

| | | |
|---|---|--|
| SPECIFICATION SHEET NO. | R1230 - XR20M00000S410 | |
| ORIGINAL MFG/PART NO. | TGS Crystals/CMG532 20M0A30-10-30-40-40TLH | |
| NEXTGEN PART CODE | XR20M00000S410 | Indicate This Code For RFQ/Order |
| DATE | Dec. 30, 2024 | |
| REVISION | A1 | Updated With Most Recent Data |
| DESCRIPTION AND MAIN PARAMETRICS | <p>MHz SMD Crystal Glass seal, Ceramic Cover, 5032 Type, 2 pads, XR Series Dimension L5.0*W3.2*H1.2mm 20.000MHz, Tolerance ± 30ppm, Load Capacitor 10pF Frequency stability ± 30ppm; Operating Temp. Range $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$, ESR 40 ohm Max, Reflow Profile Condition 260 $^{\circ}\text{C}$ Max. Package in Tape/Reel, 1000pcs/Reel 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 |  |  |
| | |  |
| Effective Date: Dec. 30, 2024 | | |

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

MAIN FEATURE

- MHz SMD Crystal, 5032 Type, L5.0*W3.2*H1.2mm, 2 pads
- Glass seal, Ceramic Cover
- Low cost, High precision, High frequency stability.
- Low Profile and Short Lead time
- RoHS/RoHS III Compliant, RoHS Annex III Lead Exemption
(exempt per RoHS EU 2015/863)
- Moisture Sensitivity Level (MSL) Level 1
- Excellent Aging and Wide Frequency Range



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



APPLICATION

- Bluetooth, wireless communication set
- Communication Electronics

ELECTRICAL CHARACTERISTICS

- See Page 5 ~Page 13 For Different Part Code And Rated Voltage.
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate NextGen Part Code XR20M00000S410 For RFQ and Order.

PART CODE GUIDE

RFQ
[Request For Quotation](#)

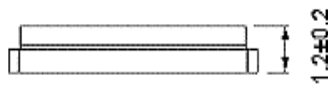
| CODE | NAME | KEY SPECIFICATION OPTION |
|-------|-----------------------------------|---|
| XR | Series Code | MHz SMD Crystal Glass seal, Ceramic Cover, 5032 Type, 2 pads |
| 20M0 | Frequency Range Code | 20M0: 20.0MHz or Custom Frequency Range by Page 6~ Page 13 |
| 0000S | Internal Control Code | Letter A~Z, a~z or digits (0~9) |
| 410 | Parameters code | Special Parameters Code Letter A~Z, a~z or digits (1-9) |
| () | Special/Custom Parameters Code | Blank: N/A XX: Letter A~Z, a~z or digits (0~9) for Special/Custom Parameters |

DIMENSION (Unit: Inch/mm)

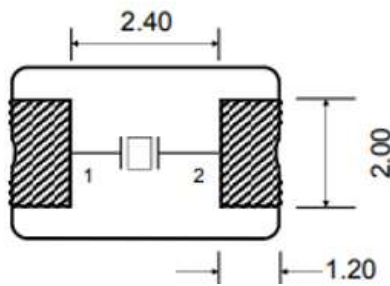
Top View



Side View



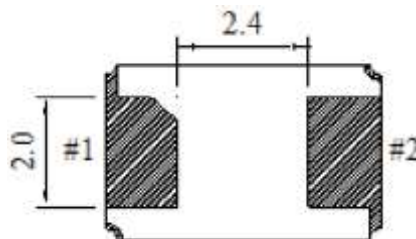
Bottom View



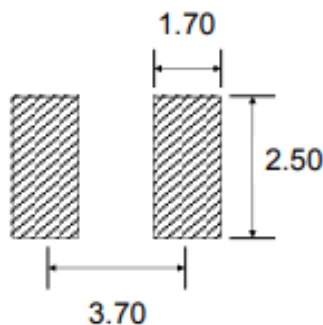
Connection
#1 Crystal #2 Crystal

or

Alternative Case
Bottom View



Solder Pattern



GENERAL SPECIFICATION

| PARAMETER | SYMBOL | VALUE | | | UNIT | CONDITION |
|------------------------------|---------------|-------------|----------|----------|------------|----------------------------|
| | | MIN. | TYPE | MAX. | | |
| Frequency Range | F0 | 8.0000 | - | 54.000 | MHz | Customer specified |
| Mode of Vibration Code | | Fundamental | | | | Optional: 3rd OT Or 5th OT |
| Frequency Tolerance | $\Delta F/F0$ | ± 10 | ± 30 | ± 50 | ppm | at 25°C ± 3 °C |
| Load Capacitance | CL | 4 | 18 | Series | pF | Customer specified |
| Frequency Stability | Tc | ± 10 | ± 30 | ± 50 | ppm | Customer specified |
| Operating Temp. Range | TOPR | -40 | - | +85 | °C | Standard |
| Storage Temp. Range | TSTG | -55 | - | +125 | °C | |
| Equivalent Series Resistance | ESR | See Table 1 | | | Ω | Customer specified |
| Drive Level | DL | - | 100 | 200 | μW | |
| Insulation Resistance | IR | 500 | - | | m Ω | At 100VDC |
| Shunt Capacitance | C0 | - | - | 5.0 | pF | |
| Aging per year | Fa | -3 | - | +3 | ppm | 1st Year |

Table 1

| FREQUENCY RANGE | MODE OF VIBRATION | ESR (Ω) MAX |
|--------------------------------|-------------------|----------------------|
| 8.0000MHz \leq F0 <10.000MHz | Fundamental | 120 |
| 10.000MHz \leq F0 <20.000MHz | Fundamental | 80 |
| 20.000MHz \leq F0 <30.000MHz | Fundamental | 40 |
| 30.000MHz \leq F0 <54.000MHz | Fundamental | 30 |

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

| PART CODE | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
| | MHz | ppm | pF | ppm | °C | Ω Max. |
| XR8M000000S410 | 8.00000 | ±30 | 10 | ±30 | -40~+85 | 120 |
| XR8M000000S412 | 8.00000 | ±30 | 12 | ±30 | -40~+85 | 120 |
| XR8M000000S416 | 8.00000 | ±30 | 16 | ±30 | -40~+85 | 120 |
| XR8M000000S418 | 8.00000 | ±30 | 18 | ±30 | -40~+85 | 120 |
| XR8M000000S420 | 8.00000 | ±30 | 20 | ±30 | -40~+85 | 120 |
| XR8M192000S410 | 8.19200 | ±30 | 10 | ±30 | -40~+85 | 120 |
| XR8M192000S412 | 8.19200 | ±30 | 12 | ±30 | -40~+85 | 120 |
| XR8M192000S416 | 8.19200 | ±30 | 16 | ±30 | -40~+85 | 120 |
| XR8M192000S418 | 8.19200 | ±30 | 18 | ±30 | -40~+85 | 120 |
| XR8M192000S420 | 8.19200 | ±30 | 20 | ±30 | -40~+85 | 120 |
| XR9M216000S410 | 9.21600 | ±30 | 10 | ±30 | -40~+85 | 120 |
| XR9M216000S412 | 9.21600 | ±30 | 12 | ±30 | -40~+85 | 120 |
| XR9M216000S416 | 9.21600 | ±30 | 16 | ±30 | -40~+85 | 120 |
| XR9M216000S418 | 9.21600 | ±30 | 18 | ±30 | -40~+85 | 120 |
| XR9M216000S420 | 9.21600 | ±30 | 20 | ±30 | -40~+85 | 120 |
| XR9M830400S410 | 9.83040 | ±30 | 10 | ±30 | -40~+85 | 120 |
| XR9M830400S412 | 9.83040 | ±30 | 12 | ±30 | -40~+85 | 120 |
| XR9M830400S416 | 9.83040 | ±30 | 16 | ±30 | -40~+85 | 120 |
| XR9M830400S418 | 9.83040 | ±30 | 18 | ±30 | -40~+85 | 120 |
| XR9M830400S420 | 9.83040 | ±30 | 20 | ±30 | -40~+85 | 120 |

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

| PART CODE | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
| | MHz | ppm | pF | ppm | °C | Ω Max. |
| XR10M00000S408 | 10.00000 | ±30 | 8 | ±30 | -40~+85 | 80 |
| XR10M00000S410 | 10.00000 | ±30 | 10 | ±30 | -40~+85 | 80 |
| XR10M00000S412 | 10.00000 | ±30 | 12 | ±30 | -40~+85 | 80 |
| XR10M00000S416 | 10.00000 | ±30 | 16 | ±30 | -40~+85 | 80 |
| XR10M00000S418 | 10.00000 | ±30 | 18 | ±30 | -40~+85 | 80 |
| XR10M00000S420 | 10.00000 | ±30 | 20 | ±30 | -40~+85 | 80 |
| XR11M05920S408 | 11.05920 | ±30 | 8 | ±30 | -40~+85 | 80 |
| XR11M05920S410 | 11.05920 | ±30 | 10 | ±30 | -40~+85 | 80 |
| XR11M05920S412 | 11.05920 | ±30 | 12 | ±30 | -40~+85 | 80 |
| XR11M05920S416 | 11.05920 | ±30 | 16 | ±30 | -40~+85 | 80 |
| XR11M05920S418 | 11.05920 | ±30 | 18 | ±30 | -40~+85 | 80 |
| XR11M05920S420 | 11.05920 | ±30 | 20 | ±30 | -40~+85 | 80 |
| XR12M00000S101 | 12.00000 | ±30 | 10 | ±50 | -40~+85 | 80 |
| XR12M00000S102 | 12.00000 | ±20 | 18 | ±30 | -40~+85 | 80 |
| XR12M00000S408 | 12.00000 | ±30 | 8 | ±30 | -40~+85 | 80 |
| XR12M00000S412 | 12.00000 | ±30 | 12 | ±30 | -40~+85 | 80 |
| XR12M00000S416 | 12.00000 | ±30 | 16 | ±30 | -40~+85 | 80 |
| XR12M00000S418 | 12.00000 | ±30 | 18 | ±30 | -40~+85 | 80 |
| XR12M00000S420 | 12.00000 | ±30 | 20 | ±30 | -40~+85 | 80 |
| XR12M28800S408 | 12.28800 | ±30 | 8 | ±30 | -40~+85 | 80 |

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

| PART CODE | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
| | MHz | ppm | pF | ppm | °C | Ω Max. |
| XR12M28800S410 | 12.28800 | ±30 | 10 | ±30 | -40~+85 | 80 |
| XR12M28800S412 | 12.28800 | ±30 | 12 | ±30 | -40~+85 | 80 |
| XR12M28800S416 | 12.28800 | ±30 | 16 | ±30 | -40~+85 | 80 |
| XR12M28800S418 | 12.28800 | ±30 | 18 | ±30 | -40~+85 | 80 |
| XR12M28800S420 | 12.28800 | ±30 | 20 | ±30 | -40~+85 | 80 |
| XR13M56000S408 | 13.56000 | ±30 | 8 | ±30 | -40~+85 | 80 |
| XR13M56000S410 | 13.56000 | ±30 | 10 | ±30 | -40~+85 | 80 |
| XR13M56000S412 | 13.56000 | ±30 | 12 | ±30 | -40~+85 | 80 |
| XR13M56000S416 | 13.56000 | ±30 | 16 | ±30 | -40~+85 | 80 |
| XR13M56000S418 | 13.56000 | ±30 | 18 | ±30 | -40~+85 | 80 |
| XR13M56000S420 | 13.56000 | ±30 | 20 | ±30 | -40~+85 | 80 |
| XR14M31818S218 | 14.31818 | ±30 | 18 | ±30 | -20~+70 | 80 |
| XR14M31818S408 | 14.31818 | ±30 | 8 | ±30 | -40~+85 | 80 |
| XR14M31818S410 | 14.31818 | ±30 | 10 | ±30 | -40~+85 | 80 |
| XR14M31818S412 | 14.31818 | ±30 | 12 | ±30 | -40~+85 | 80 |
| XR14M31818S416 | 14.31818 | ±30 | 16 | ±30 | -40~+85 | 80 |
| XR14M31818S418 | 14.31818 | ±30 | 18 | ±30 | -40~+85 | 80 |
| XR14M31818S420 | 14.31818 | ±30 | 20 | ±30 | -40~+85 | 80 |
| XR14M74560S408 | 14.74560 | ±30 | 8 | ±30 | -40~+85 | 80 |
| XR14M74560S410 | 14.74560 | ±30 | 10 | ±30 | -40~+85 | 80 |

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

| PART CODE | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
| | MHz | ppm | pF | ppm | °C | Ω Max. |
| XR14M74560S412 | 14.74560 | ±30 | 12 | ±30 | -40~+85 | 80 |
| XR14M74560S416 | 14.74560 | ±30 | 16 | ±30 | -40~+85 | 80 |
| XR14M74560S418 | 14.74560 | ±30 | 18 | ±30 | -40~+85 | 80 |
| XR14M74560S420 | 14.74560 | ±30 | 20 | ±30 | -40~+85 | 80 |
| XR16M00000S408 | 16.00000 | ±30 | 8 | ±30 | -40~+85 | 80 |
| XR16M00000S410 | 16.00000 | ±30 | 10 | ±30 | -40~+85 | 80 |
| XR16M00000S412 | 16.00000 | ±30 | 12 | ±30 | -40~+85 | 80 |
| XR16M00000S416 | 16.00000 | ±30 | 16 | ±30 | -40~+85 | 80 |
| XR16M00000S418 | 16.00000 | ±30 | 18 | ±30 | -40~+85 | 80 |
| XR16M00000S420 | 16.00000 | ±30 | 20 | ±30 | -40~+85 | 80 |
| XR18M43200S408 | 18.43200 | ±30 | 8 | ±30 | -40~+85 | 80 |
| XR18M43200S410 | 18.43200 | ±30 | 10 | ±30 | -40~+85 | 80 |
| XR18M43200S412 | 18.43200 | ±30 | 12 | ±30 | -40~+85 | 80 |
| XR18M43200S416 | 18.43200 | ±30 | 16 | ±30 | -40~+85 | 80 |
| XR18M43200S418 | 18.43200 | ±30 | 18 | ±30 | -40~+85 | 80 |
| XR18M43200S420 | 18.43200 | ±30 | 20 | ±30 | -40~+85 | 80 |
| XR19M66080S408 | 19.66080 | ±30 | 8 | ±30 | -40~+85 | 80 |
| XR19M66080S410 | 19.66080 | ±30 | 10 | ±30 | -40~+85 | 80 |
| XR19M66080S412 | 19.66080 | ±30 | 12 | ±30 | -40~+85 | 80 |
| XR19M66080S416 | 19.66080 | ±30 | 16 | ±30 | -40~+85 | 80 |

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

| PART CODE | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|-----------------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
| | MHz | ppm | pF | ppm | °C | Ω Max. |
| XR19M66080S418 | 19.66080 | ±30 | 18 | ±30 | -40~+85 | 80 |
| XR19M66080S420 | 19.66080 | ±30 | 20 | ±30 | -40~+85 | 80 |
| XR20M00000S408 | 20.00000 | ±30 | 8 | ±30 | -40~+85 | 40 |
| XR20M00000S410 | 20.00000 | ±30 | 10 | ±30 | -40~+85 | 40 |
| XR20M00000S412 | 20.00000 | ±30 | 12 | ±30 | -40~+85 | 40 |
| XR20M00000S416 | 20.00000 | ±30 | 16 | ±30 | -40~+85 | 40 |
| XR20M00000S418 | 20.00000 | ±30 | 18 | ±30 | -40~+85 | 40 |
| XR20M00000S420 | 20.00000 | ±30 | 20 | ±30 | -40~+85 | 40 |
| XR22M11840S408 | 22.11840 | ±30 | 8 | ±30 | -40~+85 | 40 |
| XR22M11840S410 | 22.11840 | ±30 | 10 | ±30 | -40~+85 | 40 |
| XR22M11840S412 | 22.11840 | ±30 | 12 | ±30 | -40~+85 | 40 |
| XR22M11840S416 | 22.11840 | ±30 | 16 | ±30 | -40~+85 | 40 |
| XR22M11840S418 | 22.11840 | ±30 | 18 | ±30 | -40~+85 | 40 |
| XR22M11840S420 | 22.11840 | ±30 | 20 | ±30 | -40~+85 | 40 |
| XR24M00000S408 | 24.00000 | ±30 | 8 | ±30 | -40~+85 | 40 |
| XR24M00000S410 | 24.00000 | ±30 | 10 | ±30 | -40~+85 | 40 |
| XR24M00000S412 | 24.00000 | ±30 | 12 | ±30 | -40~+85 | 40 |
| XR24M00000S416 | 24.00000 | ±30 | 16 | ±30 | -40~+85 | 40 |
| XR24M00000S418 | 24.00000 | ±30 | 18 | ±30 | -40~+85 | 40 |
| XR24M00000S420 | 24.00000 | ±30 | 20 | ±30 | -40~+85 | 40 |

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

| PART CODE | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
| | MHz | ppm | pF | ppm | °C | Ω Max. |
| XR24M57600S408 | 24.57600 | ±30 | 8 | ±30 | -40~+85 | 40 |
| XR24M57600S410 | 24.57600 | ±30 | 10 | ±30 | -40~+85 | 40 |
| XR24M57600S412 | 24.57600 | ±30 | 12 | ±30 | -40~+85 | 40 |
| XR24M57600S416 | 24.57600 | ±30 | 16 | ±30 | -40~+85 | 40 |
| XR24M57600S418 | 24.57600 | ±30 | 18 | ±30 | -40~+85 | 40 |
| XR24M57600S420 | 24.57600 | ±30 | 20 | ±30 | -40~+85 | 40 |
| XR25M00000S408 | 25.00000 | ±30 | 8 | ±30 | -40~+85 | 40 |
| XR25M00000S410 | 25.00000 | ±30 | 10 | ±30 | -40~+85 | 40 |
| XR25M00000S412 | 25.00000 | ±30 | 12 | ±30 | -40~+85 | 40 |
| XR25M00000S416 | 25.00000 | ±30 | 16 | ±30 | -40~+85 | 40 |
| XR25M00000S418 | 25.00000 | ±30 | 18 | ±30 | -40~+85 | 40 |
| XR25M00000S420 | 25.00000 | ±30 | 20 | ±30 | -40~+85 | 40 |
| XR27M00000S408 | 27.00000 | ±30 | 8 | ±30 | -40~+85 | 40 |
| XR27M00000S410 | 27.00000 | ±30 | 10 | ±30 | -40~+85 | 40 |
| XR27M00000S412 | 27.00000 | ±30 | 12 | ±30 | -40~+85 | 40 |
| XR27M00000S416 | 27.00000 | ±30 | 16 | ±30 | -40~+85 | 40 |
| XR27M00000S418 | 27.00000 | ±30 | 18 | ±30 | -40~+85 | 40 |
| XR27M00000S420 | 27.00000 | ±30 | 20 | ±30 | -40~+85 | 40 |
| XR28M63636S408 | 28.63636 | ±30 | 8 | ±30 | -40~+85 | 40 |
| XR28M63636S410 | 28.63636 | ±30 | 10 | ±30 | -40~+85 | 40 |

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

| PART CODE | FREQUENCY RANGE | FREQUENCY TOLERANCE | LOAD CAPACITANCE | FREQUENCY STABILITY | OPERATING TEMPE. RANGE | EQUIVALENT SERIES RESISTANCE |
|----------------|-----------------|---------------------|------------------|---------------------|------------------------|------------------------------|
| | MHz | ppm | pF | ppm | °C | Ω Max. |
| XR28M63636S412 | 28.63636 | ±30 | 12 | ±30 | -40~+85 | 40 |
| XR28M63636S416 | 28.63636 | ±30 | 16 | ±30 | -40~+85 | 40 |
| XR28M63636S418 | 28.63636 | ±30 | 18 | ±30 | -40~+85 | 40 |
| XR28M63636S420 | 28.63636 | ±30 | 20 | ±30 | -40~+85 | 40 |
| XR30M00000S408 | 30.00000 | ±30 | 8 | ±30 | -40~+85 | 30 |
| XR30M00000S410 | 30.00000 | ±30 | 10 | ±30 | -40~+85 | 30 |
| XR30M00000S412 | 30.00000 | ±30 | 12 | ±30 | -40~+85 | 30 |
| XR30M00000S416 | 30.00000 | ±30 | 16 | ±30 | -40~+85 | 30 |
| XR30M00000S418 | 30.00000 | ±30 | 18 | ±30 | -40~+85 | 30 |
| XR30M00000S420 | 30.00000 | ±30 | 20 | ±30 | -40~+85 | 30 |
| XR32M00000S408 | 32.00000 | ±30 | 8 | ±30 | -40~+85 | 30 |
| XR32M00000S410 | 32.00000 | ±30 | 10 | ±30 | -40~+85 | 30 |
| XR32M00000S412 | 32.00000 | ±30 | 12 | ±30 | -40~+85 | 30 |
| XR32M00000S416 | 32.00000 | ±30 | 16 | ±30 | -40~+85 | 30 |
| XR32M00000S418 | 32.00000 | ±30 | 18 | ±30 | -40~+85 | 30 |
| XR32M00000S420 | 32.00000 | ±30 | 20 | ±30 | -40~+85 | 30 |
| XR40M00000S408 | 40.00000 | ±30 | 8 | ±30 | -40~+85 | 30 |
| XR40M00000S410 | 40.00000 | ±30 | 10 | ±30 | -40~+85 | 30 |
| XR40M00000S412 | 40.00000 | ±30 | 12 | ±30 | -40~+85 | 30 |
| XR40M00000S416 | 40.00000 | ±30 | 16 | ±30 | -40~+85 | 30 |

RELIABILITY (MECHANICAL AND ENVIRONMENTAL ENDURANCE)

| TEST ITEMS | TEST METHOD AND CONDITIONS | REQUIREMENTS |
|--|---|---|
| High Temperature High Humidity Storage | Temperature: 85°C±3°C Relative Humidity:85%RH Time: 96 Hours | JIS C5023 |
| High Temperature Storage | Temperature: 125°C±3°C Time: 96 Hours. | MIL-STD-883E Method 1005.8 |
| Low Temperature Storage | Temperature: -40°C±3°C Time: 96 Hours. | MIL-STD-883E Method 1013 |
| Thermal Shock | Temperature 1: -55°C±5°C Temperature 2: 85°C±5 °C Temperature change between T1 and T2 5 min 10cycles maintain T1 and T2 for 30 minutes each cycle | MIL-STD-202F Method 107 Condition A |
| Resistance to Solder Heat | Solder Temperature: 260°C±5°C Time: 10±1 Seconds | MIL-STD-202F Method 210E |
| Solderability | The solder pot temperature is 245±5°C , dwell time 5±0.5sec | J-STD-002B |
| Drop Test | 3 Times Free Fall from 50cm height table to 3cm thickness hard wood board | J-STD-002B |
| Mechanical Shock | Half sine wave,1000 G 3 Times for all 3 directions(X,Y Z) | MIL STD 202F Method 213B |
| Vibration | Frequency Range: 10Hz ~ 55Hz Amplitude: 0.75mm 2 Hours in each direction, total 6 Hours | MIL-STD-883E Method 2007.3 |
| Leakage Test | Take measurements with a helium Leakage detector Leakage Rate≤1×10 ⁻³ Pa cm ³ /s | MIL-STD-883E |

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.) | 125°C |
| | Temperature Max (Ts Max.) | 200°C |
| | Time (ts Min. to ts Max.) | 60 ~ 180 seconds |
| Time maintained above | Temperature (Tl) | 217°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 (1000pcs/Reel, Unit: mm)

All Devices are packed in accordance with EIA standard RS-481-2 and specifications., 1000pcs/Reel



| ITEM | DIMENSION |
|------|-----------|
| A | 1.70 |
| B | 5.45 |
| C | 3.65 |
| D | 8.00 |
| E | 12.0 |



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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