

CMOS TCXO 3.2 x 2.5mm SMD

9.5MHz to 60.0MHz

- Miniature 3.25 x 2.5 x 1.0mm 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: | EM321T |
| 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 | See table below | |
| vs. Temperature: | ±1.0 ppm max. first year | |
| vs. Ageing: | ±0.3 ppm max. ±5% change | |
| vs. Voltage Change: | ±0.3 ppm max. ±10% change | |
| vs. Load Change: | ±1.0ppm max. for one reflow (measured after 24 hours) | |
| 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 | ✓ |

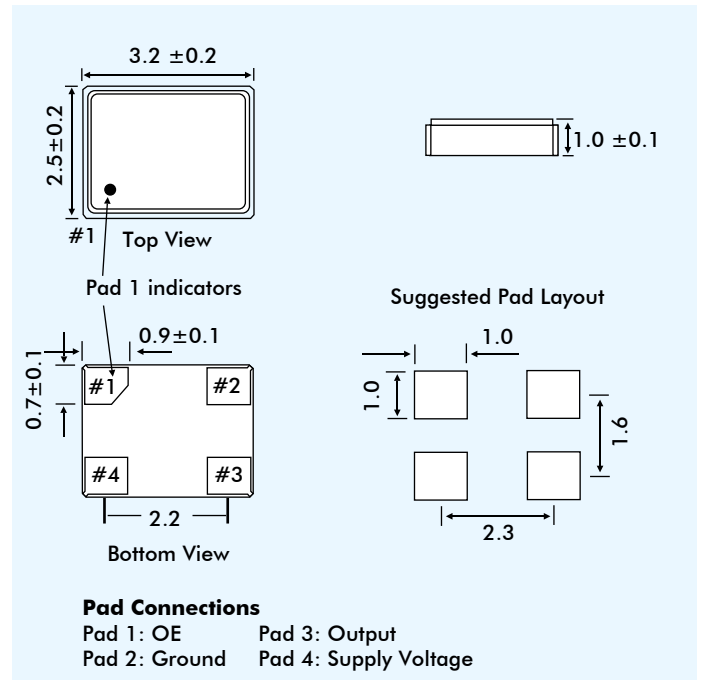
✓ = available, x = not available, ASK = call Technical Sales

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

EM321T - OUTLINES AND DIMENSIONS



PART NUMBERS EM321T 33-38.400-2.5/-40+85

