



BT1653T SERIES

HCMOS TTL SMD TCXO



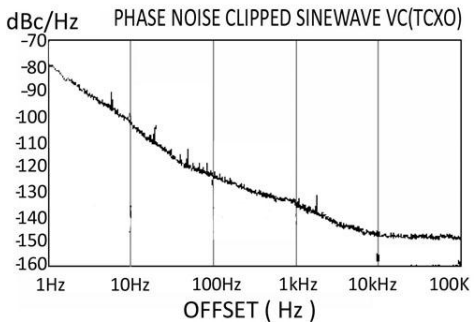
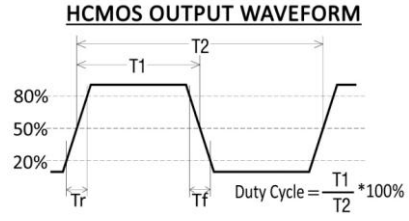
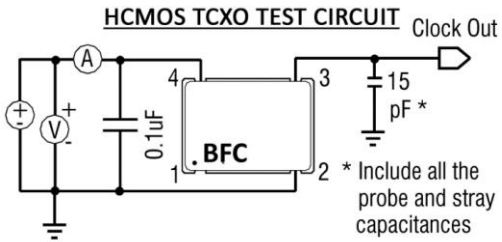
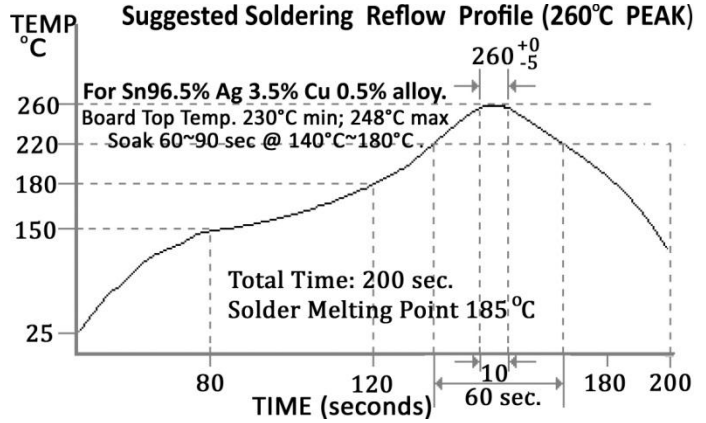
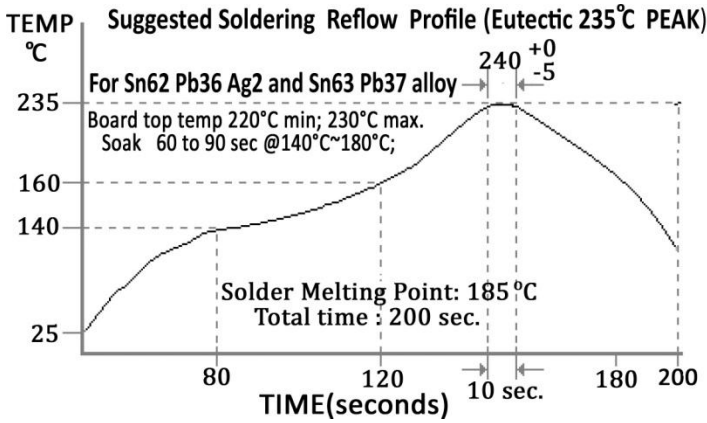
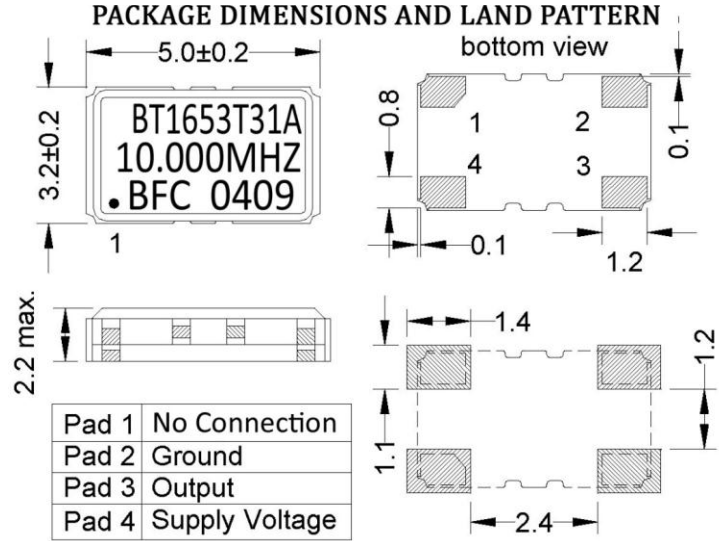
FEATURES:

- 5.0 x 3.2 x 2.2 mm Ceramic SMD TCXOs
- HCMOS Square Wave Output
- No Mechanical Trimmer To Allow For Aqueous Washing
- **RoHS Compliant**
- 0.01 uF Decoupling Capacitor Built-In
- Wide Frequency Range: 1.0 MHz to 156.0 MHz
- Frequency Stability As Tight As ± 0.5 ppm Available
- -40 to +85°C Temperature Range Available

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Frequency Range		1.0 MHz to 200.0 MHz				
Output Wave form		Square wave HCMOS				
Initial Calibration Tolerance		± 2 ppm at +25°C ± 2 °C				
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
TEMPERATURE RANGE	-40°C to +85°C	Not Available	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE
	Vs. Aging	± 1.0 ppm max. first year at +25°C				
	Vs. Voltage Change	± 0.3 ppm max. for a $\pm 5\%$ input voltage change				
	Vs. Load Change	± 2.0 ppm max. for a $\pm 10\%$ loading condition change				
FREQUENCY STABILITY	Vs. Reflow	± 1 ppm max. 1 reflow and measured 24 hours afterwards				
Supply Voltage(V _{DD})		+2.8VDC	+3.0VDC	+3.3VDC		
Current Consumption (typical)		2mA @ 8.192MHZ 4 mA @ 10 MHz 17 mA @ 77.760 MHz 35 mA @ 155.520 MHz				
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		1.5 ns typical; 2.0 nano.max. 10% \leftrightarrow 90% of V _{DD}				
Start-Up Time.		5 ms typical; 10 m. sec. max.				
Output Load		15 pF				
SSB Phase Noise At 25°C	Offset	10 Hz	100 Hz	1 kHz	10 kHz	100 kHz
	3.3V-100.0MHZ	-72 dBc/Hz	-110 dBc/Hz	-125 dBc/Hz	-132 dBc/Hz	-125 dBc/Hz
Green Requirement		RoHS Compliant, Pb Lead Free				
MSL Level		MSL 1 per IPC/JEDEC-STD-020C				
Humidity		85% RH, 85°C, 48 Hours *Crystal component only*				
Hermeticity		Leak rate 2x10 ⁻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				
Storage temperature range		-55 to +125°C				
PART NUMBER GUIDE						
Model	Voltage	Stability		Operating Temperature (°C)		Frequency
BT1653T	2 = 2.8V	5 = ± 0.5 ppm		A = 0°C to 50°C		
	3 = 3.0V	1 = ± 1 ppm		B = -10°C to 60°C		
	33 = 3.3V	15 = ± 1.5 ppm		C = -20°C to 70°C		
		2 = ± 2 ppm		D = -30°C to 75°C		
		25 = ± 2.5 ppm		M = -40°C to 85°C		
EXAMPLE						
BT1653T	3	1		A		50.000 MHz

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