

- Miniature 11.4 x 9.6 x 2.5mm SMD package
- Frequency range: 200.01MHz to 800.0MHz
- Supply voltage 3.3 Volts
- Frequency stability from  $\pm 1$ ppm over -30 to +75°C
- RoHS compliant

## DESCRIPTION

EMW42GT series TCXOs are packaged in a 4 pad SMD package with trimmer. With squarewave (CMOS) output, tolerances are available from  $\pm 1.0$ ppm over -30° to +75°C. The part has a 0.01 $\mu$ F decoupling capacitor built in.

## SPECIFICATION

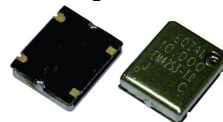
|                                |                                                                 |
|--------------------------------|-----------------------------------------------------------------|
| Product Series Code            | TCXO: EMW42GT<br>VCTCXO: VEMW42GT                               |
| Frequency Range:               | 200.01MHz to 800.0MHz                                           |
| Output Waveform:               | Squarewave, HCMOS                                               |
| Initial Calibration Tolerance: | $\leq \pm 2.0$ ppm at +25 $\pm 2^\circ$ C                       |
| Standard Frequencies:          | 200.0, 204.8, 311.04, 400.0, 409.6 and 622.08MHz (Partial list) |
| Mechanical Frequency Tuning:   | $\pm 3$ ppm minimum                                             |
| Operating Temperature Range:   | (see table)                                                     |
| Frequency Stability            | (see table)                                                     |
| 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:           | 65mA max. (Freq. dependant)                                     |
| Rise and Fall Times:           | 1.2ns typical                                                   |
| Duty Cycle:                    | 50% $\pm 5\%$                                                   |
| Start-up Time:                 | 5ms typical, 10ms max.                                          |
| Current Consumption:           | See table below                                                 |
| Output Load:                   | 15pF                                                            |
| Storage Temperature:           | -55~+125°C                                                      |

## FREQUENCY STABILITY

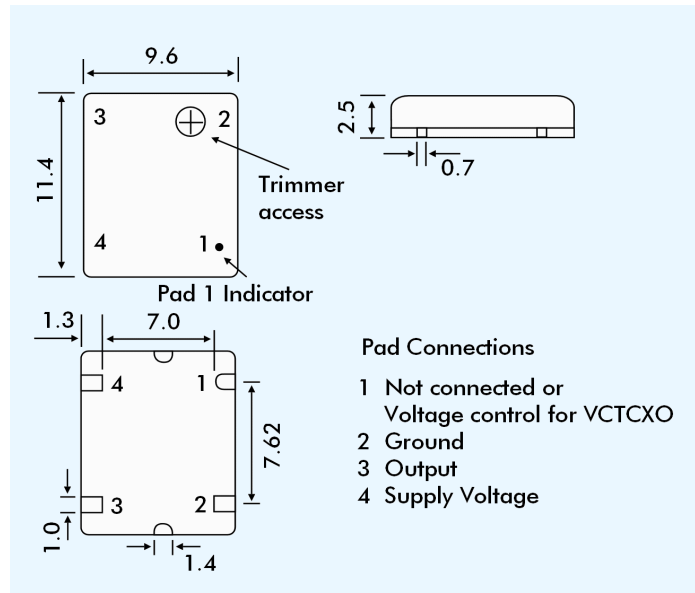
| Stability (ppm)  | $\pm 0.5$ | $\pm 1.0$ | $\pm 1.5$ | $\pm 2.0$ | $\pm 2.5$ | $\pm 3.0$ |
|------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Temp. Range (°C) |           |           |           |           |           |           |
| 0 ~ +50          | ✓         | ✓         | ✓         | ✓         | ✓         | ✓         |
| -10 ~ +60        | ASK       | ✓         | ✓         | ✓         | ✓         | ✓         |
| -20 ~ +70        | X         | ✓         | ✓         | ✓         | ✓         | ✓         |
| -30 ~ +75        | X         | ✓         | ✓         | ✓         | ✓         | ✓         |
| -40 ~ +85        | X         | X         | X         | ASK       | ASK       | ✓         |

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

## HCMOS 4 pad SMD, 'W' Group



## EMW42GT - OUTLINES AND DIMENSIONS



## VEMW42GT 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. (Vcon = +4.5V $\pm 1.0$ V)                                                                          |
| 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°C

| Offset                                  | 10Hz | 100Hz | 1kHz | 10kHz | 100kHz |
|-----------------------------------------|------|-------|------|-------|--------|
| Part = EMW42GT33 at 622.080MHz (dBc/Hz) | -50  | -77   | -102 | -115  | -108   |

## PART NUMBERING SCHEDULE

|                                        |                                    |
|----------------------------------------|------------------------------------|
| Example:                               | <b>EMW42GT33-409.60-2.5/-30+75</b> |
| Series Description                     | TCXO = EMW42GT*                    |
| VCTCXO = VEMW42GT                      |                                    |
| Supply Voltage                         | 33 = 3.3 VDC                       |
| Frequency (MHz)                        | 409.60                             |
| Stability over OTR ( $\pm$ ppm)        | 2.5                                |
| Operating Temperature Range (OTR) (°C) | -30+75                             |
| Lower and upper limits                 |                                    |

\*Note: 'G' indicates part is RoHS compliant