

# I538 Series



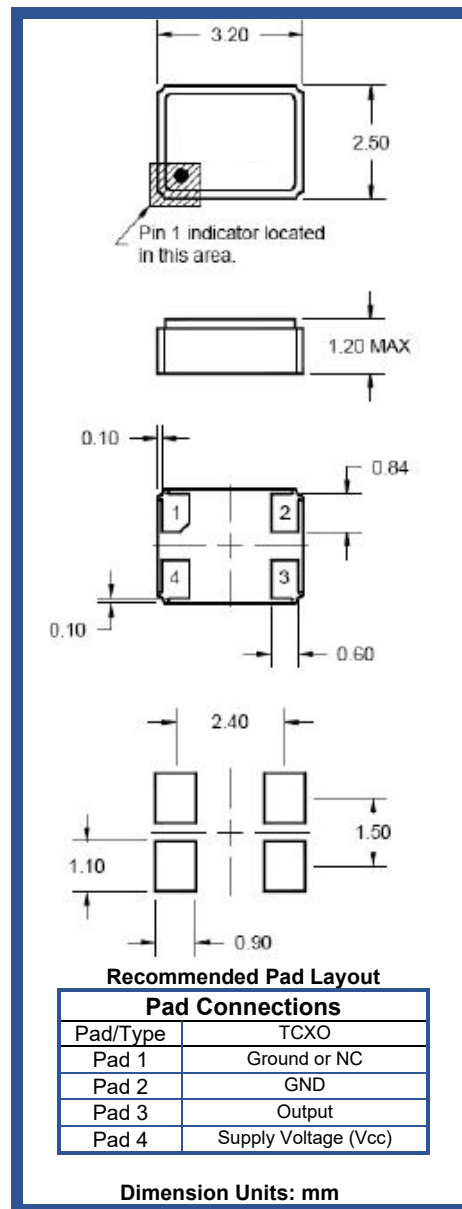
## Product Features:

TCXO  
 Low Jitter, Non-PLL Based Output  
 CMOS Output  
 Compatible with Leadfree Processing  
 Digital Compensation

## Applications:

Wireless Communication  
 Test Instruments  
 GPS  
 Base stations  
 Telecommunications

<b>Frequency</b>	8.000 MHz to 40.000 MHz
<b>Output Level</b> CMOS	"0" = 0.5 Vdc Max. "1" = 80% of Vcc Min.
<b>Output Load</b>	15pF
<b>Duty Cycle</b>	50% ±10%
<b>Rise / Fall Time</b>	10 nS Max.
<b>Frequency Stability</b> Vs Temperature Vs Voltage (±5%) Vs Load (±5%)	See Frequency Stability Table ±0.3 ppm Max. ±0.2 ppm Max.
<b>Frequency Tolerance @ 25° C</b>	±1.0 ppm Max.
<b>Aging @ 25° C</b>	±1 ppm / Year Max.
<b>Supply Voltage</b>	See Supply Voltage Table, Tolerance ± 5%
<b>Current</b>	6.0 mA Max.
<b>Operating</b>	See Operating Temperature Table
<b>Storage</b>	-40° C to +85° C
<b>Phase Noise (Typ. @ 20Mhz)</b>	-86 dBc/Hz @ 10 Hz -115 dBc/Hz @ 100 Hz -138 dBc/Hz @ 1KHz -146 dBc/Hz @ 10KHz



Part Number Guide		Sample Part Number: I538-1Q3- 20.000 MHz		
Package	Operating Temperature	Frequency Stability vs Temperature	Supply Voltage	Frequency
I538 (CMOS TCXO)	7 = 0°C to +50°C	**N = ±1.0 ppm	2 = 2.7 V	-20.000 MHz
	1 = 0°C to +70°C	**O = ±1.5 ppm	3 = 3.3 V	
	3 = -20°C to +70°C	P = ±2.0 ppm	6 = 2.5 V	
	5 = -30°C to +85°C	Q = ±2.5 ppm	7 = 3.0 V	
	2 = -40°C to +85°C	R = ±3.0 ppm	8 = 2.8 V	
		J = ±5.0 ppm		

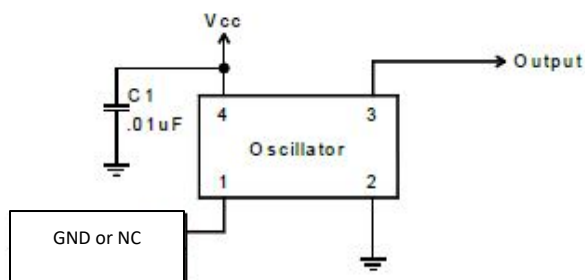
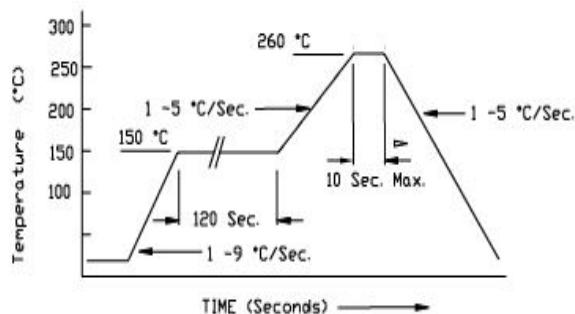
**NOTE:**

A 0.01 µF bypass capacitor is recommended between Vcc (pin 4) and GND (pin 2) to minimize power supply noise.

\*\* Not available for all operating temperature ranges and output frequencies.

## Pb Free Solder Reflow Profile:

## Typical Application:

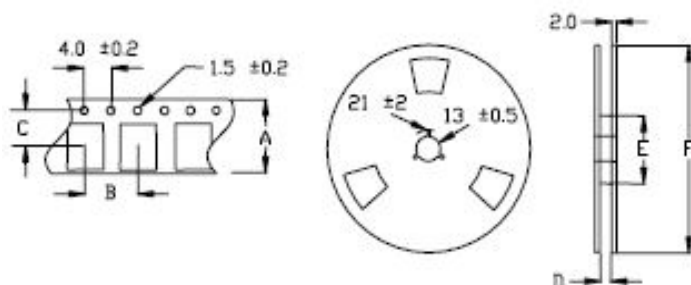


\*Units are backward compatible with 240C reflow processes

## Package Information:

MSL = N.A. (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:



Quantity per Reel	3000
A	8 ± 0.3
B	4 ± 0.2
C	3.5 ± 0.2
D	9 ± 1 or 12 ± 3
E	60 / 80
F	180

## 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 <sup>-8</sup> atm cc/s
Solvent Resistance	MIL-STD-202, Method 215

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