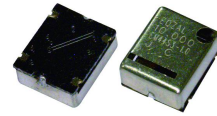


### HCMOS 4 pad SMD, 'V' Group

- Miniature 11.4 x 9.6 x 4.7mm SMD package
- Wide frequency range: 27.0MHz to 200.0MHz
- Supply voltage 3.3 Volts
- Frequency stability from  $\pm 1$ ppm over  $-30$  to  $+75^\circ\text{C}$



#### DESCRIPTION

EMV44T series TCXOs are packaged in a miniature 4 pad ceramic SMD package. 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

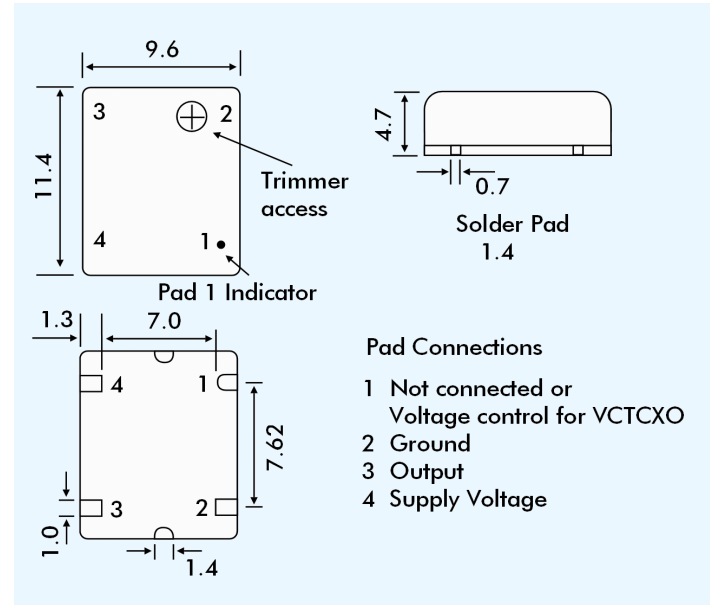
|                               |   |   |
|-------------------------------|---|---|
| Product Series Code           | TCXO:   | EMV44T  |
|                               | VCTCXO:   | VEMV44T   |
| Frequency Range:              | 27.0MHz to 200.0MHz   |   |
| Output Waveform:              | Squarewave, HCMOS   |   |
| Initial Calibration Tolerance |   |   |
|                               | Models without trimmer:   | $< \pm 2.0$ ppm   |
|                               | Models with trimmer:  | $< \pm 1.0$ ppm   |
| Standard Frequencies:         | 30.0, 32.768, 38.880, 40.0, 50.0, 54.0, 64.0, 65.536, 77.76, 80.0, 128.0, 160.0 and 200.0MHz (Partial list) |   |
| Operating Temperature Range:  | See table   |   |
| Mechanical Frequency Tuning:  | $\pm 3.0$ ppm minimum   |   |
| Frequency Stability           |   |   |
|                               | 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.<br>Logic Low: 10% Vdd max.   |   |
| Current Consumption:          | 40mA maximum  |   |
| Rise and Fall Times:          | 10ns typical  |   |
| Duty Cycle:                   | $50\% \pm 10\%$ standard,   |   |
| 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

#### EMV44T - OUTLINES AND DIMENSIONS



#### VEMV44T 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 = EMV44T33 | at 77.760MHz (dBc/Hz)  | -80  | -110  | -135 | -130  | -132   |
|                 | at 155.520MHz (dBc/Hz) | -80  | -110  | -125 | -120  | -125   |

#### PART NUMBERING SCHEDULE

