

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

ASCSM

Moisture Sensitivity Level – MSL 1



RoHS/RoHS II



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

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

## FEATURES:

- Ultra Miniature Pure Silicon™ 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<br>(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 <sub>OH</sub> | 0.8*V <sub>dd</sub> |                     | V     | CL=15pF                                               |
|                              | V <sub>OL</sub> |                     | 0.2*V <sub>dd</sub> | 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 <sub>DD</sub> +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                |      |           |



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PART IDENTIFICATION:

ASCSM - [ ] MHz - [ ] - [ ]

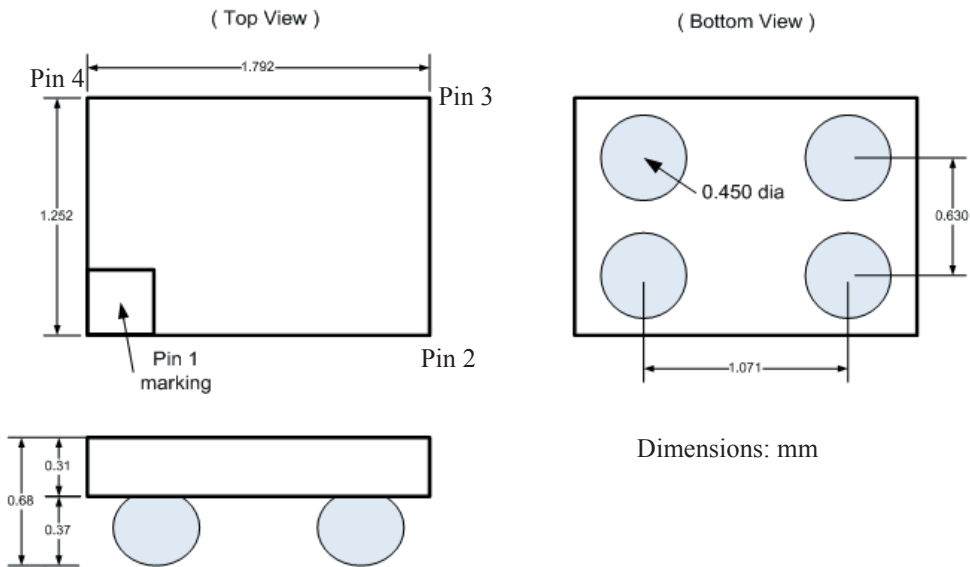
| Frequency in MHz                                        |
|---------------------------------------------------------|
| e.g. 14.3181 MHz<br>(Maximum 4 digits<br>after decimal) |

| 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 |

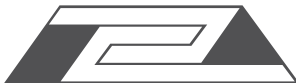
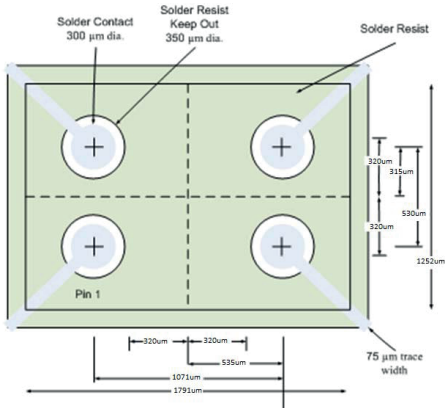
OUTLINE DRAWING:



| 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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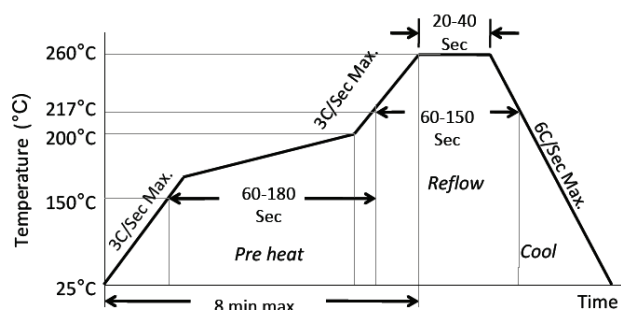
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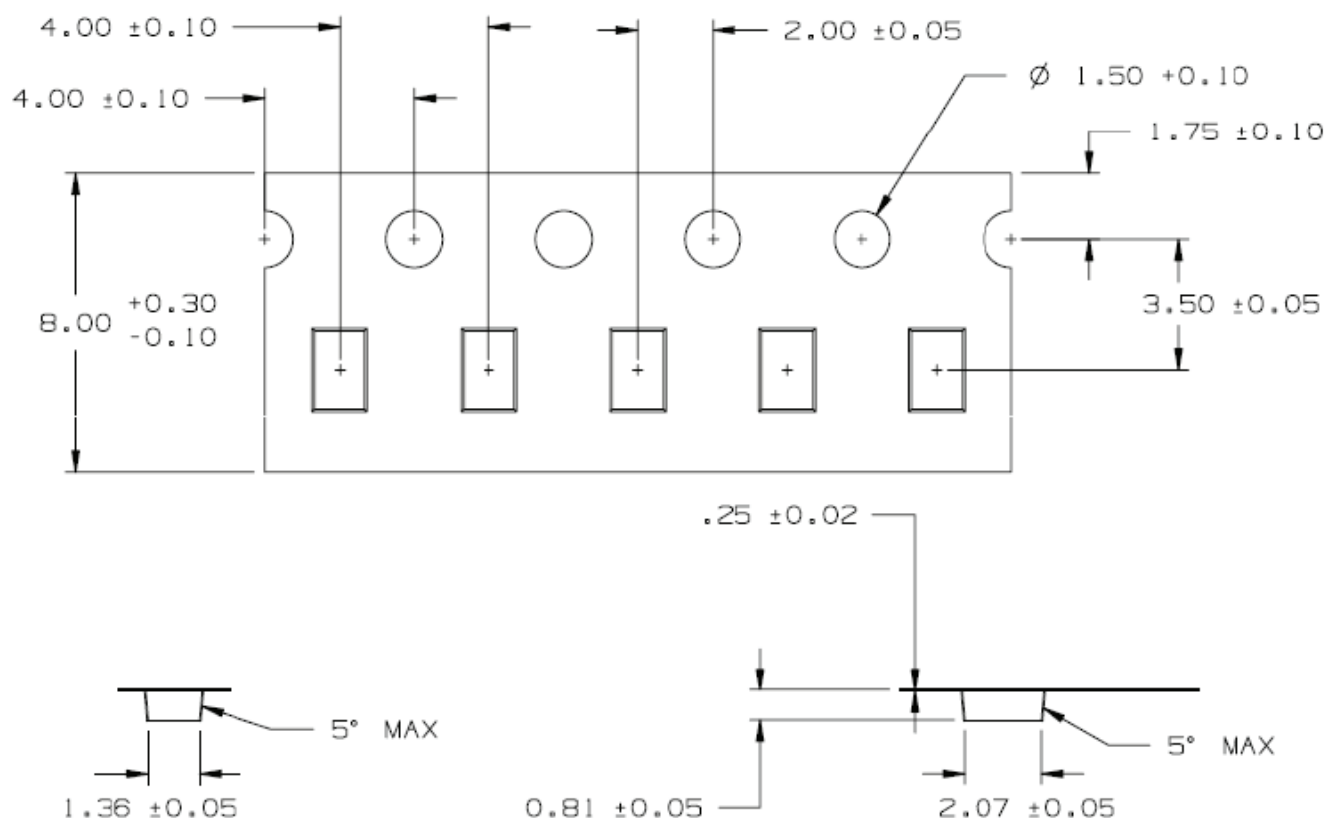
## REFLOW PROFILE:



|                                   |              |
|-----------------------------------|--------------|
| 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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**Revised: 04.11.13**

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