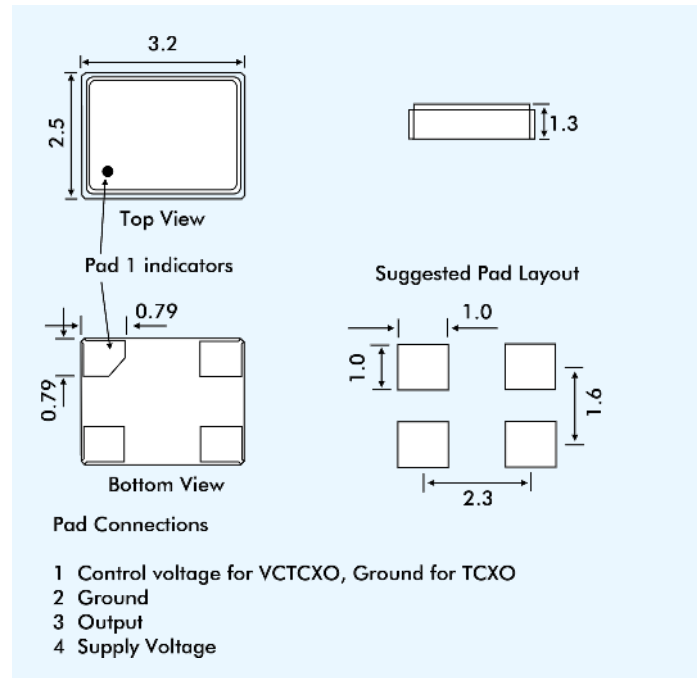


- Miniature 3.2 x 2.5 x 1.3mm SMD package
- Frequency range: 8.192MHz to 60.0MHz
- Supply voltage +1.8V, +2.5 V, +3.0V, +3.3V
- Frequency stability from ±1ppm over -40 to +85°C
- RoHS compliant



EM32T - OUTLINES AND DIMENSIONS



DESCRIPTION

EM32T series TCXOs are packaged in a miniature, 3.2 x 2.5mm outline, 4 pad ceramic SMD package. With squarewave (HCMOS) output, tolerances are available from ±1.0ppm over -40° to +85°C. The part has a 0.01µF decoupling capacitor built in.

SPECIFICATION

Product Series Code	TCXO: EM32T VCTCXO: VEM32T
Frequency Range:	8.192MHz to 60.0MHz
Output Waveform:	Squarewave, CMOS
Initial Calibration Tolerance:	<±2.0ppm at +25°±2°C
Operating Temperature Range:	from 0°~50° to -40°~+85°C
Frequency Stability	
vs. Temperature:	See table below
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
Supply Voltage:	1.8V, +2.5V, +3.0V, +3.3V ±10%
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:	6.0mA typical
Output Load:	15pF
Storage Temperature:	-40°~+85°C

VEM32T VOLTAGE CONTROL SPECIFICATION

Control Voltage:	0.9V±0.6V (1.8V); 1.4±1.0V (2.5V); 1.5V±1.0V (3.0V/3.3V)
Frequency Deviation:	±5.0 ppm min. (Vcon = +1.5V±1.0V)
Slope Polarity:	Positive (increase of control voltage increases output frequency.)
Input Impedance:	1.0MΩ minimum
Modulation Bandwidth:	20kHz minimum
Linearity:	±10% maximum

FREQUENCY STABILITY

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

✓ = available, x = not available, ASK = call Technical Sales

PART NUMBERS

Example:

EM32T33-38.400-2.5/-30+75

Series Description

TCXO = EM32T

VCTCXO = VEM32T

Supply Voltage 1.8V = 18

2.5V = 25

3.0V = 3

3.3V = 33

Frequency (MHz)

Stability over OTR (±ppm)

SSB PHASE NOISE at 25°C

Offset	10Hz	100Hz	1kHz	10kHz	100kHz	
M32T33 10.0MHz	(dBc/Hz)	-96	-122	-138	-145	-150