# Plastic Package Industrial Grade Ultra Miniature Pure Silicon™ Clockoscillators, Layout Compatible To 1.6 X 1.2 Mm Standard Oscillator

1.8 x 1.25 x 0.68mm
Layout Compatible to 1.6 x 1.2 mm
Standard Oscillator

**ASCSM**

**Moisture Sensitivity Level – MSL 1**

**RoHS/RoHS II**

**DISCONTINUED: Last Time Buy Date: December 20, 2013**

## FEATURES:

- Ultra Miniature Pure SiliconTM Clock Oscillator, Layout Compatible to 1.6 x 1.2 mm Footprint
- High Performance MEMS Technology by Discera
- Low Power Consumption for high speed communication
- Exceptional Stability Over Temp. at -40 to +105°C, ±10ppm
- Available in 30kG Shock Resistance Configuration upon request
- MIL-STD-883 shock and vibration compliant
- Ball Grid Array Packaging
- Low jitter (Period jitter RMS and Phase jitter RMS)

## APPLICATIONS:

- Imaging, Video, and Audio Modules
- Portable Consumer Electronics and Media Devices
- Tablets and Mobile Internet Devices
- Low Profile Embedded Designs
- Pico and Femto Networking

## STANDARD SPECIFICATIONS:

### Common Key Electrical Specifications

| Parameters | Minimum | Typical | Maximum | Units | Notes |
|---|---|---|---|---|---|
| Frequency Range: | 1.0 | | 150 | MHz | |
| Operating Temperature: | 0 | | +70 | °C | See options |
| Storage Temperature: | -55 | | +150 | °C | |
| Overall Frequency Stability: | -50 | | +50 | ppm | See options |
| Supply Voltage (Vdd): | +1.7 ~ +3.6 | | | V | |
| Output Load: | | | 15 | pF | |
| | 10 | | | kΩ | |
| Symmetry: | 45 | | 55 | % | @1/2Vdd |
| Startup Time: | | 1.0 | 1.3 | ms | |
| Disable Time: | | 20 | 100 | ns | |
| Disable Stand-by Current: | | | 15 | uA | |
| Tri-state Function (Stand-by) : | "1" (VIH≥0.75*Vdd) or Open: Oscillation<br>"0" (VIL<0.25*Vdd) : Hi Z | | | V | |
| Aging: | -5.0 | | +5.0 | ppm | First year |

### Key Electrical Specifications

| Parameters | | Minimum | Typical | Maximum | Units | Notes |
|---|---|---|---|---|---|---|
| Supply Current (no load): | 12 MHz | | 6.0 | 6.5 | mA | CL=0p ; V=1.8V<br>RL=∞; T=25°C<br>(Standard CL: 15pF) |
| Output Voltage: | $V_{OH}$ | 0.8*$V_{dd}$ | | | V | CL=15pF |
| | $V_{OL}$ | | | 0.2*$V_{dd}$ | V | |
| Rise Time: | Tr | | 1.8 | 3.0 | ns | CL=15pF; T=25°C<br>20%/80%*VDD |
| Fall Time: | Tf | | 1.0 | 3.0 | ns | |
| Period Jitter RMS | Jrms | | 7.0 | | ps | F=12MHz CL=15pF |

### Absolute Maximum Ratings

| Item | Minimum | Maximum | Unit | Condition |
|---|---|---|---|---|
| Input Voltage | -0.3 | $V_{DD}$+0.3 | V | |
| Junction Temp. | | +150 | °C | |
| Storage Temp. | -55 | +150 | °C | |
| Soldering Temp. | | +260 | °C | 40sec max |
| ESD | | | V | |
| HBM | | 4,000 | | |
| MM | | 200 | | |
| CDM | | 1,500 | | |




30332 Esperanza, Rancho Santa Margarita, California 92688
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## PART IDENTIFICATION:

ASCSM - [ ] MHz - [ ][ ] - [ ]

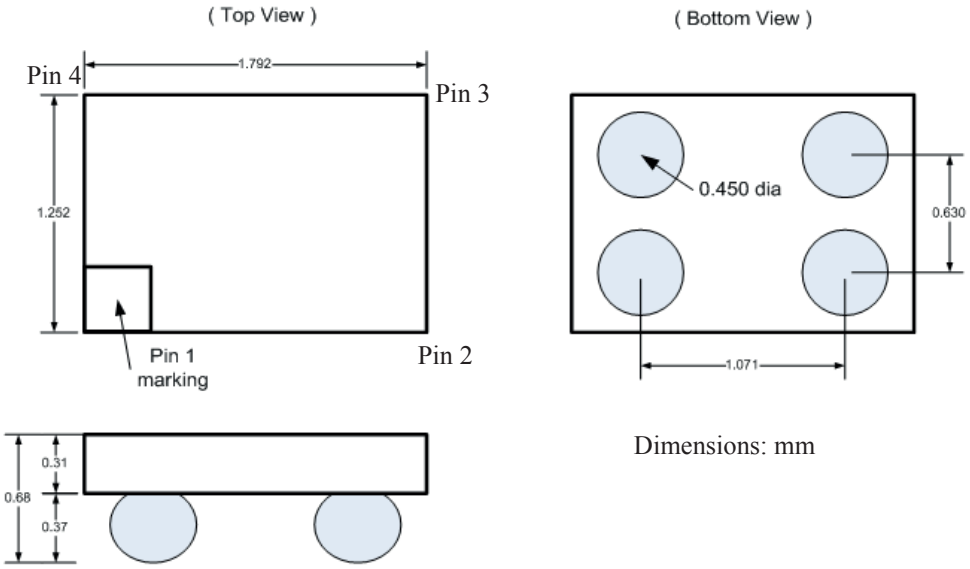
| Frequency in MHz |
|---|
| e.g. 14.3181 MHz (Maximum 4 digits after decimal) |

| Operating Temp. |
|---|
| Blank: 0°C ~ +70°C |
| E: -20°C ~ +70°C |
| L: -40°C ~ +85°C |
| X: -40°C ~ +105°C |

| Overall Freq. Stability |
|---|
| C: ±50ppm (STD) |
| Y: ±10ppm |
| R: ±25 ppm |

| Packaging |
|---|
| Blank: Bulk |
| T: 2,500pcs/reel |
| T5: 5,000pcs / reel |

## OUTLINE DRAWING:



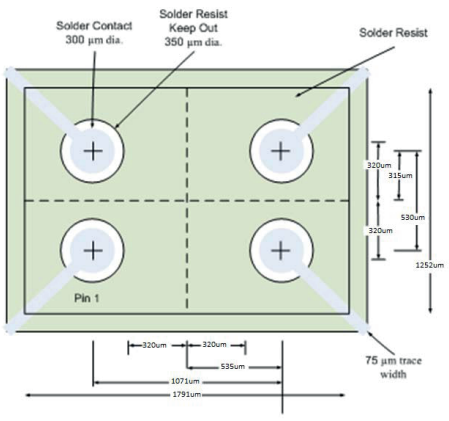

Dimensions: mm

Component height after reflow is 0.53-0.60 mm. Layout Compatible to 1.6 x 1.2 mm Standard Oscillator

| Pin | Function |
|---|---|
| 1 | Standby |
| 2 | GND |
| 3 | Output |
| 4 | Vdd |

Note: Recommend using an approximately 0.01uF bypass capacitor between PIN 2 and 4.

**Recommended Land Pattern**







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## ASCSM

RoHS/RoHS II

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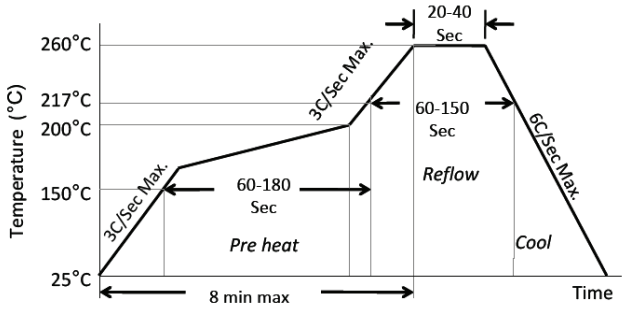
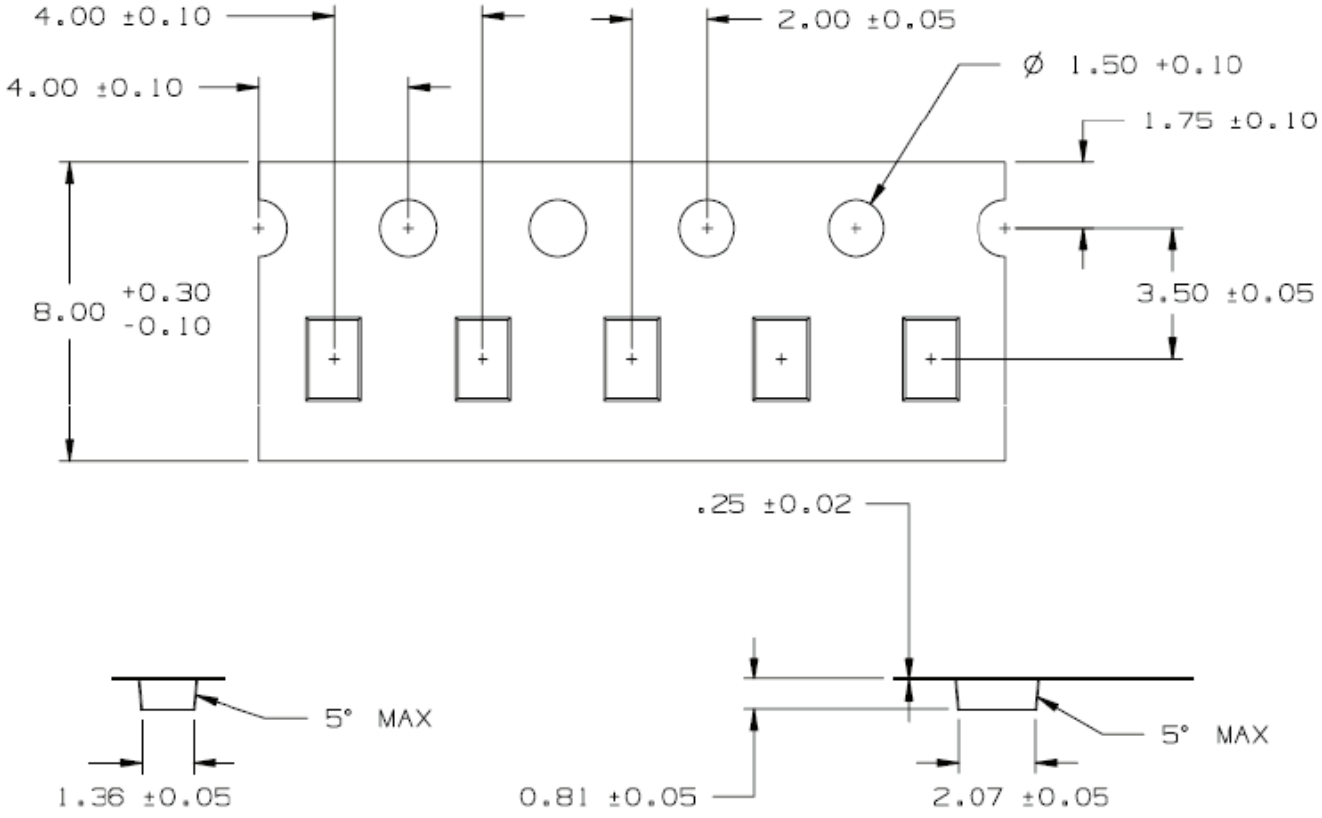
## REFLOW PROFILE:




| | |
|---|---|
| Ramp-Up Rate (200°C to Peak Temp) | 3°C/Sec Max. |
| Preheat Time 150°C to 200°C | 60-180 Sec |
| Time maintained above 217°C | 60-150 Sec |
| Peak Temperature | 255-260°C |
| Time within 5°C of actual Peak | 20-40 Sec |
| Ramp-Down Rate | 6°C/Sec Max. |
| Time 25°C to Peak Temperature | 8 min Max. |

## TAPE & REEL:

**T= 2,500pcs/reel**
**T5= 5,000pcs/reel**
**Reel Size: Ø13 inches**

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