

2.0 mm x 2.5 mm Ceramic Package SMD TCXO

I587/I787 Series

Product Features:

Low Current Consumption
Ultra-Miniature Package
RoHS Compliant
Analog Temperature Compensation

Applications:

GPS, GPS Module
CDMA / WCDMA
802.11 / Wifi
T1/E1, T3/E3

Output Specifications

Frequency	13.000MHz to 52.000MHz (Contact Sales Channel for Available Frequencies)
Frequency Tolerance	±2.0 ppm (at +25°C±3°C, referenced to nominal frequency, 60 minutes after 2nd reflow)
Frequency Stability	±0.5 ppm Maximum (Inclusive of Operating Temperature Range) ±0.2 ppm Maximum (±5%) ±0.2 ppm Maximum (±1kOhm//±1pF) ±1.0 ppm Maximum First Year
Frequency Stability vs. Temperature	
Frequency Stability Vs. Voltage	
Frequency Stability Vs. Load	
Aging (at 25°C)	±1.0 ppm Maximum First Year
Supply Voltage (Vcc)	See Part Number Guide; Tolerance ±5%
Input Current (Icc)	2.0mA Maximum (Nominal Frequency less than or equal to 32MHz) 2.5mA Maximum (Nominal Frequency over 32MHz)
Start-up Time	3mSec Maximum
Output Level	0.8Vp-p Minimum -8dBc Maximum 10kOhms//10pF
Clipped Sinewave	
Harmonics	
Output Load	10kOhms//10pF
SSB Phase Noise (at 25°C, Typ.)	-87dBc/Hz at 10Hz offset -112dBc/Hz at 100Hz offset -135dBc/Hz at 1kHz offset -145dBc/Hz at 10kHz offset
Operating Temperature Range	See Part Number Guide

Absolute Maximum Rating

Storage Temperature	-40°C to +85°C
Supply Voltage (Vcc)	-0.6 VDC to +4.6 VDC
Control Voltage (Vc)	-0.6 VDC to Vcc ±0.5 VDC (I787 Only)

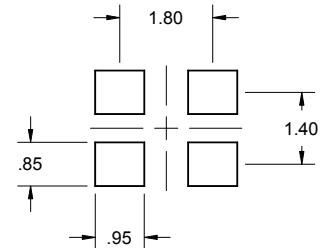
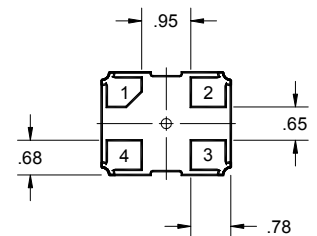
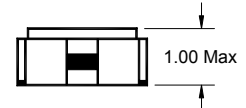
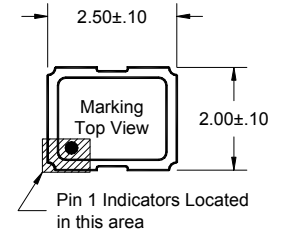
Voltage Control Characteristics

Frequency Deviation	±5ppm Minimum
Control Voltage Center and Range	1.5Vdc ±1.0Vdc
Slope	Positive
Linearity	±10%
Input Impedance	500kOhms Minimum

Part Number Guide

Sample Part Number: I587-5Y3-26.000 MHz

Package	Operating Temperature Range	Frequency Stability vs. Temperature	Supply Voltage	Frequency	Suffix
I587 (Clipped Sinewave TCXO)	5 = -30°C to +85°C	Y = ±0.5 ppm Max	3 = +3.3 VDC	XX.XXX or XX.XXXX = Nominal Frequency (5 or 6 Digits + Decimal)	MHz = Megahertz
I787 (Clipped Sinewave VCTCXO)			7 = +3.0 VDC		
			8 = +2.8 VDC		



Recommended Pad Layout

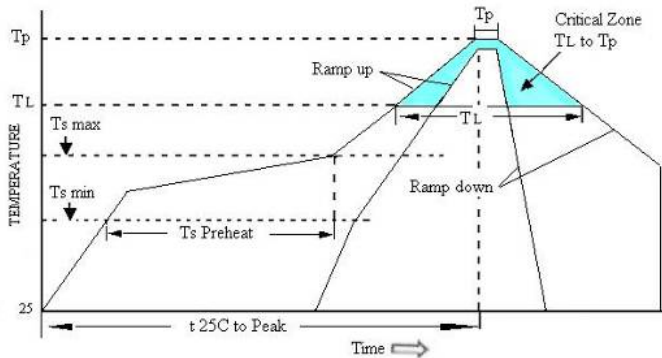
Pin Connections		
Pin 1	I587	Ground
	I787	Control Voltage
Pin 2		Ground
Pin 3		Output
Pin 4		Supply Voltage (Vcc)

Dimension Units: mm

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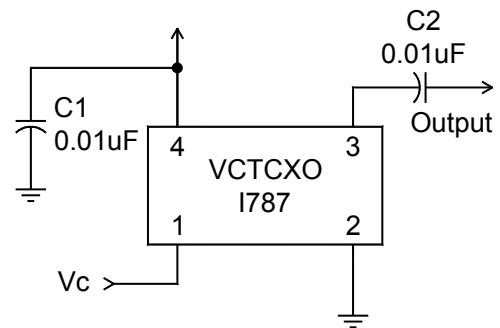
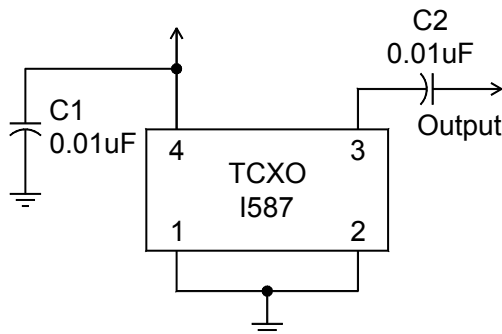
Pb Free Solder Reflow Profile:



Units are backward compatible with +240°C reflow processes

Ts max to T _L (Ramp-up Rate)	3°C / second max
Preheat	
Temperature min (Ts min)	150°C
Temperature typ (Ts typ)	175°C
Temperature max (Ts max)	200°C
Time (Ts)	60 to 180 seconds
Ramp-up Rate (T _L to T _p)	3°C / second max
Time Maintained Above Temperature (T _L)	217°C
Time (T _L)	60 to 150 seconds
Peak Temperature (T _p)	260°C max for seconds
Time within 5°C to Peak Temperature (T _p)	20 to 40 seconds
Ramp-down Rate	6°C / second max
Tune 25°C to Peak Temperature	8-minute max
Moisture Sensitivity Level (MSL)	Level 1

Circuit Configuration:



Notes:

- It is recommended that a 0.01 µF bypass capacitor be connected between Vcc (Pin 4) and Ground (Pin 2) to minimize power supply noise.
- It is recommended that an external 0.01 µF AC-coupling capacitor be connected to output (Pin 3) of the device.
- For the TCXO (I587) Pin 1 should not be left floating but must be connected to ground.

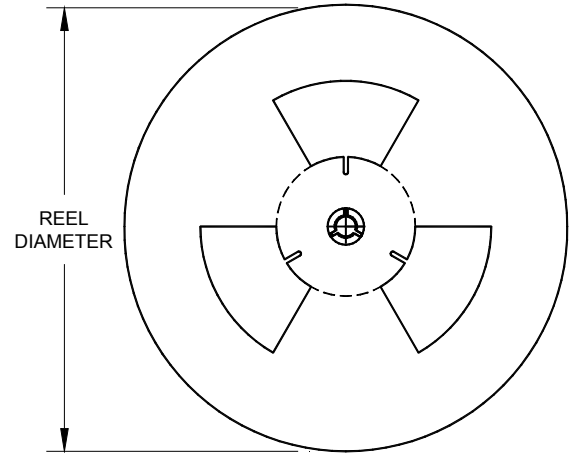
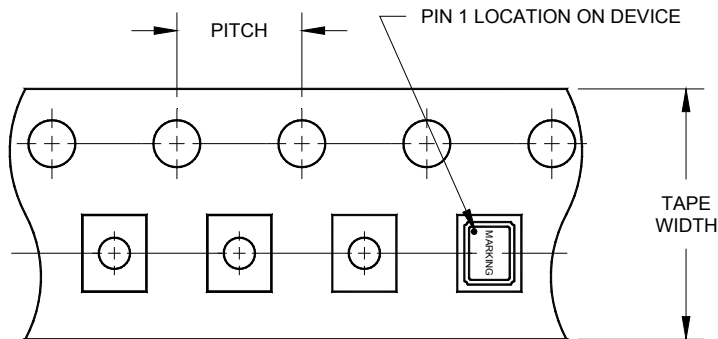
Environmental Specifications:

Thermal Shock	MIL-STD-883, Method 1011, Condition A
Moisture Resistance	MIL-STD-883, Method 1004
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Mechanical Vibration	MIL-STD-883, Method 2007, Condition A
Resistance to Soldering Heat	J-STD-020C, Table 5-2 Pb-free devices (except 2 cycles max)
Hazardous Substance	Pb-Free / RoHS / Green Compliant
Solderability	JESD22-B102-D Method 2 (Preconditioning E)
Terminal Strength	MIL-STD-883, Method 2004, Test Condition D
Gross Leak	MIL-STD-883, Method 1014, Condition C
Fine Leak	MIL-STD-883, Method 1014, Condition A2, R1=2x10 ⁻⁸ atm cc/s
Solvent Resistance	MIL-STD-202, Method 215

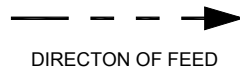
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Tape and Reel Information:



PITCH:	4.00
TAPE WIDTH:	8.00
REEL DIAMETER:	180
QTY PER REEL MAX:	1000
Compliant to EIA-481	
All Dimensions in Millimeters	



Package Information:

MSL = 1

Termination = e4 (Au over Ni over W base metallization)

Marking:

Line 1: I-Date Code (yww)

Line 2: Frequency

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