

Technical Data

S1556 Series



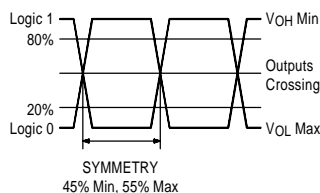
Description

A high performance, low jitter, PECL 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 package. Case is grounded to Pin 7 to reduce EMI.

Applications & Features

- Positive supply voltage - 5V PECL
- ~ Output Enable/Disable feature
- Complementary Output
- High frequency 622.08 MHz using SaRonix' proprietary fundamental crystals for exceptional jitter performance
- Covers a wide range of telecommunication applications such as Sonet, SDH and ATM
- ± 50 ppm minimum APR*

Output Waveforms



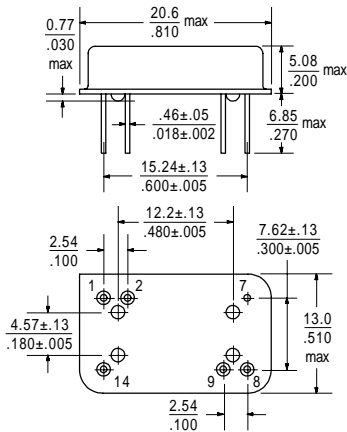
Frequency Range:	622.0800 MHz
Frequency Stability:	$\pm 20, \pm 25, \pm 32$ or ± 50 ppm over all conditions: operating temperature, supply voltage change, load change, calibration tolerance, aging (± 7.5 ppm, 10 years @ 25°C average ambient operating temperature), shock and vibration.
Temperature Range:	Operating: 0 to +70°C, 0 to +85°C, -40 to +85°C Storage: -55°C to +105°C
Supply Voltage (VCC):	5V $\pm 5\%$
Supply Current:	80mA max
Output Drive:	Symmetry: 45/55% max @ 50% waveform Rise & Fall Times: 350ps max @ 20 to 80% waveform Logic 0: VCC -1.620 max Logic 1: VCC -1.025 min Load: 50Ω to VCC -2V (output requires termination) Period Jitter RMS: < 1ps over 12kHz - 1MHz Frequency Band 8ps RMS max total absolute Jitter
Pull Characteristics:	Input Impedence (Pin 1): 50kΩ min Modulation Bandwidth: 10kHz min Pullability: ± 50 ppm min (initially) APR* Control Voltage: 0.5V to 4.5V Transfer Function: Frequency increases when Control Voltage increases Monotonic Linearity: 10% Center Control Voltage: 2.5V
Enable/Disable Control:	Output Enable Voltage (Pin 2): $\leq V_{CC} - 1.475V$ or open Disable Voltage: $\geq V_{CC} - 1.165V$ Q output disabled to a fixed level of Logic 1 \bar{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)
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)

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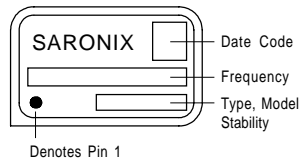
Package Details



Pin Functions:

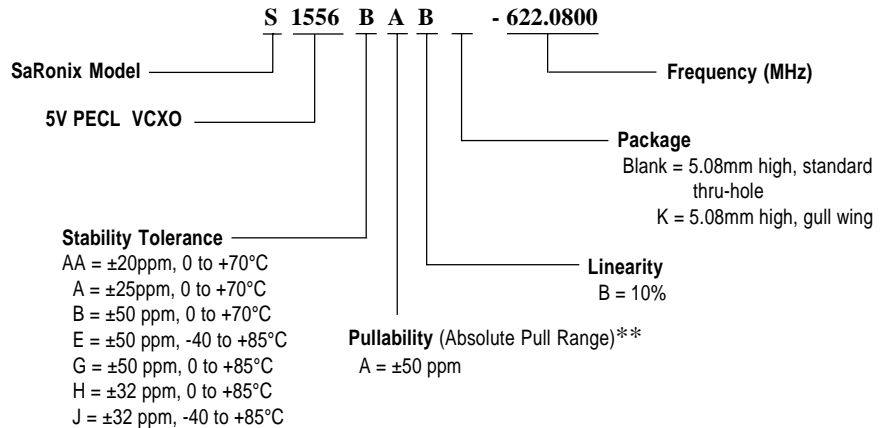
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- | | |
|------------------------|-------------------------|
| Pin 1: Control Voltage | Pin 8: Q Output |
| Pin 2: Enable / NC | Pin 9: \bar{Q} Output |
| Pin 7: GND / Case | Pin 14: Supply Voltage |

Standard Marking Format



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

Part Numbering Guide



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

All specifications are subject to change without notice.

DS-215 REV 03