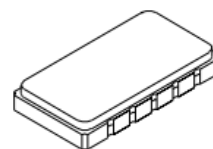


**XVT9009**

**20 MHz  
VCTCXO**



**SM7050-10**

- **Voltage Controlled Temperature Compensated Crystal Oscillator**
- **Excellent Frequency Stability & Low Phase Noise**
- **7 x 5 x 2 mm Surface-mount Case**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

#### Electrical Characteristics

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Nominal Frequency	Fo			20.000000		MHz
Storage Temperature			-55		+125	°C
Operating Temperature Range			-40		+85	°C
Power Supply Voltage	V <sub>DD</sub>		2.97	3.30	3.63	V
Output Voltage with Load 10 pF  10 KΩ	V <sub>OUT</sub>		1.0			V <sub>P-P</sub>
Output Wave form			Sinewave			
Power Supply Current	I <sub>DD</sub>				8.0	mA
Control Voltage	V <sub>CON</sub>			1.65 ±1.0		V
Control Voltage Input Impedance			100K			ohms
Frequency Tolerance, V <sub>CONTROL</sub> =1.65 V (as received)			±2.0 ppm maximum @ 25 °C ±3 °C			
Frequency Stability versus:						
Temperature, -40 to 85 °C				±0.5		ppm
Supply Voltage, 2.97 to 3.63 V				±0.2		ppm
Load, 10 pF  10 KΩ ±10%				±0.2		ppm
Control Voltage Frequency Range (1.65 ±1.0 V)				±5		ppm
Start Up Time, 90% of final RF level in V <sub>P-P</sub>					2.0	ms
First Year Aging @ 25 °C				±1		ppm
10 Year Aging @ 25 °C				±5		ppm
Harmonics					-5.0	dBc
SSB Phase Noise:						
@ 1 kHz Carrier Offset				-135		dBc/Hz
@ 10 kHz Carrier Offset				-145		dBc/Hz
@ 100 kHz Carrier Offset				-150		dBc/Hz
Standard Shipping Quantity on 180 mm (7") Reel				500		units
Lid Symbolization: (Y = Year, WW = Week, S = Shift)				9009 , YWWS		



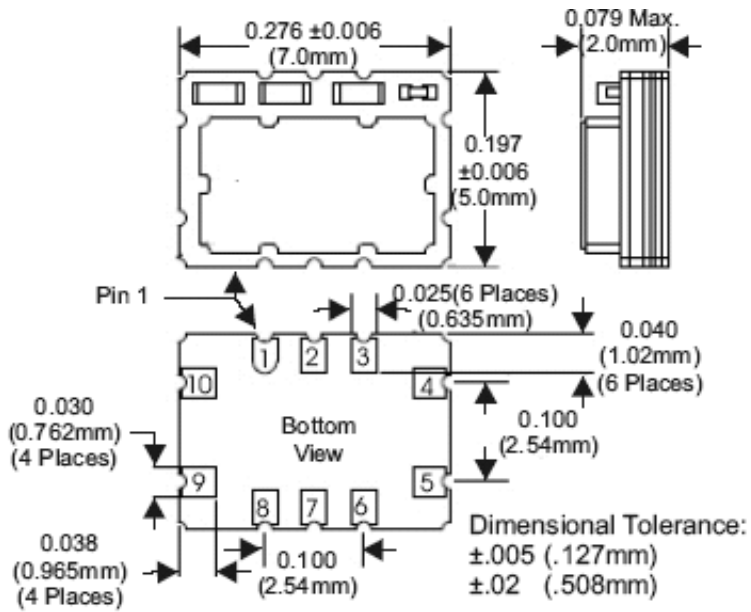
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

#### 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.

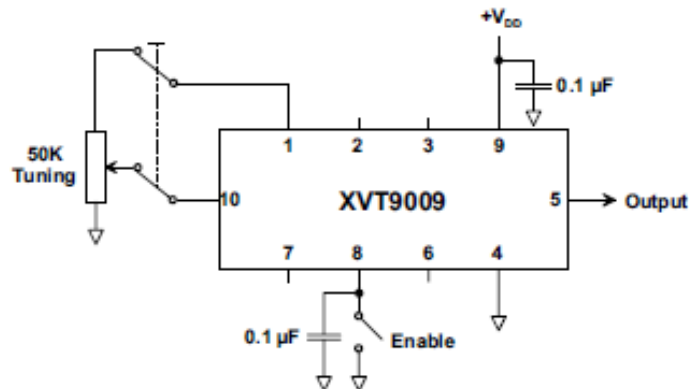
## 10-Terminal Ceramic Surface-Mount Case

### 5 x 7 mm Nominal Footprint



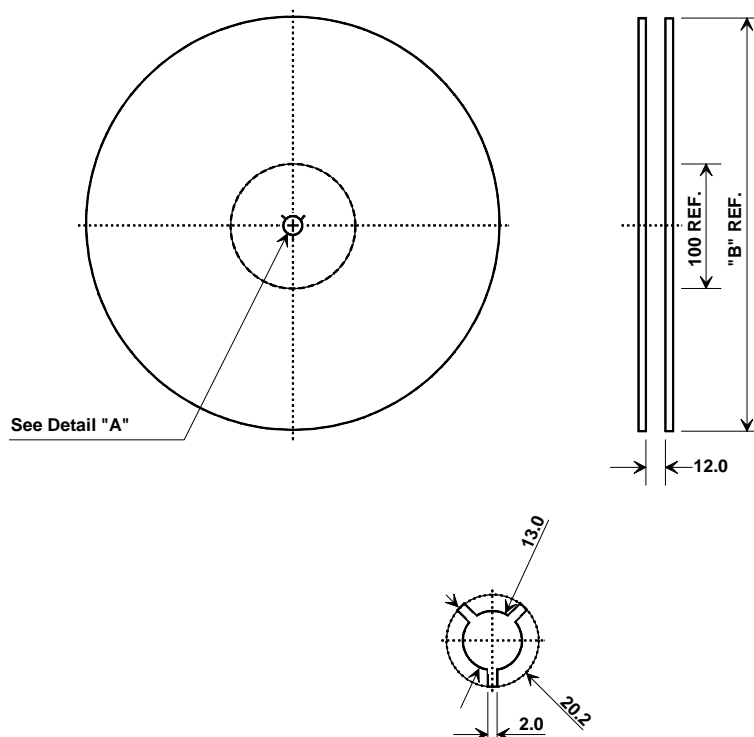
Pin	Connection
1	Control Voltage Full Scale Reference
2	No Connection
3	DC-coupled Output (do not connect)
4	Ground
5	Output ( $V_{OUT}$ )
6	No Connection
7	No Connection
8	Enable (tri-state control, ground to disable output)
9	Supply Voltage ( $V_{DD}$ )
10	Control Voltage $V_{CON}$ (leave unconnected if not used)

**XVT9009 Application Circuit**



## Tape and Reel Specifications

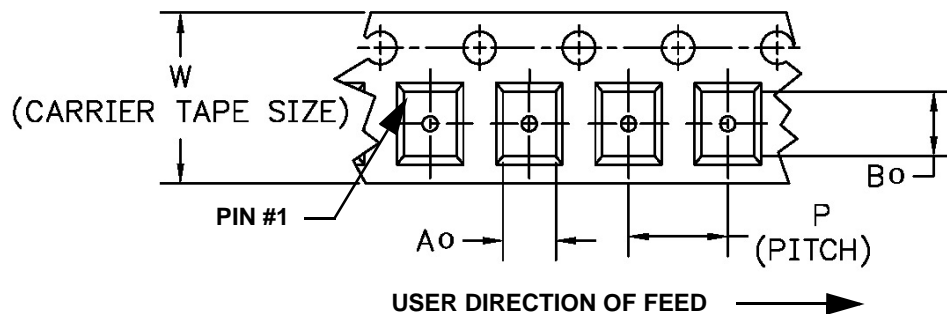
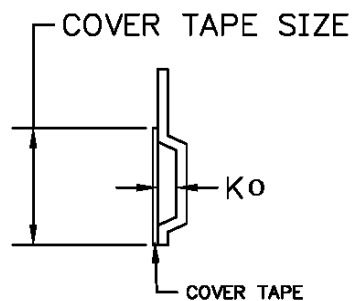
Tape and Reel Standard per ANSI/EIA-481



"B"		Quantity Per Reel
Inches	millimeters	
7	178	1000
13	330	3000

### COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	9.4 mm
Bo	7.4 mm
Ko	2.0 mm
Pitch	8.0 mm
W	16.0 mm



## 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.

