

CMOS TCXO 2.5 x 2.0mm SMD

9.5MHz to 60.0MHz

- Miniature 2.5 x 2.0 x 0.90mm SMD package
- Frequency range 9.5MHz to 60.0MHz
- Supply voltage 1.8V, 2.5V 3.3 V
- Frequency stability from ±2.5ppm

DESCRIPTION

EM221T series TCXOs are packaged in a miniature, 2.5mm x 2.0mm outline, 4 pad ceramic SMD package. With LVCMOS output into 15pF load, tolerances are available from ±2.5ppm over -40° to +85°C to ±10ppm across -40°C to +85°C (freq dependant).

SPECIFICATION

Product Series Code	TCXO:	EM221T
Frequency Range:	9.5MHz to 60MHz	
Output Waveform:	Squarewave, HCMOS	
Initial Calibration Tolerance:	<±2.0ppm at +25°±2°C	
Operating Temperature Range:	-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 (measured after 24 hours)	
Supply Voltage:	+1.8V, +2.5V, +3.3V	
Output Logic Levels:	Logic High: 90% Vdd min. Logic Low: 10% Vdd max.	
Rise and Fall Times:	10ns max.; 10%~90% waveform	
Duty Cycle:	50%±5% standard	
Start-up Time:	5ms max.	
Current Consumption:		
Vdd=3.3V:	8mA max.	
Vdd=2.5V:	7mA max.	
Vdd=1.8V:	6mA max.	
Output Load:	15pF	
Storage Temperature:	-55°~+125°C	

FREQUENCY STABILITY

Frequency Stability (ppm)		±2.5	±5.0	±10.0
Temp. Range (°C)	-40 ~ +85	✓	✓	✓
	-40~+105	ASK	ASK	✓

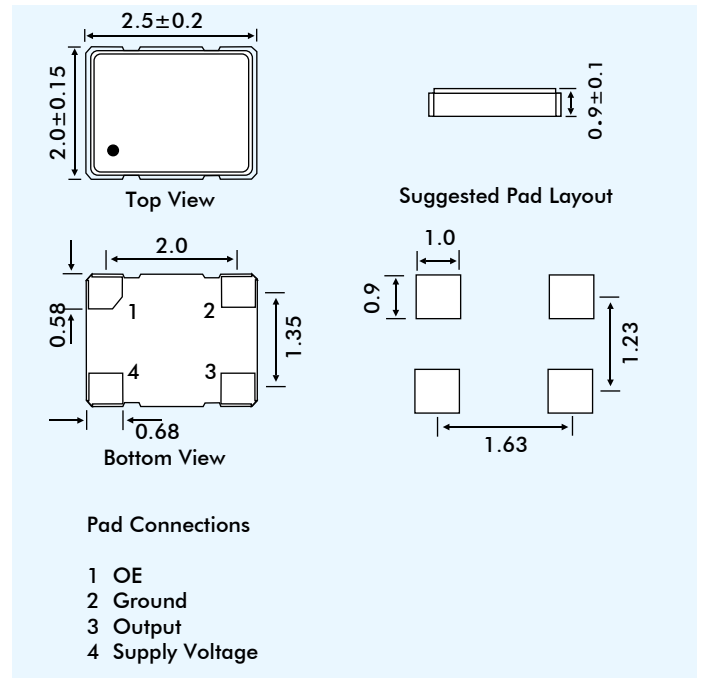
✓ = available, x = not available, ASK = call Technical Sales

SSB PHASE NOISE at 25°C

Offset	10Hz	100Hz	1kHz	10kHz	100kHz	
EM221T33 50.0MHz	(dBc/Hz)	-85	-111	-133	-149	-154

Standard Frequencies Available [MHz]
12.000, 20.000, 24.000, 25.000, 26.000, 40.000, 50.000, 60.000

EM221T - OUTLINES AND DIMENSIONS



PART NUMBERS EM221T 33-38.400-2.5/-40+85

