

- Miniature SMD 5 x 3.2 x 1.3mm package
- Frequency range: 6.4MHz to 52MHz
- Close tolerance stability available from ± 0.5 ppm
- Supply voltage 1.8V, 2.5V, 3.0V, 3.3V
- Very low power consumption



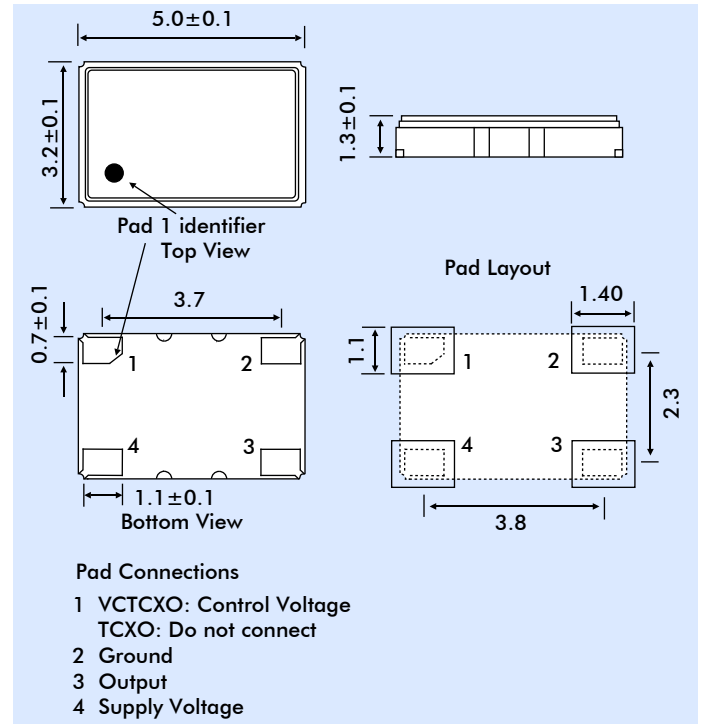
DESCRIPTION

(V)EM53T series TCXOs are packaged in a 5.0 x 3.2mm ceramic SMD case. With CMOS output, tolerances are available from ± 1.0 ppm over -40° to $+85^\circ\text{C}$. The part exhibits low supply current, 6mA max. at 3.3V.

SPECIFICATION

| | |
|---------------------------------|--|
| Product Series Code | TCXO: EM53T VCTCXO: VEM53T |
| Frequency Range: | 6.4MHz to 52MHz |
| Output Waveform: | CMOS |
| Initial Calibration Tolerance: | ± 2 ppm at $25^\circ\text{C} \pm 2^\circ\text{C}$ |
| Standard Frequencies: | 10.0, 12.8, 13.0, 14.7456, 16.0, 16.384, 19.2, 19.44, 19.680, 20.0, 25.0, 27.0 MHz |
| Operating Temperature Stab: | See table |
| Frequency Stability vs. Ageing: | ± 1.0 ppm max/Year at $+25^\circ\text{C}$ |
| vs. Voltage Change: | ± 0.3 ppm max. $\pm 5\%$ change |
| vs. Load Change: | ± 0.3 ppm max. $\pm 10\%$ change |
| vs. Reflow (SMD type): | ± 1.0 ppm max. for one reflow (measured after 24 hours) |
| Supply Voltage: | +1.8VDC $\pm 5\%$, +2.5VDC $\pm 10\%$, +3.0VDC $\pm 10\%$, +3.3VDC $\pm 10\%$ |
| Output Load: | 15pF |
| Current Consumption: | 6mA max. |
| Duty Cycle: | 50% $\pm 10\%$ standard, 50% $\pm 5\%$ as option |
| Storage Temperature: | -55°C to $+125^\circ\text{C}$ |

EM53T- OUTLINES AND DIMENSIONS



FREQUENCY STABILITY OVER OPERATING TEMP

| Stability | ± 0.5 ppm | ± 1.0 ppm | ± 1.5 ppm | ± 2.0 ppm | ± 2.5 ppm | ± 3.0 ppm |
|--|---------------|---------------|---------------|---------------|---------------|---------------|
| 0°C to $+50^\circ\text{C}$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| -10°C to $+60^\circ\text{C}$ | ASK | ✓ | ✓ | ✓ | ✓ | ✓ |
| -20°C to $+70^\circ\text{C}$ | X | ✓ | ✓ | ✓ | ✓ | ✓ |
| -30°C to $+75^\circ\text{C}$ | X | ✓ | ✓ | ✓ | ✓ | ✓ |
| -30°C to $+85^\circ\text{C}$ | X | ✓ | ✓ | ✓ | ✓ | ✓ |
| -40°C to $+85^\circ\text{C}$ | X | ASK | ASK | ASK | ✓ | ✓ |

VEM53T VOLTAGE CONTROL SPECIFICATION

| | |
|--------------------------|---|
| Control Voltage | Vdd = +1.8V: Vcon centre = $+0.9\text{V} \pm 0.6\text{V}$ Vdd = +2.5V: Vcon centre = $+1.4\text{V} \pm 1\text{V}$ Vdd = 3.0V+3.3V: Vcon centre = $+1.5\text{V} \pm 1\text{V}$ |
| Frequency Pulling Range: | ± 5 ppm min. |
| Slope Polarity: | Positive (increase of control voltage increases output freq.) |
| Linearity: | $\pm 10\%$ max. |
| Input Impedance: | 1M Ω min |
| Modulation Bandwidth: | 20kHz min. |

PART NUMBERS

Example:

VEM53T 33-38.120-1.5/-30+75

Series Description
TCXO = EM53T
VCTCXO = VEM53T

Supply Voltage
3.3V = 33
3.0V = 3
2.5V = 25
1.8V = 18

Frequency (MHz)

Stability over OTR (\pm ppm)

Operating Temperature Range (OTR) ($^\circ\text{C}$)
(Lower and upper limits.)