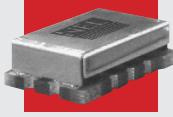


SU-A29B0 Series



Size, mm

9 x 14

I/O

6 pad

Supply Voltage

3.3V / 2.5V

- Patent Pending, harmonic multiplication for extremely low jitter
- High frequency output eliminates the need for PLL multiplication
- Stabilities over temperatures as low as ± 20 ppm eliminates SAW oscillator temperature problems



FREQUENCY CONTROLS, INC.

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Differential Positive ECL (DPECL)

SU-A29B0 Series *Rev D*

Frequency Range: 300.0MHz to 1.7GHz

Description

The **SU-A29B0 Series** of quartz crystal oscillators provide DPECL Fast Edge compatible signals. This device is intended to operate on positive voltage for PECL applications.

Features

- Wide frequency range - 300.0MHz to 1.7GHz
- 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

Creating a Part Number

SU - A29BX - FREQ

Package Code

SU 6 pad 9x14mm SMD

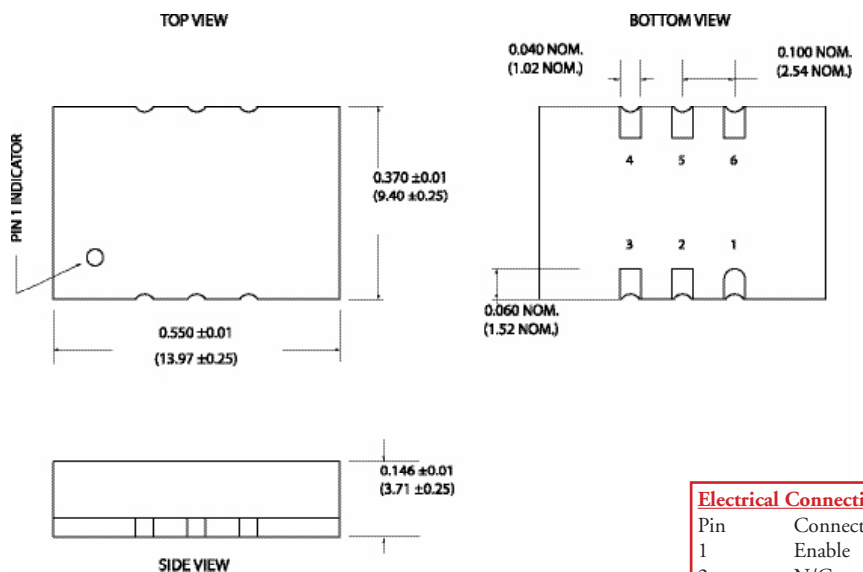
Input Voltage

Code	Specification
A	3.3V
B	2.5V

Tolerance/Performance

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

Drawing Specifications



Electrical Connections

Pin	Connection
1	Enable
2	N/C
3	Ground
4	Q Output
5	/Q Output
6	V _{CC}

Dimension shown in inches and (mm).

Differential Positive ECL (DPECL)

SU-A29B0 Series *Rev D*

Frequency Range: 300.0MHz to 1.7GHz

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	—	—	300.0MHz	—	1.7GHz
Duty Cycle	—	@ 50% points	45/55%	—	55/45%
Logic 0 ⁽¹⁾	V _{OL}	—	V _{CC} -1.810V	—	V _{CC} -1.620V
Logic 1 ⁽¹⁾	V _{OH}	—	V _{CC} -1.025V	—	V _{CC} -0.880 V
Rise & Fall Time ⁽⁶⁾	t _r , t _f	300MHz-900MHz 900MHz-2.5GHz	—	—	500 psec 200 psec
RMS Random Jitter ⁽⁴⁾	—	—	—	—	1 psec
Enable Voltage ⁽²⁾	—	with V _{EE} =0V	0V	—	1.0V
Disable Voltage	—	with V _{EE} =0V	3.0V	—	V _{CC}
Frequency Stability ⁽⁵⁾	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr. aging, shock, vibration	-100ppm	—	+100ppm
Phase Noise ⁽³⁾	—	@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%	3.135 V	3.3 V	3.465V
Supply Current	I _{CC}	50 ohm termination To 2.00V below V _{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 55 Hz to 2000 Hz
Soldering Condition	300°C for 10 seconds

Footnotes:

- 1) V_{OL}, V_{OH}, referenced to ground.
- 2) Open to Enable pin also enables the output.
- 3) Phase Noise characterization available. Phase Noise is frequency dependent, phase noise specification references a 1.0GHz part.
- 4) RMS Jitter bandwidth of 12kHz to 20MHz.
- 5) Standard frequency stability (±20,±25,±50ppm & other available).
- 6) 20-80% V_O with 50 ohm load to V_{CC}-2V.