

**ECN/PCN No.: 4745**

For Manufacturer			
<b>Product Description:</b> Clipped Sinewave TCXO	<b>Abracon Part Number / Part Series:</b> I547	<input type="checkbox"/> Documentation only <input type="checkbox"/> ECN <input checked="" type="checkbox"/> EOL	<input checked="" type="checkbox"/> Series <input type="checkbox"/> Part Number
<b>Affected Revision:</b> Rev M	<b>New Revision:</b> EOL	<b>Application:</b>	<input type="checkbox"/> Safety <input type="checkbox"/> Non-Safety
<b>Prior to Change:</b> Rev M			
<b>After Change:</b> EOL			
<b>Cause/Reason for Change:</b> Discontinuation based on manufacturing capabilities.			
Change Plan			
<b>Effective Date:</b> 4/26/24	<b>Additional Remarks:</b>		
<b>Change Declaration:</b>			
<b>Issued Date:</b> 4/26/24	<b>Issued By:</b> <i>Stephanie Lopez</i>	<b>Issued Department:</b> Engineering	
<b>Approval:</b> <i>Thomas Culhane</i> Engineering Director	<b>Approval:</b> <i>Reuben Quintanilla</i> Quality Director	<b>Approval:</b> <i>Ying Huang</i> Purchasing Director	
For Abracon EOL only			
<b>Last Time Buy (if applicable):</b> N/A	<b>Alternate Part Number / Part Series:</b> N/A		
<b>Additional Approval:</b>	<b>Additional Approval:</b>	<b>Additional Approval:</b>	
Customer Approval (If Applicable)			
<b>Qualification Status:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Not accepted <i>Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.</i>			
<b>Customer Part Number:</b>		<b>Customer Project:</b>	
<b>Company Name:</b>	<b>Company Representative:</b>	<b>Representative Signature:</b>	
<b>Customer Remarks:</b>			

## 2.5 mm x 3.2 mm Ceramic Package SMD TCXO

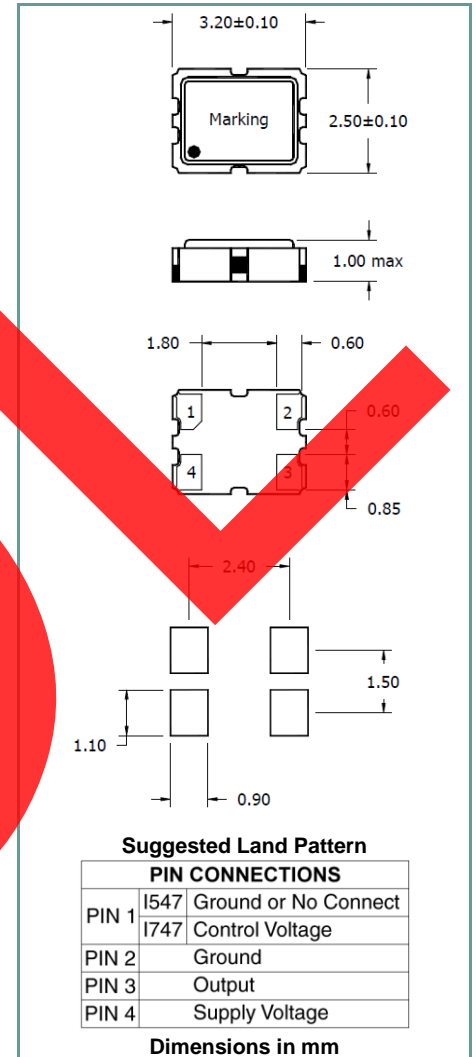
## I547/I747 Series

### Product Features:

Clipped Sinewave  
Analog Compensation  
Available  $\pm 0.5$ ppm Stability  
RoHS Compliant / Pb-free

### Applications:

GPS  
Smart Meters  
Wireless Base Stations  
Sonet / SDH  
T1/E1, T3/E3



<b>Frequency</b>	10MHz to 52MHz
<b>Frequency Tolerance @ 25° C</b>	$\pm 2.0$ ppm after second reflow
<b>Frequency Stability</b> Vs Temperature Vs Supply Voltage ( $\pm 5\%$ ) Vs Load (10%)	See Part Numbering Guide $\pm 0.2$ ppm Maximum $\pm 0.2$ ppm Maximum
<b>Output Level</b> Clipped Sinewave	0.8V p-p Minimum
<b>Output Load</b> Clipped Sinewave	10KOhms / 10 pF
<b>Start Time (90% of Vp-p)</b>	3.0mSec Maximum
<b>Aging</b>	$\pm 1$ ppm / Year Maximum
<b>Supply Voltage</b>	See Part Numbering Guide, tolerance $\pm 5\%$
<b>Current</b> <32MHz >32MHz	1.5mA Maximum 2.0mA Maximum
<b>Voltage Control</b>	1.5Vdc $\pm 1.0$ Vdc $\pm 5.0$ ppm Minimum (Only for I747)
<b>Operating Temperature Range</b>	See Part Numbering Guide
<b>Storage Temperature Range</b>	-40°C to +85°C
<b>Phase Noise (typical)</b>	-87 dBc/Hz at 10Hz -112 dBc/Hz at 100Hz -135 dBc/Hz at 1KHz -145 dBc/Hz at 10KHz
<b>Compensation</b>	Analog

### Part Numbering Guide

Sample Part Number: I547-1Q3-20.000 MHz				
Package	Operating Temperature	Frequency Stability vs Temperature	Supply Voltage	Frequency
I547 (Clipped Sinewave TCXO) I747 (Clipped Sinewave TCVCXO)	7 = 0°C to +50°C	*, ** Y = $\pm 0.5$ ppm	3 = 3.3V	- 20.000 MHz
	1 = 0°C to +70°C	*N = $\pm 1.0$ ppm	7 = 3.0V	
	3 = -20°C to +70°C	*O = $\pm 1.5$ ppm	8 = 2.8V	
	5 = -30°C to +85°C	*P = $\pm 2.0$ ppm	2 = 2.7V	
	2 = -40°C to +85°C	Q = $\pm 2.5$ ppm	1 = 1.8V	
		R = $\pm 3.0$ ppm		
	J = $\pm 5.0$ ppm			

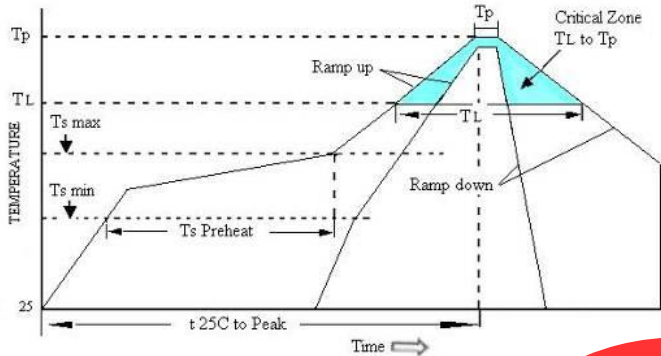
\* Not available for all frequencies or temperature ranges.  
\*\* Referenced to the midpoint between minimum and maximum frequency value over Operating Temperature Range.

**NOTE:** It is recommended that a 0.01 $\mu$ F bypass capacitor be connected between Vdd (Pin 4) and Ground (Pin 2) to minimize power supply noise. It is recommended that an external 0.01 $\mu$ F AC-coupling capacitor be connected to output (Pin 3) of the device. For the TXCO (I547), it is recommended that Pin 1 should not be left floating but be connected to Ground.

## 2.5 mm x 3.2 mm Ceramic Package SMD TCXO

**I547/I747 Series**

### Pb Free Solder Reflow Profile:



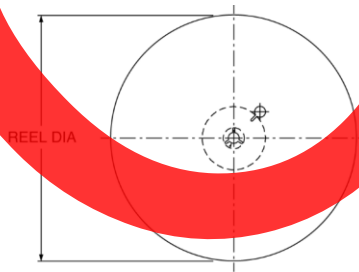
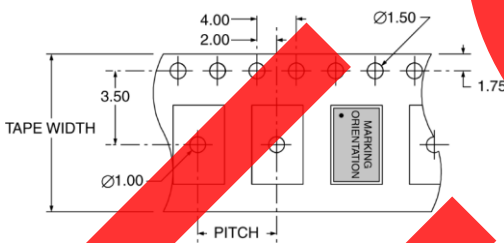
Units are backward compatible with +240°C reflow processes

Ts max to TL (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 (TL to Tp)	3°C / second max
Time Maintained Above Temperature (TL)	217°C 60 to 150 seconds
Time (TL)	
Peak Temperature (Tp)	260°C max for 10 seconds
Time within 5°C to Peak Temperature (Tp)	20 to 40 seconds
Ramp-down Rate	6°C / second max
Time 25°C to Peak Temperature	8 minutes max

### Package Information:

MSL = 1 (package does not contain plastic, storage life is unlimited under normal room conditions)  
Termination = e4 (Au over Ni over W base metallization)

### Tape and Reel Information:



PITCH	4.00
TAPE WIDTH	8.00
REEL DIA	180
QTY PER REEL	3,000

### Tape and Reel Information:

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 Compliant
Solderability	JESD22-B102 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