

CVS575D2 Series

Low Phase Noise / Low Jitter
Voltage Controlled SAW Oscillator

3.3V LVPECL



General Description:

The CVS575D2 is a new Crystek Family of SAW (surface acoustic wave) based Voltage Controlled SAW Oscillator (VCISO) offering extremely low-jitter, low phase noise, and low-g performance. The VCISO is being released with 3 frequency variants; 245.760 MHz, 250 MHz, and 311.04 MHz in a 5x7.5 mm SMD package. Additional frequencies will be added in the future. Contact Crystek for a custom frequency.

Features:

- Available Frequencies:
 - 245.760 MHz
 - 250.000 MHz
 - 311.040 MHz
- Low-g SAW resonator design
- Extremely low output jitter under 30 femto-seconds
- Industry standard 5x7.5 mm SMD package
- Enable/Disable function using CMOS input logic levels
- RoHS compliant
- MIL-STD-883 shock and vibration resistant

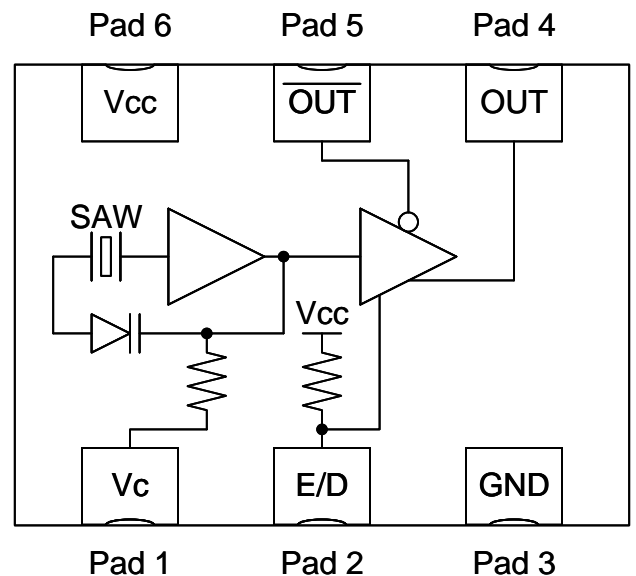


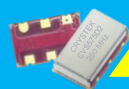
Applications:

- Telecommunication for meeting low-jitter generation
- Test and measurement equipment



Block Diagram:



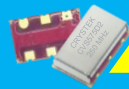


Operating Electrical Characteristics:

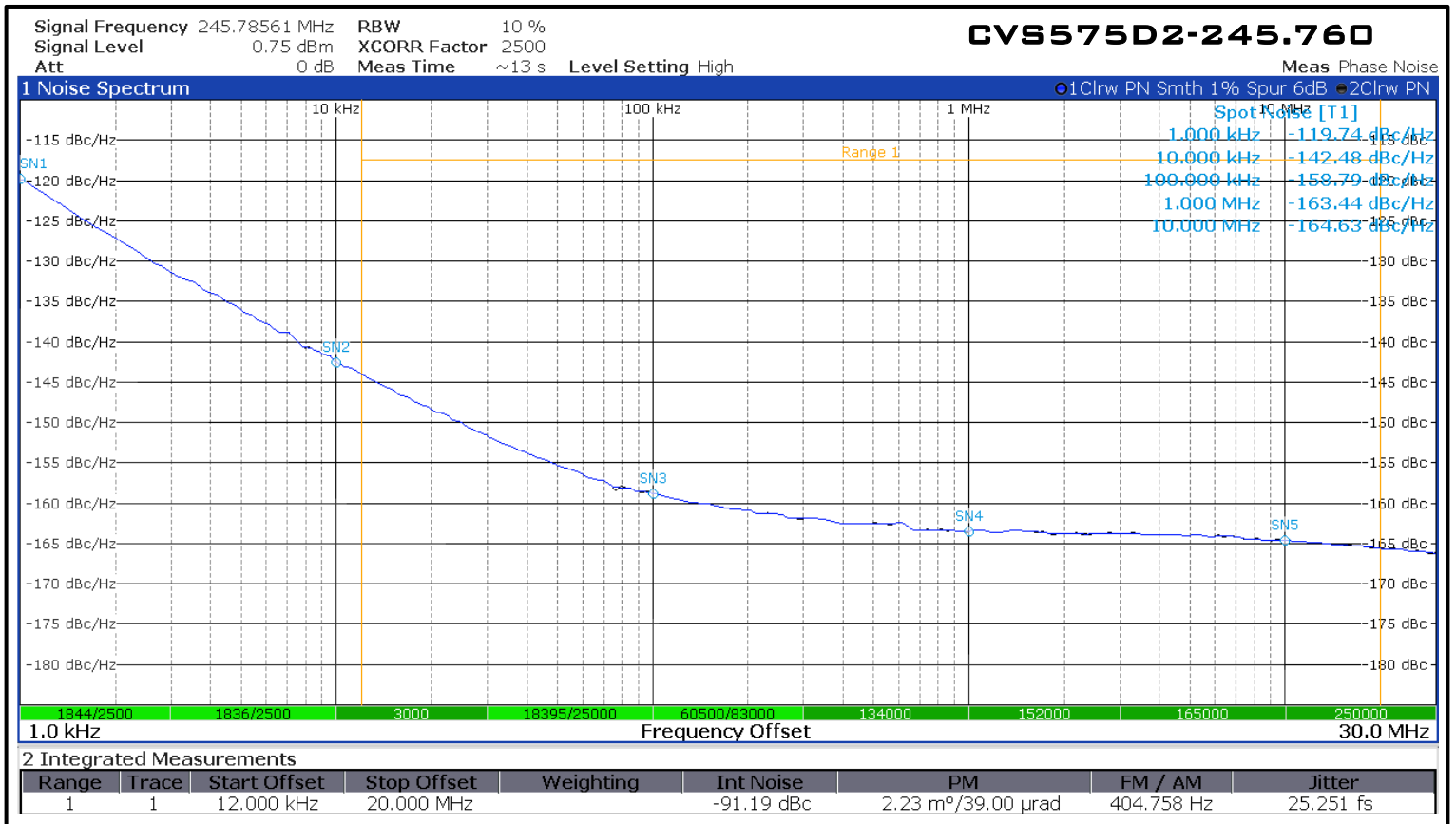
Parameter	Condition	MIN	TYP	MAX	UNITS
Supply, Vcc		3.14	3.3	3.47	V
Current, Icc	Output load = 50Ω		82		mA
Operating Temperature Range		-20		70	°C
Absolute Pulling Range	Over Operating Temp Range	±50			ppm
Linearity			±15		%
Tuning Sensitivity, Kv			+115		ppm/V
Input Impedance			47		kΩ
Input Modulation Bandwidth		20			kHz
Output Loading	Over Operating Temp Range		50		Ω
DC Output Level	Logic High	Vcc-1.15		Vcc-0.88	V
DC Output Level	Logic Low	Vcc-1.85		Vcc-1.75	V
Differential Output Voltage	Ta = 25°C	0.75		0.92	Vpp
Duty Cycle		45		55	%
Rise/Fall Time	20% - 80%	100		250	ps
Enable Time	E/D "0" to "1"			15	μs
Disable Time	E/D "1" to "0"			500	ms
Start-Up Time	Vcc 0V to 3.3V	1		2	ms
Phase Noise Floor	@ 10 MHz Offset			-162	dBc/Hz
Jitter	12 kHz to 20 MHz		30		fs

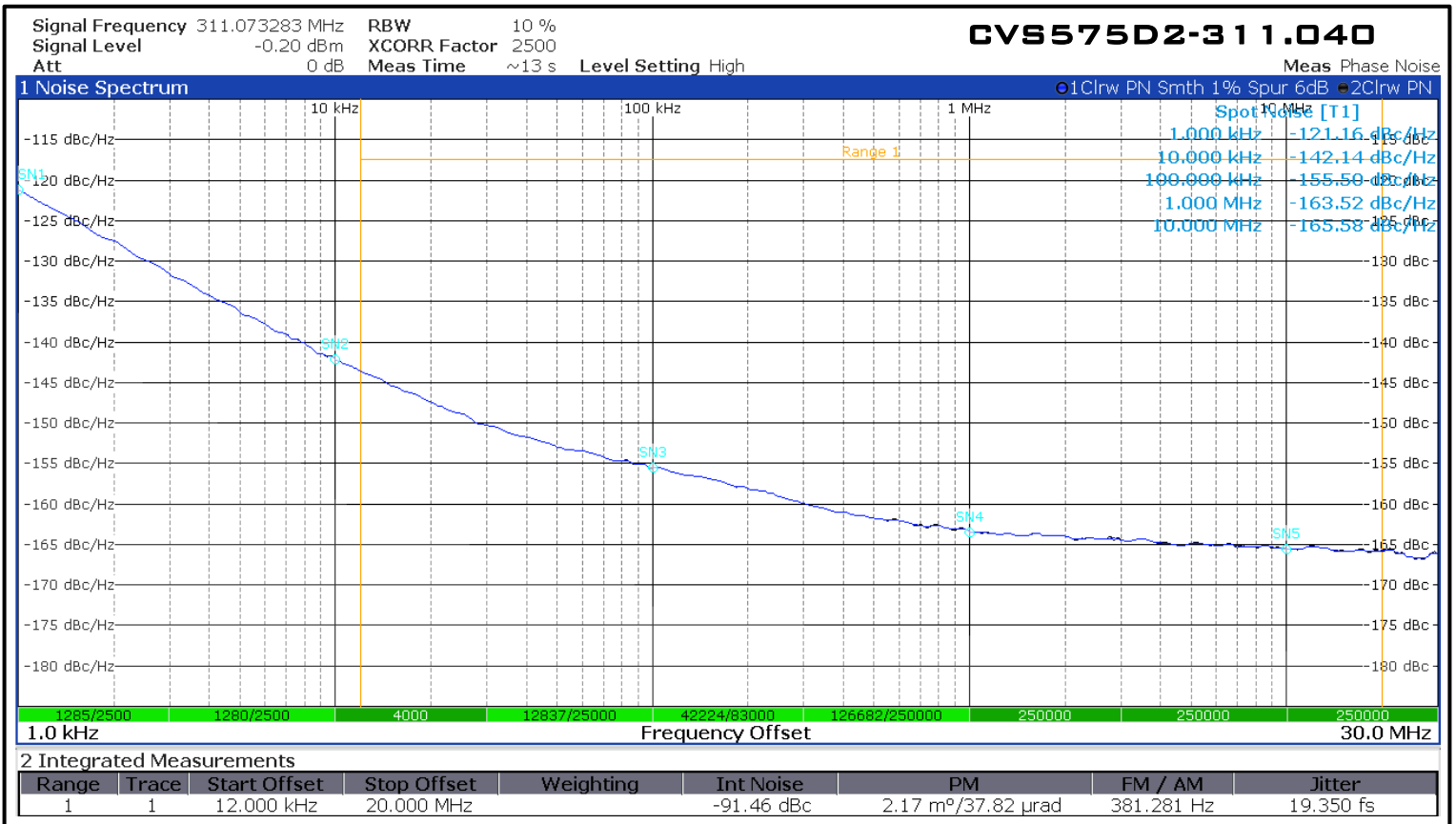
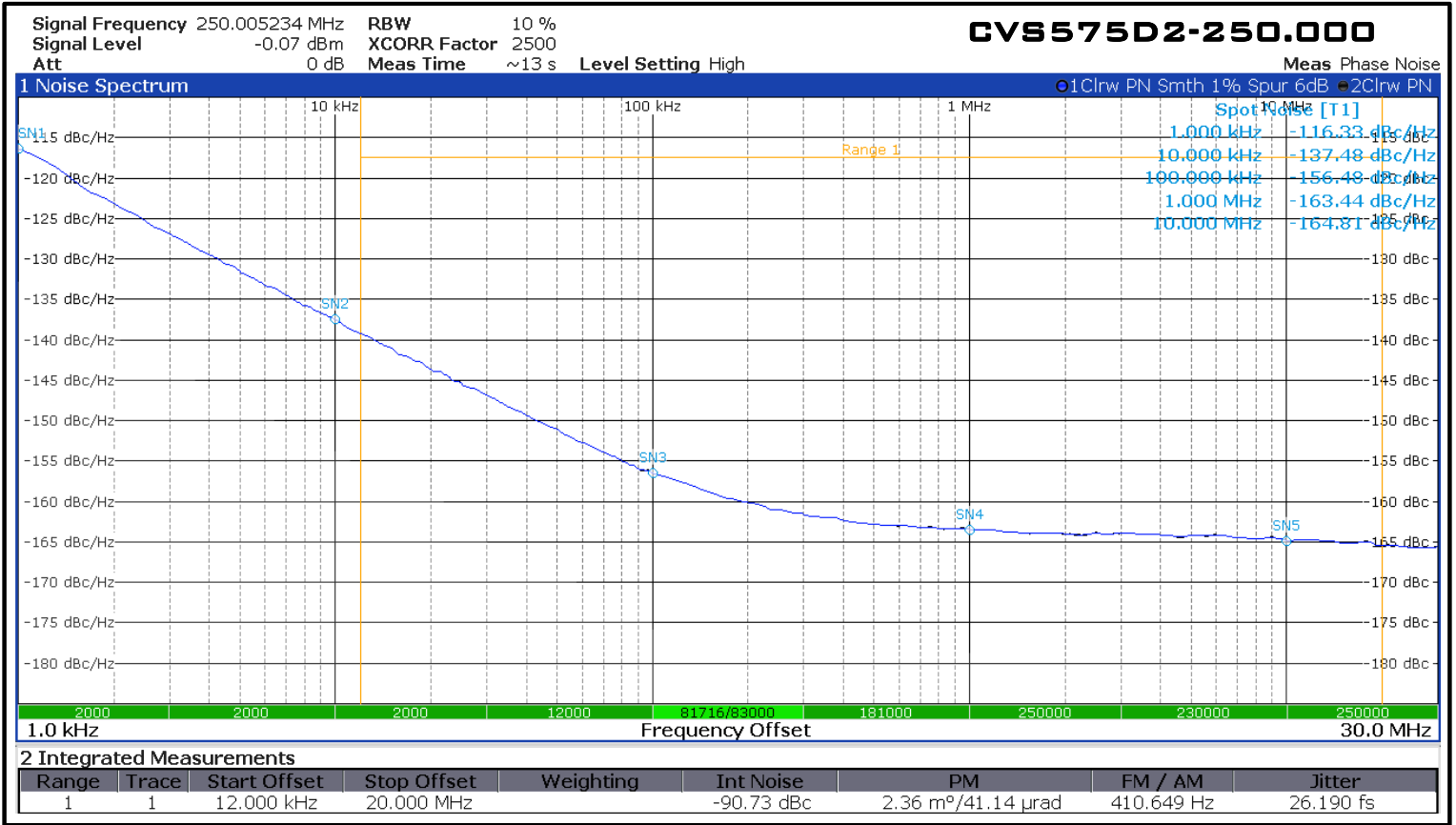
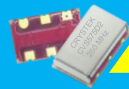
Absolute Maximum Ratings

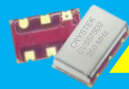
Parameter	Condition	MIN	MAX	UNITS
Supply Voltage (Vcc)		-0.5	Vcc+0.5	V
Input Voltage (Vc)		-0.5	Vcc+0.5	V
Input E/D Voltage		-0.5	Vcc+0.5	V
Soldering Temperature			260	°C
Storage Temperature		-45	90	°C
ESD Rating	Human Body Model	2000		V



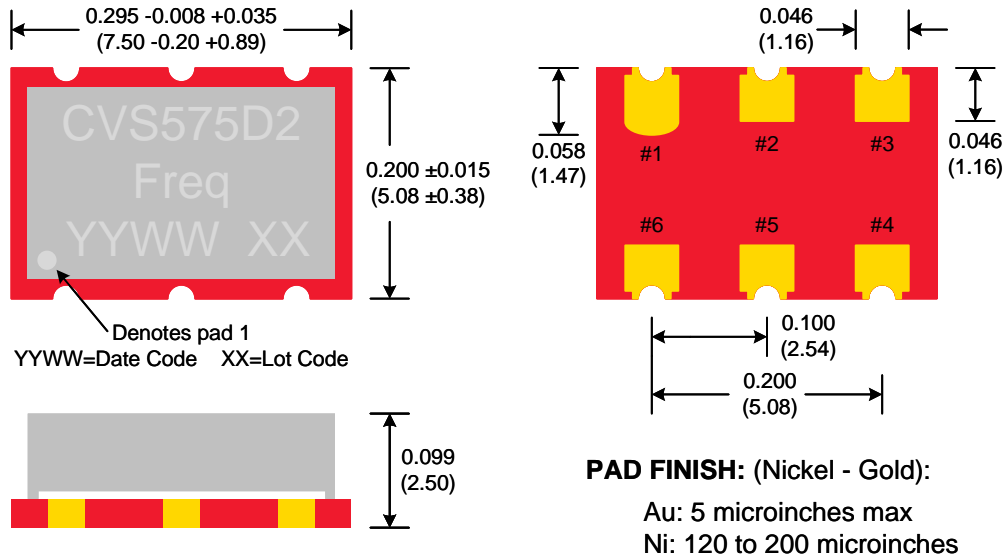
Phase Noise Plots:







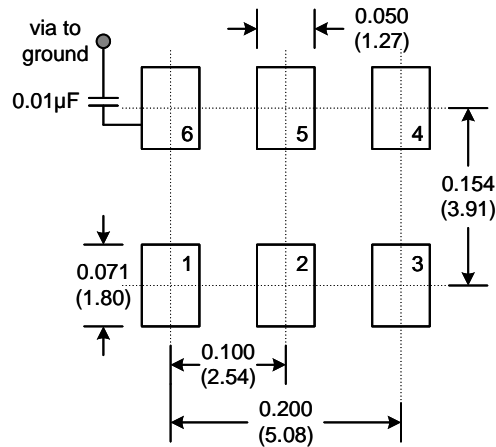
External Dimensions:



Pad	Connection
1	Volt Cntrl
2	E/D
3	GND
4	OUT
5	COU
6	Vdd

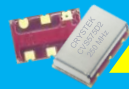
Example Part Number:
CVS575D2-311.040

Suggested Pad Layout:

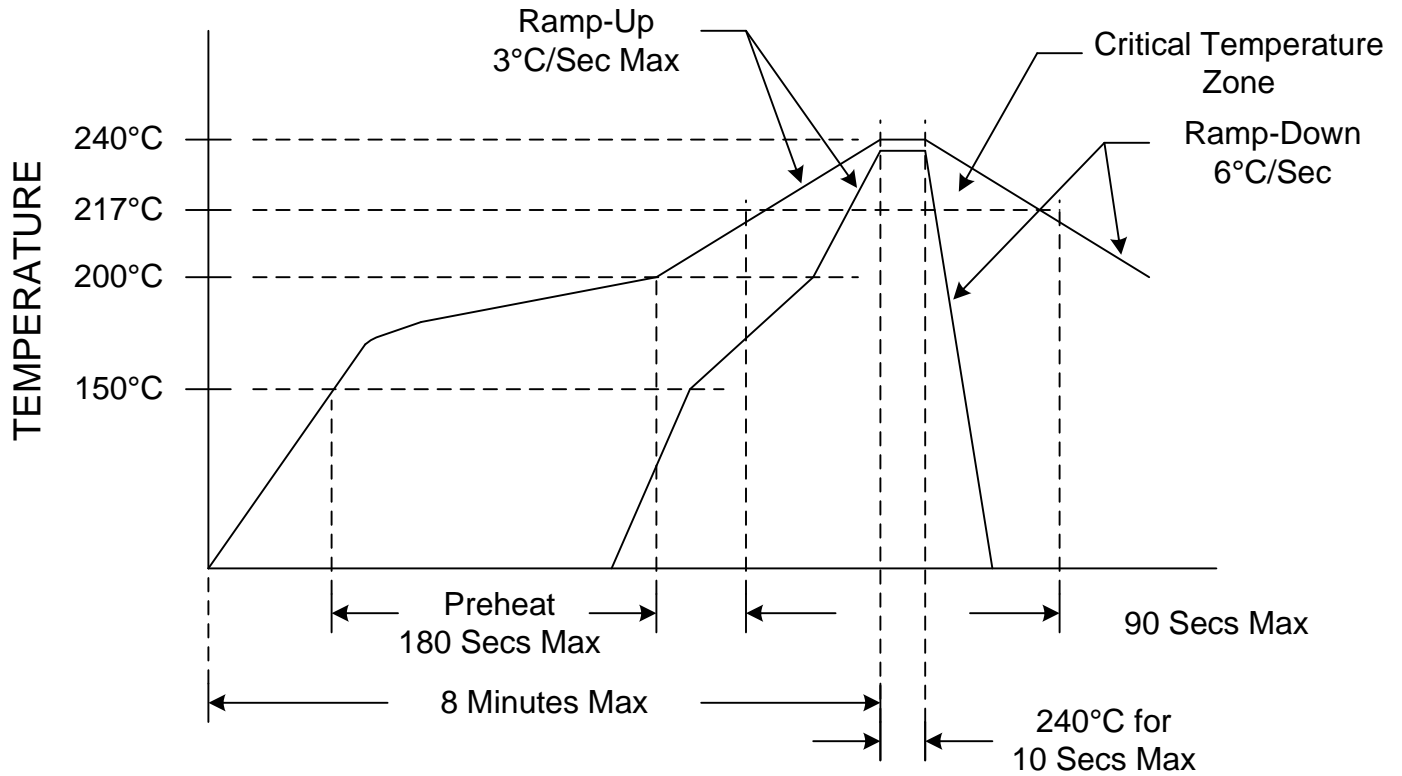


Environmental Standard Compliance:

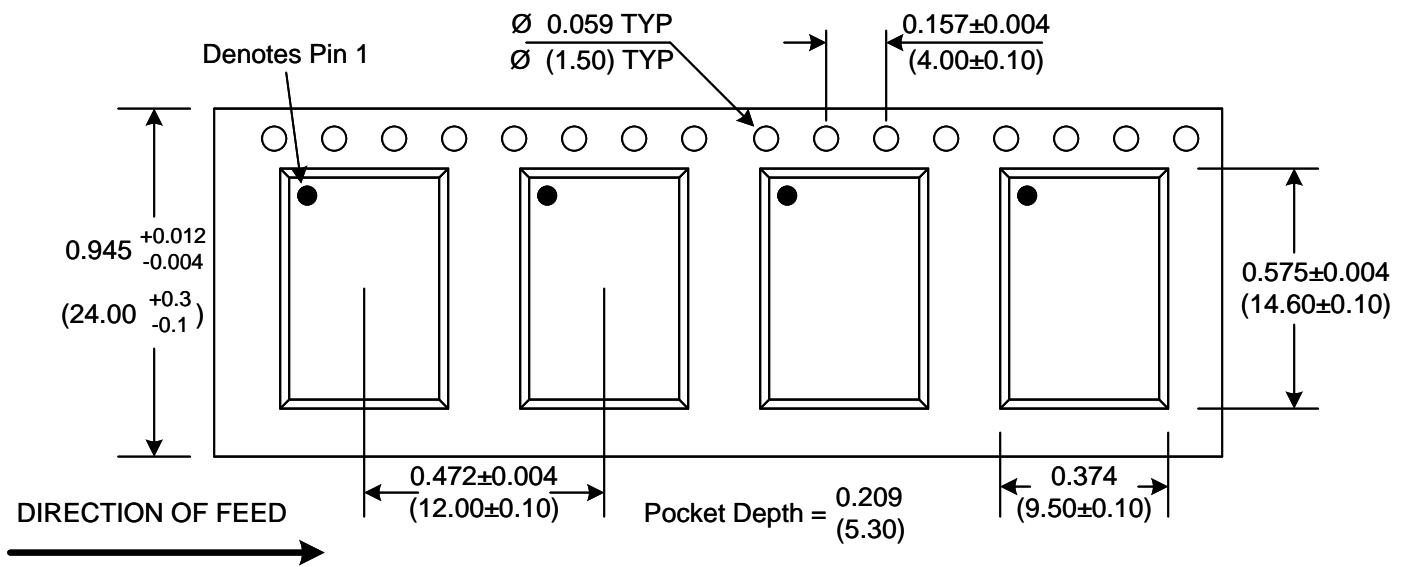
Parameter	Conditions
Mechanical Shock	MIL-STD-883, Method 2002
Mechanical Vibration	MIL-STD-883, Method 2007
Solderability	MIL-STD-883, Method 2003
Resistance to Solvents	MIL-STD-883, Method 2015



Recommended Reflow Soldering Profile:



Tape And Reel:



Drawing not to scale