EUROQUARTZ

VEM14S Series TCXO

Voltage-controlled Clipped Sinewave 14 pin DIL

- **14 pin DIL package**
- **Frequency range: 9.6MHz to 26.0MHz**
- **Supply voltage 3.0 or 5.0 Volts**
- **EFC tuning ±5ppm to ±12ppm**
- **Customized specifications available**

Pb RoHS COMPLIANT 2002 / 95 / EC

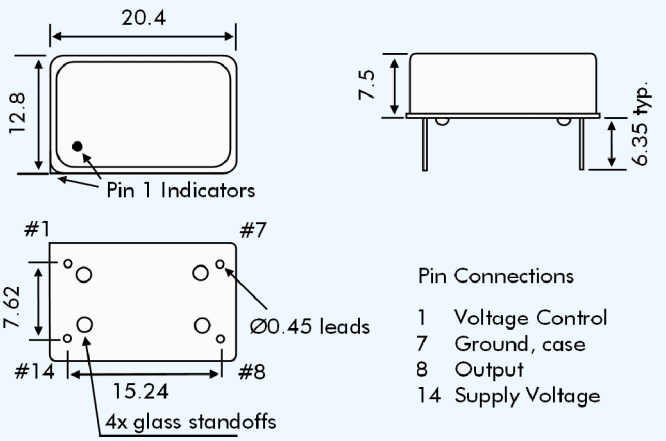
DESCRIPTION

VEM14S series TCXOs are packaged in the industry-standard 14 pin Dual-in-Line package. With Clipped Sinewave output, tolerances are available from ±1.0ppm over 0° to 50°C to ±1ppm over -30° to +70°C. Supply voltage 3.0 or 5.0 Volts. The output is controllable by EFC enabling output variation of ±5ppm to ±12ppm.

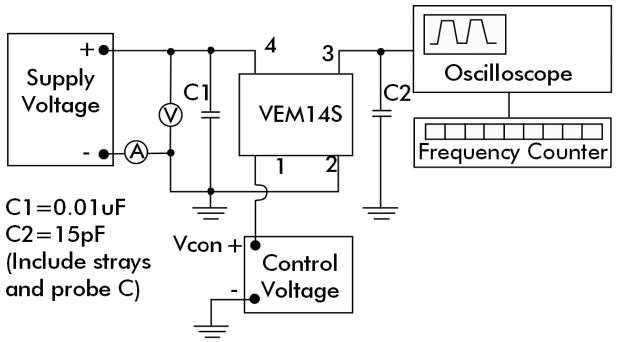
SPECIFICATION

Product Series Code:	VEM14S
Frequency Range:	9.6MHz to 26.0MHz
Output Waveform:	Clipped sine wave
Initial Calibration Tolerance*:	±3ppm at 25°C
Standard Frequencies:	9.6, 10.0, 12.80, 13.0, 14.40, 15.36, 16.384, 19.2, 19.440, and 19.680MHz.
Operating Temperature Range:	*See table*
Frequency Stability	
Over Operating Temperature range:	*See table*
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)
Input Voltage Range:	+2.6 VDC to +6.0 VDC 3.0V and 5.0V are standard
Output Voltage Level	
+3.0V supply:	0.8V p-p minimum
+5.0V supply:	1.0V p-p minimum
Current Consumption:	*See table*
Output Load:	10k Ohms//15pF
Harmonic Distortion:	-10dB typical, -7dB maximum
Output Format:	DC block, AC coupled
Storage Temperature:	-40°C to +85°C
Electrical Frequency Tuning	±5ppm to ±12ppm for .5Vdd *(<±100ppm is available)*
Slope Polarity:	Positive *(Increasing control V. increases output frequency)*
Linearity:	10% maximum

VEM14S - OUTLINES AND DIMENSIONS



VEM14S - TEST CIRCUIT



FREQUENCY STABILITY

Frequency Stability (ppm)		±1.0	±1.5	±2.0	±2.5
Operating Temperature Range (°C)	0 ~ +50	✓	✓	✓	✓
	-10 ~ +60	✓	✓	✓	✓
	-20 ~ +70	✓	✓	✓	✓
	-30 ~ +75	✓	✓	✓	✓

■ = standard specification

PHASE NOISE (Example: VEM14S at 10.0MHz)

SSB Phase Noise at 25°C	Offset (Hz)	10	100	1k	10k	100k
	VEM14S 10MHz (dBc/Hz)	-72	-110	-125	-132	-125

VEM14S - PART NUMBERING PROCEDURE

Example: **VEM14S3-19.44-2.5/-30+75**

Series Description
Supply Voltage
3 = 3.0 VDC
5 = 5.0 VDC
Frequency
Stability over OTR (ppm)
Operating Temperature Range (OTR) (°C)

EUROQUARTZ LIMITED Blacknell Lane CREWKERNE Somerset UK TA18 7HE
Tel: +44 (0)1460 230000 Fax: +44 (0)1460 230001 info@euroquartz.co.uk www.euroquartz.co.uk