CRYSTAL CLOCK OSCILLATORS

Data Sheet 0547B

Rev. C

LVDS

SU-A2D30 Series

PATENT PENDING

Description

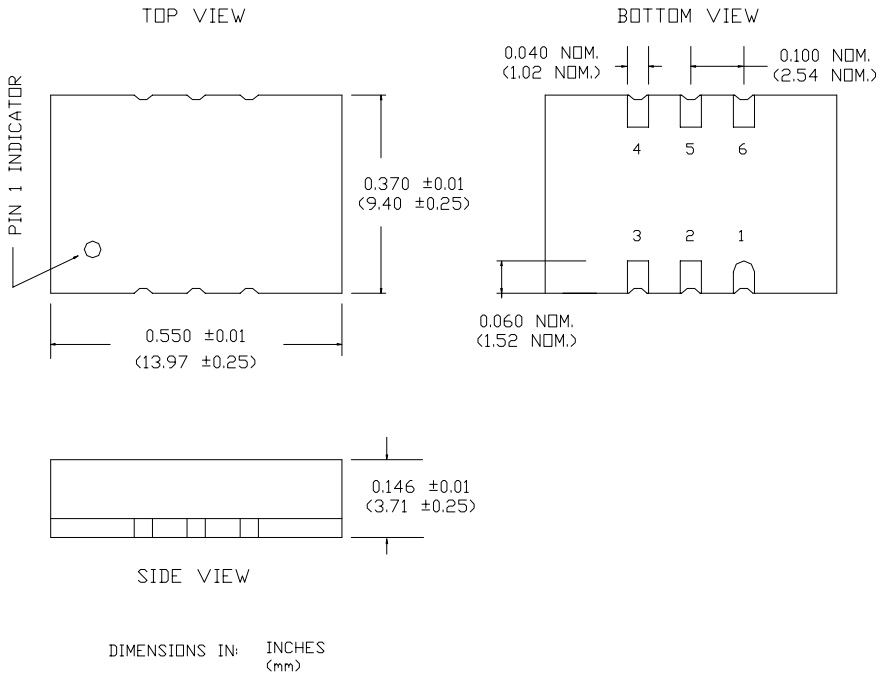
The **SU-A2D30 Series** of quartz crystal oscillators provides a LVDS compatible signal.

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 ±20ppm 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}



NEL FREQUENCY CONTROLS, INC.

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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 (1)	-----	@ 50% points	45/55%	-----	55/45%
Logic 0 (1)	V_{OL}	-----	0.925V	-----	-----
Logic 1(1)	V_{OH}	-----	-----	-----	1.474V
Differential Voltage Swing (1)	$V_{DIFF-OUT}$	-----	500mV	700mV	-----
Rise & Fall Time(1)	tr,tf	20-80% V_O	-----	-----	300 psec
RMS Random Jitter(5)	-----	-----	-----	-----	1 psec
Enable Voltage(2)	----	with V_{EE}=0V	-----	-----	0.8V
Disable Voltage	-----	with V_{EE}=0V	2.0V	-----	-----
Frequency Stability(3)	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	-----	+100ppm
Phase Noise(4)	-----	@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_{CC}	3.3V±5%	3.135V	3.3V	3.465V
Supply Current	I_{CC}	-----	0.0 mA	-----	120 mA
Output current	I_O	Low level Output Current	0.0 mA	-----	±50.0 mA
Operating temperature	T_A	------	0°C	-----	70°C
Storage temperature	T_S	-----	-55°C	-----	125°C
Input: Logic High (ECL) - Disables V_{EE} or Open - Enables					
Lead temperature	T_L	Soldering, 10 sec.	-----	-----	300°C
Load	50 Ohm to V_{CC}-2V or Thevenin Equivalent, Bias Required				
Start-up time	t_S	-----	-----	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.

Creating a Part Number

SU - A2D3X - FREQ

Package Code
SU 6 pad 9x14mm SMD

Input Voltage

Code	Specification
A	3.3V
B	2.5V

Tolerance/Performance

0	±100ppm 0-70°C
1	±50ppm 0-70°C
7	±25ppm 0-70°C
9	Customer Specific
A	±20ppm 0-70°C
B	±50ppm -40 to +85°C
C	±100ppm -40 to +85°C

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