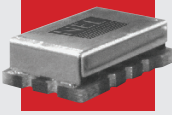


# SU-A29B0 Series



## 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  $\pm 20$ ppm eliminates SAW oscillator temperature problems



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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

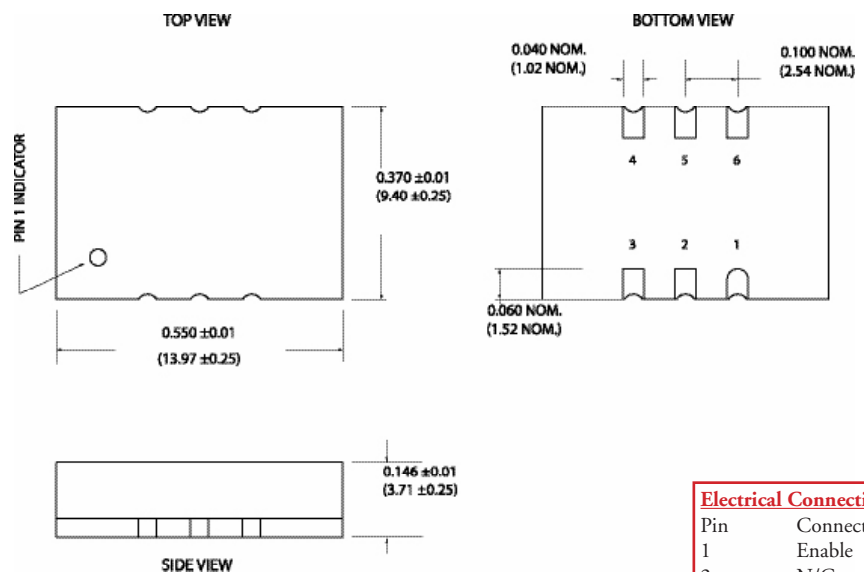
#### Input Voltage

Code	Specification
A	3.3V
B	2.5V

#### Tolerance/Performance

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

### Drawing Specifications



Dimension shown in inches and (mm).

#### Electrical Connections

Pin	Connection
1	Enable
2	N/C
3	Ground
4	Q Output
5	/Q Output
6	V <sub>CC</sub>

# 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 <sup>(1)</sup>	V <sub>OL</sub>	—	V <sub>CC</sub> -1.810V	—	V <sub>CC</sub> -1.620V
Logic 1 <sup>(1)</sup>	V <sub>OH</sub>	—	V <sub>CC</sub> -1.025V	—	V <sub>CC</sub> -0.880V
Rise & Fall Time <sup>(6)</sup>	t <sub>r</sub> , t <sub>f</sub>	300MHz-900MHz 900MHz-2.5GHz	—	—	500 psec 200 psec
RMS Random Jitter <sup>(4)</sup>	—	—	—	—	1 psec
Enable Voltage <sup>(2)</sup>	—	with V <sub>EE</sub> =0V	0V	—	1.0V
Disable Voltage	—	with V <sub>EE</sub> =0V	3.0V	—	V <sub>CC</sub>
Frequency Stability <sup>(5)</sup>	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr. aging, shock, vibration	-100ppm	—	+100ppm
Phase Noise <sup>(3)</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%	3.135 V	3.3 V	3.465V
Supply Current	I <sub>CC</sub>	50 ohm termination To 2.00V below V <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 55 Hz to 2000 Hz
Soldering Condition	300°C for 10 seconds

#### Footnotes:

- 1) V<sub>OL</sub>, V<sub>OH</sub>, 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<sub>O</sub> with 50 ohm load to V<sub>CC</sub>-2V.