# EM42S Series TCXO

## Clipped Sinewave, 4 Pad FR4 substrate SMD

- **Industry-standard SMD package 11.4 x 9.6 x 2.5mm**
- **Close tolerance stabilities from ±0.5ppm over 0° to +50°C**
- **±1ppm over -40 to +85°C**
- **Low power consumption**

### DESCRIPTION

EM42S series TCXOs are packaged in the industry-standard 11.4 x 9.6 x 2.5mm SMD package. With clipped sinewave output, close tolerances are available from ±0.5ppm over 0° to 50°C or ±1ppm over -40° to +85°C. The part has low power consumption.

### SPECIFICATION

| | |
|---|---|
| Product Series Code | |
| TCXO: | EM42S |
| VCTCXO: | VEM42S |
| Frequency Range: | 10.0MHz to 27.0MHz |
| Output Waveform: | Clipped Sinewave |
| Initial Calibration Tolerance**: | <±1ppm at 25°C |
| Standard Frequencies: | 10.0, 12.80, 13.0, 14.40, 15.36, 16.384, 19.2, 19.440, and 19.68MHz (Partial list) |
| Operating Temperature Range: | *See table* |
| Frequency Stability | |
| vs. Ageing: | ±1.0 ppm max. first year |
| vs. Voltage Change: | ±0.3 ppm max. ±5% change |
| vs. Load Change: | ±0.3 ppm max. ±10% change |
| vs. Reflow: | ±1ppm max. for one reflow (Measured after 24 hours) |
| Supply Voltage: | +2.8, +3.0 or +5.0Volts *(Specify when ordering)* |
| Output Voltage Level: | 0.8V p-p minimum |
| Start-up Time: | 2ms typical, 5ms max. |
| Current Consumption: | *See table below* |
| Output Load: | 10kOhm//10pF ±10% |
| Harmonic Distortion: | -10dB typical, -7dB max. |
| SSB Phase Noise: | *See table* |
| Output Format: | DC block, AC coupled |
| Storage Temperature: | -50° to +100°C |

### FREQUENCY STABILITY

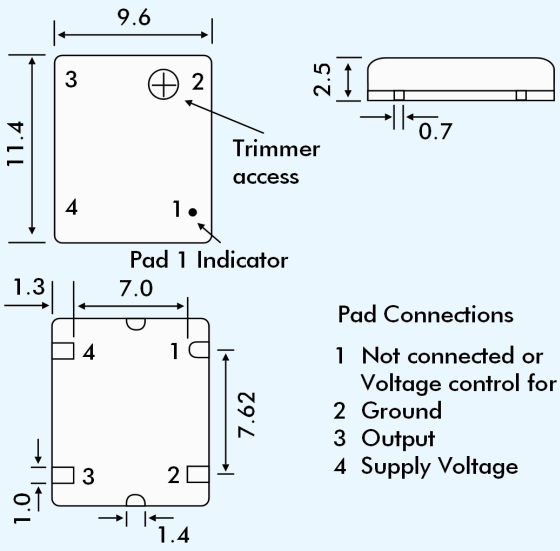
| Frequency Stability (ppm) | | ±0.5 | ±1.0 | ±1.5 | ±2.0 | ±2.5 |
|---|---|---|---|---|---|---|
| Temperature Range (°C) | 0 ~ +50 | ASK | ✓ | ✓ | ✓ | ✓ |
| | -10 ~ +60 | x | ✓ | ✓ | ✓ | ✓ |
| | -20 ~ +70 | x | x | ✓ | ✓ | ✓ |
| | -30 ~ +75 | x | x | x | ✓ | ✓ |
| | -40 ~ +85 | x | x | x | x | ✓ |

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

### CURRENT CONSUMPTION

| Frequency Range | +3.0 V | +5.0 V |
|---|---|---|
| 10.0MHz to 13MHz | 1.3mA | 2.0mA |
| 13.1MHz to 20MHz | 1.5mA | 2.2mA |
| 20.1MHz to 27MHz | 2.0mA | 2.5mA |

### EM42S - OUTLINES AND DIMENSIONS




### VEM42S VOLTAGE CONTROL SPECIFICATION

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

### PHASE NOISE

| SSB Phase Noise at 25°C | Offset (Hz) | 10 | 100 | 1k | 10k | 100k |
|---|---|---|---|---|---|---|
| | EM42S 13MHz (dBc/Hz) | -80 | -115 | -135 | -148 | -150 |

### PART NUMBERING PROCEDURE

Example: **EM42S3-19.44-2.5/-30+75**

Series Description
TCXO = EM42S
VCTCXO = VEM42S

Supply Voltage
28 = 2.8 VDC
3 = 3.0 VDC
5 = 5.0 VDC

Frequency (MHz)
Stability over OTR (±ppm)
Operating Temperature Range (OTR) (°C)
Lower and upper limits.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