

- Miniature SMD 5 x 3.2 x 1.3mm package
- Frequency range: 6.4MHz to 40MHz
- Close tolerance stability available from $\pm 0.5\text{ppm}$
- Supply voltage 2.5V, 3.0, 3.3VDC
- Very low power consumption



DESCRIPTION

(V)EM53T series TCXOs are packaged in a miniature 3.2 x 2.5mm ceramic SMD case. With clipped sinewave output, tolerances are available from $\pm 1.0\text{ppm}$ over -40° to $+85^\circ\text{C}$. The part exhibits low supply current, 6mA max. at 3.3V.

SPECIFICATION

Product Series Code	TCXO: EM537T VCTCXO: VEM53T
Frequency Range:	6.4MHz to 40MHz
Output Waveform:	CMOS
Initial Calibration Tolerance:	$< \pm 2\text{ppm}$ at 25°C
Standard Frequencies:	10.0, 12.8, 13.0, 14.7456, 16.0, 16.384, 16.367667, 19.2, 19.44, 19.680, 20.0, 25.0, 27.0 MHz
Operating Temperature Stab:	See table
Frequency Stability vs. Ageing:	$\pm 1.0\text{ ppm max/Year}$ at 25°C
vs. Voltage Change:	$\pm 0.2\text{ ppm max. } \pm 5\%$ change
vs. Load Change:	$\pm 0.2\text{ ppm max. } \pm 10\%$ change
vs. Reflow (SMD type):	$\pm 1.0\text{ ppm max.}$ for one reflow (measured after 24 hours)
Supply Voltage:	+2.5VDC $\pm 5\%$, +3.0VDC $\pm 5\%$ +3.3VDC $\pm 5\%$
Start-up Time:	5ms typical, 10ms max.
Output Load:	15pF
Current Consumption:	6mA max.
Duty Cycle:	50% $\pm 10\%$ standard, 50% $\pm 5\%$ as option
Storage Temperature:	-40°C to $+85^\circ\text{C}$

FREQUENCY STABILITY OVER OPERATING TEMP

Stability	0.5ppm	1.0ppm	1.5ppm	2.0ppm	2.5ppm	3.0ppm
0°C to +50°C:	✓	✓	✓	✓	✓	✓
-10°C to +60°C:	Ask	✓	✓	✓	✓	✓
-20°C to +70°C:	x	✓	✓	✓	✓	✓
-30°C to +75°C:	x	✓	✓	✓	✓	✓
-30°C to +85°C:	x	✓	✓	✓	✓	✓
-40°C to +85°C:	x	Ask	✓	✓	✓	✓

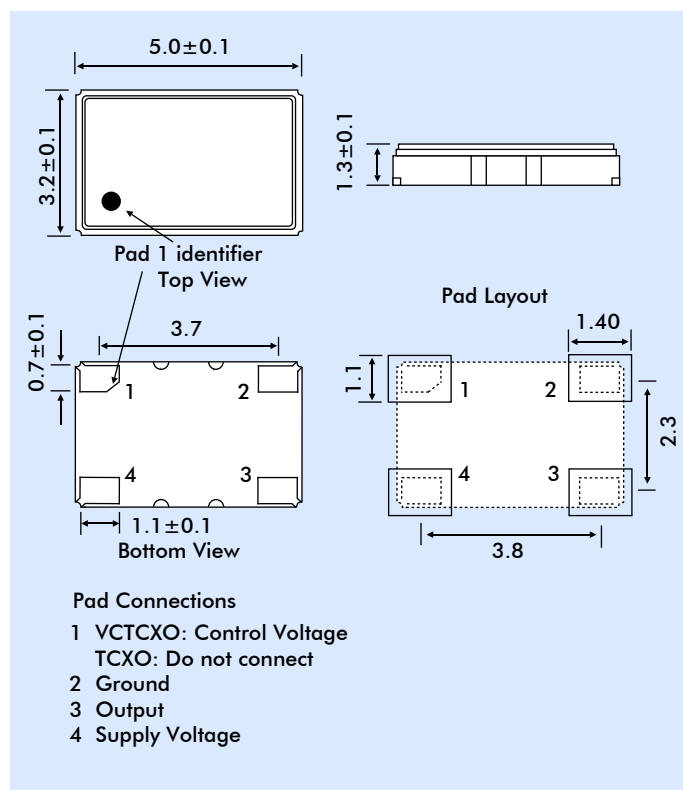
VEM53S VOLTAGE CONTROL SPECIFICATION

Control Voltage	Vcon centre = $+1.5\text{V} \pm 1\text{V}$
Frequency Pulling Range:	$\pm 5\text{ ppm min.}$
Slope Polarity:	Positive (increase of control voltage increases output freq.)
Linearity:	$\pm 5\%$ typical $\pm 10\%$ max.
Input Impedance:	1M Ω typical
Modulation Bandwidth:	20kHz min. measured at +3dB

SSB PHASE NOISE at 25°C

Offset	10Hz	100Hz	1kHz	10kHz	100kHz	
Test Frequency 10.0MHz	(dBc/Hz)	-96	-122	-138	-145	-150

EM53T- OUTLINES AND DIMENSIONS



PART NUMBERS

