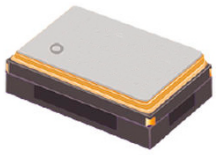
# Programmable - High Performance
# SMD XO & VCXO (LVDS Output)



2.5 x 2.0 x 1.0 mm

**ASG2-D**

ESD Sensitive

RoHS / RoHS II Compliant

**Moisture Sensitivity Level (MSL) – 1**

## FEATURES:

- +2.5V or +3.3V operation
- -40°C to +85°C standard operating temperature range
- Miniature size 2.5 x 2.0 x 1.0 mm Ceramic SMT Package
- Short lead time

## APPLICATIONS:

- Networking
- SONET/SDH
- WiMax / WLAN
- Computing
- Phase Locked Loops
- Direct Digital Synthesis (DDS)
- DSL/ADSL
- Base Terminal Stations

## STANDARD SPECIFICATIONS:

| Parameters | | Minimum | Typical | Maximum | Units | Notes |
|---|---|---|---|---|---|---|
| Frequency Range | | 8 | | 1500 | MHz | |
| Operating Temperature | | -40 | | +85 | °C | |
| Storage Temperature | | -55 | | +125 | °C | |
| Overall Frequency Stability | | -50 | | +50 | ppm | ***See Note # 1*** |
| Initial Tolerance + Stability over operating temperature | | -35.00 | | +35.00 | ppm | |
| Supply Voltage (Vdd) | $V_{dd}$ = 3.3V | 3.135 | 3.300 | 3.465 | V | |
| | $V_{dd}$ = 2.5V | 2.375 | 2.500 | 2.625 | V | |
| Input Current | | | | 40 | mA | Frequency dependent |
| LVDS Output (OUT & $\overline{OUT}$) | Differential Output Voltage Swing | | 350 | | mV | $V_{OD}$ |
| | Duty Cycle | 45 | | 55 | % | @1.25V |
| | Rise Time | | | 600 | ps | RL=100Ω/CL=10pF |
| | Fall Time | | | 600 | ps | RL=100Ω/CL=10pF |
| Enable/Disable Function | | "1" ($V_{IH}$ ≥ 0.7*Vdd) or Open: Oscillation<br>"0" ($V_{IL}$ < 0.3*Vdd) : High Z | | | | |
| Control Voltage Range | | 0 | | Vdd | V | For VCXO Only |
| Absolute Pull Range | | ±35 | | | ppm | For VCXO Only |
| Control Port Bandwidth | | 10 | | | kHz | For VCXO Only |
| Linearity | | | | 15 | % | For VCXO Only |
| Slope | | Positive | | | | For VCXO Only |
| Phase jitter RMS (12kHz to 20MHz offset) | | | 1.0 | 1.8 | ps | ***See Note #2*** |

***Note #1:*** Inclusive of initial tolerance at 25ºC±3ºC, operating temperature range, input voltage variation, load variation & 15 years aging at 25ºC.

***Note #2***: The rms jitter integrated over 12kHz to 20MHz Bandwidth is dependent on the carrier and whether or not the final frequency is achieved without engaging the Fractional Mode



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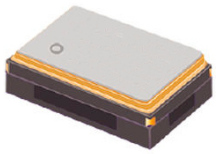
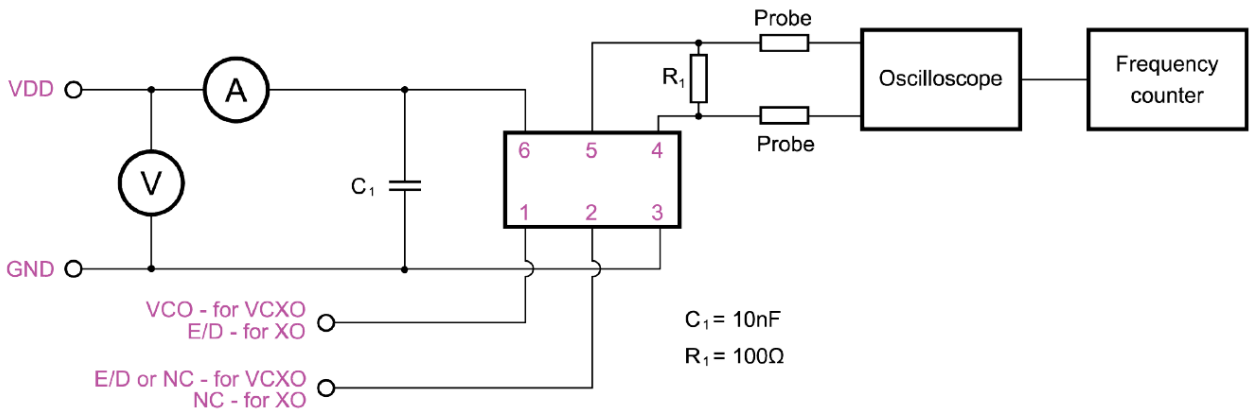


2.5 x 2.0 x 1.0 mm

## TEST CIRCUIT




## OPTIONS & PART IDENTIFICATION:

ASG2 - D - [ ] - [ ] - [ ] MHz - [ ]

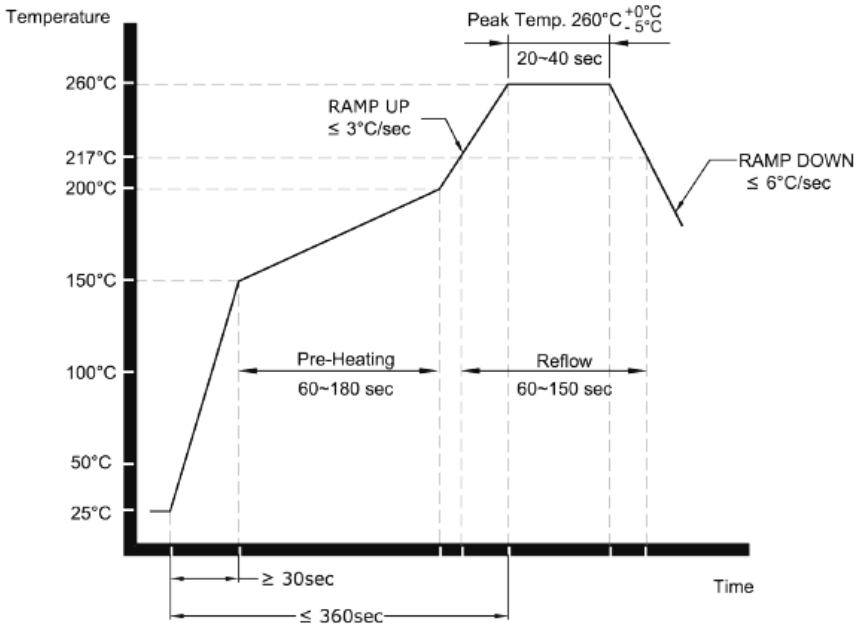
| Fixed or Pull-able |
|---|
| X = Fixed Oscillator |
| V = VCXO |

| Operating Voltage |
|---|
| 3.30V = A |
| 2.50V = B |

| Frequency in MHz |
|---|
| Please specify the Frequency in MHz e.g. 100.000 MHz |

| Packaging |
|---|
| Blank = Bulk |
| T = Tape & Reel |

## RECOMMENDED REFLOW PROFILE







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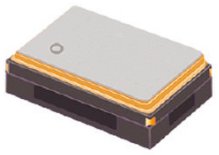


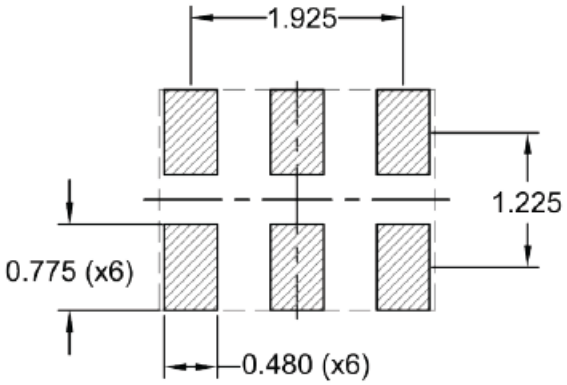
2.5 x 2.0 x 1.0 mm

## OUTLINE DIMENSION:

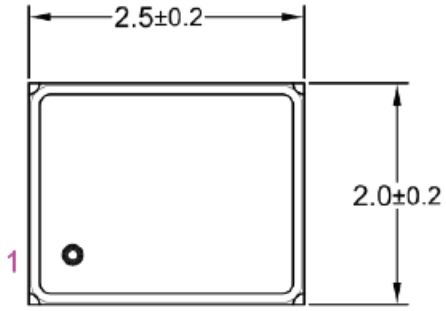
| Pin # | Pin Description For VCXO configuration |
|---|---|
| 1 | Voltage Control for VCXO |
| 2 | Output Enable (OE) ***or*** No Connect (N/C) |
| 3 | GND |
| 4 | RF Output |
| 5 | Complimentary Output |
| 6 | Vdd |

| Pin # | Pin Description For XO configuration |
|---|---|
| 1 | Output Enable (OE) |
| 2 | No Connect (N/C) for XO |
| 3 | GND |
| 4 | RF Output |
| 5 | Complimentary Output |
| 6 | Vdd |

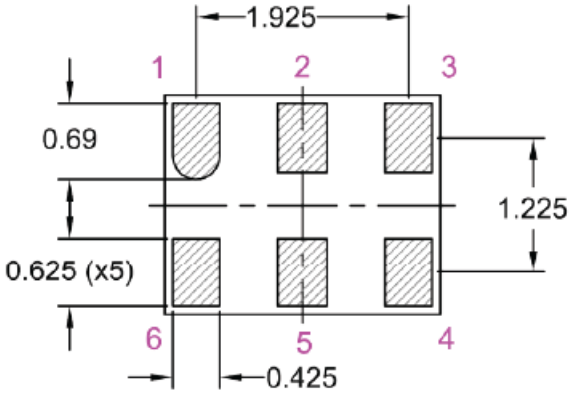
***Recommended Land Pattern***




***Top View***




***Bottom View***




***Side View***

**Dimensions: mm**

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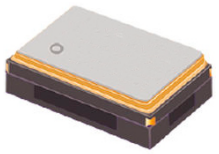
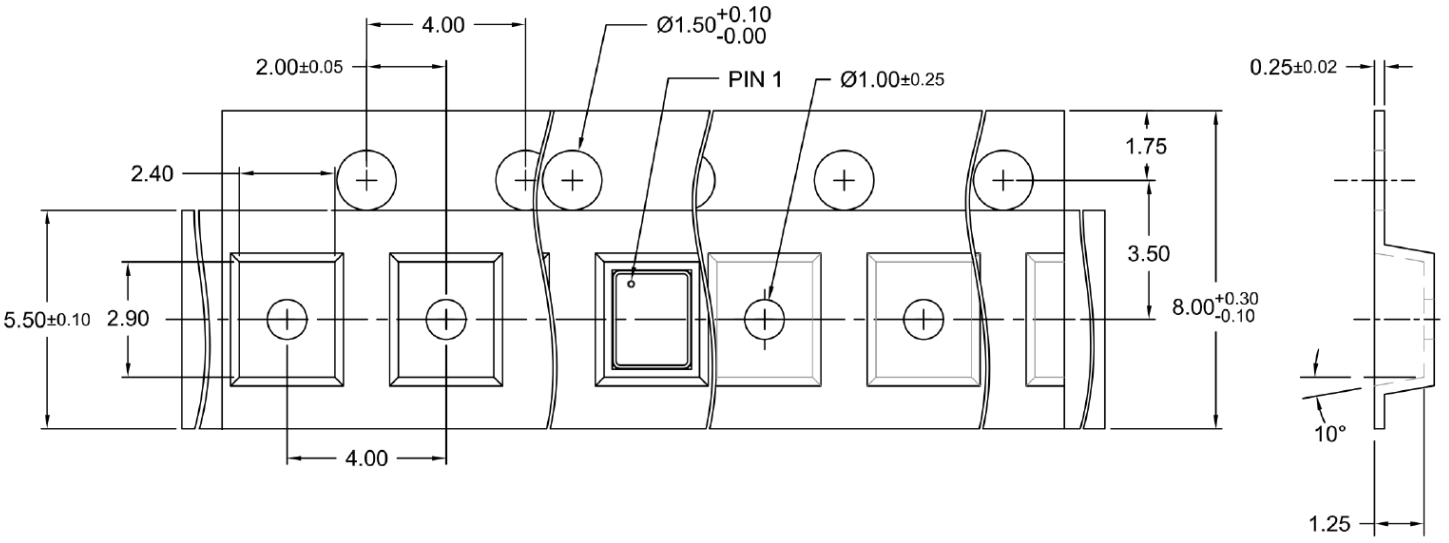
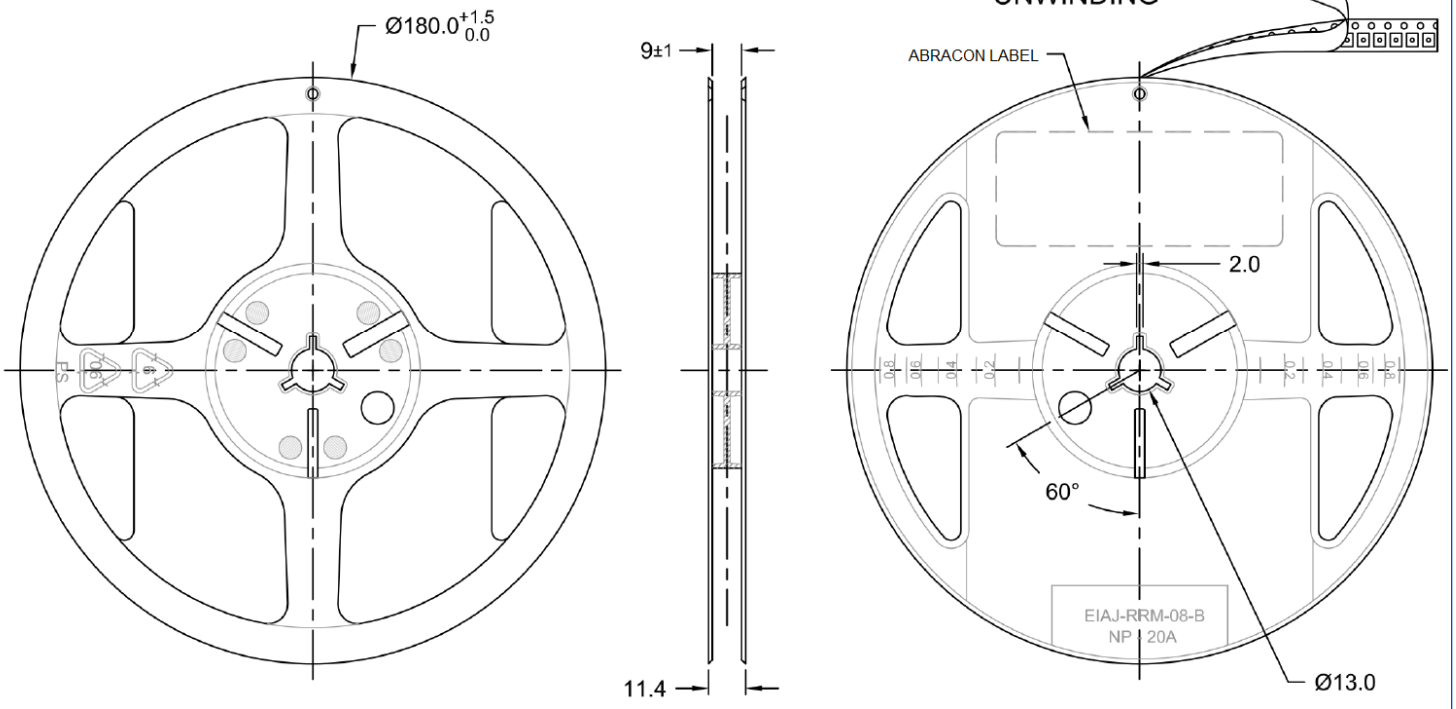


2.5 x 2.0 x 1.0 mm

## TAPE & REEL:

**T= Tape and reel (3,000pcs/reel)**




**Dimensions: mm**

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