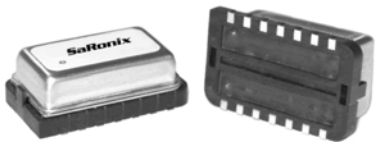
ADVANCE INFORMATION

SaRonix

Voltage Controlled Crystal Oscillator 3.3V LVPECL, SMD

Technical Data S1566 Series



ACTUAL SIZE

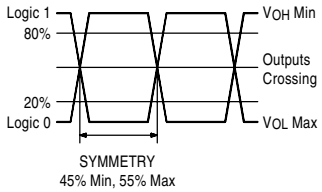
Description

A high performance, low jitter, LVPECL voltage controlled crystal oscillator, designed primarily for use in phase locked loops, Sonet, ATM and SDH network/switching applications. Complementary outputs are Motorola 10KE compatible and can be enabled/disabled. Device is packaged in a 14-pin DIP compatible, hermetic metal package with thru-hole and true SMD configurations. Case is grounded to Pin 7 to reduce EMI.

Applications & Features

- 3.3V LVPECL
- ˜ True SMD adapter option
- ˜ Output Enable/Disable feature
- Complementary Output
- High-frequency SaRonix proprietary fundamental crystals for exceptional jitter performance
- Covers a wide range of telecommunication applications such as Sonet, SDH and ATM
- ±50ppm minimum APR*

Output Waveforms



Frequency Range:	622.08 MHz to 666.5143 MHz
Frequency Stability:	±20, ±25, ±32 or ±50 ppm over all conditions: operating temperature, rated input (supply) voltage change, load change, shock and vibration.
vs. Aging:	±7.5ppm, 10 years @ 25°C average ambient operating temperature
Room Temp (RMT):	center frequency V_C = 1.65V ±0.35V
Temperature Range:	
Operating:	0 to +70°C, 0 to +85°C, -40 to +85°C
Storage:	-55°C to +105°C
Supply Voltage (V_{CC}):	3.3V ±5%
Supply Current:	80mA max
Output Drive:	
Symmetry:	45/55% max @ 50% waveform
Rise & Fall Times:	350ps max @ 20 to 80% waveform
Logic 0:	V_{CC} -1.620 max
Logic 1:	V_{CC} -1.025 min
Load:	50Ω to V_{CC} -2V (output requires termination)
Period Jitter RMS:	0.1ps in 12kHz to 1MHz Freq. Band (computed from Phase Noise) 40ps peak-to-peak max (measured using DSO)
Pull Characteristics:	
Input Impedence (Pin 1):	50kΩ min
Modulation Bandwidth:	10kHz min
Pullability:	±50ppm min (initially) APR* (Vc: 1.65V ±1.35V)
Control Voltage:	0.3V to 3V
Transfer Function:	Frequency increases when Control Voltage increases
Monotonic Linearity:	15%
Center Control Voltage:	1.65V
Enable/Disable Control:	Output Enable Voltage (Pin 2): ≤ V_{CC} -1.475V or open Output Disable Voltage (Pin 2): ≥ V_{CC} -1.165V Q Output Disabled to a fixed level of Logic 1 $\overline{Q}$ Output Disabled to a fixed level of Logic 0
Mechanical:	
Shock:	MIL-STD-883, Method 2002, Condition B
Solderability:	MIL-STD-883, Method 2003
Terminal Strength:	MIL-STD-883, Method 2004, Conditions B2
Vibration:	MIL-STD-883, Method 2007, Condition A
Solvent Resistance:	MIL-STD-202, Method 215
Resistance to Soldering Heat:	MIL-STD-202, Method 210, Condition B (I or J for gull-wing/SMD)
Environmental:	
Gross Leak Test:	MIL-STD-883, Method 1014, Condition C
Fine Leak Test:	MIL-STD-883, Method 1014, Condition A2
Thermal Shock:	MIL-STD-883, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883, Method 1004

*APR = (VCXO Pull relative to specified Output Frequency) – (VCXO Freq. Stability) – (Aging)

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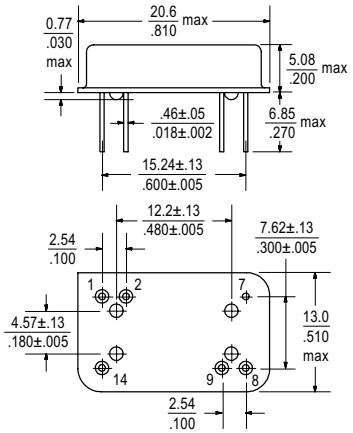
Package Details

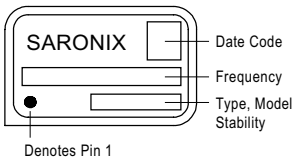


Pin Functions:

S1566

Pin 1: Control Voltage	Pin 8: Q Output
Pin 2: $\overline{\text{Enable}}$ / NC	Pin 9: $\overline{\text{Q}}$ Output
Pin 7: GND / Case	Pin 14: Supply Voltage

Standard Marking Format



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

*** Package with true SMD adapter is not shown, please see separate data sheet.**

Part Numbering Guide

S 1566 B A B S - 622.0800

SaRonix Model

3.3V LVPECL VCXO

Frequency (MHz)

Package
Blank = standard thru-hole
K = gull wing
S = true SMD adapter

Stability Tolerance
AA = ±20ppm, 0 to +70°C
A = ±25ppm, 0 to +70°C
B = ±50 ppm, 0 to +70°C
E = ±50 ppm, -40 to +85°C
G = ±50 ppm, 0 to +85°C
H = ±32 ppm, 0 to +85°C
J = ±32 ppm, -40 to +85°C

Linearity
B = 15%

Pullability (Absolute Pull Range)**
A = ±50 ppm

**APR = (VCXO Pull relative to specified Output Frequency) – (VCXO Freq. Stability)– (Aging)

All specifications are subject to change without notice.

DS-216 REV 02