



## 3.2 mm x 5.0 mm Ceramic Package SMD Oscillator, LVDS



## ISM89 Series

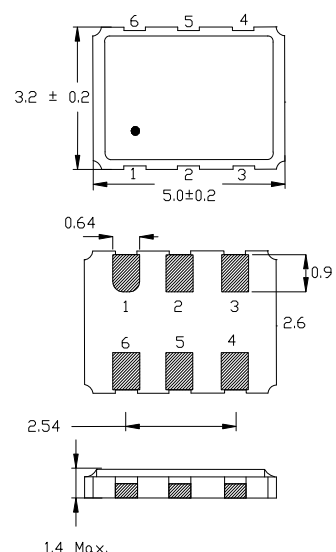
### Product Features:

Surface Mount Package  
Low Jitter  
Reflow Compatible  
Compatible with Leadfree Processing

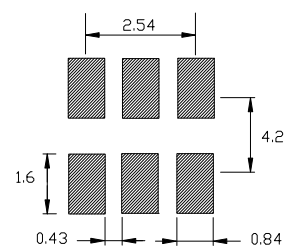
### Applications:

Test Equipment  
Server & Storage  
Sonet /SDH

|                              |                                              |
|------------------------------|----------------------------------------------|
| <b>Frequency</b>             | 80 MHz to 250.000 MHz                        |
| <b>Output Level</b>          | $V_{OH} = 1.43$ typ. $V_{OL} = 1.10$ typ.    |
| <b>Duty Cycle</b>            | 50% $\pm 5\%$                                |
| <b>Rise / Fall Time</b>      | 0.7 nS Max.                                  |
| <b>Output Load</b>           | 100 $\Omega$ (offset 1.25V typ.)             |
| <b>Frequency Stability</b>   | $\pm 25$ ppm                                 |
| <b>Enable Phase Delay</b>    | 2 mS Max.                                    |
| <b>Disable Phase Delay</b>   | 200 nS Max.                                  |
| <b>Supply Voltage</b>        | See Input Voltage Table, Tolerance $\pm 5\%$ |
| <b>Current</b>               | 55 mA Typical                                |
| <b>Operating</b>             | -40° C to +85° C                             |
| <b>Storage</b>               | -50° C to +125° C                            |
| <b>Integrated Jitter RMS</b> | 0.3 typ. (12 KHz to 20 MHz Band)             |



Recommended Pad Layout



| Pin | Connection   |
|-----|--------------|
| 1   | Enable       |
| 2   | N.C.         |
| 3   | Vss          |
| 4   | Output       |
| 5   | Comp. Output |
| 6   | Vdd          |

Dimension Units: mm

| Part Number Guide |               | Sample Part Number: ISM89 – 3258AH - 156.250 |                       |          |                    |                  |               |
|-------------------|---------------|----------------------------------------------|-----------------------|----------|--------------------|------------------|---------------|
| Package           | Input Voltage | Operating Temperature                        | Symmetry (Duty Cycle) | Output   | Stability (in ppm) | Enable / Disable | Frequency     |
| ISM89 -           | 3 = 3.3 V     | 1 = 0° C to +70° C                           | 5 = 45 / 55 Max.      | 8 = LVDS | A = $\pm 25$       | H = Enable       | - 156.250 MHz |
|                   | 6 = 2.5 V     | 6 = -10° C to +70° C                         |                       |          |                    |                  |               |
|                   |               | 3 = -20° C to +70° C                         |                       |          |                    |                  |               |
|                   |               | 2 = -40° C to +85° C                         |                       |          |                    |                  |               |

NOTE: A 0.01  $\mu$ F bypass capacitor is recommended between Vcc (pin 6) and GND (pin 3) to minimize power supply noise.



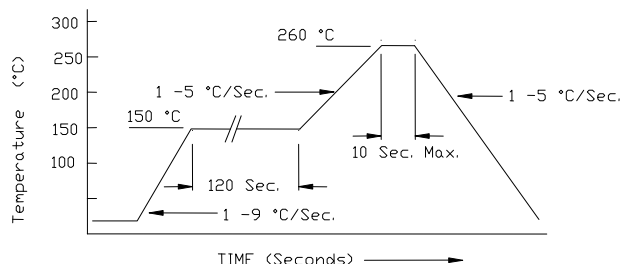
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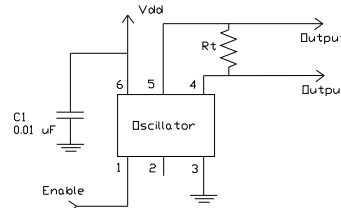
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### Pb Free Solder Reflow Profile:

### Typical Application:



\*Units are backward compatible with 240C reflow processes



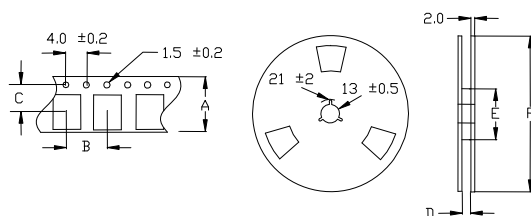
LVDS Load = Rt- 100 ohms

### Package Information:

MSL = N.A. (package does not contain plastic, storage life is unlimited under normal room conditions).

Termination = e4 (Au over Ni over W base metalization).

### Tape and Reel Information:



| Quantity per Reel | 1000         |
|-------------------|--------------|
| A                 | 16 +/- .3    |
| B                 | 8 +/- .2     |
| C                 | 7.5 +/- .2   |
| D                 | 17.5 +/- 1   |
| E                 | 50 / 60 / 80 |
| F                 | 180 / 250    |

### Environmental Specifications

|                              |                                                                        |
|------------------------------|------------------------------------------------------------------------|
| Thermal Shock                | MIL-STD-883, Method 1011, Condition A                                  |
| Moisture Resistance          | MIL-STD-883, Method 1004                                               |
| Mechanical Shock             | MIL-STD-883, Method 2002, Condition B                                  |
| Mechanical Vibration         | MIL-STD-883, Method 2007, Condition A                                  |
| Resistance to Soldering Heat | J-STD-020C, Table 5-2 Pb-free devices (except 2 cycles max)            |
| Hazardous Substance          | Pb-Free / RoHS / Green Compliant                                       |
| Solderability                | JESD22-B102-D Method 2 (Preconditioning E)                             |
| Terminal Strength            | MIL-STD-883, Method 2004, Test Condition D                             |
| Gross Leak                   | MIL-STD-883, Method 1014, Condition C                                  |
| Fine Leak                    | MIL-STD-883, Method 1014, Condition A2, R1=2x10 <sup>-8</sup> atm cc/s |
| Solvent Resistance           | MIL-STD-202, Method 215                                                |

### Marking

Line 1: ILSI and Date Code (YWW)

Line 2: Frequency