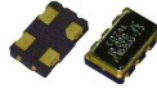


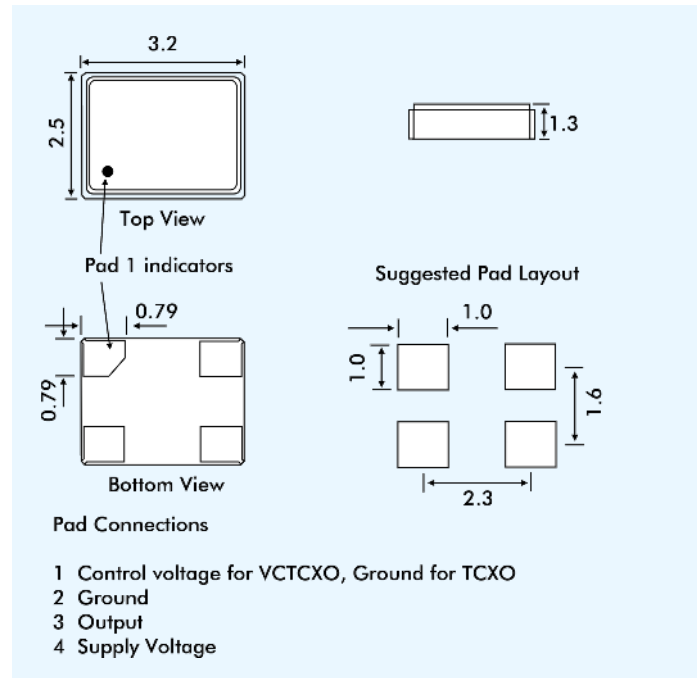
HCMOS TCXO 3.2 x 2.5mm SMD

8.192MHz to 38.4MHz

- Miniature 3.2 x 2.5 x 1.3mm SMD package
- Frequency range: 8.192MHz to 38.4MHz
- Supply voltage 3.3 Volts
- Frequency stability from ± 1 ppm 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 ± 1.0 ppm over -40° to +85°C. The part has a 0.01 μ F decoupling capacitor built in.

SPECIFICATION

Product Series Code	TCXO: EM32T VCTCXO: VEM32T
Frequency Range:	8.192MHz to 38.4MHz
Output Waveform:	Squarewave, HCMOS
Initial Calibration Tolerance:	$< \pm 2.0$ ppm at $+25^\circ \pm 2^\circ\text{C}$
Operating Temperature Range:	from $0^\circ \sim 50^\circ$ to $-40^\circ \sim +85^\circ\text{C}$
Frequency Stability	
vs. Temperature:	See table below
vs. Ageing:	± 1.0 ppm max. first year
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:	+3.3Volts $\pm 5\%$
Output Logic Levels:	Logic High: 90% Vdd min. Logic Low: 10% Vdd max.
Rise and Fall Times:	10ns max.
Duty Cycle:	50% $\pm 10\%$ standard, 50% $\pm 5\%$ option
Start-up Time:	5ms typical, 10ms max.
Current Consumption:	4.0mA typical (frequency dependant)
Output Load:	15pF
Storage Temperature:	$-50^\circ \sim +100^\circ\text{C}$
Ageing:	± 3 ppm per year (max.)

VEM32T VOLTAGE CONTROL SPECIFICATION

Control Voltage:	Standard = $+1.5 \pm 1.0$ Volts for all input voltages. (Contact technical sales if $+2.5 \pm 2.0$ Volts is required.)
Frequency Deviation:	± 6.0 ppm min. (Vcon = $+4.5V \pm 1.0V$)
Slope Polarity:	Positive (increase of control voltage increases output frequency.)
Input Impedance:	50k Ω minimum
Modulation Bandwidth:	20kHz minimum
Linearity:	$\pm 10\%$ maximum

FREQUENCY STABILITY

Frequency Stability (ppm)	± 0.5	± 1.0	± 1.5	± 2.0	± 2.5	± 3.0	± 5.0
Temp. Range (°C)							
0 ~ +50	✓	✓	✓	✓	✓	✓	✓
-10 ~ +60	ASK	✓	✓	✓	✓	✓	✓
-20 ~ +70	x	✓	✓	✓	✓	✓	✓
-30 ~ +75	x	✓	✓	✓	✓	✓	✓
-40 ~ +85	x	✓	✓	✓	✓	✓	✓

✓ = 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 3.3VDC

Frequency (MHz)

Stability over OTR (\pm ppm)

Operating Temperature Range (OTR) (°C)
(Lower and upper limits.)

SSB PHASE NOISE at 25°C

Offset	10Hz	100Hz	1kHz	10kHz	100kHz	1 MHz	10 MHz
M32T33 10.0MHz	(dBc/Hz)	-80	-115	-135	-138	-142	-148