

LVDS  
SU-A2D30 Series

PATENT PENDING

Description

The SU-A2D30 Series of quartz crystal oscillators provides a LVDS compatible signal.

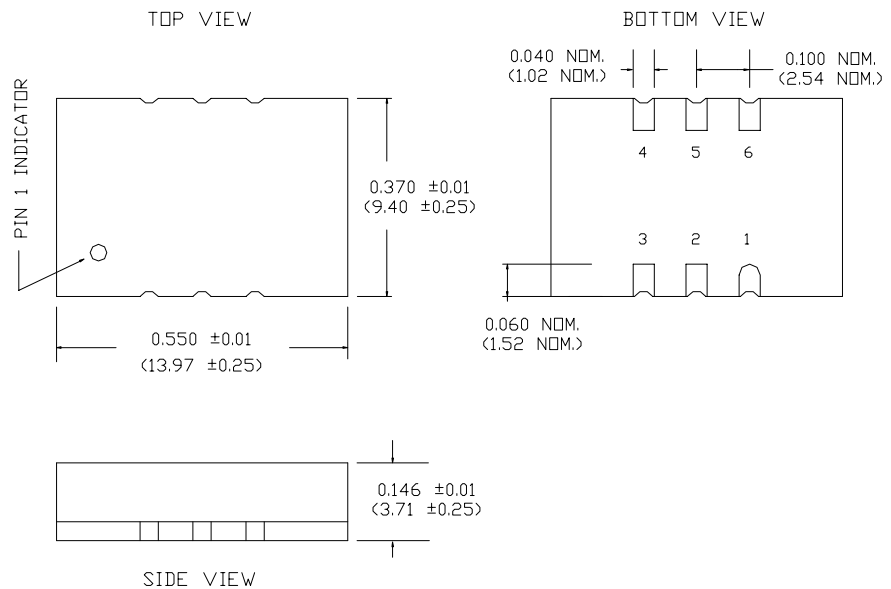
Features

- Wide frequency range - 350.0MHz to 750.0MHz
- Patent Pending, harmonic multiplication for extremely low jitter
- High frequency output eliminates the need for PLL multiplication
- Stabilities over temperatures as low as  $\pm 20$ ppm eliminates SAW oscillator temperature problems
- 3.3V and 2.5V version available
- High Reliability - NEL HALT/HASS qualified for crystal oscillator start-up conditions
- User specified tolerance available
- Cover connected to ground
- Will withstand SMD reflow temperatures of 183°C for 4 minutes maximum
- High shock resistance, to 1000g

Electrical Connection

Pin Connection

- 1 Enable
- 2 N/C
- 3 Ground
- 4 Q Output
- 5 /Q Output
- 6  $V_{CC}$



DIMENSIONS IN: INCHES (mm)



SU-A2D30 Series Continued  
LVDS

Rev. C

## Operating Conditions and Output Characteristics

### Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	----	----	350.0MHz	----	750.0MHz
Duty Cycle <sup>(1)</sup>	----	@ 50% points	45/55%	----	55/45%
Logic 0 <sup>(1)</sup>	V <sub>OL</sub>	----	0.925V	----	----
Logic 1 <sup>(1)</sup>	V <sub>OH</sub>	----	----	----	1.474V
Differential Voltage Swing <sup>(1)</sup>	V <sub>DIFF-OUT</sub>	----	500mV	700mV	----
Rise & Fall Time <sup>(1)</sup>	tr,tf	20-80% V <sub>O</sub>	----	----	300 psec
RMS Random Jitter <sup>(5)</sup>	----	----	----	----	1 psec
Enable Voltage <sup>(2)</sup>	----	with V <sub>EE</sub> =0V	----	----	0.8V
Disable Voltage	----	with V <sub>EE</sub> =0V	2.0V	----	----
Frequency Stability <sup>(3)</sup>	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	----	+100ppm
Phase Noise <sup>(4)</sup>	----	@100Hz	----	----	- 80 dBc/Hz
	----	@1kHz	----	----	-110 dBc/Hz
	----	@10kHz	----	----	-130 dBc/Hz
	----	@100kHz	----	----	-130 dBc/Hz
	----	@1MHz	----	----	-135 dBc/Hz
----	----	@10MHz	----	----	-135 dBc/Hz

### General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage	V <sub>CC</sub>	3.3V±5%	3.135V	3.3V	3.465V
Supply Current	I <sub>CC</sub>	----	0.0 mA	----	120 mA
Output current	I <sub>O</sub>	Low level Output Current	0.0 mA	----	±50.0 mA
Operating temperature	T <sub>A</sub>	----	0°C	----	70°C
Storage temperature	T <sub>S</sub>	----	-55°C	----	125°C
Input: Logic High (ECL) - Disables V <sub>EE</sub> or Open - Enables					
Lead temperature	T <sub>L</sub>	Soldering, 10 sec.	----	----	300°C
Load		50 Ohm to V <sub>CC</sub> -2V or Thevenin Equivalent, Bias Required			
Start-up time	t <sub>S</sub>	----	----	2 ms	10 ms

### 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

#### Footnotes:

- 1) With load of 100 ohms across differential outputs.
- 2) Open to Enable pin also enables the output.
- 3) Standard frequency stability (±20,±25,±50ppm & others available)
- 4) Phase Noise characterization available. Phase Noise is frequency dependant, phase noise specification references a 1.0GHz part.
- 5) RMS Jitter bandwidth of 12kHz to 20MHz.

