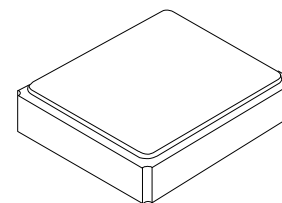


- **Temperature Compensated Crystal Oscillator**
- **Miniature 3.2 x 2.5 mm SMD Package**
- **Excellent Frequency Stability**
- **Low Phase Noise**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

XTC7012

38.4000 MHz
TCXO



SM3225-4

Electrical Characteristics

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Nominal Frequency	F_O			38.4000		MHz
Frequency Tolerance after Reflow			± 2 ppm maximum @ 25 ± 2 °C			
Storage Temperature Range in Tape and Reel			-40		+85	°C
Operating Temperature Range			-40		+85	°C
Power Supply Voltage	V_{DD}		1.71	1.80	1.89	V
Output Voltage with 10 pF 10 K Ω Load			0.8			V_{P-P}
Output Waveform			Clipped Sinewave			
Power Supply Current	I_{DD}				2.0	mA
Frequency Stability versus:						
Temperature, -40 to +85 °C					± 5.0	ppm
Load Variation, 10 pF 10 K Ω $\pm 10\%$					± 0.2	ppm
Supply Voltage, 1.80 V $\pm 5\%$					± 0.2	ppm
Start Up Time, 90% of Final RF level in V_{P-P}					2.0	ms
Harmonics					-5.0	dBc
SSB Phase Noise @ 1 kHz Carrier Offset					-125	dBc/Hz
Aging @ 25 °C					± 1.0	ppm/yr
Standard Shipping Quantity on 180 mm (7") Reel				1000		units
Lid Symbolization (Y = Year, WW = Week, S = Shift)			7012, YWWS			

Pin Connections

Connection	Terminals
Ground	1
Ground	2
TCXO Output	3
V_{DD}	4



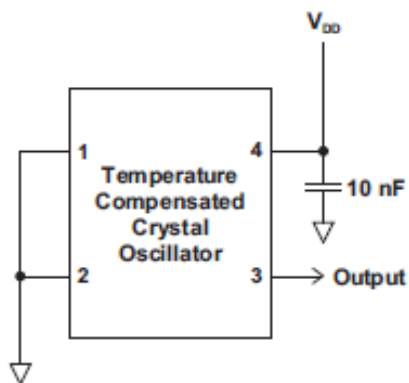
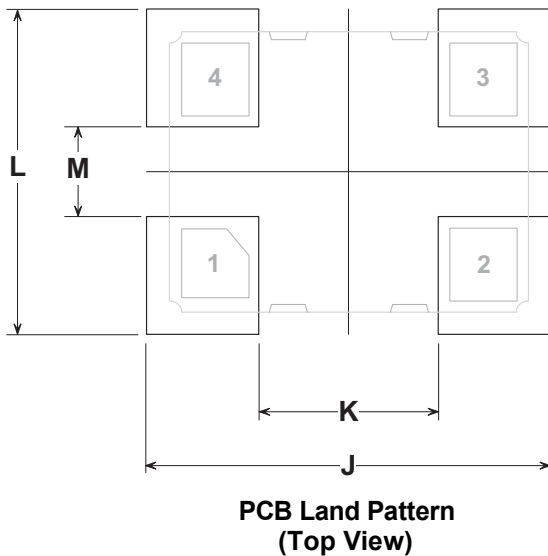
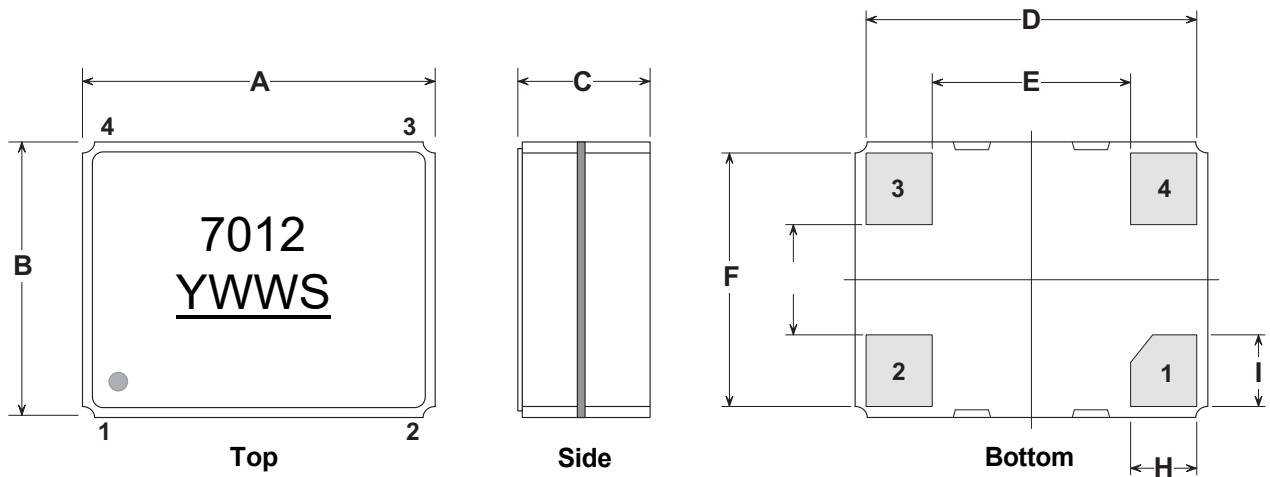
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

4-Terminal Surface-Mount Seam Weld Case

3.2 x 2.5 mm Nominal Footprint



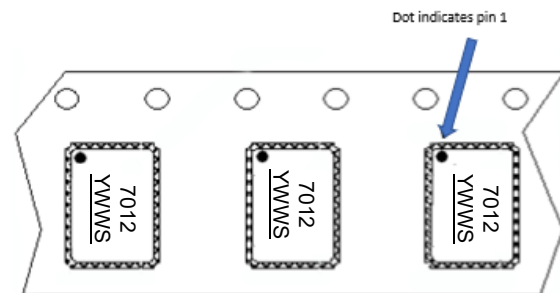
TCXO Application Circuit

Case and PCB Land Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.00	3.20	3.40	0.118	0.126	0.134
B	2.30	2.50	2.70	0.091	0.098	0.106
C	-	-	1.20	-	-	0.047
D	-	3.08	-	-	0.121	-
E	-	1.80	-	-	0.071	-
F	-	2.38	-	-	0.094	-
G	-	1.00	-	-	0.039	-
H	-	0.60	-	-	0.024	-
I	-	0.65	-	-	0.026	-
J	-	3.60	-	-	0.142	-
K	-	1.60	-	-	0.063	-
L	-	2.90	-	-	0.114	-
M	-	0.80	-	-	0.031	-

Case Materials

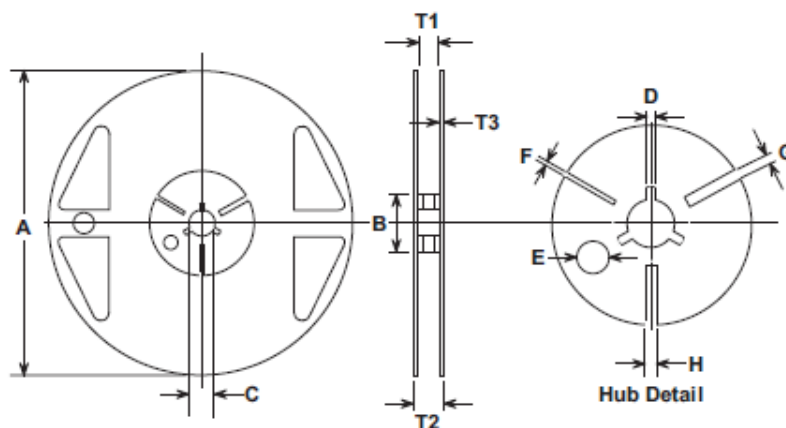
Materials	
Solder Pad Plating	0.3 to 1.0 μm Gold over 1.27 to 8.89 μm Nickel
Lid Plating	2.0 to 3.0 μm Nickel
Body	Al_2O_3 Ceramic



Package orientation in carrier tape

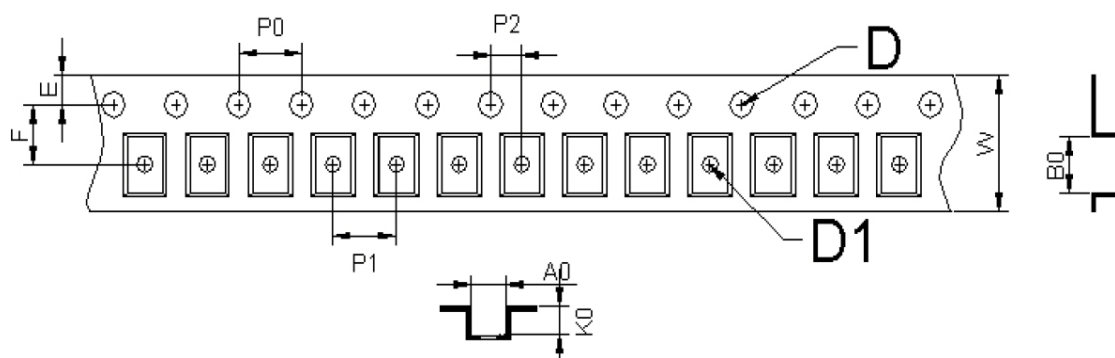
Reel Dimensions

Tape and Reel Standard per ANSI/EIA-481



mm	A	B	C	D	E	F	G	H	T1	T2	T3
Dimension	180	60	13.0	2.0	9.1	2.9	4.9	3.9	9.0	11.4	1.2
Tolerance	±1.0	+1.0/-0.0	±0.2	±0.5	±0.5	±0.5	±0.5	±0.5	±0.3	±1.0	±0.1

Tape Dimensions



mm	A0	B0	W	F	E	P0	P1	P2	D1	D	K0	t
Dimension	2.80	3.71	8.00	3.50	1.75	4.00	4.00	2.00	1.50	1.00	1.75	0.25
Tolerance	±0.10	±0.10	+0.30/-0.10	±0.05	±0.10	±0.10	±0.10	±0.05	+0.10/-0.00	+0.25/-0.00	±0.10	±0.02

Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

