ADVANCE INFORMATION

SaRonix

Voltage Controlled Crystal Oscillator 5V PECL, OC-12

Technical Data

S1556 Series

ACTUAL SIZE

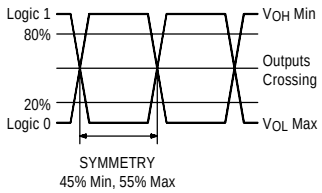
Description

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
- ±50ppm minimum APR*

Output Waveforms



Frequency Range:	622.0800 MHz
Frequency Stability:	±20, ±25, ±32 or ±50 ppm over all conditions: operating temperature, supply voltage change, load change, calibration tolerance, aging (±7.5ppm, 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 (V_{CC}):	5V ±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:	< 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:	±50ppm 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): ≤ V_{CC} -1.475V or open Disable Voltage: ≥ 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)
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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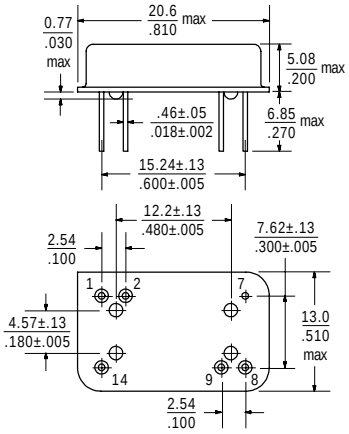
Package Details

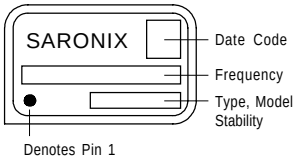


Pin Functions:

S1556

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

Standard Marking Format



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

Part Numbering Guide

S 1556 B A B - 622.0800

SaRonix Model

5V PECL VCXO

Frequency (MHz)

Package
Blank = 5.08mm high, standard thru-hole
K = 5.08mm high, gull wing

Linearity
B = 10%

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

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-215 REV 03