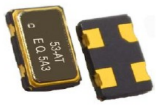
EUROQUARTZ

MB53T TCXO

5 x 3.2 x 2.2mm SMD HCMOS

- **Quick turnaround production**
- **Low Jitter: 70ps peak to peak (typical)**
- **Low phase noise: -114dBc at1kHz offset (133MHz)**
- **Custom frequencies are easily configured**
- **Supply voltages 2.8V, 3.0V or 3.3VDC**
- **TCXO or VCTCXOs CMOS square wave output**

RoHS



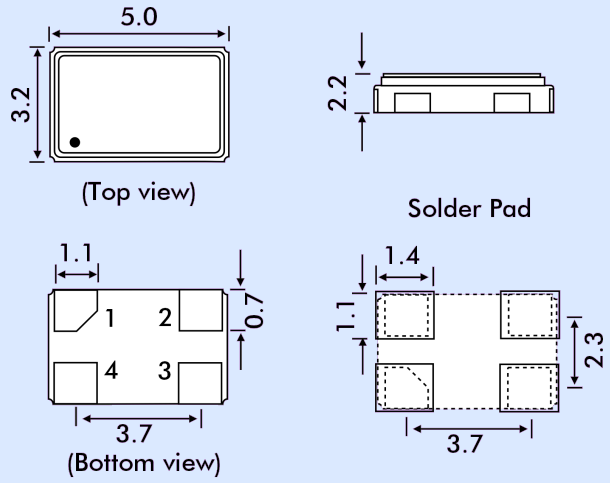
DESCRIPTION

The MB53T TCXO is packaged in 7 x 5mm, 4 pad ceramic SMD package. The part has a squarewave (CMOS) output and a stability of ±2.5ppm over the temperature range -30° to +85°C. A 0.01µF decoupling capacitor is built-in. The part may be specified as a TCXO or a Voltage-Controlled TCXO (VCTCXO).

SPECIFICATION

Product Series Code	
TCXO:	MB53T
VCTCXO:	VMB53T
Frequency Range:	1.0MHz to 200.0MHz
Output Waveform:	Squarewave, HCMOS
Initial Calibration Tolerance:	<±2.0ppm at +25°±2°C
Frequency Stability	
vs. Temperature Change:	*See table*
vs. Ageing:	±1.0 ppm max. first year
vs. Voltage Change:	±0.3 ppm max. ±5% change
vs. Load Change:	±0.3 ppm max. ±10% change
vs. Reflow (SMD type):	±1.0ppm max. for one reflow (*Measured after 24 hours*)
Supply Voltage:	+2.8VDC ±5% +3.0VDC ±5% +3.3VDC ±5%
Output Logic Levels:	Logic High: 90% Vdd min. Logic Low: 10% Vdd max.
Rise and Fall Times:	10ns max.
Duty Cycle:	50±10% standard, 50±5% option
Start-up Time:	5ms typical, 10ms max.
Current Consumption	
at 25.0MHz:	8mA max.
at 200.0MHz:	20mA max.
Output Load:	15pF
Storage Temperature:	-55~+125°C
RoHS Status:	RoHS Compliant and pB free

MB53T - OUTLINES AND DIMENSIONS



Pad Connections
1 VCTCXO: Voltage Control
TCXO: Do not connect
2 Ground
3 Output
4 Supply Voltage

VMB53T VOLTAGE CONTROL SPECIFICATION

Control Voltage Centre:	Standard = +1.5±1.0Volts (for all voltages)
Frequency Deviation:	±5.0ppm min. (Vcon = +1.5V±1.0V)
Slope Polarity:	Positive *(increase of control voltage increases output frequency.)*
Input Impedance:	50kΩ minimum
Modulation Bandwidth:	20kHz minimum
Linearity:	±10% maximum

FREQUENCY STABILITY OVER TEMPERATURE

Frequency Stability (ppm)		±0.5	±1.0	±1.5	±2.0	±2.5	±3.0
Temperature Range (°C)	0 ~ +50	✓	✓	✓	✓	✓	✓
	-10 ~ +60	ASK	✓	✓	✓	✓	✓
	-20 ~ +70	x	✓	✓	✓	✓	✓
	-30 ~ +75	x	✓	✓	✓	✓	✓
	-40 ~ +85	x	✓	✓	✓	✓	✓

✓ = available, x = not available, ASK = Please contact us

PART NUMBER FORMAT

Example: **MB53T 28 - 38.880 - 2.5 / -30+85**

Series Description
TCXO: MB53T
VCTCXO: VMB53T
Supply Voltage
28: 2.8VDC
30: 3.0VDC
33: 3.3VDC
Frequency MHz
Stability ±ppm
Operating Temperature Range

SSB PHASE NOISE at 25°C

Offset		10Hz	100Hz	1kHz	10kHz	100k Hz
MB53T at 133.333MHz	(dBc/Hz)	-76	-102	-114	-110	-100

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