SH-A368X Series



Size, Low Profile, mm 5 x 7 x 1.45 I/O 6 pad Supply Voltage

3.3V

VCXO Series (PECL) SH-A368X Series Rev B

Frequency Range: 60.0 MHz to 200.0 MHz

Description

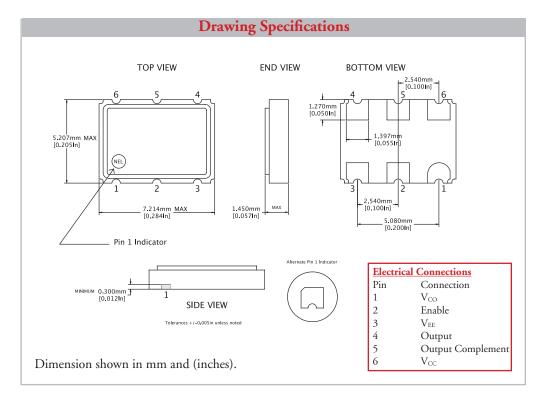
The SH-A368X Series of voltage controlled quartz crystal oscillators provide frequency control by applying a voltage to Pin 1. This unit supplies DPECL compatible outputs which are enabled when Pin 2 is set to a logic low or left open.

Features

- Frequency range-60.0MHz to 200.0MHz
- Wide Absolute Pull Range
- Will withstand SMD reflow temperatures of 253°C for 4 minutes maximum
- Space-saving alternative to discrete component oscillators
- High shock resistance, to 1000g
- 3.3 volt operation
- Metal lid electrically connected to ground to reduce EMI
- Low Jitter Wavecrest jitter characterization available

- High Reliability NEL HALT/HASS qualified for crystal oscillator start-up conditions
- High Q Crystal actively tuned oscillator circuit
- Power supply decoupling internal
- No internal PLL avoids cascading PLL problems
- High frequencies due to proprietary design
- Gold plated pads
- RoHS Compliant, Lead Free Construction

Creating a Part Number SH - A368X - FREQ Package Code SH 6 pad 5x7mm SMD Input Voltage Code Specification A 3.3 V APR/Performance 1 ±50 ppm 0-70°C 9 Customer Specific B ±50 ppm -40 to +85°C





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Operating Conditions and Output Characteristics

Electrical Characteristics										
Parameter	Symbol	Conditions	Min	Typical	Max					
Frequency	_	_	60.0 MHz	_	200.0 MHz					
Duty Cycle	_	$@V_{O}/2$	45/55%		55/45%					
Logic 0	V_{OL}	_	V _{CC} -1.810 Vdc		V _{CC} -1.620 Vdc					
Logic 1	V_{OH}		V _{CC} -1.200 Vdc		V _{CC} -0.880 Vdc					
Rise & Fall Time	$t_{r,}$ t_{f}	$20\text{-}80\%~\mathrm{V}_\mathrm{O}$	_		1.25 ns					
Jitter, RMS ⁽¹⁾	_	_	_	3 psec						
Absolute Pull Range ⁽⁴⁾	APR	$V_{CO} = 0.3 \text{ to } 3.0 \text{V}$	_	±100ppm	_					
V _{CO} Input Impedance	_	50na dc current max	100K ohm	_						
V _{CO} Linearity	_	$V_{CO} = 0.3 \text{ to } 3.0 \text{V}$	_		10%					
Transfer Function ⁽²⁾	_	$V_{CO} = 0.3 \text{ to } 3.0 \text{V}$	_	Positive	_					

General	\mathbf{C}	haracteristics

General Characteristics										
Parameter	Symbol	Conditions Min		Typical	Max					
Supply Voltage	$ m V_{CC}$ - $ m V_{EE}$	3.3V ±5%	3.135 V	3.3 V	3.465 V					
Supply Current	I_{CC}		_	_	120 mA					
Output Current	I_{O}		0.0 mA	_	±50.0 mA					
Operating Temperature	T_{A}		0°C	_	70°C					
Storage Temperature	T_{s}		-55°C	_	125°C					
Power Dissipation	P_{D}		_		416 mW					
Lead Temperature	$T_{\scriptscriptstyle m L}$	Soldering, 10 sec.	_	_	300°C					
Load	50 ohm to V_{CC} -2 V	or Thevenin Equivalent, Bias I	Required							

Environmental and Mechanical Characteristics

Mechanical Shock Per MIL-STD-202, Method 213, Condition E Thermal Shock Per MIL-STD-833, Method 1011, Condition A

Vibration 0.060" double amplitude 10 Hz to 55 Hz, 35g's 55 Hz to 2000 Hz

Soldering Condition 300°C for 10 seconds

Hermetic Seal Leak rate less than 1 x 10⁻⁸ atm.cc/sec of helium

Footnotes:

- 1) Jitter performance is frequency dependent. Please contact factory for full Wavecrest characterization. RMS jitter bandwidth of 12kHz to 20MHz.
- 2) Frequency increase with increase in control voltage and is monotonic.
- 3) Logic levels are dependant on specified load of 50 ohms to Vcc-2 volts
- 4) Pullability is frequency dependant. Consult factory.