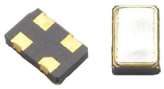
SaRonix™
A PERICOM® COMPANY

Crystal Clock Oscillator

3.3V, CMOS / TTL

Technical Data

S1633 Series



ACTUAL SIZE

Description

The 3.3V S1633 is a crystal-controlled, low-current, low voltage oscillator providing precise rise and fall times to drive high performance applications. The miniature, low profile leadless ceramic package has gold-plated contact pads, ideal for today's pick-and-place SMT environments. These oscillators are contained in a rugged, subcompact 3.2x5mm package ideal for high density applications requiring tight frequency stability over a range of operating conditions.

Applications & Features

- Miniature, 1.3mm high ceramic package ideal for SMT applications
- 3.3V operation
- Extended frequency range and low jitter for a variety of networking, computing and communications applications requiring compact size or low power
- Low-power standby function included
- Perfect for high density, low power switches, routers, base stations, and storage devices
- Ideal for 802.11 applications
- Anywhere small size, low power, surface mountability are a priority
- Available on tape & reel; 16mm tape, 1000pcs per reel

Frequency Range:	1.8432 MHz to 125 MHz (as specified)
Frequency Stability:	±25ppm, ±50ppm over all conditions; calibration tolerance, operating temperature, rated input (supply) voltage changes, load change, aging*, shock and vibration
Aging*:	1 year @ 25°C average ambient operating temperature
Temperature Range:	
Operating:	-20 to +70°C or -40 to +85°C (as specified)
Storage:	-55 to +125°C
Supply Voltage:	3.3V ±5%
Supply Current:	
Oscillation:	15mA max (1.8432 to 39.9999 MHz) 10mA max (40 to 59.9999 MHz) 40mA max (60 to 79.9999 MHz) 55mA max (80 to 125 MHz)
Stand-by:	0.01mA max (1.8432 to 125 MHz)
Output (LVCMOS / LVTTL Compatible)	
Symmetry:	45/55% measured @ 50% V_{DD} (-20 to +70˚C) 45/55% measured @ 50% V_{DD} (-40 to +85˚C, up to 79.9999 MHz) 40/60% measured @ 50% V_{DD} (-40 to +85˚C, 80 to 125 MHz)
Rise & Fall Times:	7ns max (1.8432 to 39.9999 MHz) 5ns max (40 to 79.9999 MHz) 3ns max (80 to 125 MHz)
Logic 0:	10% V_{DD} max
Logic 1:	90% V_{DD} min
Load:	15pF max or 10LSTTL
Jitter (1.8432 to 80 MHz):	5ps RMS (1-sigma) max, accumulated in 20,0000 adjacent periods 1.5ps RMS (1-sigma) max phase jitter computed in 10 kHz~20 MHz freq. band 50ps peak-to-peak max total jitter, sampled in 100,000 random periods
Jitter (80 to 125 MHz):	3ps RMS (1-sigma) max, accumulated in 20,0000 adjacent periods 1ps RMS (1-sigma) max phase jitter computed in 10 kHz ~ 20 MHz freq. band 30ps peak-to-peak max total jitter, sampled in 100,000 random periods
Standby Function (pad 1):	
Oscillation:	$V_{IN} \geq 2.2V$ or open
Stand-by:	$V_{IN} \leq 0.8V$ (output is high impedance)
Oscillation Output Delay:	10ms max
Standby Output Delay:	0.1µs max
Internal Pullup Resistance:	50KΩ min
Mechanical:	
Shock:	MIL-STD-883, Method 2002, Condition B
Solderability:	MIL-STD-883, Method 2003
Solvent Resistance:	MIL-STD-202, Method 215
Terminal Strength:	MIL-STD-883, Method 2004, Condition D
Gross Leak:	MIL-STD-883, Method 1014, Condition C
Fine Leak:	MIL-STD-883, Method 1014, Condition A2 ($R_I = 2x10^{-8}$ atm cc/s)
Environmental:	
Thermal Shock:	MIL-STD-883, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883, Method 1004
Vibration:	MIL-STD-883, Method 2007, Condition A
Resitance to Soldering Heat:	MIL-STD-202, Method 210, Condition I or J

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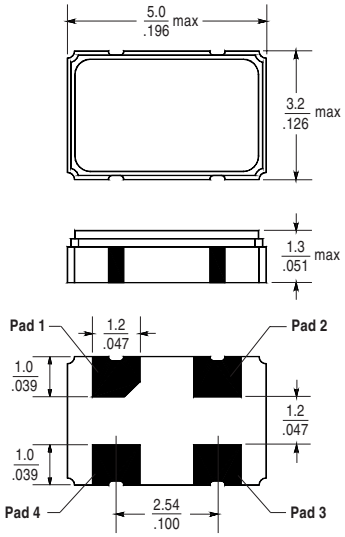
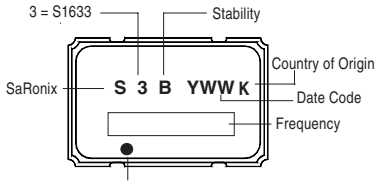
Package Details



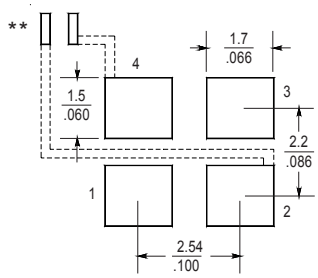
Pad Functions:

Pad 1: En/Disable (Standby)
Pad 2: GND
Pad 3: Output
Pad 4: V_{DD}

Marking Format (exact location of items may vary)



Recommended Land Pattern



** External high frequency power supply decoupling required.

Scale: None (Dimensions in $\frac{mm}{inches}$)

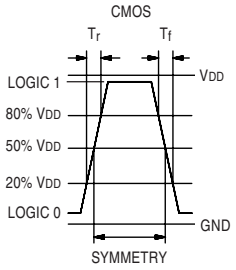
Part Numbering Guide

S 1633 B – 44.0000 (T)

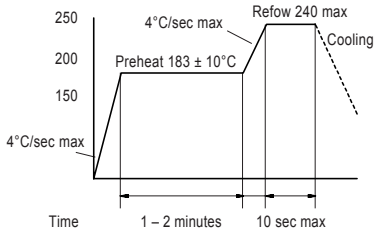
- SaRonix
- Series: S1633 = 3.3V, 3.2x5mm Ceramic SMD
- Stability Tolerance:
  - A = ±25 ppm, (-20 to +70°C)*
  - B = ±50 ppm, (-20 to +70°C)
  - E = ±50 ppm, (-40 to +85°C)
- Frequency (MHz)
- Packing Method
  - Blank = Bulk
  - (T) = Tape & Reel
    - full reel increments only

*(Confirm availability by frequency)

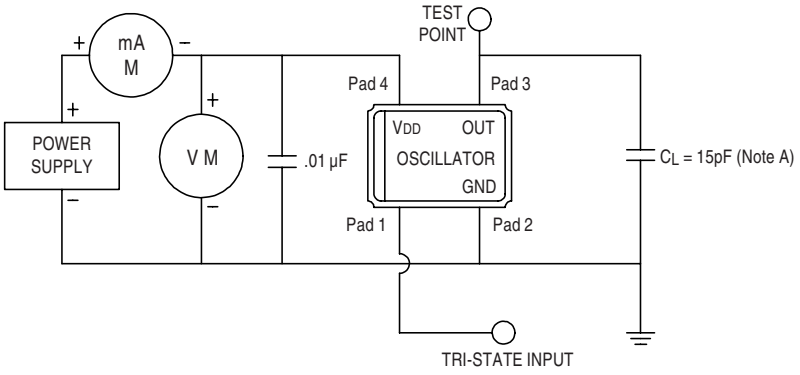
Output Waveform



Solder Reflow Guide



Test Circuit



Note A: C_L includes probe and jig capacitance.

*All specfications subject to changes without notice

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