

HCMOS 4 pad SMD, kHz Range

- Miniature 11.4 x 9.6 x 4.7mm SMD package
- Frequency range: 20.0 to 50.0kHz; 32.768kHz
- Supply voltage 3.3 or 5.0 Volts
- Frequency stability from ± 1 ppm over -30 to +75°C

DESCRIPTION

EM44T series TCXOs are packaged in a miniature 4 pad ceramic SMD package. With squarewave (CMOS) output, tolerances are available from ± 1.0 ppm over -30° to +75°C. The part has a 0.01 μ F decoupling capacitor built in.

SPECIFICATION

| | |
|-------------------------------|--|
| Product Series Code | TCXO: EM44T VCTCXO: VEM44T |
| Frequency Range: | 32.768kHz Standard frequency 20.0kHz to 50.0kHz |
| Output Waveform: | Squarewave |
| Initial Calibration Tolerance | |
| Models with mech. trimmer: | <1.0ppm (at t. 25° \pm 2°C) |
| Models without trimmer: | <2.0ppm (at t. 25° \pm 2°C) |
| Operating Temperature Range: | See table |
| Frequency Stability | |
| 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 |
| vs. Reflow: | ± 1 ppm max. for one reflow (Measured after 24 hours) |
| Supply Voltage: | +3.3 or +5.0Volts (Specify when ordering) |
| Output Logic Levels: | Logic High: 90% Vdd min. Logic Low: 10% Vdd max. |
| Rise and Fall Times: | 10ns max. |
| Duty Cycle: | 50% \pm 5% |
| Start-up Time: | 2ms typical, 5ms max. |
| Current Consumption: | See table below |
| Output Load: | 15pF |
| Storage Temperature: | -55~+125°C |

FREQUENCY STABILITY

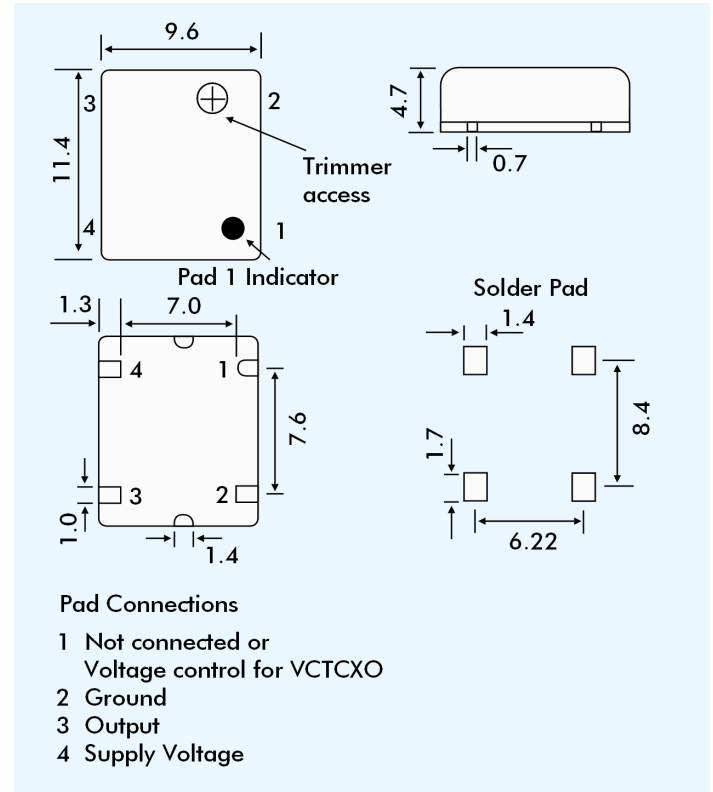
| Frequency Stability (ppm) | | ± 0.5 | ± 1.0 | ± 1.5 | ± 2.0 | ± 2.5 |
|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Temperature Range (°C) | 0 ~ +50 | ASK | ✓ | ✓ | ✓ | ✓ |
| | -10 ~ +60 | x | ✓ | ✓ | ✓ | ✓ |
| | -20 ~ +70 | x | x | ✓ | ✓ | ✓ |
| | -30 ~ +75 | x | x | x | ✓ | ✓ |
| | -40 ~ +85 | x | x | x | x | ✓ |

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

CURRENT CONSUMPTION

| Frequency | +3.3 V |
|-----------|--------|
| 32.768kHz | 8.0mA |
| 50kHz | 12mA |

EM44T - OUTLINES AND DIMENSIONS



VEM44T VOLTAGE CONTROL SPECIFICATION

| | |
|-----------------------|---|
| Control Voltage: | Standard = +1.5 \pm 1.0Volts for all input voltages. (Contact technical sales if +2.5 \pm 2.0 Volts is required.) |
| Frequency Deviation: | ± 6.0 ppm min. |
| Slope Polarity: | Positive (increase of control voltage increases output frequency.) |
| Input Impedance: | 10k Ω min. |
| Modulation Bandwidth: | 3.0kHz min. measured at -3dB |
| Linearity: | 10% max. |

PART NUMBERING PROCEDURE

Example: **EM44T33-32.768k-2.5/-30+75**

Series Description
 TCXO = EM44T
 VCTCXO = VEM44T

Supply Voltage
 33 = 3.3 VDC
 5 = 5.0 VDC

Frequency (kHz)
 32.768k = 32.768kHz

Stability over OTR (\pm ppm)
 2.5 = ± 2.5 ppm

Operating Temperature Range (OTR) (°C)
 -30+75 = -30 to +75°C

Lower and upper limits.