

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

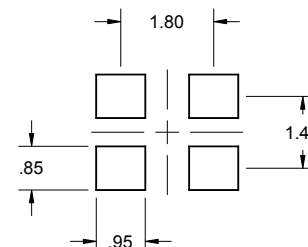
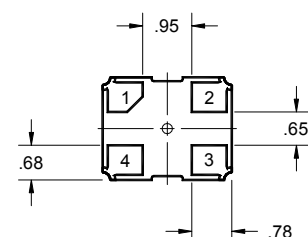
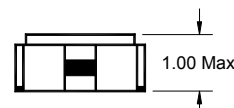
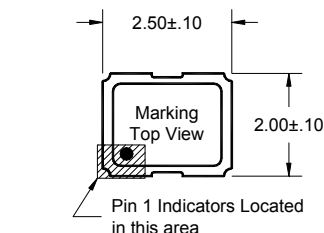
Frequency	13.000MHz to 52.000MHz (Contact Sales Channel for Available Frequencies)
Frequency Tolerance	±2.0 ppm (at +25°C±3°C, referenced to nominal frequency, 60 minutes after 2nd reflow)
Frequency Stability	±0.5 ppm Maximum (Inclusive of Operating Temperature Range)
Frequency Stability vs. Temperature	±0.2 ppm Maximum (±5%)
Frequency Stability Vs. Voltage	±0.2 ppm Maximum (±1kOhm/±1pF)
Frequency Stability Vs. Load	±1.0 ppm Maximum First Year
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
Clipped Sinewave	-8dBc Maximum
Harmonics	10kOhms/10pF
Output Load	
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



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

Part Number Guide

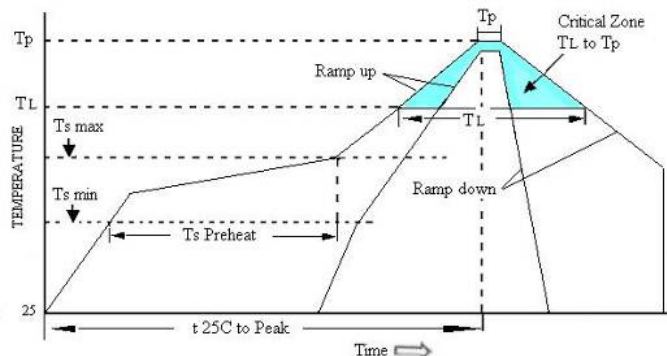
Sample Part Number: I587-5Y3-26.000 MHz

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		

2.0 mm x 2.5 mm Ceramic Package SMD TCXO

I587/I787 Series

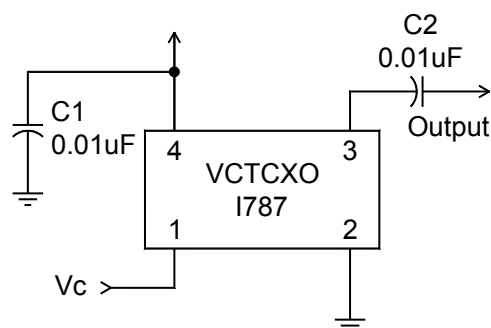
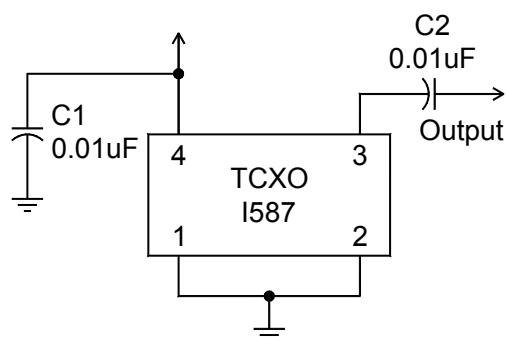
Pb Free Solder Reflow Profile:



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 Tp)	3°C / second max
Time Maintained Above Temperature (T _L)	217°C
Time (T _L)	60 to 150 seconds
Peak Temperature (Tp)	260°C max for seconds
Time within 5°C to Peak Temperature (Tp)	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

Units are backward compatible with +240°C reflow processes

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.

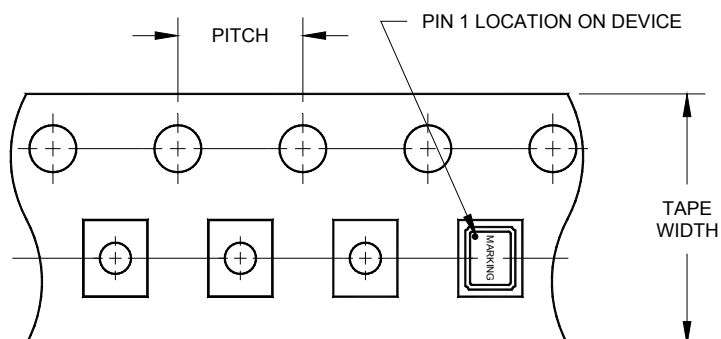
Environmental Specifications:

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

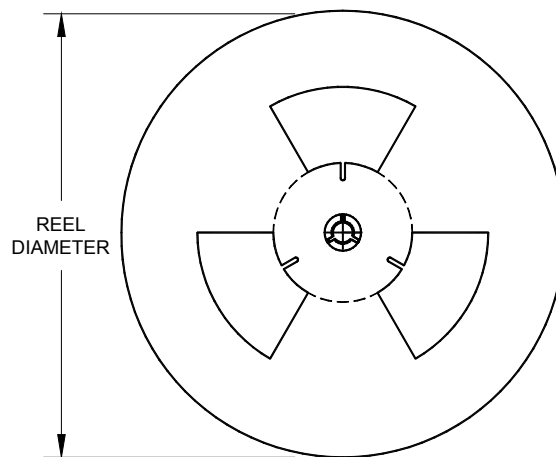
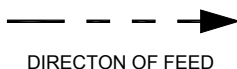
2.0 mm x 2.5 mm Ceramic Package SMD TCXO

I587/I787 Series

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

PROPRIETARY AND CONFIDENTIAL

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION, AND SUCH INFORMATION MAY NOT BE DISCLOSED TO OTHERS FOR ANY PURPOSE NOR USED FOR MANUFACTURING PURPOSES WITHOUT WRITTEN PERMISSION FROM ILSI America.