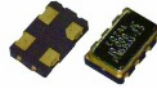


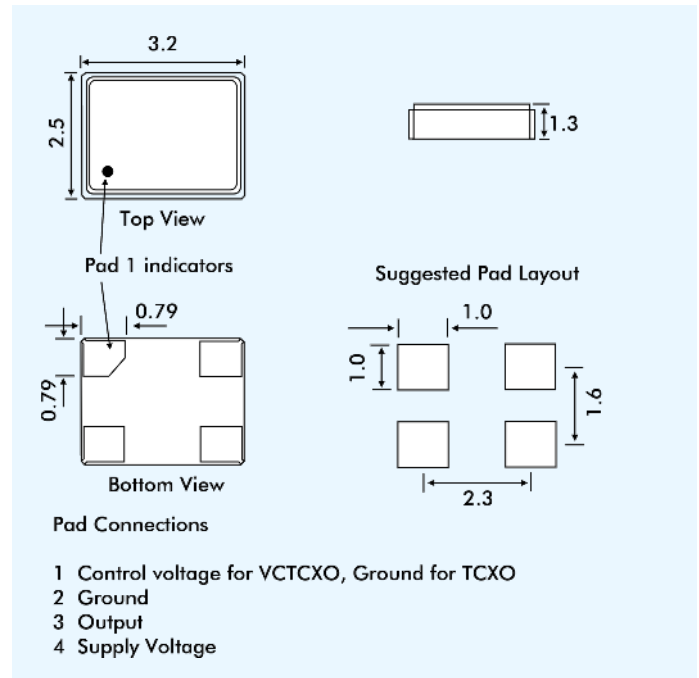
## HCMOS TCXO 3.2 x 2.5mm SMD

## 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  $\pm 1$ 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  $\pm 1.0$ ppm over -40° to +85°C. The part has a 0.01 $\mu$ 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° $\pm 2^\circ$ C	
Operating Temperature Range:	from 0°~50° to -40°~+85°C	
Frequency Stability		
vs. Temperature:	See table below	
vs. Ageing:	$\pm 1.0$ ppm max. first year	
vs. Voltage Change:	$\pm 0.3$ ppm max. $\pm 5\%$ change	
vs. Load Change:	$\pm 0.3$ ppm max. $\pm 10\%$ change	
vs. Reflow (SMD type):	$\pm 1.0$ 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°~+100°C	
Ageing:	$\pm 3$ 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:	$\pm 6.0$ ppm min. (Vcon = +4.5V $\pm 1.0$ V)
Slope Polarity:	Positive (increase of control voltage increases output frequency.)
Input Impedance:	50k $\Omega$ minimum
Modulation Bandwidth:	20kHz minimum
Linearity:	$\pm 10\%$ maximum

### FREQUENCY STABILITY

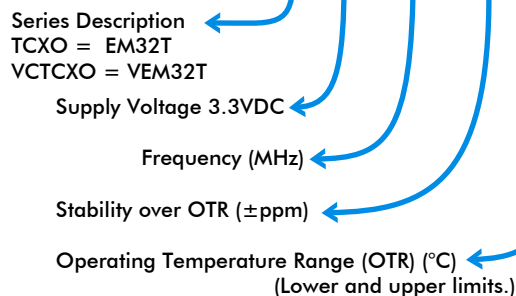
Frequency Stability (ppm)	$\pm 0.5$	$\pm 1.0$	$\pm 1.5$	$\pm 2.0$	$\pm 2.5$	$\pm 3.0$	$\pm 5.0$
Temp. Range (°C)							
0 ~ +50	✓	✓	✓	✓	✓	✓	✓
-10 ~ +60	ASK	✓	✓	✓	✓	✓	✓
-20 ~ +70	x	✓	✓	✓	✓	✓	✓
-30 ~ +75	x	✓	✓	✓	✓	✓	✓
-40 ~ +85	x	✓	✓	✓	✓	✓	✓

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

### PART NUMBERS

Example:

**EM32T33-38.400-2.5/-30+75**



### 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	-150