

## HCMOS 4 pad SMD, 'W' Group

- Miniature 11.4 x 9.6 x 4.7mm SMD package
- Frequency range: 200.01MHz to 800.0MHz
- Supply voltage 3.3 Volts
- Frequency stability from  $\pm 1$ ppm over  $-30$  to  $+75^\circ\text{C}$

### DESCRIPTION

EMW44T series TCXOs are packaged in a 4 pad SMD package with trimmer. With squarewave (CMOS) output, tolerances are available from  $\pm 1.0$ ppm over  $-30^\circ$  to  $+75^\circ\text{C}$ . The part has a  $0.01\mu\text{F}$  decoupling capacitor built in.

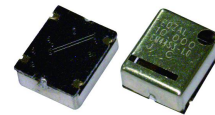
### SPECIFICATION

Product Series Code	TCXO:	EMW44T
	VCTCXO:	VEMW44T
Frequency Range:	200.01MHz to 800.0MHz	
Output Waveform:	Squarewave, HCMOS	
Initial Calibration Tolerance:	$< \pm 2.0$ ppm at $+25^\circ \pm 2^\circ\text{C}$	
Standard Frequencies:	200.0, 204.8, 311.04, 400.0, 409.6 and 622.08MHz (Partial list)	
Mechanical Frequency Tuning:	$\pm 3$ ppm minimum	
Operating Temperature Range:	(see table)	
Frequency Stability	(see table)	
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:	+3.3 Volts	
Output Logic Levels:	Logic High: 90% Vdd min. Logic Low: 10% Vdd max.	
Current Consumption:	65mA max. (Freq. dependant)	
Rise and Fall Times:	1.2ns typical	
Duty Cycle:	50% $\pm 5\%$	
Start-up Time:	5ms typical, 10ms max.	
Current Consumption:	See table below	
Output Load:	15pF	
Storage Temperature:	$-55 \sim +125^\circ\text{C}$	

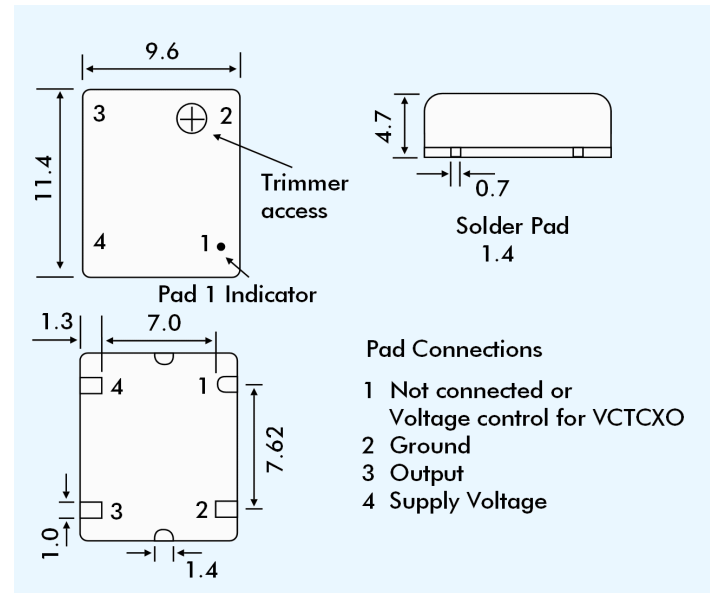
### FREQUENCY STABILITY

Stability (ppm)	$\pm 0.5$	$\pm 1.0$	$\pm 1.5$	$\pm 2.0$	$\pm 2.5$	$\pm 3.0$
Temp. Range ( $^\circ\text{C}$ )	0 ~ +50	✓	✓	✓	✓	✓
	-10 ~ +60	ASK	✓	✓	✓	✓
	-20 ~ +70	X	✓	✓	✓	✓
	-30 ~ +75	X	✓	✓	✓	✓
	-40 ~ +85	X	X	X	ASK	ASK

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



### EMW44T - OUTLINES AND DIMENSIONS



### VEMW44T 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. ( $V_{con} = +4.5V \pm 1.0V$ )
Slope Polarity:	Positive (increase of control voltage increases output frequency.)
Input Impedance:	$2M\Omega$ minimum
Modulation Bandwidth:	25kHz minimum
Linearity:	$\pm 10\%$ maximum

### SSB PHASE NOISE at $25^\circ\text{C}$

Offset	10Hz	100Hz	1kHz	10kHz	100kHz
Part = EMW44T33 at 622.080MHz (dBc/Hz)	-50	-77	-102	-115	-108

### PART NUMBERING SCHEDULE

Example: **EMW44T33-409.60-2.5/-30+75**

Series Description	TCXO = EMW44T
VCTCXO =	VEMW44T
Supply Voltage	33 = 3.3 VDC
Frequency (MHz)	409.60
Stability over OTR ( $\pm$ ppm)	2.5
Operating Temperature Range (OTR) ( $^\circ\text{C}$ )	-30+75
Lower and upper limits	