

LVDS SK-B2D00 Series

Description

The **SK-B2D00 Series** of quartz crystal oscillators provide LVDS compatible signals. This device is to operate using positive voltage and uses multiple ground pins for improved signal integrity.

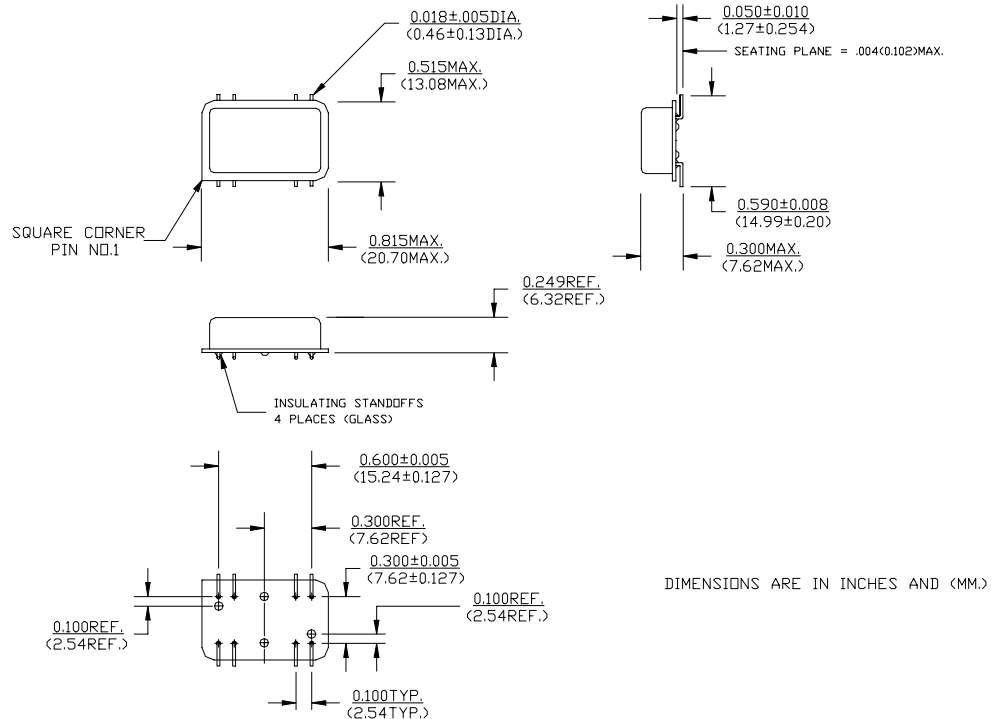
Features

- Wide frequency range - 80.0MHz to 540.0MHz
- User specified tolerance available
- Case at electrical ground
- Will withstand vapor phase temperatures of 253°C for 4 minutes maximum
- All metal, resistance weld, hermetically sealed package
- High shock resistance, to 1000g
- Enable/Disable
- 2.5 volt operation
- LVDS output on pin 7, complement on Pin 8
- 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 leads

Electrical Connection

Pin	Connection
1	V _{CC}
2	V _{EE} Case
6	V _{EE} Case
7	Output
8	/Output
9	V _{EE} Case
13	V _{EE} Case
14	Enable/Disable

All other pins are
No Connect



SK-B2D00 Series Continued
LVDS

Rev. C

Operating Conditions and Output Characteristics

Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	80.0MHz	-----	540.0MHz
Duty Cycle ⁽²⁾	-----	@ $V_{O}/2$	45/55%	-----	55/45%
Logic 0 ⁽²⁾	V_{OL}	-----	0.80V	-----	1.10V
Logic 1 ⁽²⁾	V_{OH}	-----	1.25V	-----	1.55V
Differential Voltage ⁽²⁾	V_{OD}	-----	250 mV	-----	450 mV
Disable Voltage	-----	with $V_{EE}=0V$	-----	-----	0.8V
Enable Voltage ⁽⁵⁾	---	with $V_{EE}=0V$	2.0V	-----	-----
Rise & Fall Time ⁽²⁾	tr,tf	20-80% V_{O}	-----	0.8 ns	1.0 ns
Tpd ⁽⁴⁾	-----	-----	-0.5 ns	-----	+0.5 ns
Jitter, RMS ⁽³⁾	-----	-----	-----	-----	3 psec
Frequency Stability ⁽¹⁾	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	-----	+100ppm

General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage	V_{CC}	-----	2.375V	2.5V	2.625V
Supply Current	I_{CC}	-----	0.0 mA	-----	80 mA
Output current	I_{O}	Continuous Output Current	0.0 mA	-----	±50.0 mA
Operating temperature	T_{A}	-----	0°C	-----	55°C
Storage temperature	T_{S}	-----	-55°C	-----	125°C
Power Dissipation	P_{D}	-----	-----	-----	210 mW
Lead temperature	T_{L}	Soldering, 10 sec.	-----	-----	300°C
Load		100 ohms across differential outputs	-----	-----	-----
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
Hermetic Seal	Leak rate less than 1×10^{-8} atm.cc/sec of helium

Footnotes:

- Standard frequency stability ($\pm 20, \pm 25, \pm 50$ ppm & others available)
- With Load of 100 ohms across differential outputs.
- Jitter performance is frequency dependent. Please contact factory for full Wavecrest characterization.
RMS jitter bandwidth of 12kHz to 20MHz.
- Tpd is phase shift between the falling edge of pin 7 and the rising edge of pin 8.
- Open to enable also enables the output.

Creating a Part Number	
SK - B29DX - FREQ	
Package Code	Tolerance/Performance
HK Leaded 8 pin (14 pin)	0 ±100ppm 0-70°C
SK 8 pin (14 pin) SMD Gull Wing	1 ±50ppm 0-70°C
	7 ±25ppm 0-70°C
	9 Customer Specific
Input Voltage	A ±20ppm 0-70°C
Code Specification	B ±50ppm -40 to +85°C
A 3.3V	C ±100ppm -40 to +85°C
B 2.5V	