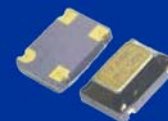




BVT1657T SERIES VCTCXO



BROOKDALE FREQUENCY CONTROLS, INC.

- 5.0 x 7.0 x 2.5mm CERAMIC SMD VCTCXOs
- NO MECHANICAL TRIMMER FOR AQUEOUS WASHING
- RoHS Compliant: Pb Free
- REQUEST A CERTIFICATE OF CONFORMANCE
- 0.01 uF DECOUPLING CAPACITOR BUILT-IN
- FREQUENCY STABILITY TIGHT AS ± 0.5 ppm AVAILABLE
- HCMOS SQUAREWAVE OUTPUT
- REQUEST A QUOTE ON THIS DEVICE

BVT1657T TCXO SERIES SPECIFICATIONS

Frequency Range		1.0 MHz ~ 156.0 MHz				
Output Wave from		Square wave HCMOS				
Initial Calibration Tolerance ⁽¹⁾		± 2 ppm at $+25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and $V_{\text{con}} = +1.5\text{VDC}$				
Frequency Stability		± 0.5 ppm	± 1.0 ppm	± 1.5 ppm	± 2.0 ppm	± 2.5 ppm
TEMPERATURE RANGE	0°C to +50°C	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE
	-10°C to +60°C	CALL US	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE
	-20°C to +70°C	Not Available	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE
	-30°C to +75°C	Not Available	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE
	-40°C to +85°C	Not Available	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE
FREQUENCY STABILITY	Vs. AGING	± 1.0 ppm max. first year at $+25^{\circ}\text{C}$				
	Vs. VOLTAGE CHANGE	± 0.3 ppm max. for a $\pm 5\%$ input voltage change				
	Vs. LOAD CHANGE	± 0.3 ppm max. for a $\pm 10\%$ loading condition change				
	Vs. REFLOW	± 1 ppm max. 1 reflow and measured 24 hours afterwards				
Supply Voltage (V_{DD})		+2.8VDC	+3.0VDC	+3.3VDC	+5VDC	
Current Consumption (typical)		2 mA @ 8.192MHz 3 mA @ 10 MHz 14 mA @ 77.760 MHz 26 mA @ 155.520 MHz	2mA @ 8.192MHz 4 mA @ 10 MHz 17 mA @ 77.760 MHz 35 mA @ 155.520 MHz	5 mA @ 8.192MHz 7 mA @ 10 MHz 32 mA @ 77.760 MHz 50 mA @ 155.520 MHz		
Electronic Frequency Tuning	Frequency Deviation Range with V_{con}	$V_{\text{con}} = +1.5 \text{V} \pm 1.0 \text{V}$. with $\pm 5 \sim \pm 12$ ppm Deviation Range (standard No suffix) $V_{\text{con}} = +2.5 \text{V} \pm 2.0 \text{V}$. with $\pm 5 \sim \pm 25$ ppm Deviation Range (suffix W)				
	Slope Polarity	Positive: Positive voltage for positive frequency shift				
	Linearity	10 % ma				
Output Voltage Range	Logic High "1"	90% (V_{DD}) min.				
	Logic Low "0"	10% (V_{DD}) max.				
Duty Cycle		50% $\pm 10\%$ measured @ 50% V_{DD}				
Rise Time and Fall Time		10 ns max. 20% \leftrightarrow 80% of waveform				
Start-Up Time.		10ms max.				
Output Load		15 pF				
SSB Phase Noise (25°C)	Offset	10 Hz	100 Hz	1 kHz	10 kHz	100 kHz
	3.3V-100.000MHZ	-72dBc/Hz	--110 dBc/Hz	-125dBc/Hz	-132dBc/Hz	-125dBc/Hz
Humidity		85% RH, 85°C, 48 Hours				
Hermeticity		Leak rate 2×10^{-8} ATM-cm ³ /sec max. *Crystal component only*				
Solderability		MIL-STD-202F method 208E				
Vibration		MIL-STD-202F method 204, 35G, 50 to 2000Hz				
Shock		MIL-STD-202F method 213B, test conditions E, 1000GG 1/2sine wave				

PART NUMBER GUIDE

Model	Voltage	Stability	Operating Temperature (°C)	Vcon Range	Frequency
BVT1657T	2 = 2.8V	1 = ± 1 ppm	A = 0°C to 70°C	Blank = $+1.5\text{V} \pm 1\text{V}$ ($\pm 5 \sim \pm 12$ ppm)	
	3 = 3.0V	15 = ± 1.5 ppm	B = -10°C to 60°C	W = $+2.5\text{V} \pm 2\text{V}$ ($\pm 5 \sim \pm 25$ ppm)	
	33 = 3.3V	2 = ± 2 ppm	C = -20°C to 70°C		
	5 = 5.0V	25 = ± 2.5 ppm	D = -30°C to 75°C		
		5 = ± 0.5 ppm	M = -40°C to 85°C		

EXAMPLE

BVT1657T	3	1	A		50.0MHz
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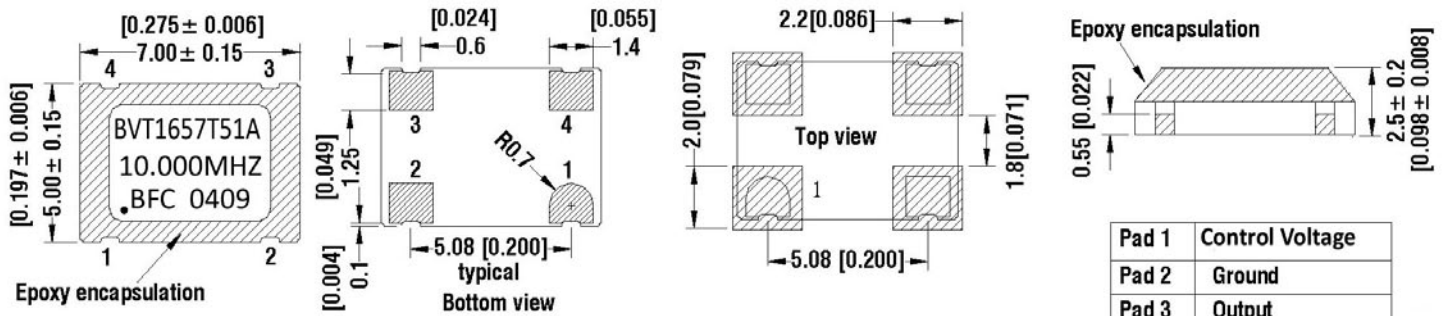


BVT1657T SERIES VCTCXO

HCMOS OUTPUT / 5 x 7 x 2.5mm SMD PACKAGE / 2.8V, 3V,

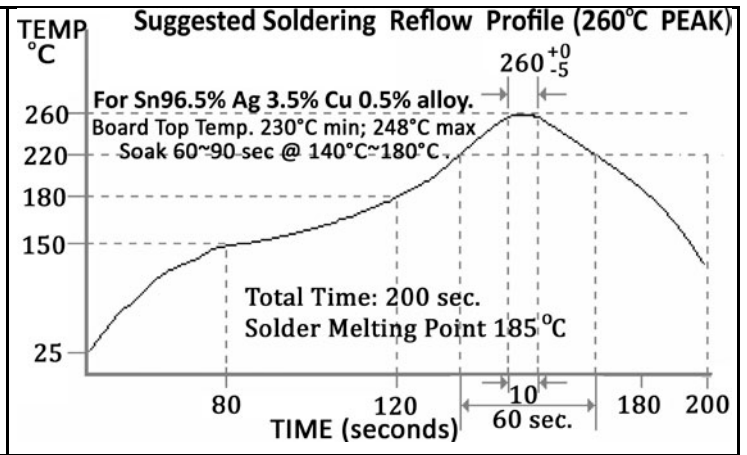
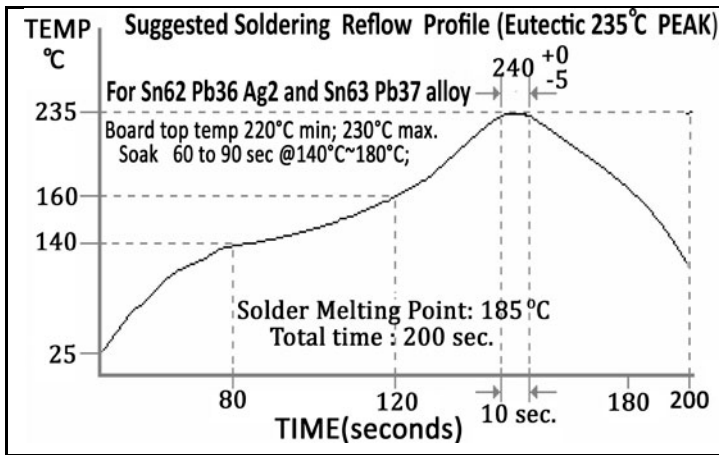


PACKAGE DIMENSIONS AND LAND PATTERN

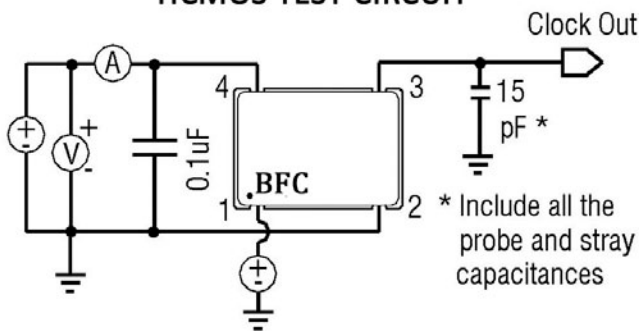


Pad 1	Control Voltage
Pad 2	Ground
Pad 3	Output
Pad 4	Supply voltage

Rounded pad is pad No. 1. Count counter-clockwise when looking at top view.
 Count clockwise when looking at bottom view. 0.01 uF decoupling capacitor is built-in.



HCMOS TEST CIRCUIT



HCMOS OUTPUT WAVEFORM

