

- Package 14 pin DIL
- 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 $+75^\circ\text{C}$
- RoHS compliant



DESCRIPTION

EM14GT series TCXOs are packaged in a miniature 6 pad ceramic SMD package. With squarewave (CMOS) output, tolerances are available from ± 1.0 ppm over -30° to $+75^\circ\text{C}$. The part has a $0.01\mu\text{F}$ decoupling capacitor built in.

SPECIFICATION

| | | |
|-------------------------------|---|--|
| Product Series Code | TCXO: | EM14GT |
| | VCTCXO: | VEM14GT |
| Frequency Range: | 32.768kHz Standard frequency 20.0kHz to 50.0kHz | |
| Output Waveform: | Squarewave | |
| Initial Calibration Tolerance | | |
| | Models with mech. trimmer: | < 1.0 ppm (at t. $25^\circ \pm 2^\circ\text{C}$) |
| | Models without trimmer: | < 2.0 ppm (at t. $25^\circ \pm 2^\circ\text{C}$) |
| 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 $+5.0$ Volts (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: | $-55 \sim +125^\circ\text{C}$ | |

FREQUENCY STABILITY

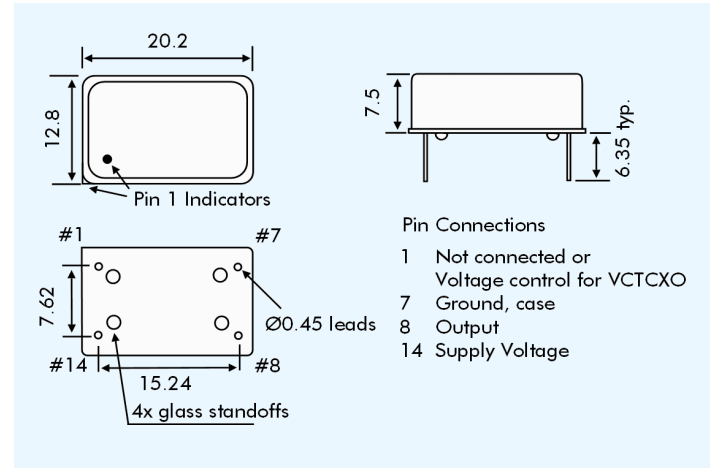
| Frequency Stability (ppm) | | ± 0.5 | ± 1.0 | ± 1.5 | ± 2.0 | ± 2.5 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
| Temperature Range ($^\circ\text{C}$) | 0 ~ +50 | ASK | ✓ | ✓ | ✓ | ✓ |
| | -10 ~ +60 | x | ✓ | ✓ | ✓ | ✓ |
| | -20 ~ +70 | x | x | ✓ | ✓ | ✓ |
| | -30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

EM14GT - OUTLINES AND DIMENSIONS



VEM14GT 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: | ± 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: **EM14GT33-32.768k-2.5/-30+75**

Series Description
 TCXO = EM14GT
 VCTCXO = VEM14GT
 Supply Voltage
 33 = 3.3 VDC
 5 = 5.0 VDC
 Frequency (kHz)
 Stability over OTR (\pm ppm)
 Operating Temperature Range (OTR) ($^\circ\text{C}$)
 Lower and upper limits.