

VCXO Series (PECL)
SU-A369X Series

PATENT PENDING

Description

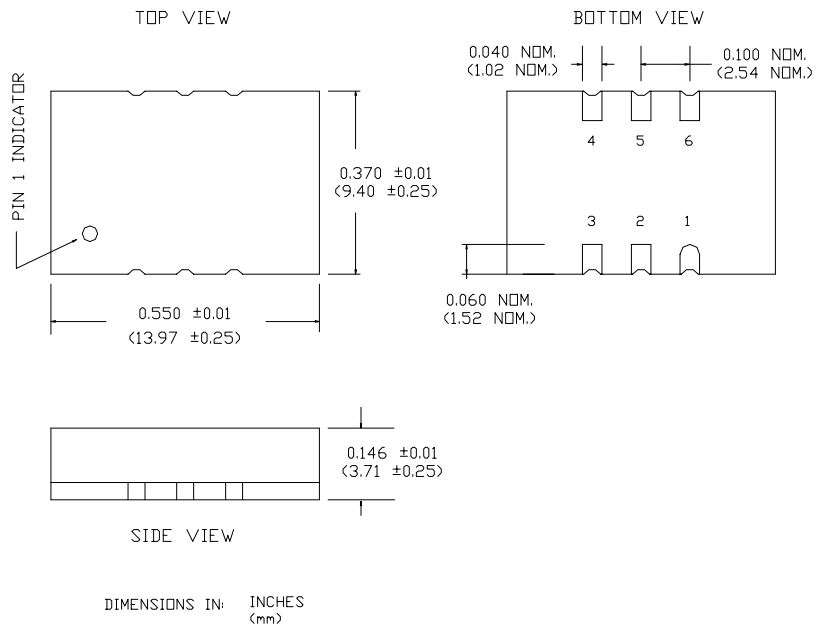
The **SU-A369X Series** of voltage controlled quartz crystal oscillators provide frequency control by applying a voltage to Pin 1. This unit supplies DPECL compatible outputs which are enabled when Pin 2 is set to a logic low or left open.

Features

- Frequency range—300.0MHz to 1.500GHz
- Wide Absolute Pull Range
- Will withstand SMD reflow temperatures of 183°C for 4 minutes maximum
- Space-saving alternative to discrete component oscillators
- High shock resistance, to 1000g
- 3.3 volt operation
- 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

Electrical Connection

Pad	Connection
1	V _{CO}
2	Enable
3	V _{EE}
4	Output
5	Output Complement
6	V _{CC}



SU-A369X Series Continued
VCXO (PECL)

Rev. F

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	----	----	300.0MHz	----	1.500GHz
Duty Cycle	----	@ $V_o / 2$	45/55%	----	55/45%
Logic 0	V_{OL}	----	$V_{CC}-1.810V_{dc}$	----	$V_{CC}-1.620V_{dc}$
Logic 1	V_{OH}	----	$V_{CC}-1.200V_{dc}$	----	$V_{CC}-0.880V_{dc}$
Rise & Fall Time	tr,tf	$20-80\%V_o$	----	----	600 ps
Jitter, RMS ⁽¹⁾	----	----	----	3 psec	----
Absolute Pull Range ⁽³⁾	APR	$V_{CO}=0.3$ to 3.0V	----	$\pm 100ppm$	----
Vco input impedance	----	50na dc current max	100K ohm	----	----
Vco linearity	----	$V_{CO}=0.3$ to 3.0V	----	----	10%
Transfer Function ⁽²⁾	----	$V_{CO}=0.3$ to 3.0V	----	Positive	----
Modulation Bandwidth	MBW	@ -3dB, $0 < V_{CO} < 3.3V$	25kHz	----	----
Enable Voltage ⁽⁴⁾	----	with $V_{EE}=0V$	0V	----	0.8V
Disable Voltage	----	with $V_{EE}=0V$	2.0V	----	V_{CC}

General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage	$V_{CC}-V_{EE}$	$3.3V \pm 5\%$	3.135V	3.3V	3.465V
Supply Current	I_{CC}	----	----	----	150 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	----	----	----	520 mW
Lead temperature	T_L	Soldering, 10 sec.	----	----	300°C
Load		50 Ohm to $V_{CC}-2V$ or Thevenin Equivalent, Bias 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 55Hz to 2000 Hz
Soldering Condition	300°C for 10 seconds
Hermetic Seal	Leak rate less than 1×10^{-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) Pullability is frequency dependant. Consult factory.
- 4) Open to Enable pin also enables the outputs

