

# Programmable - High Performance

## SMD XO & VCXO (LVDS Output)

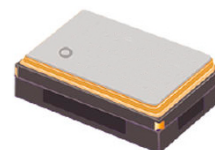
ASG2-D



ESD Sensitive



RoHS / RoHS II Compliant



2.5 x 2.0 x 1.0 mm

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   | <b>See Note # 1</b> |
| Initial Tolerance + Stability over operating temperature |                                   | -35.00                                                                                                                     |         | +35.00          | ppm   |                     |
| Supply Voltage (Vdd)                                     | V <sub>dd</sub> = 3.3V            | 3.135                                                                                                                      | 3.300   | 3.465           | V     |                     |
|                                                          | V <sub>dd</sub> = 2.5V            | 2.375                                                                                                                      | 2.500   | 2.625           | V     |                     |
| Input Current                                            |                                   |                                                                                                                            |         | 40              | mA    | Frequency dependent |
| LVDS Output<br>(OUT & $\overline{\text{OUT}}$ )          | Differential Output Voltage Swing |                                                                                                                            | 350     |                 | mV    | V <sub>OD</sub>     |
|                                                          | 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 <sub>IH</sub> ≥ 0.7*V <sub>dd</sub> ) or Open: Oscillation<br>"0" (V <sub>IL</sub> < 0.3*V <sub>dd</sub> ) : High Z |         |                 |       |                     |
| Control Voltage Range                                    |                                   | 0                                                                                                                          |         | V <sub>dd</sub> | 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    | <b>See Note #2</b>  |

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

**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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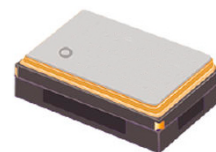
ASG2-D



ESD Sensitive

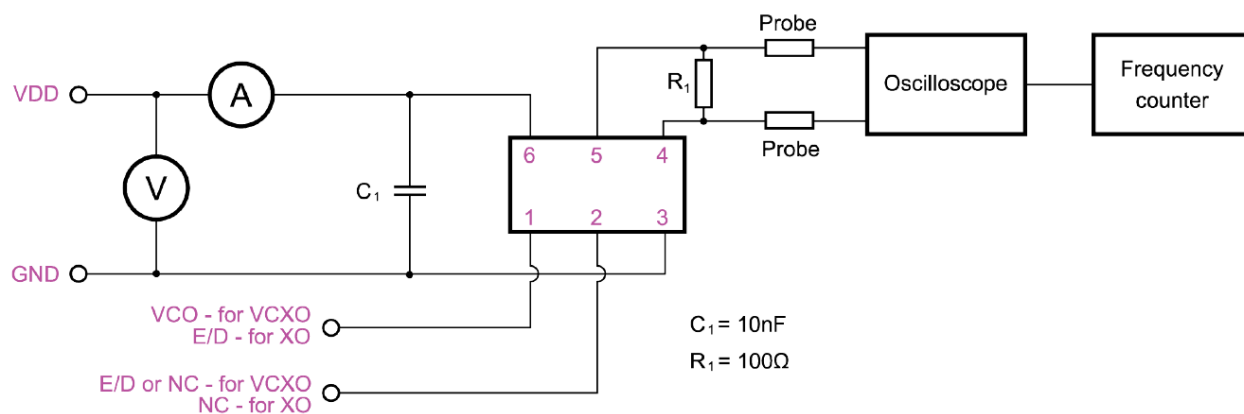


RoHS / RoHS II Compliant



2.5 x 2.0 x 1.0 mm

## TEST CIRCUIT



## OPTIONS & PART IDENTIFICATION:

ASG2 - D -  -  -  MHz -

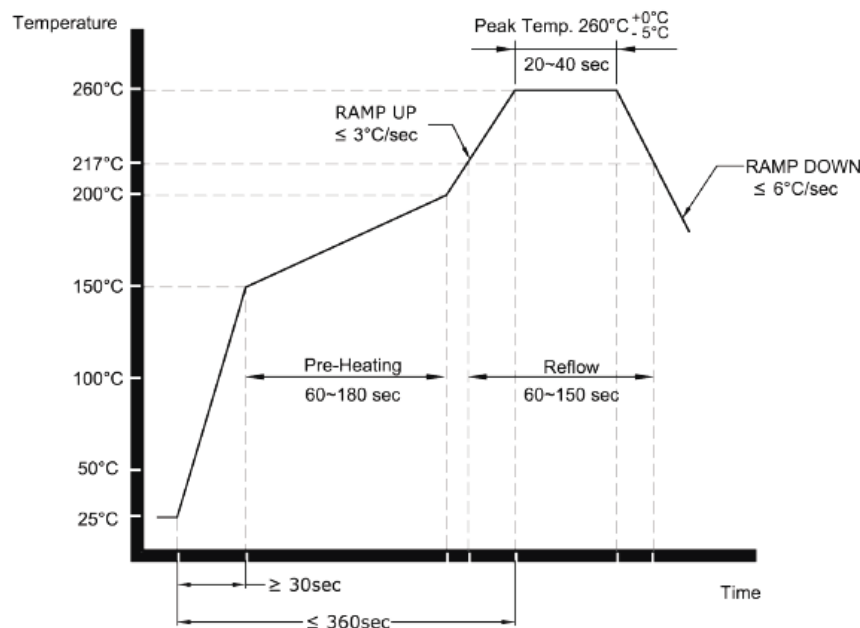
| Fixed or Pull-able   |
|----------------------|
| X = Fixed Oscillator |
| V = VCXO             |

| 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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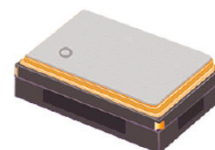
ASG2-D



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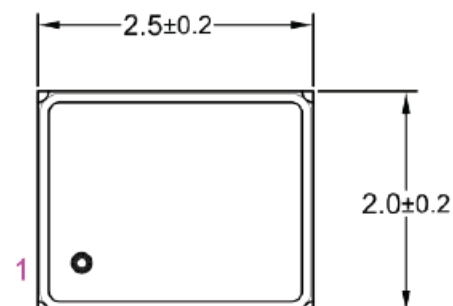
2.5 x 2.0 x 1.0 mm

### OUTLINE DIMENSION:

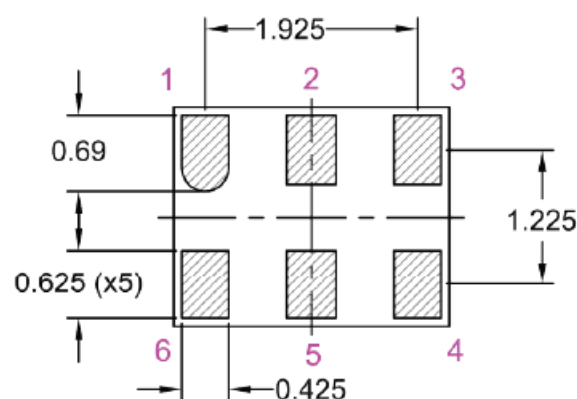
| Pin # | Pin Description<br>For VCXO configuration        |
|-------|--------------------------------------------------|
| 1     | Voltage Control for VCXO                         |
| 2     | Output Enable (OE) <i>or</i><br>No Connect (N/C) |
| 3     | GND                                           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

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

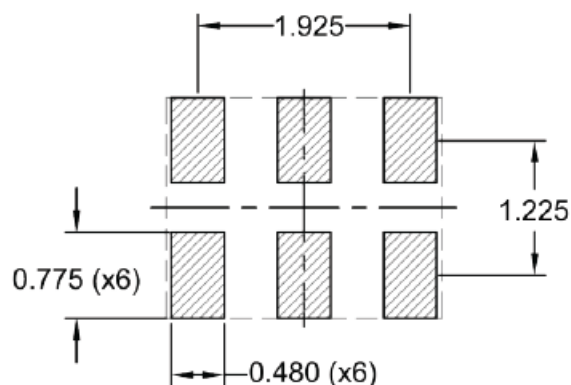
Top View



Bottom View



Recommended Land Pattern



Side View



Dimensions: mm

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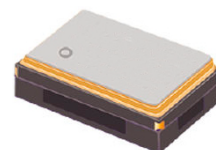
ASG2-D



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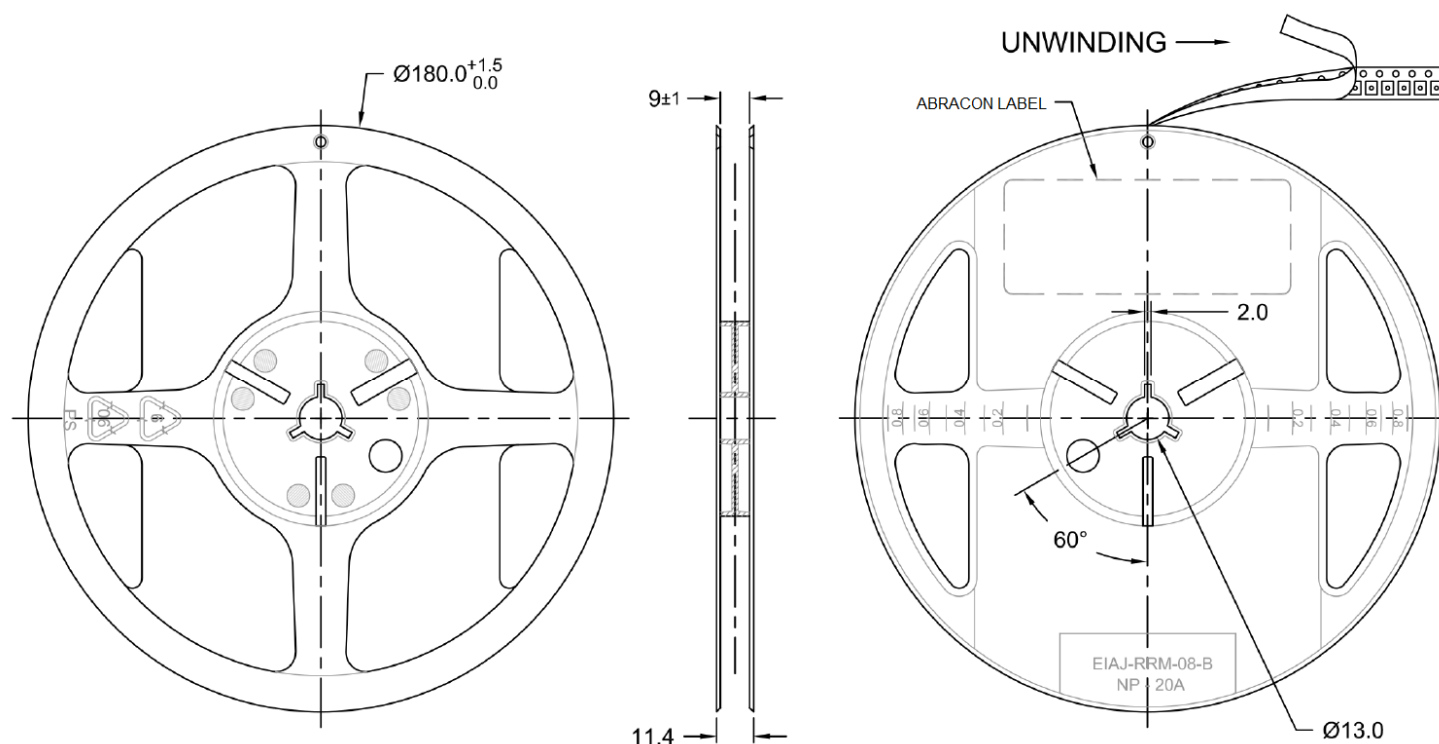
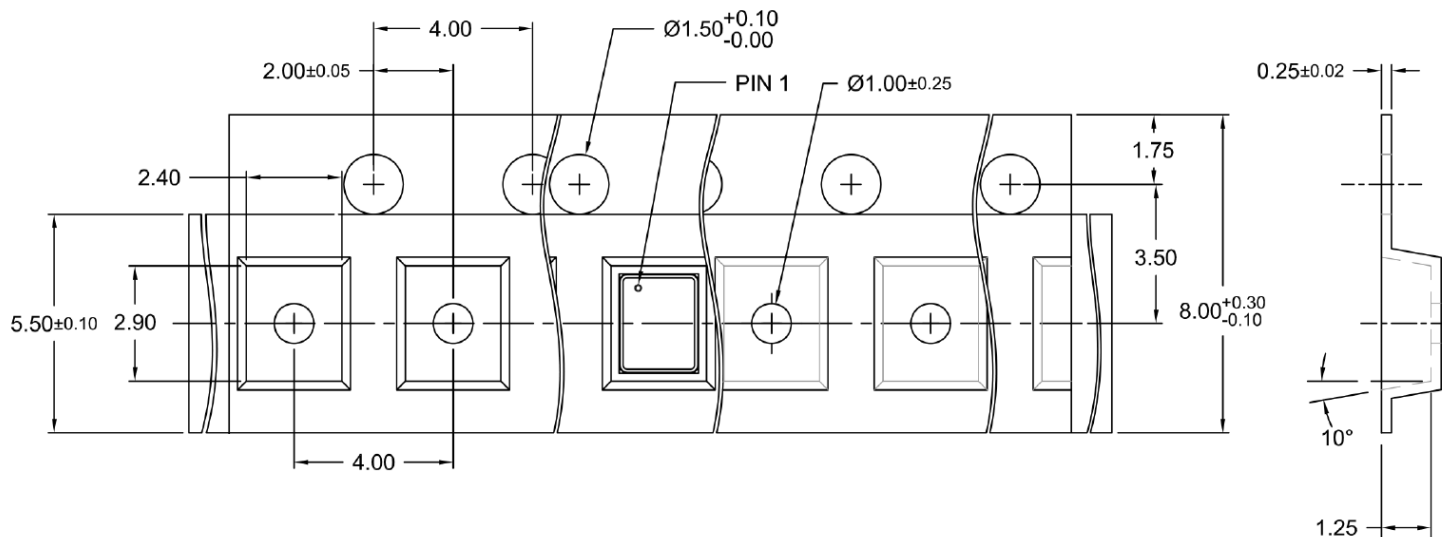
Pb RoHS / RoHS II Compliant



2.5 x 2.0 x 1.0 mm

## TAPE & REEL:

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



Dimensions: mm

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