

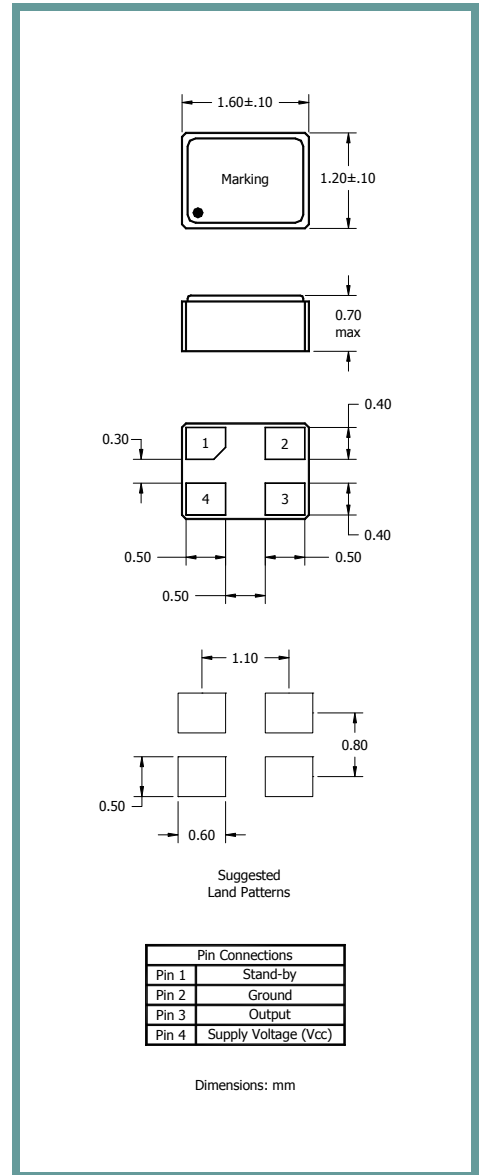
**Product Features:**

- Low Jitter, Non-PLL Based Output
- CMOS Output
- Wide Range of Supply Voltage (+1.8V to +3.3 V)
- Stand-by Function on Pin 1
- RoHS Compliant
- Compatible with Leadfree Processing

**Applications:**

- Fibre Channel
- Server & Storage
- Sonet / SDH
- 802.11 / Wifi
- T1/E1, T3/E3

|  |   |
|--|---|
| <b>Frequency</b>                               | 1.000000 MHz to 80.000000 MHz   |
| <b>Output Level CMOS</b>                       | Logic "0" = 0.4 V max<br>Logic "1" = Vcc - 0.4 V min  |
| <b>Duty Cycle</b>                              | See Duty Cycle Table in Part Number Guide   |
| <b>Rise / Fall Time</b>                        | 4.5 nSec max (10% to 90% of waveform)   |
| <b>Output Load</b>                             | 15pF max  |
| <b>Frequency Stability</b>                     | See Frequency Stability Table in Part Number Guide (Note 1)   |
| <b>Start-up time</b>                           | 2.0 mSec max with Vcc = +3.30 VDC<br>5.0 mSec max with Vcc = +1.80 VDC  |
| <b>Stand By Terminal Function (Pin 1)</b>      | 0.7 Vcc min = Output enable<br>0.3 Vcc max = Oscillation stop and High impedance output   |
| <b>Supply Voltage (Vcc)</b>                    | See Input Voltage Table in Part Number Guide (Tolerance = ±10%)   |
| <b>Current During Standby During Operation</b> | 10 µA max<br>2.5 typ., 3.5 mA max (1.8 V, 15 pF load @ 50.000MHz)<br>3.5 typ., 5.0 mA max (1.8 V, 15 pF load @ 80.000MHz)<br><br>4.2 typ., 6.0 mA max (3.3 V, 15 pF load @ 50.000MHz)<br>6.0 typ., 8.5 mA max (3.3 V, 15 pF load @ 80.000MHz) |
| <b>Aging</b>                                   | ± 3.0 ppm max @ +25°C First Year  |
| <b>Temperature Range Operating Storage</b>     | See Operating Temperature Table in Part Number Guide<br>-40°C to +105°C   |
| <b>Random Jitter (RJ)</b>                      | 2.9 pSec typ  |
| <b>Total Jitter (TJ)</b>                       | 40.0 pSec typ<br>TJ = n x RJ where n ≈ 14.1, BER = 10 <sup>-12</sup>  |
| <b>Phase Jitter</b>                            | 1.0 pSec max<br>Offset frequency = 12 kHz to 5.000MHz   |



Notes:

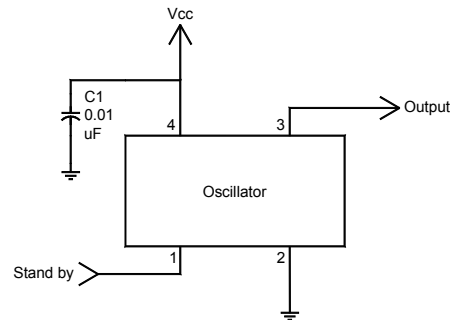
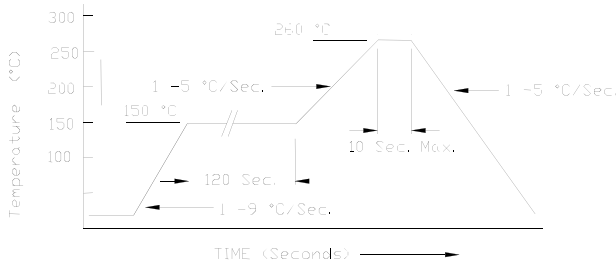
1. Includes room temperature tolerance and stability over operating temperature.
2. A 0.01 µF bypass capacitor is recommended between Vcc (Pin 4) and GND (Pin 2) to minimize power supply noise.

| Part Number Guide: |               |                       |                       | Sample Part Number: ISM16-3153A-20.0000 |                    |           |
|--------------------|---------------|-----------------------|-----------------------|---|--------------------|-----------|
| Package            | Input Voltage | Operating Temperature | Duty Cycle (Symmetry) | Output                                  | Stability (in ppm) | Frequency |
| ISM16              | 1 = +1.8V     | 1 = 0°C to +70°C      | 5 = 45/55 max         | 3 = 15 pF                               | A = ±25*           | -20.0000  |
|                    | 3 = +3.3V     | 2 = -40°C to +85°C    | 6 = 40/60 max         |   | B = ±50            |           |
|                    | 6 = +2.5V     | 3 = -20°C to +70°C    |                       |   | C = ±100           |           |
|                    |               | 5 = -30°C to +85°C    |                       |   | F = ±20*           |           |

\*Not available for all temperature ranges

**Pb Free Solder Reflow Profile:**

**Typical Application:**

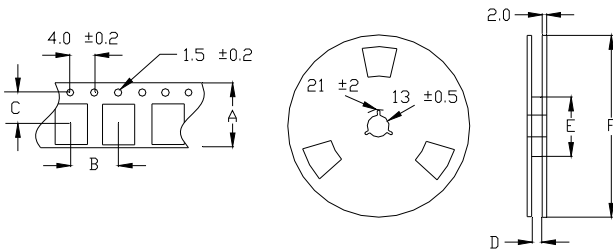


Units are backward compatible with 240°C reflow process.

**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 metallization).

**Tape and Reel Information:**



| Quantity per Reel | 3000      |
|-------------------|-----------|
| <b>A</b>          | 8.0 ±0.2  |
| <b>B</b>          | 4.0 ±0.1  |
| <b>C</b>          | 3.5 ±0.05 |
| <b>D</b>          | 9.0 ±0.3  |
| <b>E</b>          | 60 / 80   |
| <b>F</b>          | 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: 1 - Date Code (yww)  
Line 2: Frequency

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