | %                                                    | $\Omega$                   | mA                  |                     |                      |
| CA45C004K476TA | 4                                            | 47                     | 2                                              | 6                                                    | 1.8                        | 247                 | 222                 | 99                   |
| CA45D004K476TA | 4                                            | 47                     | 2                                              | 6                                                    | 1.6                        | 306                 | 276                 | 122                  |
| CA45A004K686TA | 4                                            | 68                     | 3                                              | 30                                                   | 4                          | 137                 | 123                 | 55                   |
| CA45B004K686TA | 4                                            | 68                     | 3                                              | 6                                                    | 1.9                        | 212                 | 190                 | 85                   |
| CA45C004K686TA | 4                                            | 68                     | 3                                              | 6                                                    | 1.5                        | 271                 | 244                 | 108                  |
| CA45D004K686TA | 4                                            | 68                     | 3                                              | 6                                                    | 1.1                        | 369                 | 332                 | 148                  |
| CA45A004K107TA | 4                                            | 100                    | 4                                              | 30                                                   | 4                          | 137                 | 123                 | 55                   |
| CA45B004K107TA | 4                                            | 100                    | 4                                              | 8                                                    | 1.8                        | 217                 | 196                 | 87                   |
| CA45C004K107TA | 4                                            | 100                    | 4                                              | 8                                                    | 1.3                        | 291                 | 262                 | 116                  |
| CA45D004K107TA | 4                                            | 100                    | 4                                              | 8                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45B004K157TA | 4                                            | 150                    | 6                                              | 14                                                   | 2                          | 206                 | 186                 | 82                   |
| CA45C004K157TA | 4                                            | 150                    | 6                                              | 12                                                   | 1.2                        | 303                 | 272                 | 121                  |
| CA45D004K157TA | 4                                            | 150                    | 6                                              | 8                                                    | 0.8                        | 433                 | 390                 | 173                  |
| CA45E004K157TA | 4                                            | 150                    | 6                                              | 8                                                    | 0.5                        | 574                 | 517                 | 230                  |
| CA45V004K157TA | 4                                            | 150                    | 6                                              | 8                                                    | 0.5                        | 707                 | 636                 | 283                  |
| CA45B004K227TA | 4                                            | 220                    | 9                                              | 18                                                   | 1.5                        | 238                 | 214                 | 95                   |
| CA45C004K227TA | 4                                            | 220                    | 9                                              | 15                                                   | 1.2                        | 303                 | 272                 | 121                  |
| CA45D004K227TA | 4                                            | 220                    | 9                                              | 8                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E004K227TA | 4                                            | 220                    | 9                                              | 8                                                    | 0.5                        | 574                 | 517                 | 230                  |
| CA45C004K337TA | 4                                            | 330                    | 13                                             | 10                                                   | 0.9                        | 350                 | 315                 | 140                  |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 4.0V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45D004K337TA | 4                         | 330                    | 13                                             | 8                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E004K337TA | 4                         | 330                    | 13                                             | 8                                                    | 0.8                        | 454                 | 409                 | 182                  |
| CA45V004K337TA | 4                         | 330                    | 13                                             | 10                                                   | 0.6                        | 645                 | 581                 | 258                  |
| CA45C004K477TA | 4                         | 470                    | 19                                             | 14                                                   | 0.3                        | 606                 | 545                 | 242                  |
| CA45D004K477TA | 4                         | 470                    | 19                                             | 12                                                   | 0.9                        | 408                 | 367                 | 163                  |
| CA45E004K477TA | 4                         | 470                    | 19                                             | 10                                                   | 0.5                        | 574                 | 517                 | 230                  |
| CA45V004K477TA | 4                         | 470                    | 19                                             | 12                                                   | 0.3                        | 913                 | 822                 | 365                  |
| CA45D004K687TA | 4                         | 680                    | 27                                             | 25                                                   | 0.5                        | 548                 | 493                 | 219                  |
| CA45E004K687TA | 4                         | 680                    | 27                                             | 14                                                   | 0.9                        | 428                 | 385                 | 171                  |
| CA45V004K687TA | 4                         | 680                    | 27                                             | 12                                                   | 0.3                        | 913                 | 822                 | 365                  |
| CA45W004K687TA | 4                         | 680                    | 27                                             | 12                                                   | 0.35                       | 845                 | 761                 | 338                  |
| CA45D004K108TA | 4                         | 1000                   | 40                                             | 60                                                   | 0.2                        | 866                 | 779                 | 346                  |
| CA45E004K108TA | 4                         | 1000                   | 40                                             | 20                                                   | 0.5                        | 574                 | 517                 | 230                  |
| CA45V004K108TA | 4                         | 1000                   | 40                                             | 15                                                   | 0.2                        | 1118                | 1006                | 447                  |
| CA45W004K108TA | 4                         | 1000                   | 40                                             | 16                                                   | 0.2                        | 1118                | 1006                | 447                  |
| CA45E004K158TA | 4                         | 1500                   | 60                                             | 30                                                   | 0.2                        | 908                 | 817                 | 363                  |
| CA45V004K158TA | 4                         | 1500                   | 60                                             | 30                                                   | 0.2                        | 1118                | 1006                | 447                  |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 6.3V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45A6R3K155TA | 6.3                       | 1.5                    | 1                                              | 6                                                    | 3                          | 161                 | 145                 | 64                   |
| CA45A6R3K225TA | 6.3                       | 2.2                    | 1                                              | 6                                                    | 9                          | 91                  | 82                  | 37                   |
| CA45A6R3K335TA | 6.3                       | 3.3                    | 1                                              | 6                                                    | 7                          | 104                 | 93                  | 41                   |
| CA45B6R3K335TA | 6.3                       | 3.3                    | 1                                              | 6                                                    | 5.5                        | 124                 | 112                 | 50                   |
| CA45A6R3K475TA | 6.3                       | 4.7                    | 1                                              | 6                                                    | 6                          | 112                 | 101                 | 45                   |
| CA45B6R3K475TA | 6.3                       | 4.7                    | 1                                              | 6                                                    | 4.4                        | 139                 | 125                 | 56                   |
| CA45A6R3K685TA | 6.3                       | 6.8                    | 1                                              | 6                                                    | 6                          | 112                 | 101                 | 45                   |
| CA45B6R3K685TA | 6.3                       | 6.8                    | 1                                              | 6                                                    | 5                          | 130                 | 117                 | 52                   |
| CA45A6R3K106TA | 6.3                       | 10                     | 1                                              | 6                                                    | 4                          | 137                 | 123                 | 55                   |
| CA45B6R3K106TA | 6.3                       | 10                     | 1                                              | 6                                                    | 3.5                        | 156                 | 140                 | 62                   |
| CA45C6R3K106TA | 6.3                       | 10                     | 1                                              | 6                                                    | 3                          | 191                 | 172                 | 77                   |
| CA45P6R3K106TA | 6.3                       | 10                     | 0.5                                            | 6                                                    | 4                          | 126                 | 114                 | 50                   |
| CA45A6R3K156TA | 6.3                       | 15                     | 1                                              | 6                                                    | 3.5                        | 146                 | 132                 | 59                   |
| CA45B6R3K156TA | 6.3                       | 15                     | 1                                              | 6                                                    | 3                          | 168                 | 151                 | 67                   |
| CA45C6R3K156TA | 6.3                       | 15                     | 1                                              | 6                                                    | 1.8                        | 247                 | 222                 | 99                   |
| CA45A6R3K226TA | 6.3                       | 22                     | 1                                              | 6                                                    | 3                          | 158                 | 142                 | 63                   |
| CA45B6R3K226TA | 6.3                       | 22                     | 1                                              | 6                                                    | 2.5                        | 184                 | 166                 | 74                   |
| CA45C6R3K226TA | 6.3                       | 22                     | 1                                              | 6                                                    | 2                          | 235                 | 211                 | 94                   |
| CA45D6R3K226TA | 6.3                       | 22                     | 1                                              | 6                                                    | 2                          | 274                 | 246                 | 110                  |
| CA45A6R3K336TA | 6.3                       | 33                     | 2                                              | 14                                                   | 3                          | 173                 | 156                 | 69                   |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 6.3V, CAPACITANCE TOL.  $\pm 10\%$  (K)**

| Part Code      | Rate<br>Voltage<br>$\leq 85^{\circ}\text{C}$ | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|----------------------------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                                              |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                                            | $\mu\text{F}$          | $\mu\text{A}$                                  | %                                                    | $\Omega$                   | mA                  |                     |                      |
| CA45B6R3K336TA | 6.3                                          | 33                     | 2                                              | 6                                                    | 2                          | 197                 | 177                 | 79                   |
| CA45C6R3K336TA | 6.3                                          | 33                     | 2                                              | 6                                                    | 2                          | 247                 | 222                 | 99                   |
| CA45D6R3K336TA | 6.3                                          | 33                     | 2                                              | 6                                                    | 1.6                        | 306                 | 276                 | 122                  |
| CA45A6R3K476TA | 6.3                                          | 47                     | 3                                              | 12                                                   | 4                          | 146                 | 132                 | 59                   |
| CA45B6R3K476TA | 6.3                                          | 47                     | 3                                              | 6                                                    | 2                          | 206                 | 186                 | 82                   |
| CA45C6R3K476TA | 6.3                                          | 47                     | 3                                              | 6                                                    | 1.6                        | 262                 | 236                 | 105                  |
| CA45D6R3K476TA | 6.3                                          | 47                     | 3                                              | 6                                                    | 1.1                        | 369                 | 332                 | 148                  |
| CA45E6R3K476TA | 6.3                                          | 47                     | 3                                              | 6                                                    | 1.1                        | 387                 | 349                 | 155                  |
| CA45A6R3K686TA | 6.3                                          | 68                     | 4                                              | 30                                                   | 4                          | 137                 | 123                 | 55                   |
| CA45B6R3K686TA | 6.3                                          | 68                     | 4                                              | 8                                                    | 2                          | 217                 | 196                 | 87                   |
| CA45C6R3K686TA | 6.3                                          | 68                     | 4                                              | 6                                                    | 2                          | 271                 | 244                 | 108                  |
| CA45D6R3K686TA | 6.3                                          | 68                     | 4                                              | 6                                                    | 1                          | 408                 | 367                 | 163                  |
| CA45A6R3K107TA | 6.3                                          | 100                    | 6                                              | 26                                                   | 3                          | 158                 | 142                 | 63                   |
| CA45B6R3K107TA | 6.3                                          | 100                    | 6                                              | 15                                                   | 2                          | 206                 | 186                 | 82                   |
| CA45C6R3K107TA | 6.3                                          | 100                    | 6                                              | 8                                                    | 1                          | 350                 | 315                 | 140                  |
| CA45D6R3K107TA | 6.3                                          | 100                    | 6                                              | 8                                                    | 1                          | 433                 | 390                 | 173                  |
| CA45E6R3K107TA | 6.3                                          | 100                    | 6                                              | 8                                                    | 1                          | 454                 | 409                 | 182                  |
| CA45B6R3K157TA | 6.3                                          | 150                    | 10                                             | 15                                                   | 3                          | 168                 | 151                 | 67                   |
| CA45C6R3K157TA | 6.3                                          | 150                    | 10                                             | 8                                                    | 1                          | 291                 | 262                 | 116                  |
| CA45D6R3K157TA | 6.3                                          | 150                    | 10                                             | 8                                                    | 1                          | 408                 | 367                 | 163                  |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 6.3V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45E6R3K157TA | 6.3                       | 150                    | 9                                              | 8                                                    | 1                          | 486                 | 437                 | 194                  |
| CA45B6R3K227TA | 6.3                       | 220                    | 14                                             | 18                                                   | 2                          | 230                 | 207                 | 92                   |
| CA45C6R3K227TA | 6.3                       | 220                    | 14                                             | 14                                                   | 1                          | 303                 | 272                 | 121                  |
| CA45D6R3K227TA | 6.3                       | 220                    | 14                                             | 8                                                    | 1                          | 463                 | 417                 | 185                  |
| CA45E6R3K227TA | 6.3                       | 220                    | 14                                             | 8                                                    | 1                          | 574                 | 517                 | 230                  |
| CA45V6R3K227TA | 6.3                       | 220                    | 14                                             | 8                                                    | 1                          | 707                 | 636                 | 283                  |
| CA45C6R3K337TA | 6.3                       | 330                    | 21                                             | 12                                                   | 1                          | 303                 | 272                 | 121                  |
| CA45D6R3K337TA | 6.3                       | 330                    | 21                                             | 8                                                    | 1                          | 500                 | 450                 | 200                  |
| CA45E6R3K337TA | 6.3                       | 330                    | 21                                             | 8                                                    | 1                          | 574                 | 517                 | 230                  |
| CA45V6R3K337TA | 6.3                       | 330                    | 21                                             | 10                                                   | 0                          | 913                 | 822                 | 365                  |
| CA45D6R3K477TA | 6.3                       | 470                    | 30                                             | 14                                                   | 1                          | 548                 | 493                 | 219                  |
| CA45E6R3K477TA | 6.3                       | 470                    | 30                                             | 10                                                   | 2                          | 332                 | 298                 | 133                  |
| CA45V6R3K477TA | 6.3                       | 470                    | 30                                             | 10                                                   | 0                          | 791                 | 712                 | 316                  |
| CA45E6R3K687TA | 6.3                       | 680                    | 43                                             | 20                                                   | 1                          | 524                 | 472                 | 210                  |
| CA45V6R3K687TA | 6.3                       | 680                    | 43                                             | 12                                                   | 1                          | 707                 | 636                 | 283                  |
| CA45W6R3K687TA | 6.3                       | 680                    | 43                                             | 12                                                   | 1                          | 707                 | 636                 | 283                  |
| CA45E6R3K108TA | 6.3                       | 1000                   | 63                                             | 30                                                   | 1                          | 524                 | 472                 | 210                  |
| CA45V6R3K108TA | 6.3                       | 1000                   | 63                                             | 16                                                   | 0                          | 913                 | 822                 | 365                  |
| CA45W6R3K108TA | 6.3                       | 1000                   | 63                                             | 16                                                   | 0.3                        | 913                 | 822                 | 365                  |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 10V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45A010K105TA | 10                        | 1                      | 1                                              | 4                                                    | 10                         | 87                  | 78                  | 35                   |
| CA45B010K105TA | 10                        | 1                      | 1                                              | 4                                                    | 5                          | 130                 | 117                 | 52                   |
| CA45A010K155TA | 10                        | 1.5                    | 1                                              | 6                                                    | 10                         | 87                  | 78                  | 35                   |
| CA45B010K155TA | 10                        | 1.5                    | 1                                              | 6                                                    | 10                         | 92                  | 83                  | 37                   |
| CA45A010K225TA | 10                        | 2.2                    | 1                                              | 6                                                    | 7                          | 104                 | 93                  | 41                   |
| CA45B010K225TA | 10                        | 2.2                    | 1                                              | 6                                                    | 5                          | 136                 | 122                 | 54                   |
| CA45A010K335TA | 10                        | 3.3                    | 1                                              | 6                                                    | 6                          | 117                 | 105                 | 47                   |
| CA45B010K335TA | 10                        | 3.3                    | 1                                              | 6                                                    | 6                          | 124                 | 112                 | 50                   |
| CA45A010K475TA | 10                        | 4.7                    | 1                                              | 6                                                    | 5                          | 122                 | 110                 | 49                   |
| CA45B010K475TA | 10                        | 4.7                    | 1                                              | 6                                                    | 4                          | 146                 | 131                 | 58                   |
| CA45P010K475TA | 10                        | 4.7                    | 0.5                                            | 8                                                    | 9                          | 84                  | 76                  | 34                   |
| CA45A010K685TA | 10                        | 6.8                    | 1                                              | 6                                                    | 4                          | 134                 | 120                 | 53                   |
| CA45B010K685TA | 10                        | 6.8                    | 1                                              | 6                                                    | 3.5                        | 156                 | 140                 | 62                   |
| CA45C010K685TA | 10                        | 6.8                    | 1                                              | 6                                                    | 2                          | 241                 | 217                 | 96                   |
| CA45A010K106TA | 10                        | 10                     | 1                                              | 6                                                    | 4                          | 140                 | 126                 | 56                   |
| CA45B010K106TA | 10                        | 10                     | 1                                              | 6                                                    | 3                          | 168                 | 151                 | 67                   |
| CA45C010K106TA | 10                        | 10                     | 1                                              | 6                                                    | 3                          | 210                 | 189                 | 84                   |
| CA45D010K106TA | 10                        | 10                     | 1                                              | 6                                                    | 3                          | 245                 | 220                 | 98                   |
| CA45P010K106TA | 10                        | 10                     | 1                                              | 18                                                   | 6.5                        | 100                 | 90                  | 40                   |
| CA45A010K156TA | 10                        | 15                     | 2                                              | 8                                                    | 6                          | 112                 | 101                 | 45                   |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 10V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45B010K156TA | 10                        | 15                     | 2                                              | 6                                                    | 2.8                        | 174                 | 157                 | 70                   |
| CA45C010K156TA | 10                        | 15                     | 2                                              | 6                                                    | 2                          | 235                 | 211                 | 94                   |
| CA45A010K226TA | 10                        | 22                     | 2                                              | 8                                                    | 3.2                        | 153                 | 138                 | 61                   |
| CA45B010K226TA | 10                        | 22                     | 2                                              | 6                                                    | 2.4                        | 188                 | 169                 | 75                   |
| CA45C010K226TA | 10                        | 22                     | 2                                              | 6                                                    | 1.8                        | 247                 | 222                 | 99                   |
| CA45D010K226TA | 10                        | 22                     | 2                                              | 6                                                    | 1.6                        | 306                 | 276                 | 122                  |
| CA45E010K226TA | 10                        | 22                     | 2                                              | 6                                                    | 1.6                        | 321                 | 289                 | 128                  |
| CA45A010K336TA | 10                        | 33                     | 3                                              | 15                                                   | 6                          | 112                 | 101                 | 45                   |
| CA45B010K336TA | 10                        | 33                     | 3                                              | 6                                                    | 1.9                        | 212                 | 190                 | 85                   |
| CA45C010K336TA | 10                        | 33                     | 3                                              | 6                                                    | 1.6                        | 262                 | 236                 | 105                  |
| CA45D010K336TA | 10                        | 33                     | 3                                              | 6                                                    | 1.1                        | 369                 | 332                 | 148                  |
| CA45A010K476TA | 10                        | 47                     | 5                                              | 26                                                   | 3                          | 158                 | 142                 | 63                   |
| CA45B010K476TA | 10                        | 47                     | 5                                              | 8                                                    | 1.8                        | 217                 | 196                 | 87                   |
| CA45C010K476TA | 10                        | 47                     | 5                                              | 6                                                    | 1.2                        | 303                 | 272                 | 121                  |
| CA45D010K476TA | 10                        | 47                     | 5                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E010K476TA | 10                        | 47                     | 5                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45A010K686TA | 10                        | 68                     | 7                                              | 6                                                    | 0.9                        | 173                 | 156                 | 69                   |
| CA45B010K686TA | 10                        | 68                     | 7                                              | 14                                                   | 1.8                        | 217                 | 196                 | 87                   |
| CA45C010K686TA | 10                        | 68                     | 7                                              | 6                                                    | 1.3                        | 291                 | 262                 | 116                  |
| CA45D010K686TA | 10                        | 68                     | 7                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 10V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45E010K686TA | 10                        | 68                     | 7                                              | 6                                                    | 0.5                        | 574                 | 517                 | 230                  |
| CA45A010K107TA | 10                        | 100                    | 10                                             | 30                                                   | 4                          | 137                 | 123                 | 55                   |
| CA45B010K107TA | 10                        | 100                    | 10                                             | 25                                                   | 2.5                        | 184                 | 166                 | 74                   |
| CA45C010K107TA | 10                        | 100                    | 10                                             | 8                                                    | 1.2                        | 303                 | 272                 | 121                  |
| CA45D010K107TA | 10                        | 100                    | 10                                             | 8                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E010K107TA | 10                        | 100                    | 10                                             | 8                                                    | 0.8                        | 454                 | 409                 | 182                  |
| CA45C010K157TA | 10                        | 150                    | 15                                             | 20                                                   | 0.9                        | 350                 | 315                 | 140                  |
| CA45D010K157TA | 10                        | 150                    | 15                                             | 8                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E010K157TA | 10                        | 150                    | 15                                             | 8                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45V010K157TA | 10                        | 150                    | 15                                             | 8                                                    | 0.5                        | 707                 | 636                 | 283                  |
| CA45C010K227TA | 10                        | 220                    | 22                                             | 16                                                   | 0.9                        | 350                 | 315                 | 140                  |
| CA45D010K227TA | 10                        | 220                    | 22                                             | 8                                                    | 0.6                        | 500                 | 450                 | 200                  |
| CA45E010K227TA | 10                        | 220                    | 22                                             | 8                                                    | 0.5                        | 574                 | 517                 | 230                  |
| CA45V010K227TA | 10                        | 220                    | 22                                             | 8                                                    | 0.3                        | 913                 | 822                 | 365                  |
| CA45C010K337TA | 10                        | 330                    | 33                                             | 18                                                   | 1.2                        | 303                 | 272                 | 121                  |
| CA45D010K337TA | 10                        | 330                    | 33                                             | 15                                                   | 0.9                        | 408                 | 367                 | 163                  |
| CA45E010K337TA | 10                        | 330                    | 33                                             | 10                                                   | 0.9                        | 428                 | 385                 | 171                  |
| CA45V010K337TA | 10                        | 300                    | 33                                             | 10                                                   | 0.5                        | 707                 | 636                 | 283                  |
| CA45D010K477TA | 10                        | 470                    | 47                                             | 14                                                   | 0.5                        | 548                 | 493                 | 219                  |
| CA45E010K477TA | 10                        | 470                    | 47                                             | 15                                                   | 0.5                        | 574                 | 517                 | 230                  |

[illegible]

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 16V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45A016K684TA | 16                        | 0.68                   | 1                                              | 4                                                    | 12                         | 79                  | 71                  | 32                   |
| CA45A016K105TA | 16                        | 1                      | 1                                              | 4                                                    | 11                         | 83                  | 74                  | 33                   |
| CA45B016K105TA | 16                        | 1                      | 1                                              | 4                                                    | 5                          | 130                 | 117                 | 52                   |
| CA45C016K105TA | 16                        | 1                      | 1                                              | 4                                                    | 5                          | 148                 | 133                 | 59                   |
| CA45A016K155TA | 16                        | 1.5                    | 1                                              | 6                                                    | 8                          | 97                  | 87                  | 39                   |
| CA45B016K155TA | 16                        | 1.5                    | 1                                              | 6                                                    | 6.4                        | 115                 | 104                 | 46                   |
| CA45A016K225TA | 16                        | 2.2                    | 1                                              | 6                                                    | 6.5                        | 107                 | 97                  | 43                   |
| CA45B016K225TA | 16                        | 2.2                    | 1                                              | 6                                                    | 4.6                        | 136                 | 122                 | 54                   |
| CA45C016K225TA | 16                        | 2.2                    | 1                                              | 6                                                    | 4.6                        | 155                 | 139                 | 62                   |
| CA45A016K335TA | 16                        | 3.3                    | 1                                              | 6                                                    | 5                          | 122                 | 110                 | 49                   |
| CA45B016K335TA | 16                        | 3.3                    | 1                                              | 6                                                    | 4.5                        | 137                 | 124                 | 55                   |
| CA45A016K475TA | 16                        | 4.7                    | 1                                              | 6                                                    | 5                          | 122                 | 110                 | 49                   |
| CA45B016K475TA | 16                        | 4.7                    | 1                                              | 6                                                    | 3.5                        | 156                 | 140                 | 62                   |
| CA45C016K475TA | 16                        | 4.7                    | 1                                              | 6                                                    | 2.9                        | 195                 | 175                 | 78                   |
| CA45A016K685TA | 16                        | 6.8                    | 1                                              | 6                                                    | 4.2                        | 134                 | 120                 | 53                   |
| CA45B016K685TA | 16                        | 6.8                    | 1                                              | 6                                                    | 2.5                        | 184                 | 166                 | 74                   |
| CA45C016K685TA | 16                        | 6.8                    | 1                                              | 6                                                    | 2.5                        | 210                 | 189                 | 84                   |
| CA45A016K106TA | 16                        | 10                     | 2                                              | 6                                                    | 3                          | 158                 | 142                 | 63                   |
| CA45B016K106TA | 16                        | 10                     | 2                                              | 6                                                    | 2.8                        | 174                 | 157                 | 70                   |
| CA45C016K106TA | 16                        | 10                     | 2                                              | 6                                                    | 2                          | 235                 | 211                 | 94                   |

ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 16V, CAPACITANCE TOL. ±10% (K)

| Part Code      | Rate Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                        |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                      | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45D016K106TA | 16                     | 10                     | 2                                              | 6                                                    | 2                          | 274                 | 246                 | 110                  |
| CA45E016K106TA | 16                     | 10                     | 2                                              | 6                                                    | 2                          | 287                 | 259                 | 115                  |
| CA45A016K156TA | 16                     | 15                     | 2                                              | 8                                                    | 3.5                        | 146                 | 132                 | 59                   |
| CA45B016K156TA | 16                     | 15                     | 2                                              | 6                                                    | 2.5                        | 184                 | 166                 | 74                   |
| CA45C016K156TA | 16                     | 15                     | 2                                              | 6                                                    | 1.8                        | 247                 | 222                 | 99                   |
| CA45D016K156TA | 16                     | 15                     | 2                                              | 6                                                    | 1.8                        | 289                 | 260                 | 115                  |
| CA45A016K226TA | 16                     | 22                     | 4                                              | 10                                                   | 2.3                        | 181                 | 163                 | 72                   |
| CA45B016K226TA | 16                     | 22                     | 4                                              | 6                                                    | 2.3                        | 192                 | 173                 | 77                   |
| CA45C016K226TA | 16                     | 22                     | 4                                              | 6                                                    | 1.5                        | 271                 | 244                 | 108                  |
| CA45D016K226TA | 16                     | 22                     | 4                                              | 6                                                    | 1                          | 387                 | 349                 | 155                  |
| CA45E016K226TA | 16                     | 22                     | 4                                              | 6                                                    | 1                          | 406                 | 366                 | 162                  |
| CA45B016K336TA | 16                     | 33                     | 5                                              | 8                                                    | 2.1                        | 201                 | 181                 | 80                   |
| CA45C016K336TA | 16                     | 33                     | 5                                              | 6                                                    | 1.5                        | 271                 | 244                 | 108                  |
| CA45D016K336TA | 16                     | 33                     | 5                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E016K336TA | 16                     | 33                     | 5                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45B016K476TA | 16                     | 47                     | 8                                              | 14                                                   | 2.5                        | 184                 | 166                 | 74                   |
| CA45C016K476TA | 16                     | 47                     | 8                                              | 6                                                    | 1                          | 332                 | 298                 | 133                  |
| CA45D016K476TA | 16                     | 47                     | 8                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E016K476TA | 16                     | 47                     | 8                                              | 6                                                    | 0.8                        | 454                 | 408                 | 182                  |
| CA45V016K476TA | 16                     | 47                     | 8                                              | 6                                                    | 0.8                        | 559                 | 503                 | 224                  |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 16V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45B016K686TA | 16                        | 68                     | 11                                             | 6                                                    | 0.8                        | 326                 | 293                 | 130                  |
| CA45C016K686TA | 16                        | 68                     | 11                                             | 6                                                    | 1.3                        | 291                 | 262                 | 116                  |
| CA45D016K686TA | 16                        | 68                     | 11                                             | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E016K686TA | 16                        | 68                     | 11                                             | 6                                                    | 0.8                        | 454                 | 409                 | 182                  |
| CA45C016K107TA | 16                        | 100                    | 16                                             | 10                                                   | 1                          | 332                 | 298                 | 133                  |
| CA45D016K107TA | 16                        | 100                    | 16                                             | 8                                                    | 0.7                        | 463                 | 417                 | 185                  |
| CA45E016K107TA | 16                        | 100                    | 16                                             | 8                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45D016K157TA | 16                        | 150                    | 24                                             | 10                                                   | 0.9                        | 408                 | 367                 | 163                  |
| CA45E016K157TA | 16                        | 150                    | 24                                             | 8                                                    | 0.5                        | 574                 | 517                 | 230                  |
| CA45V016K157TA | 16                        | 150                    | 24                                             | 8                                                    | 0.4                        | 791                 | 712                 | 316                  |
| CA45D016K227TA | 16                        | 220                    | 35                                             | 15                                                   | 0.9                        | 408                 | 367                 | 163                  |
| CA45E016K227TA | 16                        | 220                    | 35                                             | 14                                                   | 0.5                        | 574                 | 517                 | 230                  |
| CA45V016K227TA | 16                        | 220                    | 35                                             | 7.2                                                  | 0.9                        | 527                 | 474                 | 211                  |
| CA45E016K337TA | 16                        | 330                    | 53                                             | 30                                                   | 0.4                        | 642                 | 578                 | 257                  |
| CA45V016K337TA | 16                        | 330                    | 53                                             | 12                                                   | 0.8                        | 559                 | 503                 | 224                  |
| CA45W016K337TA | 16                        | 330                    | 53                                             | 10                                                   | 0.8                        | 559                 | 503                 | 224                  |
| CA45E016K447TA | 16                        | 470                    | 75                                             | 16                                                   | 0.4                        | 642                 | 578                 | 257                  |
| CA45W016K447TA | 16                        | 470                    | 75                                             | 16                                                   | 0.4                        | 791                 | 712                 | 316                  |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 20V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45A020K474TA | 20                        | 0.47                   | 1                                              | 4                                                    | 14                         | 73                  | 66                  | 29                   |
| CA45A020K684TA | 20                        | 0.68                   | 1                                              | 4                                                    | 12                         | 79                  | 71                  | 32                   |
| CA45A020K105TA | 20                        | 1                      | 1                                              | 4                                                    | 9                          | 91                  | 82                  | 37                   |
| CA45B020K105TA | 20                        | 1                      | 1                                              | 4                                                    | 9                          | 97                  | 87                  | 39                   |
| CA45A020K155TA | 20                        | 1.5                    | 1                                              | 6                                                    | 6.5                        | 107                 | 97                  | 43                   |
| CA45B020K155TA | 20                        | 1.5                    | 1                                              | 4.8                                                  | 5.6                        | 123                 | 111                 | 49                   |
| CA45A020K225TA | 20                        | 2.2                    | 1                                              | 6                                                    | 6                          | 112                 | 101                 | 45                   |
| CA45B020K225TA | 20                        | 2.2                    | 1                                              | 6                                                    | 3.5                        | 156                 | 140                 | 62                   |
| CA45A020K335TA | 20                        | 3.3                    | 1                                              | 6                                                    | 5.9                        | 113                 | 101                 | 45                   |
| CA45B020K335TA | 20                        | 3.3                    | 1                                              | 6                                                    | 3                          | 168                 | 151                 | 67                   |
| CA45C020K335TA | 20                        | 3.3                    | 1                                              | 6                                                    | 2.3                        | 219                 | 197                 | 87                   |
| CA45D020K335TA | 20                        | 3.3                    | 1                                              | 6                                                    | 2.3                        | 255                 | 230                 | 102                  |
| CA45A020K475TA | 20                        | 4.7                    | 1                                              | 6                                                    | 5                          | 122                 | 110                 | 49                   |
| CA45B020K475TA | 20                        | 4.7                    | 1                                              | 6                                                    | 3                          | 168                 | 151                 | 67                   |
| CA45C020K475TA | 20                        | 4.7                    | 1                                              | 6                                                    | 2.8                        | 198                 | 178                 | 79                   |
| CA45D020K475TA | 20                        | 4.7                    | 1                                              | 6                                                    | 2.8                        | 231                 | 208                 | 93                   |
| CA45A020K685TA | 20                        | 6.8                    | 1                                              | 8                                                    | 6                          | 112                 | 101                 | 45                   |
| CA45B020K685TA | 20                        | 6.8                    | 1                                              | 6                                                    | 2.5                        | 184                 | 166                 | 74                   |
| CA45C020K685TA | 20                        | 6.8                    | 1                                              | 6                                                    | 2                          | 235                 | 211                 | 94                   |
| CA45D020K685TA | 20                        | 6.8                    | 1                                              | 6                                                    | 1.4                        | 327                 | 295                 | 131                  |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 20V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45A020K106TA | 20                        | 10                     | 2                                              | 10                                                   | 5                          | 122                 | 110                 | 49                   |
| CA45B020K106TA | 20                        | 10                     | 2                                              | 6                                                    | 2.1                        | 201                 | 181                 | 80                   |
| CA45C020K106TA | 20                        | 10                     | 2                                              | 6                                                    | 1.7                        | 254                 | 229                 | 102                  |
| CA45D020K106TA | 20                        | 10                     | 2                                              | 6                                                    | 1.2                        | 354                 | 318                 | 141                  |
| CA45E020K106TA | 20                        | 10                     | 2                                              | 6                                                    | 1.2                        | 371                 | 334                 | 148                  |
| CA45A020M106TA | 20                        | 10                     | 2                                              | 10                                                   | 5                          | 122                 | 110                 | 49                   |
| CA45B020K156TA | 20                        | 15                     | 3                                              | 6                                                    | 2.3                        | 192                 | 173                 | 77                   |
| CA45C020K156TA | 20                        | 15                     | 3                                              | 6                                                    | 1.7                        | 254                 | 229                 | 102                  |
| CA45D020K156TA | 20                        | 15                     | 3                                              | 6                                                    | 1.1                        | 369                 | 332                 | 148                  |
| CA45B020K226TA | 20                        | 22                     | 4                                              | 8                                                    | 4                          | 146                 | 131                 | 58                   |
| CA45C020K226TA | 20                        | 22                     | 4                                              | 6                                                    | 1.6                        | 262                 | 236                 | 105                  |
| CA45D020K226TA | 20                        | 22                     | 4                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E020K226TA | 20                        | 22                     | 4                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45B020K336TA | 20                        | 33                     | 7                                              | 10                                                   | 4                          | 146                 | 131                 | 58                   |
| CA45C020K336TA | 20                        | 33                     | 7                                              | 6                                                    | 1.5                        | 271                 | 244                 | 108                  |
| CA45D020K336TA | 20                        | 33                     | 7                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E020K336TA | 20                        | 33                     | 7                                              | 6                                                    | 0.7                        | 486                 | 437                 | 194                  |
| CA45C020K476TA | 20                        | 47                     | 9                                              | 6                                                    | 0.9                        | 350                 | 315                 | 140                  |
| CA45D020K476TA | 20                        | 47                     | 9                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E020K476TA | 20                        | 47                     | 9                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 20V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45C020K686TA | 20                        | 68                     | 14                                             | 8                                                    | 0.5                        | 469                 | 422                 | 188                  |
| CA45D020K686TA | 20                        | 68                     | 14                                             | 6                                                    | 0.7                        | 463                 | 417                 | 185                  |
| CA45E020K686TA | 20                        | 68                     | 14                                             | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45V020K686TA | 20                        | 68                     | 14                                             | 6                                                    | 0.6                        | 645                 | 581                 | 258                  |
| CA45D020K107TA | 20                        | 100                    | 20                                             | 8                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E020K107TA | 20                        | 100                    | 20                                             | 8                                                    | 0.5                        | 574                 | 517                 | 230                  |
| CA45V020K107TA | 20                        | 100                    | 20                                             | 8                                                    | 0.5                        | 707                 | 636                 | 283                  |
| CA45D020K157TA | 20                        | 150                    | 30                                             | 8                                                    | 0.5                        | 548                 | 493                 | 219                  |
| CA45E020K157TA | 20                        | 150                    | 30                                             | 10                                                   | 0.4                        | 642                 | 578                 | 257                  |
| CA45V020K157TA | 20                        | 150                    | 30                                             | 8                                                    | 0.4                        | 791                 | 712                 | 316                  |
| CA45E020K227TA | 20                        | 220                    | 44                                             | 12                                                   | 0.6                        | 524                 | 472                 | 210                  |
| CA45V020K227TA | 20                        | 220                    | 44                                             | 12                                                   | 0.5                        | 707                 | 636                 | 283                  |
| CA45W020K227TA | 20                        | 220                    | 44                                             | 10                                                   | 0.5                        | 707                 | 636                 | 283                  |
| CA45E020K337TA | 20                        | 330                    | 66                                             | 20                                                   | 0.8                        | 454                 | 409                 | 182                  |
| CA45V020K337TA | 20                        | 330                    | 66                                             | 20                                                   | 0.8                        | 559                 | 503                 | 224                  |
| CA45W020K337TA | 20                        | 330                    | 66                                             | 10                                                   | 0.8                        | 559                 | 503                 | 224                  |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 25V, CAPACITANCE TOL.  $\pm 10\%$  (K)**

| Part Code      | Rate<br>Voltage<br>$\leq 85^{\circ}\text{C}$ | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|----------------------------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                                              |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                                            | $\mu\text{F}$          | $\mu\text{A}$                                  | %                                                    | $\Omega$                   | mA                  |                     |                      |
| CA45A025K474TA | 25                                           | 0.47                   | 1                                              | 4                                                    | 14                         | 73                  | 66                  | 29                   |
| CA45A025K684TA | 25                                           | 0.68                   | 1                                              | 4                                                    | 10                         | 87                  | 78                  | 35                   |
| CA45B025K684TA | 25                                           | 0.68                   | 1                                              | 4                                                    | 6                          | 119                 | 107                 | 48                   |
| CA45A025K105TA | 25                                           | 1                      | 1                                              | 4                                                    | 8                          | 97                  | 87                  | 39                   |
| CA45B025K105TA | 25                                           | 1                      | 1                                              | 4                                                    | 5                          | 130                 | 117                 | 52                   |
| CA45C025K105TA | 25                                           | 1                      | 1                                              | 4                                                    | 5                          | 148                 | 133                 | 59                   |
| CA45A025K155TA | 25                                           | 1.5                    | 1                                              | 6                                                    | 7.5                        | 100                 | 90                  | 40                   |
| CA45B025K155TA | 25                                           | 1.5                    | 1                                              | 6                                                    | 5                          | 130                 | 117                 | 52                   |
| CA45A025K225TA | 25                                           | 2.2                    | 1                                              | 6                                                    | 7                          | 104                 | 93                  | 41                   |
| CA45B025K225TA | 25                                           | 2.2                    | 1                                              | 6                                                    | 4.5                        | 137                 | 124                 | 55                   |
| CA45C025K225TA | 25                                           | 2.2                    | 1                                              | 6                                                    | 3.5                        | 177                 | 160                 | 71                   |
| CA45A025K335TA | 25                                           | 3.3                    | 1                                              | 6                                                    | 7                          | 104                 | 93                  | 41                   |
| CA45B025K335TA | 25                                           | 3.3                    | 1                                              | 6                                                    | 3.5                        | 156                 | 140                 | 62                   |
| CA45C025K335TA | 25                                           | 3.3                    | 1                                              | 6                                                    | 2.8                        | 198                 | 178                 | 79                   |
| CA45A025K475TA | 25                                           | 4.7                    | 1                                              | 8                                                    | 6                          | 112                 | 101                 | 45                   |
| CA45B025K475TA | 25                                           | 4.7                    | 1                                              | 6                                                    | 2.8                        | 174                 | 157                 | 70                   |
| CA45C025K475TA | 25                                           | 4.7                    | 1                                              | 6                                                    | 2.4                        | 214                 | 193                 | 86                   |
| CA45D025K475TA | 25                                           | 4.7                    | 1                                              | 6                                                    | 2.4                        | 250                 | 225                 | 100                  |
| CA45E025K475TA | 25                                           | 4.7                    | 1                                              | 6                                                    | 1.2                        | 371                 | 334                 | 148                  |
| CA45B025K685TA | 25                                           | 6.8                    | 2                                              | 6                                                    | 2.8                        | 174                 | 157                 | 70                   |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 25V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45C025K685TA | 25                        | 6.8                    | 2                                              | 6                                                    | 2                          | 235                 | 211                 | 94                   |
| CA45D025K685TA | 25                        | 6.8                    | 2                                              | 6                                                    | 1.8                        | 289                 | 260                 | 115                  |
| CA45E025K685TA | 25                        | 6.8                    | 2                                              | 6                                                    | 1.8                        | 303                 | 272                 | 121                  |
| CA45B025K106TA | 25                        | 10                     | 3                                              | 6                                                    | 2.5                        | 184                 | 166                 | 74                   |
| CA45C025K106TA | 25                        | 10                     | 3                                              | 6                                                    | 1.8                        | 247                 | 222                 | 99                   |
| CA45D025K106TA | 25                        | 10                     | 3                                              | 6                                                    | 1.2                        | 354                 | 318                 | 141                  |
| CA45E025K106TA | 25                        | 10                     | 3                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45B025K156TA | 25                        | 15                     | 4                                              | 8                                                    | 4                          | 146                 | 131                 | 58                   |
| CA45C025K156TA | 25                        | 15                     | 4                                              | 6                                                    | 1.6                        | 262                 | 236                 | 105                  |
| CA45D025K156TA | 25                        | 15                     | 4                                              | 6                                                    | 1                          | 387                 | 349                 | 155                  |
| CA45E025K156TA | 25                        | 15                     | 4                                              | 6                                                    | 1                          | 406                 | 366                 | 162                  |
| CA45B025K226TA | 25                        | 22                     | 6                                              | 6                                                    | 1                          | 292                 | 262                 | 117                  |
| CA45C025K226TA | 25                        | 22                     | 6                                              | 6                                                    | 1.4                        | 280                 | 252                 | 112                  |
| CA45D025K226TA | 25                        | 22                     | 6                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E025K226TA | 25                        | 22                     | 6                                              | 6                                                    | 0.7                        | 486                 | 437                 | 194                  |
| CA45V025K226TA | 25                        | 22                     | 6                                              | 6                                                    | 0.7                        | 598                 | 538                 | 239                  |
| CA45C025K336TA | 25                        | 33                     | 8                                              | 6                                                    | 0.7                        | 271                 | 244                 | 108                  |
| CA45D025K336TA | 25                        | 33                     | 8                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E025K336TA | 25                        | 33                     | 8                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45D025K476TA | 25                        | 47                     | 12                                             | 8                                                    | 0.9                        | 408                 | 367                 | 163                  |

ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 25V, 30V, CAPACITANCE TOL. ±10% (K)

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | µF                     | µA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45E025K476TA | 25                        | 47                     | 12                                             | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45V025K476TA | 25                        | 47                     | 12                                             | 6                                                    | 0.4                        | 791                 | 712                 | 316                  |
| CA45D025K686TA | 25                        | 68                     | 17                                             | 10                                                   | 0.9                        | 408                 | 367                 | 163                  |
| CA45E025K686TA | 25                        | 68                     | 17                                             | 8                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45V025K686TA | 25                        | 68                     | 17                                             | 6                                                    | 0.5                        | 707                 | 636                 | 283                  |
| CA45D025K107TA | 25                        | 100                    | 25                                             | 10                                                   | 0.7                        | 486                 | 437                 | 194                  |
| CA45E025K107TA | 25                        | 100                    | 25                                             | 10                                                   | 0.3                        | 742                 | 667                 | 297                  |
| CA45V025K107TA | 25                        | 100                    | 25                                             | 8                                                    | 0.5                        | 707                 | 636                 | 283                  |
| CA45E025K157TA | 25                        | 150                    | 3B                                             | 8                                                    | 0.6                        | 524                 | 472                 | 210                  |
| CA45V025K157TA | 25                        | 150                    | 38                                             | 10                                                   | 0.4                        | 791                 | 712                 | 316                  |
| CA45W025K157TA | 25                        | 150                    | 38                                             | 8                                                    | 0.4                        | 791                 | 712                 | 316                  |
| CA45G025K227TA | 25                        | 220                    | 55                                             | 8                                                    | 0.4                        | 775                 | 697                 | 310                  |
| CA45E030K107TA | 30                        | 100                    | 30                                             | 10                                                   | 0.3                        | 742                 | 667                 | 297                  |
| CA45W030K107TA | 30                        | 100                    | 30                                             | 8                                                    | 0.5                        | 707                 | 636                 | 283                  |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 35V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45A035K104TA | 35                        | 0.1                    | 0.5                                            | 6                                                    | 10                         | 177                 | 159                 | 71                   |
| CA45A035K224TA | 35                        | 0.22                   | 0.5                                            | 4                                                    | 15                         | 71                  | 64                  | 28                   |
| CA45A035K334TA | 35                        | 0.33                   | 0.5                                            | 4                                                    | 10                         | 87                  | 78                  | 35                   |
| CA45A035K474TA | 35                        | 0.47                   | 1                                              | 4                                                    | 12                         | 79                  | 71                  | 32                   |
| CA45B035K474TA | 35                        | 0.47                   | 1                                              | A                                                    | 10                         | 92                  | 83                  | 37                   |
| CA45A035K684TA | 35                        | 0.68                   | 1                                              | 4                                                    | 8                          | 97                  | 87                  | 39                   |
| CA45B035K684TA | 35                        | 0.68                   | 1                                              | 4                                                    | 8                          | 103                 | 93                  | 41                   |
| CA45A035K105TA | 35                        | 1                      | 1                                              | 4                                                    | 7.5                        | 100                 | 90                  | 40                   |
| CA45B035K105TA | 35                        | 1                      | 1                                              | 4                                                    | 6.5                        | 114                 | 103                 | 46                   |
| CA45A035K155TA | 35                        | 1.5                    | 1                                              | 6                                                    | 7.5                        | 100                 | 90                  | 40                   |
| CA45B035K155TA | 35                        | 1.5                    | 1                                              | 6                                                    | 5.2                        | 128                 | 115                 | 51                   |
| CA45C035K155TA | 35                        | 1.5                    | 1                                              | 6                                                    | 4.5                        | 156                 | 141                 | 63                   |
| CA45D035K155TA | 35                        | 1.5                    | 1                                              | 6                                                    | 4.5                        | 183                 | 164                 | 73                   |
| CA45A035K225TA | 35                        | 2.2                    | 1                                              | 6                                                    | 4.5                        | 129                 | 116                 | 52                   |
| CA45B035K225TA | 35                        | 2.2                    | 1                                              | 6                                                    | 4.2                        | 142                 | 128                 | 57                   |
| CA45C035K225TA | 35                        | 2.2                    | 1                                              | 6                                                    | 3.5                        | 177                 | 160                 | 71                   |
| CA45D035K225TA | 35                        | 2.2                    | 1                                              | 6                                                    | 3.5                        | 207                 | 186                 | 83                   |
| CA45B035K335TA | 35                        | 3.3                    | 1                                              | 6                                                    | 3.5                        | 156                 | 140                 | 62                   |
| CA45C035K335TA | 35                        | 3.3                    | 1                                              | 6                                                    | 2.5                        | 210                 | 189                 | 84                   |
| CA45D035K335TA | 35                        | 3.3                    | 1                                              | 6                                                    | 2.5                        | 245                 | 220                 | 98                   |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 35V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45B035K475TA | 35                        | 4.7                    | 2                                              | 6                                                    | 3.1                        | 166                 | 149                 | 66                   |
| CA45C035K475TA | 35                        | 4.7                    | 2                                              | 6                                                    | 2.2                        | 224                 | 201                 | 89                   |
| CA45D035K475TA | 35                        | 4.7                    | 2                                              | 6                                                    | 1.5                        | 316                 | 285                 | 126                  |
| CA45E035K475TA | 35                        | 4.7                    | 2                                              | 6                                                    | 1.2                        | 371                 | 334                 | 148                  |
| CA45B035K685TA | 35                        | 6.8                    | 2                                              | 6                                                    | 2.8                        | 217                 | 196                 | 90                   |
| CA45C035K685TA | 35                        | 6.8                    | 2                                              | 6                                                    | 1.8                        | 247                 | 222                 | 99                   |
| CA45D035K685TA | 35                        | 6.8                    | 2                                              | 6                                                    | 1.3                        | 340                 | 306                 | 136                  |
| CA45E035K685TA | 35                        | 6.8                    | 2                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45C035K106TA | 35                        | 10                     | 4                                              | 6                                                    | 1.6                        | 262                 | 236                 | 105                  |
| CA45D035K106TA | 35                        | 10                     | 4                                              | 6                                                    | 1                          | 387                 | 349                 | 155                  |
| CA45E035K106TA | 35                        | 10                     | 4                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45C035K156TA | 35                        | 15                     | 5                                              | 6                                                    | 1.4                        | 280                 | 252                 | 112                  |
| CA45D035K156TA | 35                        | 15                     | 5                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E035K156TA | 35                        | 15                     | 5                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45C035K226TA | 35                        | 22                     | 8                                              | 6                                                    | 1.4                        | 280                 | 252                 | 112                  |
| CA45D035K226TA | 35                        | 22                     | 8                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E035K226TA | 35                        | 22                     | 8                                              | 6                                                    | 0.7                        | 486                 | 437                 | 194                  |
| CA45V035K226TA | 35                        | 22                     | 8                                              | 6                                                    | 0.5                        | 707                 | 636                 | 283                  |
| CA45D035K336TA | 35                        | 33                     | 12                                             | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E035K336TA | 35                        | 33                     | 12                                             | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |

ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 35V, CAPACITANCE TOL. ±10% (K)

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | µF                     | µA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45V035K336TA | 35                        | 33                     | 12                                             | 6                                                    | 0.5                        | 707                 | 636                 | 283                  |
| CA45W035K336TA | 35                        | 33                     | 12                                             | 6                                                    | 0.5                        | 707                 | 636                 | 283                  |
| CA45D035K476TA | 35                        | 47                     | 16                                             | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E035K476TA | 35                        | 47                     | 16                                             | 10                                                   | 0.9                        | 428                 | 385                 | 171                  |
| CA45V035K476TA | 35                        | 47                     | 16                                             | 10                                                   | 0.5                        | 707                 | 636                 | 283                  |
| CA45W035K476TA | 35                        | 47                     | 16                                             | 6                                                    | 0.6                        | 645                 | 581                 | 258                  |
| CA45E035K686TA | 35                        | 68                     | 24                                             | 6                                                    | 0.7                        | 486                 | 437                 | 194                  |
| CA45V035K686TA | 35                        | 68                     | 24                                             | 6                                                    | 0.5                        | 707                 | 636                 | 283                  |
| CA45W035K686TA | 35                        | 68                     | 24                                             | 6                                                    | 0.6                        | 645                 | 581                 | 258                  |
| CA45G035K107TA | 35                        | 100                    | 35                                             | 6                                                    | 0.6                        | 632                 | 569                 | 253                  |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 40V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45A040K474TA | 40                        | 0.47                   | 1                                              | 4                                                    | 9                          | 91                  | 82                  | 37                   |
| CA45B040K474TA | 40                        | 0.47                   | 1                                              | 4                                                    | 9                          | 97                  | 87                  | 39                   |
| CA45B040K684TA | 40                        | 0.68                   | 1                                              | 4                                                    | 6                          | 119                 | 107                 | 48                   |
| CA45C040K684TA | 40                        | 0.68                   | 1                                              | 4                                                    | 7.5                        | 121                 | 109                 | 48                   |
| CA45B040K105TA | 40                        | 1                      | 1                                              | 4                                                    | 5                          | 130                 | 117                 | 52                   |
| CA45C040K105TA | 40                        | 1                      | 1                                              | 4                                                    | 6                          | 135                 | 122                 | 54                   |
| CA45B040K155TA | 40                        | 1.5                    | 1                                              | 6                                                    | 4                          | 146                 | 131                 | 58                   |
| CA45C040K155TA | 40                        | 1.5                    | 1                                              | 6                                                    | 4.5                        | 156                 | 141                 | 63                   |
| CA45C040K225TA | 40                        | 2.2                    | 1                                              | 6                                                    | 2.5                        | 210                 | 189                 | 84                   |
| CA45D040K225TA | 40                        | 2.2                    | 1                                              | 6                                                    | 3                          | 224                 | 201                 | 89                   |
| CA45C040K335TA | 40                        | 3.3                    | 1                                              | 6                                                    | 2                          | 235                 | 211                 | 94                   |
| CA45D040K335TA | 40                        | 3.3                    | 1                                              | 6                                                    | 2                          | 274                 | 246                 | 110                  |
| CA45C040K475TA | 40                        | 4.7                    | 2                                              | 6                                                    | 1.5                        | 271                 | 244                 | 108                  |
| CA45D040K475TA | 40                        | 4.7                    | 2                                              | 6                                                    | 1.5                        | 316                 | 285                 | 126                  |
| CA45E040K475TA | 40                        | 4.7                    | 2                                              | 6                                                    | 1.5                        | 332                 | 298                 | 133                  |
| CA45D040K685TA | 40                        | 6.8                    | 3                                              | 6                                                    | 1.2                        | 354                 | 318                 | 141                  |
| CA45E040K685TA | 40                        | 6.8                    | 3                                              | 6                                                    | 1.2                        | 371                 | 334                 | 148                  |
| CA45D040K106TA | 40                        | 10                     | 4                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E040K106TA | 40                        | 10                     | 4                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45E040K156TA | 40                        | 15                     | 6                                              | 6                                                    | 0.7                        | 486                 | 437                 | 194                  |

ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 40V, CAPACITANCE TOL.  $\pm 10\%$  (K)

[illegible]

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 50V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45A050K334TA | 50                        | 0.33                   | 0.5                                            | 4                                                    | 10                         | 87                  | 78                  | 35                   |
| CA45A050K474TA | 50                        | 0.47                   | 1                                              | 4                                                    | 12                         | 79                  | 71                  | 32                   |
| CA45B050K474TA | 50                        | 0.47                   | 1                                              | 4                                                    | 9.5                        | 95                  | 85                  | 38                   |
| CA45C050K474TA | 50                        | 0.47                   | 1                                              | 4                                                    | 8                          | 117                 | 106                 | 47                   |
| CA45A050K684TA | 50                        | 0.68                   | 1                                              | 4                                                    | 8                          | 97                  | 87                  | 39                   |
| CA45B050K684TA | 50                        | 0.68                   | 1                                              | 4                                                    | 8                          | 103                 | 93                  | 41                   |
| CA45C050K684TA | 50                        | 0.68                   | 1                                              | 4                                                    | 7                          | 125                 | 113                 | 50                   |
| CA45A050K105TA | 50                        | 1                      | 1                                              | 4                                                    | 7                          | 104                 | 93                  | 41                   |
| CA45B050K105TA | 50                        | 1                      | 1                                              | 6                                                    | 7                          | 110                 | 99                  | 44                   |
| CA45C050K105TA | 50                        | 1                      | 1                                              | 4                                                    | 5.5                        | 141                 | 127                 | 57                   |
| CA45D050K105TA | 50                        | 1                      | 1                                              | 4                                                    | 2.2                        | 261                 | 235                 | 104                  |
| CA45E050K105TA | 50                        | 1                      | 1                                              | 4                                                    | 2.2                        | 274                 | 246                 | 110                  |
| CA45B050K155TA | 50                        | 1.5                    | 1                                              | 8                                                    | 6                          | 119                 | 107                 | 48                   |
| CA45C050K155TA | 50                        | 1.5                    | 1                                              | 6                                                    | 4.5                        | 156                 | 141                 | 63                   |
| CA45D050K155TA | 50                        | 1.5                    | 1                                              | 6                                                    | 4                          | 194                 | 174                 | 77                   |
| CA45B050K225TA | 50                        | 2.2                    | 1                                              | 8                                                    | 4.5                        | 137                 | 124                 | 55                   |
| CA45C050K225TA | 50                        | 2.2                    | 1                                              | 8                                                    | 3                          | 191                 | 172                 | 77                   |
| CA45D050K225TA | 50                        | 2.2                    | 1                                              | 6                                                    | 2.5                        | 245                 | 220                 | 98                   |
| CA45E050K225TA | 50                        | 2.2                    | 1                                              | 6                                                    | 2                          | 287                 | 259                 | 115                  |
| CA45C050K335TA | 50                        | 3.3                    | 2                                              | 6                                                    | 2.5                        | 210                 | 189                 | 84                   |

**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 50V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45D050K335TA | 50                        | 3.3                    | 2                                              | 6                                                    | 2                          | 274                 | 246                 | 110                  |
| CA45E050K335TA | 50                        | 3.3                    | 2                                              | 6                                                    | 1.8                        | 303                 | 272                 | 121                  |
| CA45C050K475TA | 50                        | 4.7                    | 2                                              | 6                                                    | 1.5                        | 271                 | 244                 | 108                  |
| CA45D050K475TA | 50                        | 4.7                    | 2                                              | 6                                                    | 1.4                        | 327                 | 295                 | 131                  |
| CA45E050K475TA | 50                        | 4.7                    | 2                                              | 6                                                    | 1.2                        | 371                 | 334                 | 148                  |
| CA45V050K475TA | 50                        | 4.7                    | 2                                              | 6                                                    | 1.2                        | 456                 | 411                 | 183                  |
| CA45C050K685TA | 50                        | 6.8                    | 3                                              | 6                                                    | 1                          | 332                 | 298                 | 133                  |
| CA45D050K685TA | 50                        | 6.8                    | 3                                              | 6                                                    | 1                          | 387                 | 349                 | 155                  |
| CA45E050K685TA | 50                        | 6.8                    | 3                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45D050K106TA | 50                        | 10                     | 5                                              | 6                                                    | 0.8                        | 433                 | 390                 | 173                  |
| CA45E050K106TA | 50                        | 10                     | 5                                              | 6                                                    | 0.8                        | 454                 | 409                 | 182                  |
| CA45V050K106TA | 50                        | 10                     | 5                                              | 6                                                    | 0.7                        | 598                 | 538                 | 239                  |
| CA45D050K156TA | 50                        | 15                     | 8                                              | 8                                                    | 0.8                        | 433                 | 390                 | 173                  |
| CA45E050K156TA | 50                        | 15                     | 8                                              | 8                                                    | 0.8                        | 454                 | 409                 | 182                  |
| CA45V050K156TA | 50                        | 15                     | 8                                              | 6                                                    | 0.7                        | 598                 | 538                 | 239                  |
| CA45E050K226TA | 50                        | 22                     | 11                                             | 10                                                   | 0.6                        | 524                 | 472                 | 210                  |
| CA45W050K226TA | 50                        | 22                     | 11                                             | 6                                                    | 0.4                        | 791                 | 712                 | 316                  |
| CA45V050K226TA | 50                        | 22                     | 11                                             | 8                                                    | 0.4                        | 791                 | 712                 | 316                  |
| CA45E050K336TA | 50                        | 33                     | 17                                             | 8                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45W050K336TA | 50                        | 33                     | 17                                             | 8                                                    | 0.6                        | 645                 | 581                 | 258                  |



**ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 63V, CAPACITANCE TOL. ±10% (K)**

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | μF                     | μA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45C063K474TA | 63                        | 0.47                   | 1                                              | 4                                                    | 7                          | 125                 | 113                 | 50                   |
| CA45C063K684TA | 63                        | 0.68                   | 1                                              | 4                                                    | 6                          | 135                 | 122                 | 54                   |
| CA45C063K105TA | 63                        | 1                      | 1                                              | 4                                                    | 5                          | 148                 | 133                 | 59                   |
| CA45D063K155TA | 63                        | 1.5                    | 1                                              | 6                                                    | 3.5                        | 207                 | 186                 | 83                   |
| CA45D063K225TA | 63                        | 2.2                    | 1                                              | 6                                                    | 2                          | 274                 | 246                 | 110                  |
| CA45D063K335TA | 63                        | 3.3                    | 2                                              | 6                                                    | 1.5                        | 316                 | 285                 | 126                  |
| CA45D063K475TA | 63                        | 4.7                    | 3                                              | 6                                                    | 1                          | 387                 | 349                 | 155                  |
| CA45E063K475TA | 63                        | 4.7                    | 3                                              | 6                                                    | 1                          | 406                 | 366                 | 162                  |
| CA45D063K685TA | 63                        | 6.8                    | 4                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E063K685TA | 63                        | 6.8                    | 4                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45V063K685TA | 63                        | 6.8                    | 4                                              | 6                                                    | 0.9                        | 527                 | 474                 | 211                  |
| CA45D063K106TA | 63                        | 10                     | 6                                              | 6                                                    | 0.9                        | 408                 | 367                 | 163                  |
| CA45E063K106TA | 63                        | 10                     | 6                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45V063K106TA | 63                        | 10                     | 6                                              | 6                                                    | 0.9                        | 527                 | 474                 | 211                  |
| CA45E063K156TA | 63                        | 15                     | 9                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45V063K156TA | 63                        | 15                     | 9                                              | 6                                                    | 0.9                        | 527                 | 474                 | 211                  |
| CA45E063K226TA | 63                        | 22                     | 14                                             | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45V063K226TA | 63                        | 22                     | 14                                             | 6                                                    | 0.9                        | 527                 | 474                 | 211                  |
| CA45W063K226TA | 63                        | 22                     | 14                                             | 6                                                    | 0.9                        | 527                 | 474                 | 211                  |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |

ELECTRONICAL CHARACTERISTICS- RATED VOLTAGE 75V, 100V, CAPACITANCE TOL. ±10% (K)

| Part Code      | Rate<br>Voltage<br>≤ 85°C | Cap.<br>@25°C<br>100Hz | Max.<br>Leakage<br>Current<br>@+25°C<br>5 min. | Max.<br>Dissipation<br>Factor (DF)<br>@25°C<br>100Hz | ESR<br>@25°C<br>100<br>KHz | Max. Ripple Current |                     |                      |
|----------------|---------------------------|------------------------|------------------------------------------------|------------------------------------------------------|----------------------------|---------------------|---------------------|----------------------|
|                |                           |                        |                                                |                                                      |                            | @<br>25°C<br>100KHz | @<br>85°C<br>100KHz | @<br>125°C<br>100KHz |
|                | V                         | µF                     | µA                                             | %                                                    | Ω                          | mA                  |                     |                      |
| CA45C075K474TA | 75                        | 0.47                   | 1                                              | 4                                                    | 7                          | 125                 | 113                 | 50                   |
| CA45C075K684TA | 75                        | 0.68                   | 1                                              | 4                                                    | 6                          | 135                 | 122                 | 54                   |
| CA45C075K105TA | 75                        | 1                      | 1                                              | 4                                                    | 4.5                        | 156                 | 141                 | 63                   |
| CA45D075K105TA | 75                        | 1                      | 1                                              | 4                                                    | 4.5                        | 183                 | 164                 | 73                   |
| CA45D075K155TA | 75                        | 1.5                    | 1                                              | 6                                                    | 3.5                        | 207                 | 186                 | 83                   |
| CA45E075K225TA | 75                        | 2.2                    | 2                                              | 6                                                    | 1.8                        | 303                 | 272                 | 121                  |
| CA45E075K335TA | 75                        | 3.3                    | 2                                              | 6                                                    | 1.3                        | 356                 | 321                 | 143                  |
| CA45E075K475TA | 75                        | 4.7                    | 4                                              | 6                                                    | 0.9                        | 428                 | 385                 | 171                  |
| CA45V075K475TA | 75                        | 4.7                    | 4                                              | 6                                                    | 0.9                        | 527                 | 474                 | 211                  |
| CA45C100K474TA | 100                       | 0.47                   | 1                                              | 4                                                    | 6.5                        | 130                 | 117                 | 52                   |
| CA45C100K684TA | 100                       | 0.68                   | 1                                              | 4                                                    | 5                          | 148                 | 133                 | 59                   |
| CA45D100K684TA | 100                       | 0.68                   | 1                                              | 4                                                    | 5                          | 173                 | 156                 | 69                   |
| CA45D100K105TA | 100                       | 1                      | 1                                              | 4                                                    | 4.5                        | 183                 | 164                 | 73                   |
| CA45E100K225TA | 100                       | 2.2                    | 2                                              | 6                                                    | 1.5                        | 332                 | 298                 | 133                  |
| CA45V100K225TA | 100                       | 2.2                    | 2                                              | 6                                                    | 1.5                        | 408                 | 367                 | 163                  |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |
|                |                           |                        |                                                |                                                      |                            |                     |                     |                      |

## APPLICATION NTOE

### STORAGE CONDITION

- Environmental temperature: 10°C ~ +30°C
- Relative humidity no more than 60%
- Storing period: No more than one and half year since the date of stocking.

### APPLICATION GUIDE

#### 1) Ripple Current and Voltage

If the ripple current is applied to the capacitor, the Joule heat (power dissipated) will be generated in the capacitor, so it will affect the reliability of the capacitor.

##### (1) Power Dissipated

The actual power dissipated can be calculated using the following formula:  $P=I^2 \times ESR$ .....Formula 1

P: Power dissipated (W); I: Ripple current (A); ESR: Equivalent series resistance ( $\Omega$ )

##### (2) Ripple Current

Using the maximum power dissipation 125mW Max., the ripple current can be calculated using the following

formula:  $I = \sqrt{\frac{P}{ESR}} \times K \times F$ .....Formula 2

K: Temperature derating factor..... Table 1; F: Frequency derating factor..... Table 2

ESR: Refer to the ratings of each specific product

Table 1: Temperature Drop Factor K

| Temperature | Temperature Derating Factor K |
|-------------|-------------------------------|
| 25 °C       | 1                             |
| 85 °C       | 0.9                           |
| 125 °C      | 0.4                           |

Table 2: Frequency Derating Factor F

| Frequency (KHz) | 10   | 100 | 500  | 1000 |
|-----------------|------|-----|------|------|
| MnO2            | 0.80 | 1.0 | 1.15 | 1.20 |
| Polymer         | 0.75 | 1.0 | 1.10 | 1.30 |

### (3) Ripple Voltage

The ripple voltage applied to the capacitor is limited by three criteria.

- (a) The power dissipation in the ESR of capacitor must not exceed 125mW Max. @+25°C
- (b) The positive peak AC voltage plus the DC bias voltage must not exceed the DC voltage rating of the capacitor.
- (c) The negative peak AC voltage, in combination with the bias voltage, if any , must not exceed the permissible reverse voltage ratings presented .

### 2) Reverse Voltage

Solid tantalum capacitors are polarized devices , and applied reverse voltage can not be allowed . If the reverse voltage is unavoidable, a small degree of transient reverse voltage is permissible for short periods as follow.

25°C..... 10% of Max. rated voltage or 1V whichever is smaller

85°C..... 5% of Max. rated voltage or 0.5V whichever is smaller

125°C.....1% of Max. rated voltage or 0.1V whichever is smaller

Even under these restrictions, capacitors can not be used continuously in reverse voltage mode.

### 3) Working Voltage

- (1) For general applications, using 50% of rated voltage of capacitors or less.
- (2) When used at the power circuit, low impedance circuit , coupling circuit or witching circuit which has leakage current problems, please design the circuit with voltage under 30% of the working voltage ( max 50%) to avoid the adverse effect of the surge current.
- (3) Derating voltage when temperature above 85°C.

When the chip tantalum capacitor is used at 85°C or more temperatures, the reduced voltage ( $U_T$ ) is calculated from the following expression, however, note that the ambient temperature is not more than 125°C.

$$U_T = V_0 (U_R - U_C)(T - 85) / 40$$

$U_R$ : Rated voltage (V);  $U_C$ : Derating voltage at 125°C;  $T$ : Ambient temperature (°C )

#### 4) Protective Resistance

In a circuit (switching circuit, charge / discharge circuit, etc.) that has an instantaneous current, series resistance is at least  $3\Omega/V$ , this can improve the reliability of tantalum capacitors. If the capacitor is in a low impedance circuit, the voltage applied to the capacitor should be half or one third of the rated voltage.

#### 5) Redundancy

MnO<sub>2</sub> tantalum capacitors will heat, and may cause fire and burn in the short circuit. This is determined by the situation, time and other factors. When the circuit is designed, it is possible to provide the best possible space to keep the tantalum capacitor reliability.

#### 6) Test Condition

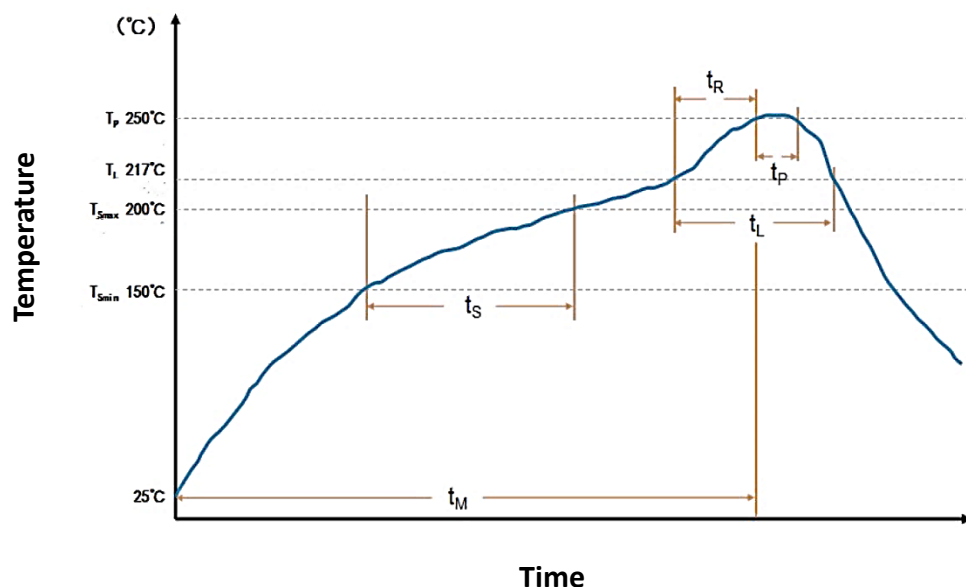
Ambient Temperature 25°C; Relative Humidity 60 to 70%; Air Pressure 800 to 1060mbar. Test and experiment, in order to make the test results not problems, it is necessary to will test the product after fully discharge.

This product is a polar components, testing or when using it is strictly prohibited to will is negative pick back, in order to avoid performance failure

#### 7) Soldering

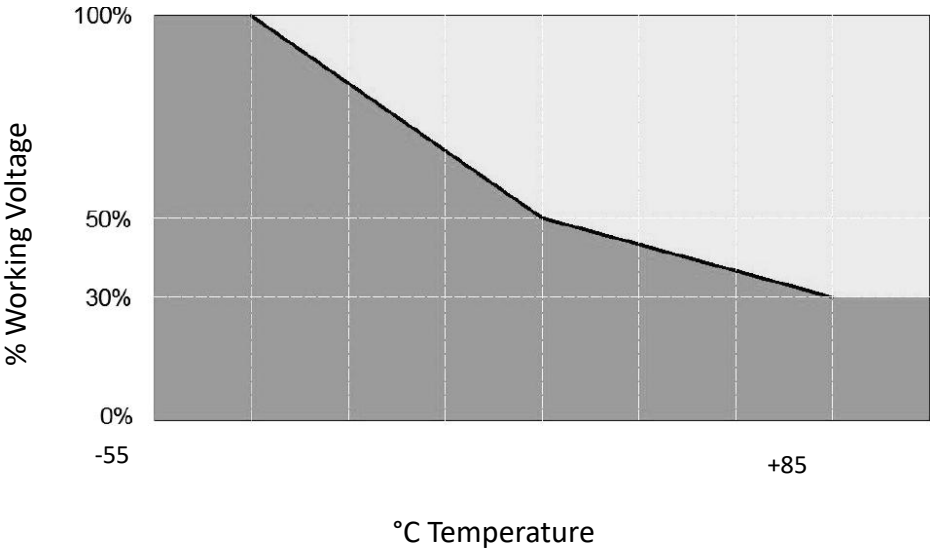
The SMD tantalum capacitor can be used for reflow soldering, which is not suitable for wave soldering and manual welding. The reflow temperature are  $\leq 250^{\circ}\text{C}$ ,  $\leq 5$  seconds. If you must use manual welding, should use the melted solder to contact lead, and the electric soldering iron power should be less than or equal to 25W, temperature should be less than  $300^{\circ}\text{C}$ , welding time should be less than 3 seconds, can not use electric iron contact the product lead directly, and in particular, can not contact the product ontology directly. Recommended profile conditions for convection and IR reflow reflect the profile conditions of the IPC/J-STD-020D standard for moisture sensitivity testing

# RECOMMENDED PROFILE CONDITIONS –Only For reference



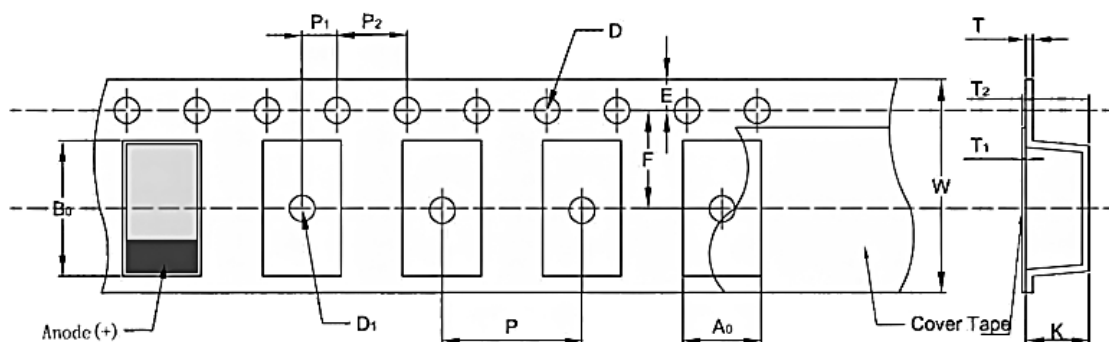
| CHARACTERISTICS                       | UNIT      | SYMBOL     | SnPb ASSEMBLY | Pb-Free ASSEMBLY |
|---------------------------------------|-----------|------------|---------------|------------------|
| Preheat Temperature Min.              | °C        | T smin     | 100           | 150              |
| Preheat Temperature Max.              | °C        | T smax     | 150           | 200              |
| Preheat time                          | Second    | T s        | 60~120        | 60~120           |
| Ramp-up Rate                          | °C/Second | T L to T p | ≤ 3           | ≤ 3              |
| Liquidous Temperature                 | °C        | T L        | 183           | 217              |
| Time Above Liquidous                  | Second    | t L        | 60~150        | 60~150           |
| Peak Temperature                      | °C        | T p        | 220 or 235    | 245 or 250       |
| Time within 5°C Max. Peak Temperature | Second    | t p        | ≤ 10          | ≤ 3              |
| Ramp-down Rate                        | °C/Second | T p to T L | ≤ 6           | ≤ 6              |
| Time 25°C to Peak Temperature         | minute    |            | ≤ 6           | ≤ 6              |

RECOMMENDED VOLTAGE DERATING GUIDELINES – Only For reference



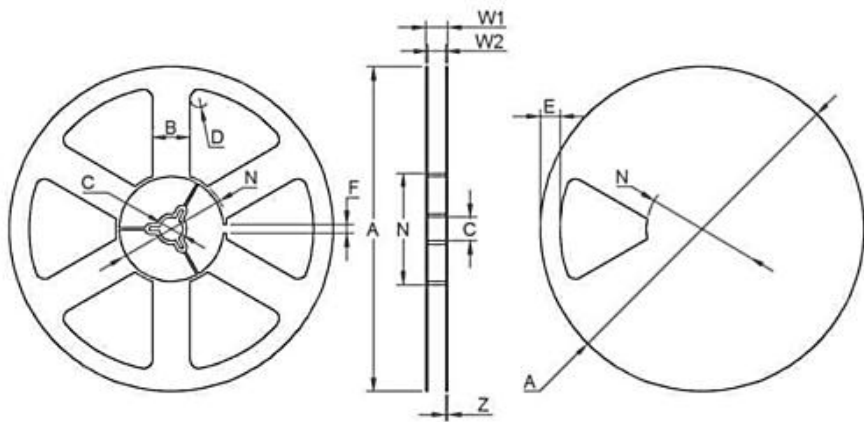
|                                                   |                       |
|---------------------------------------------------|-----------------------|
| CONDITION                                         | -55 °C ~ 85 °C        |
| % Change in Working DC Voltage with Temperature   | V <sub>R</sub>        |
| Recommended Max. Application @V <sub>R</sub> ≤10V | 50 of V <sub>R</sub>  |
| Recommended Max. Application @V <sub>R</sub> ≥16V | 30% of V <sub>R</sub> |

TAPE DIMENSION (Unit: mm) Tolerance  $\pm 0.2$ mm over 10 sprocket hole spaces



| CASE<br>SIZE<br>CODE | DIMENSION |           |           |           |           |            |           |            |           |           |            |
|----------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|------------|-----------|-----------|------------|
|                      | A0        | B0        | K         | W         | E         | F          | P2        | P          | P1        | D         | D1         |
|                      | $\pm 0.1$ | $\pm 0.1$ | $\pm 0.1$ | $\pm 0.3$ | $\pm 0.1$ | $\pm 0.05$ | $\pm 0.1$ | $\pm 0.05$ | $\pm 0.1$ | $\pm 0.2$ | $\pm 0.25$ |
| A                    | 1.88      | 3.53      | 1.90      | 8.00      | 1.75      | 3.50       | 4.00      | 4.00       | 2.00      | 1.55      | 1.00       |
| B1                   | 3.07      | 3.80      | 2.22      | 8.00      | 1.75      | 3.50       | 4.00      | 4.00       | 2.00      | 1.55      | 1.10       |
| B                    | 3.07      | 3.80      | 2.22      | 8.00      | 1.75      | 3.50       | 4.00      | 4.00       | 2.00      | 1.55      | 1.10       |
| C                    | 3.60      | 6.40      | 2.85      | 12.00     | 1.75      | 5.50       | 4.00      | 8.00       | 2.00      | 1.55      | 1.60       |
| H1                   | 4.60      | 7.60      | 2.16      | 12.00     | 1.75      | 5.50       | 4.00      | 8.00       | 2.00      | 1.55      | 1.55       |
| L                    | 4.60      | 7.60      | 2.16      | 12.00     | 1.75      | 5.50       | 4.00      | 8.00       | 2.00      | 1.55      | 1.55       |
| H                    | 4.60      | 7.60      | 2.16      | 12.00     | 1.75      | 5.50       | 4.00      | 8.00       | 2.00      | 1.55      | 1.55       |
| F                    | 6.50      | 7.80      | 2.20      | 12.00     | 1.75      | 5.50       | 4.00      | 8.00       | 2.00      | 1.55      | 1.50       |
| D                    | 4.60      | 7.60      | 3.10      | 12.00     | 1.75      | 5.50       | 4.00      | 8.00       | 2.00      | 1.55      | 1.55       |
| Y                    | 4.60      | 7.60      | 3.10      | 12.00     | 1.75      | 5.50       | 4.00      | 8.00       | 2.00      | 1.55      | 1.55       |
| E                    | 4.60      | 7.60      | 4.40      | 12.00     | 1.75      | 5.50       | 4.00      | 8.00       | 2.00      | 1.55      | 1.55       |
| V                    | 6.40      | 7.60      | 4.40      | 12.00     | 1.75      | 5.50       | 4.00      | 8.00       | 2.00      | 1.55      | 1.55       |
| W                    | 6.50      | 8.00      | 4.70      | 16.00     | 1.75      | 7.50       | 4.00      | 12.00      | 2.00      | 1.55      | 1.55       |

REEL DIMENSION (Unit: mm)



| REEL SIZE    | TAPE WIDE | DIMENSION |         |          |             |             |
|--------------|-----------|-----------|---------|----------|-------------|-------------|
|              |           | A         | B       | C        | W2          | W1          |
| 7" (180 mm)  | 8         | 178±2.0   | 50 Min. | 13.2±0.5 | 8.4+1.5/-0  | 10.8+1.5/-0 |
| 7" (180 mm)  | 12        | 178±2.0   | 50 Min. | 13.2±0.5 | 12.4+1.5/0  | 14.8+1.5/-0 |
| 7" (180 mm)  | 16        | 178±2.0   | 50 Min. | 13.2±0.5 | 16.0+1.5/-0 | 19.0+1.5/-0 |
| 13" (330 mm) | 12        | 330±2.0   | 50 Min. | 13.2±0.5 | 12.4+1.5/-0 | 16.5+1.5/-0 |

QTY PER REEL (Unit: pcs)

| CASE<br>SIZE<br>CODE | A    | B1   | B    | C   | H1   | L    | H    | F    | D   | Y   | E   | V   | W   |
|----------------------|------|------|------|-----|------|------|------|------|-----|-----|-----|-----|-----|
| Qty.                 | 2000 | 2000 | 2000 | 500 | 1000 | 1000 | 1000 | 1000 | 500 | 500 | 500 | 400 | 400 |

## IMPORTANT NOTES AND DISCLAIMER

1. **ROHS COMPLIANCE:** The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. **REACH COMPLIANCE:** REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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