




| | | |
|---|--|-------------------------------|
| SPECIFICATION SHEET NO. | R1008- DC455K0000S133 | |
| ORIGINAL MFG/PART NO | TGS Crystals/CDBC 455C35 TLH/CDBC455C35 | |
| DATE | Oct. 08, 2024 | |
| REVISION | A3 | Updated With Most Recent Data |
| DESCRIPTION AND MAIN PARAMETRICS | <p>KHz SMD Discriminators 6260 Type L6.2*W6.0*H3.1mm 2 Pads DC Series</p> <p>455KHz, Anti-resonate Frequency (Fa) 462±1.5KHz</p> <p>Resonant Impedance (Ri): 200 ohms Max. ; ΔF(Fa-Fr) Fr: Resonant Frequency: 40 ± 4.0 kHz.; Capacitance (at 1 kHz): 150 pF ± 20%.;</p> <p>Operating Temp. Range -20°C ~+85°C</p> <p>Reflow Profile Condition 260 °C Max.</p> <p>Package in Tape/Reel, 2000pcs/Reel</p> <p>REACH/RoHS/RoHS III Compliant, RoHS Annex III lead Exemption (exempt per RoHS EU 2015/863)</p> | |
| CUSTOMER | | |
| CUSTOMER PART NUMBER | | |
| CROSS REF. PART NUMBER | | |
| MEMO | | |

| | | | |
|-------------------------|---|--|---|
| VENDOR APPROVE | | | |
| Issued/Checked/Approved |  |  |  |
| Date: Oct. 08, 2024 | | | |

| | |
|-------------------------|--|
| CUSTOMER APPROVE | |
| | |
| Date: | |

MAIN FEATURE

- KHz SMD Ceramic Discriminator 6260 Type 2 pads
- White case, L6.2*W6.0*H3.1mm
- Low Cost And Short Shipment
- Reflow Profile Condition 260 °C Max.
- Cross Main Competitors Parts CDBC and JTC series
- For Quadrature Detection With IC: SONY/CXA1474
- REACH/RoHS/RoHS III compliant, RoHS Annex III lead Exemption
(Exempt per RoHS EU 2015/863)



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



APPLICATION

- Communication Electronics

HOW TO ORDER

- Please follow up part code guide and indicate part code when you order or RFQ.

PART CODE GUIDE

RFQ
[Request For Quotation](#)

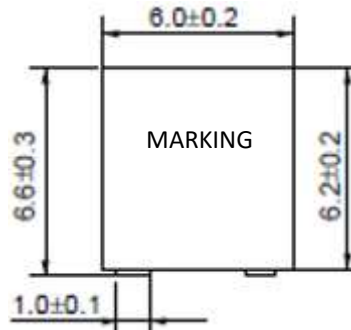
| CODE | NAME | KEY SPECIFICATION OPTION |
|------|--------------------|--|
| DC | Product Series | KHz SMD Ceramic Discriminator Case 6260, 2 Pads, Dimension L6.2*W6.0*H3.1mm |
| 455K | Frequency Range | 450: 450KHz; 455K: 455KHz |
| 0000 | Internal Control | Letter or Digits (A~Z, a~z or 1~9) |
| S | SMD Type Package | Tape/Reel |
| 133 | Special Parametric | Letter or Digits (A~Z, a~z or 1~9) |
| - XX | Suffix | Blank: N/A XX: Internal Control Code, Letter A~Z, a~z or digits (0~9) for Special/Custom Parameters |

DIMENSION (Unit: mm)

Case 6260 Type 2 Pads

L6.2*W6.0*H3.1mm

Top View



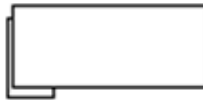
Marking

Line 1: CDBc

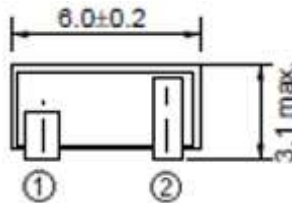
Line 2: 455C33

See Page 5/6 for different Part Code

Side View



Side View

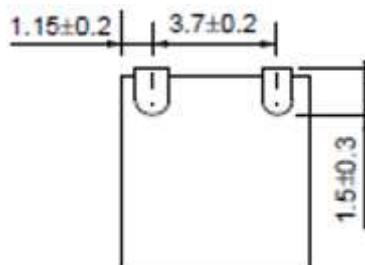


Connection

①: Pin 1: Input/Output

②: Pin 2: Output/Input

Bottom View

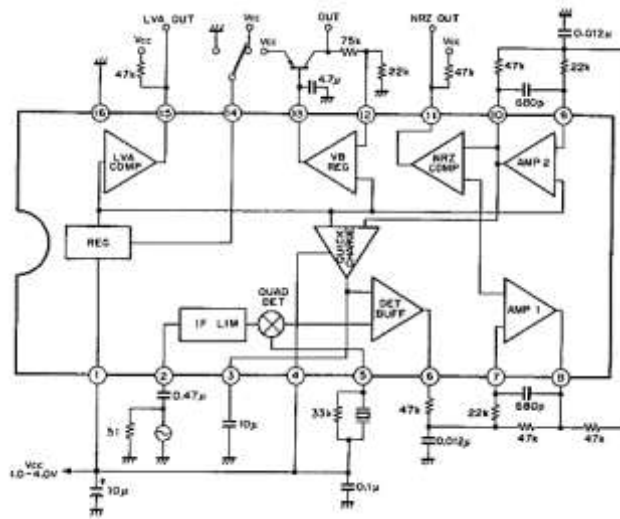


MATERIAL LIST

| NO. | ITEM | MATERIAL |
|-----|-----------|---|
| 1 | Case | Polybutene Terephthalate (Mixture Of Glass Fiber) |
| 2 | Terminal | Phosphor Bronze Ag Clad |
| 3 | Base Seal | Epoxy Resin |

MEASUREMENT

- Measurement shall be carried out at the standard temperature of 25±2°C. If no specific requirements, Test can be carried out under 5-35°C.
- Measuring Circuit: For Quadrature Detection With IC: SONY/CXA1474



GENERAL ELECTRICAL CHARACTERISTICS - FOR DIFFERENT PART CODE- Ta = 25°C

| PARAMETER | UNITS | VALUE | | | CONDITION |
|-----------------------|-------|---------------------|---------|------|----------------|
| | | MIN. | TYPICAL | MAX. | |
| Operation Temperature | °C | -20 | | +85 | |
| Storage Temperature | °C | -40 | | +85 | |
| Temperature Stability | % | | | ±0.5 | @ -20°C ~+85°C |
| Withstand Voltage | V | DC 50V For 1 minute | | | |

ELECTRICAL PARAMETERS – FOR DIFFERENT PART CODE- Ta = 25°C

| Part Code | Modulation Frequency | 3dB Demodulated Bandwidth From 450 kHz | Demodulated Output at 450 kHz | Demodulated Distortion Factor | IC Model No. For Reference Only | Marking Line 2 |
|----------------|----------------------|--|-------------------------------|-------------------------------|---------------------------------|----------------|
| | KHz | KHz | mV | % | | |
| DC450K0000S024 | 450±1.0 | ±4.0KMin | 100±40 | 2.0 | TA31136 | 450C24 |
| DC450K0000S028 | 450±1.0 | ±4.0KMin | 40±20 | 3.0 | TA31142F | 450C28 |
| DC450K0000S036 | 450±1.0 | ±13.0Min | 90±30 | 2.5 | NE(SA) 606/616 | 450C36 |
| DC450K0000S049 | 450±1.0 | ±4.0 Min | 45±10 | 3.0 | MC3661 | 450C49 |
| DC450K0000S079 | 450±1.0 | ±4.0 Min | 145±40 | / | TB32302FG | 450C79 |

ELECTRICAL PARAMETERS – FOR DIFFERENT PART CODE- Ta = 25°C

| Part Code | Anti-resonate Frequency | Resonant Impedance | $\Delta f(f_a - f_r)$ Fr: Resonant Frequency | Capacitance (At 1 KHz) | IC Model No. For Reference Only | Marking Line 2 |
|-----------------------|-------------------------|--------------------|--|------------------------|---------------------------------|----------------|
| | KHz | Ohm | mV | pF | | |
| DC455K0000S103 | 455±1.0 | 70 Max. | 46±5.0 | 550 ±20% | CXA1184M | 455C3 |
| DC455K0000S133 | 455±1.5 | 200 Max. | 40±40 | 150 ±20% | CXA1474 | 455C33 |

ELECTRICAL PARAMETERS – FOR DIFFERENT PART CODE- Ta = 25°C

| Part Code | Modulation Frequency | 3dB Demodulated Bandwidth From 455 kHz | Demodulated Output at 455 kHz | Demodulated Distortion Factor | IC Model No. For Reference Only | Marking Line 2 |
|----------------|----------------------|--|-------------------------------|-------------------------------|---------------------------------|----------------|
| | KHz | KHz | mV | % | | |
| DC455K0000S107 | 455±1.0 | ±4.0 Min | 350±60 | 3.0 | MC3357 | 455C7 |
| DC455K0000S109 | 455±1.0 | ±4.0 Min | 120±40 | 1.5 | NE604N | 455C9 |
| DC455K0000S113 | 455±1.0 | ±4.0 Min | 330±50 | 4.0 | CXA1003BM | 455C13 |
| DC455K0000S116 | 455±1.0 | ±4.0 Min | 175±40 | 2.0 | MC3372 | 455C16 |
| DC455K0000S124 | 455±1.0 | ±4.0 Min | 100±40 | 2.0 | TA31136FN | 455C24 |
| DC455K0000S127 | 455±1.0 | ±4.0 Min | 90±30 | 2.0 | TK10487 | 455C27 |
| DC455K0000S128 | 455±1.0 | ±4.0 Min | 48~51 | 3.0 | TA31142F | 455C28 |
| DC455K0000S129 | 455±1.0 | ±4.0 Min | 100±30 | 2.5 | NE605 | 455C29 |
| DC455K0000S132 | 455±1.0 | ±4.0 Min | 40±20 | 3.0 | TA31142F | 455C32 |
| DC455K0000S135 | 455±1.0 | ±4.0 Min | 100±40 | 2.5 | TK10930 | 455C35 |
| DC455K0000S136 | 455±1.0 | ±13.0 Min | 90±30 | 2.5 | NE(SA) 606/616 | 455C36 |
| DC455K0000S139 | 455±1.0 | ±11.0 Min | 130±20 | 2.5 | NE(SA) 607/617 | 455C39 |
| DC455K0000S140 | 455±1.0 | ±4.0 Min | 40±20 | 3.5 | TA31145 | 455C40 |
| DC455K0000S149 | 455±1.0 | ±4.0 Min | 45±10 | 3.0 | MC3361 | 455C49 |
| DC455K0000S150 | 455±1.0 | ±4.0 Min | 64±6.4 | 4.0 | CXA3117N | 455C50 |
| DC455K0000S154 | 455±1.0 | ±4.0 Min | 165±20 | / | TA31149 | 455C54 |
| DC455K0000S166 | 455±1.0 | ±4.2 Min | 40±10 | 4.0 | NJM2590 | 455C66 |
| DC455K0000S170 | 455±1.0 | ±5.0 Min | 85±10 | 4.5 | NJM2591V | 455C70 |
| DC455K0000S179 | 455±1.0 | ±3.0 Min | 145±40 | / | TB32302FG | 455C79 |

TEST METHOD AND CONDITIONS

Measurement Condition: Unless otherwise noted, the standard range of atmospheric conditions for measurements and tests are as follows:

Ambient temperature: 5°C to 35 °C Relative humidity :45% to 85%; Air pressure :86Kpa to 106 Kpa

If there is doubt about the results, measurement shall be made within the following limits:

Ambient temperature: 18°C to 22 °C ; Relative humidity :60% to 70%; Air pressure: 86Kpa to 106 Kpa

| TEST ITEMS | TEST METHOD AND CONDITIONS | REQUIREMENT |
|-------------------------------|--|---|
| Demodulated 3dB Bandwidth | Input the above signal and sweep the carrier around 455kHz, and find Out the maximum audio output frequency. Then sweep the carrier frequency again and find two frequencies, which are observed –3dB attenuation points from the maximum point. Higher frequency point is called (f1) and lower called (f2). (F1-455KHz) is defined as upper 3dB bandwidth and (455KHz -f2) defined as lower 3dB bandwidth. | No visible damage and it meet Table at Page 5/6 |
| Demodulate Output | Demodulated output shall be measured when carrier frequency is adjusted to 455KHz. | No damage and it meet Table at Page 5/6 |
| Demodulated Distortion Factor | Carrier frequency is adjusted to 455KHz And distortion shall be measured with 1 kHz modulation frequency. | No damage and it meet Table at Page 5/6. |
| Input Signal Condition | Input signal condition, Input level 80dBμ Frequency Deviation ±4.0KHz Modulation Frequency: 1.0KHz | |

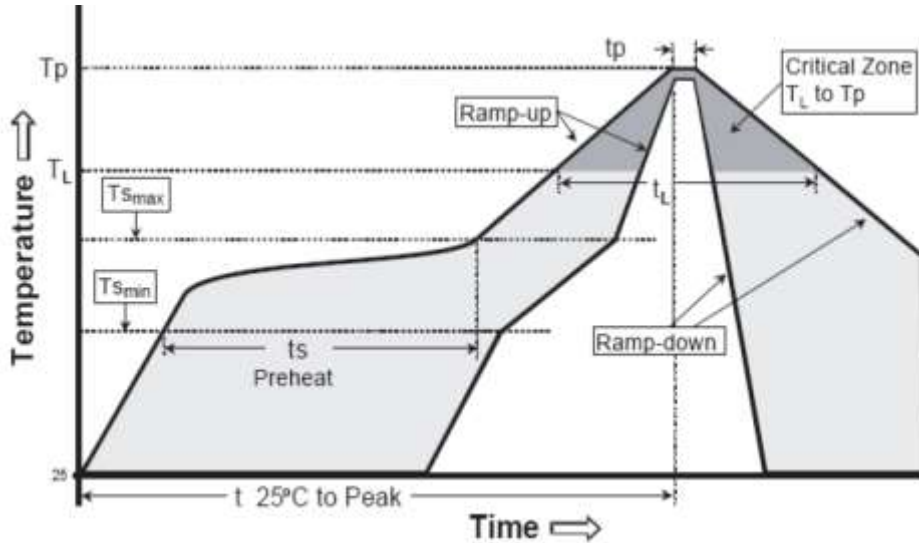
ENVIRONMENTAL CHARACTERISTICS

| TEST ITEMS | MEASUREMENT CONDITION | REQUIREMENT |
|---------------------------|---|---------------------------------|
| Humidity | After being placed in a chamber with 90-95% R.H. at 40±2°C for 100 hours and then being placed in room temperature for 1 hour, filter shall be measured. | It shall meet Table at Page 5/6 |
| High Temperature | After being placed in a chamber with 80±2°C, for 100 hours and then being placed in room temperature for 1 hour, filter shall be measured. | It shall meet Table at Page 5/6 |
| Low Temperature | After being placed in a chamber with -20±2°C, for 100 hours and then being placed in room temperature for 1 hour, filter shall be measured. | It shall meet Table at Page 5/6 |
| Heat Shock | After being kept at room temperature, filter shall be placed at temperature of -55 °C, for 30 minutes, then be placed at temperature. 85°C, for 30 minutes. After that returned to -55°C again. Repeated above cycle for 5 times. After being kept in room temp. for 1 hour, filter shall be measured | It shall meet Table at Page 5/6 |
| Resistance to Solder Heat | Lead terminals are immersed up to 1.5mm from filter's body in soldering bath of 350± 10°C, for 3±0.5 sec. And then filter shall be measured after being placed in room temperature for 1 hour. | It shall meet Table at Page 5/6 |

PHYSICAL CHARACTERISTICS

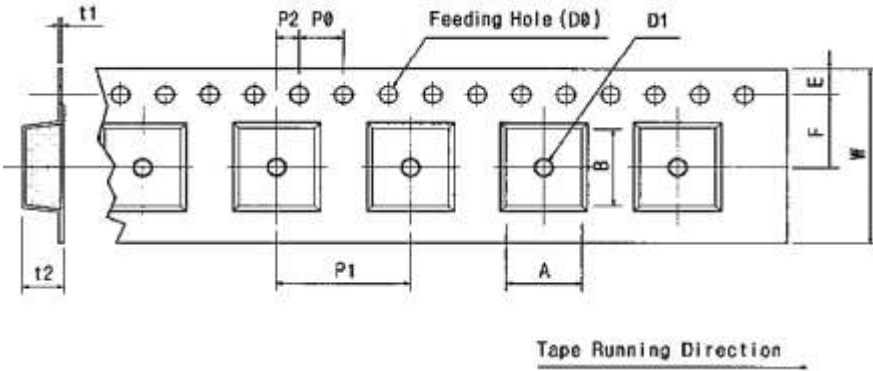
| TEST ITEMS | TEST METHOD AND CONDITIONS | REQUIREMENT |
|------------------------------|---|--|
| Random Drop/ Drop Test | Filter shall be measured after 3 times random drops from the height of 30cm on concrete floor | No damage and it meet Table at Page 5/6 |
| Vibration | Filter shall be measured after being applied vibration of amplitude of 1.5mm with 10-55Hz band of vibration frequency to each of 3 perpendicular directions for 2 hours | No damage and it meet Table at Page 5/6 |
| Solderability | Lead terminals are immersed in aide solder for 5 sec and then immersed in soldering bath of 230±5°C, for 3±0.5 sec. At least 95% lead terminals shall be covered with solder | No damage and it meet Table at Page 5/6 |
| Substrate Bending Test | After lead terminals shall be fixed at 2mm from filter’s body, they shall be folded up to 90°from their axial directions and folded back to –90°.Then folded back to their axial direction, the speed of folding be each 3 seconds. | No damage and it meet Table at Page 5/6 |
| Terminal Strength Pulling | After force of 1kg for 10 seconds is applied to each terminal in axial direction, Filter shall be measured. | No damage and it meet Table at Page 5/6 |

SUGGESTED REFLOW PROFILE (For Reference Only)

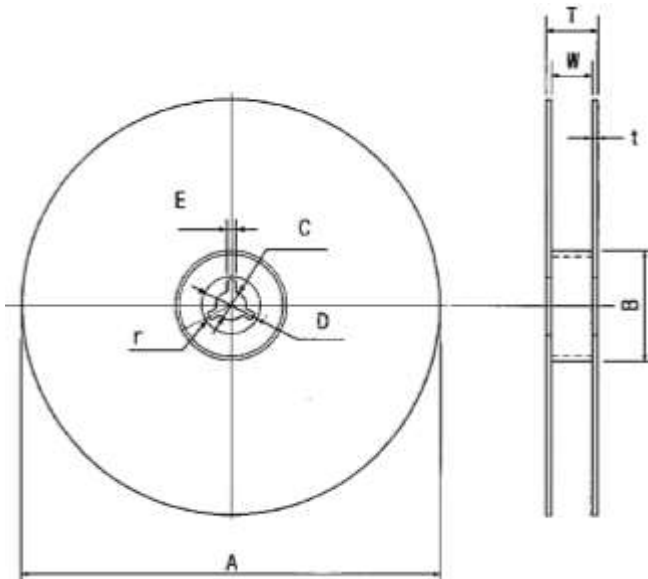


| PROFILE FEATURE | | PB-FREE ASSEMBLY |
|---|---------------------------|-------------------|
| Average Ramp-up Rate (Ts Max to Tp) | | 3°C/second Max |
| Preheat | Temperature Min (Ts Min.) | 150°C |
| | Temperature Max (Ts Max.) | 180°C |
| | Time (ts Min. to ts Max.) | 60 ~ 180 seconds |
| Time maintained above | Temperature (Tl) | 230°C |
| | Time (tl) | 60 ~ 150 seconds |
| Peak/Classification Temperature (Tp) | | 260 °C |
| Time within 5°C of actual Peak Temperature (tp) | | 20 ~ 40 seconds |
| Ramp-down rate | | 6 °C /Second Max. |
| Time 25 °C to Peak Temperature | | 8 minutes Max. |
| Suggest reflow times | | 3 Times Max. |

TAPE AND REEL (Unit: mm, 2000pcs/Reel)



| CODE | DIMENSION |
|------|-------------|
| W | 16.0+/-0.30 |
| F | 6.80+/-0.20 |
| E | 1.75+/-0.10 |
| P 0 | 4.00+/-0.10 |
| P 1 | 7.80+/-0.10 |
| P 2 | 2.00+/-0.05 |
| D 0 | Ø1.5+/-0.10 |
| D 1 | Ø1.5+/-0.10 |
| t 2 | 3.60+/-0.10 |
| A | 7.70+/-0.10 |



| CODE | DIMENSION |
|------|-------------|
| A | Ø330+/-1.0 |
| B | Ø80+/-0.5 |
| C | Ø13.0+/-0.5 |
| E | 2.00+/-0.3 |
| W | 16.0+/-1.0 |

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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