

50 Ohm TCXO 4 pad 11.4 x 9.6 x 4.7mm SMD

- Sinewave output TCXO 50 Ohms
- Wide frequency range 9.6MHz to 360.0MHz
- Supply Voltage from 3.0 to 15.0 Volts
- Output 50 Ohm load, power <13dBm
- Produced as TCXO or VCTCXO with EFC



DESCRIPTION

EM44E series TCXOs are packaged in an industry-standard, 11.4 x 9.6mm SMD package. The TCXO may be specified to operate at any supply voltage from 3.0 to 15.0 Volts. Close tolerances from ± 1 ppm over -40° to $+85^{\circ}\text{C}$ are available. With true sine wave output, the part can be produced as either a standard TCXO or a voltage-controlled TCXO (VCTCXO).

SPECIFICATION

Product Series Code	TCXO: EM44E VCTCXO: VEM44E
Load:	50 Ω
Frequency Range:	9.6MHz to 320.0MHz
Output Waveform:	True Sinewave
Initial Calibration Tolerance*:	± 2 ppm at 25 $^{\circ}\text{C}$
Operating Temperature Range:	See table
Output Voltage Level:	0.8V p-p min., 1.0V p-p typ.
Input Voltage Range:	+15.0, 12.0, 10.0, 9.0, 5.0 3.30 or 3.0 Volts DC $\pm 5\%$
Frequency Stability	
vs. Temperature:	See table
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
Supply Voltage:	+3.0V to +15.0V (Specify when ordering)
Output Power	
Supply +3.0 and +3.3V:	+5dBm (0.4V rms, 3.2mW)
Supply +5.0 V and above:	+13dBm (1.0V rms 20mW)
Current Consumption**	
At 30.0MHz:	20mA max for 5.0 V supply
At 310MHz:	75mA max. for 3.3 V supply
Start-up Time:	5ms typical, 10ms max.
Harmonic Distortion:	-20dBc max.
Spurious:	-60dBc
SSB Phase Noise:	See table
Output Format:	DC block, AC coupled
Vibration:	6g rms, 10~200Hz
Shock:	15g 11ms, $\frac{1}{2}$ sinewave 3 shocks in each plane
Storage Temperature:	-55° to $+125^{\circ}\text{C}$

* Stability over temperature is measured from this initial tolerance.
** Current consumption depends upon frequency, voltage and power.

FREQUENCY STABILITY

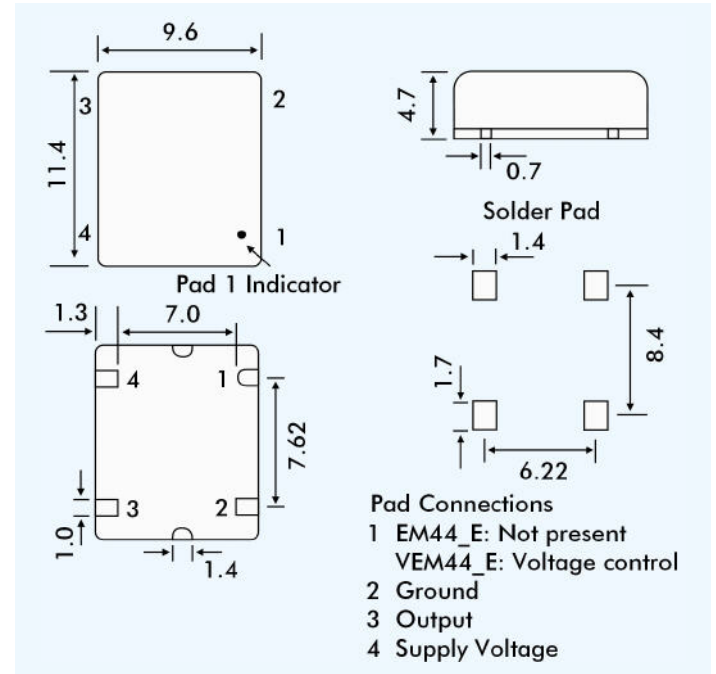
Frequency Stability (ppm)		± 0.5	± 1.0	± 1.5	± 2.0	± 2.5
Temperature Range ($^{\circ}\text{C}$)	0 ~ +50	ASK	✓	✓	✓	✓
	-10 ~ +60	x	✓	✓	✓	✓
	-20 ~ +70	x	✓	✓	✓	✓
	-30 ~ +75	x	✓	✓	✓	✓
	-40 ~ +85	x	ASK	✓	✓	✓

✓ = available, x = not available, ASK = call Technical Sales
■ = standard specification

SSB PHASE NOISE

EM44E 310.0MHz	Offset (Hz)	10	100	1k	10k	100k	1MHz
	(dBc/Hz)	-60	-90	-120	-125	-130	-140

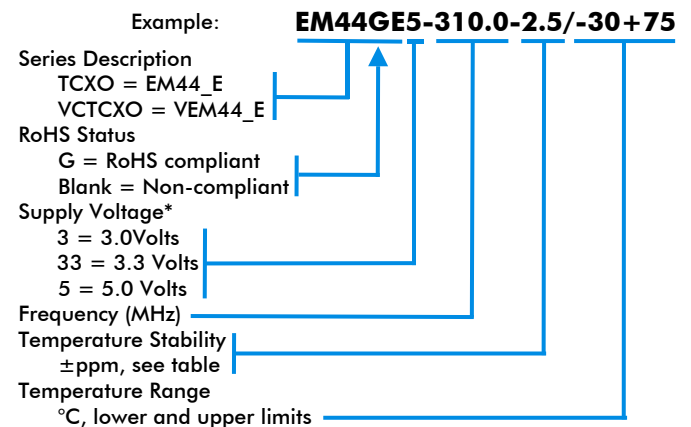
EM44E - OUTLINES AND DIMENSIONS



VEM44E VOLTAGE CONTROL SPECIFICATION

Control Voltage:	+1.5V $\pm 1.0\text{V}$, +2.5V $\pm 2.0\text{V}$ (or custom)
Frequency Deviation Range:	± 8.0 ppm min. for +1.5Volts Vcont.
Options:	Narrow: ± 1 ppm max. (or custom) Wide: ± 35 ppm min. (or custom)
Slope Polarity = Positive:	Increase of control voltage increases output frequency.
Linearity:	10% max.

PART NUMBERING



* Insert the voltage here; e.g. for 12.0 Volts supply package code = EM44_E12