

- Frequency Range 10.0MHz to 100.0MHz
- 36.2 x 27.7 x 16.0mm 5 pin metal, solder-sealed package
- Supply Voltage 5.0 Volts
- AT-Cut Crystal
- Sine Wave Output
- EFC (Voltage control) as standard



DESCRIPTION

OC31E5A series oven-controlled crystal oscillators are close tolerance OCXOs with good phase noise performance.

SPECIFICATION

Crystal Cut:	AT-cut
Output Waveform:	Sine Wave
Supply Voltage:	+5.0 VDC \pm 0.2V
Frequency Range:	1.25MHz to 100.0MHz
Initial Calibration Tolerance:	\pm 0.5ppm max. (at $V_{CON} + 2.5V$)
Frequency Stability	
over 0° to +60°C:	\pm 0.03ppm
over -20° to +70°C:	\pm 0.08ppm
over -40° to +85°C:	\pm 0.2ppm
vs. Voltage Change:	$< \pm 20$ ppb for $\pm 5\%$ change
vs. Ageing:	± 5.0 ppb max per day ± 0.5 ppm per first year ± 3.0 ppm over 10 years
vs. Load Change:	$< \pm 20$ ppb for $\pm 5\%$ change

Warm-up Time: 3 minutes max. to within ± 0.5 ppm of nominal freq.

Voltage Control

Control Voltage Centre:	+2.5 Volts (V_{CON})
Freq. Deviation Range:	± 5.0 ppm min., ± 20 ppm max. ref. to 25°C and O.T.R.
Control Voltage Range:	2.5V \pm 2.0Volts
Transfer Function:	Positive: Increasing control voltage increases output frequency
Input Impedance:	100k Ω minimum
EFC Linearity:	$\pm 10\%$ maximum

Power Dissipation: 1.2W max. steady state
3.5W max. at turn on

Output

Output Level:	+3dBm typ., +8dBm max. into 50 Ω load
Harmonics:	-30dBc min.
Spurious:	-75dBc min.

Reference Voltage: +4.0 \pm 0.3VDC or custom

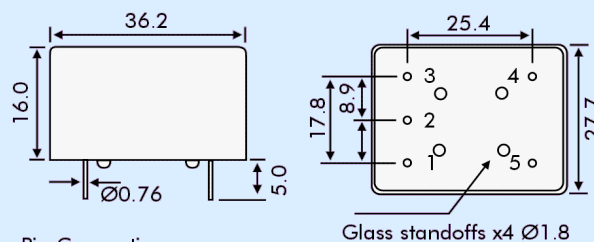
Environmental

Storage Temperature:	-55° to +125°C
Shock:	2000g, 0.3ms $\frac{1}{2}$ sine
Vibration:	10 ~2000Hz / 10g

PHASE NOISE (at 10MHz)

Offset	dBc/Hz
1Hz	-75
10Hz	-100
100Hz	-130
1kHz	-140
10kHz	-150

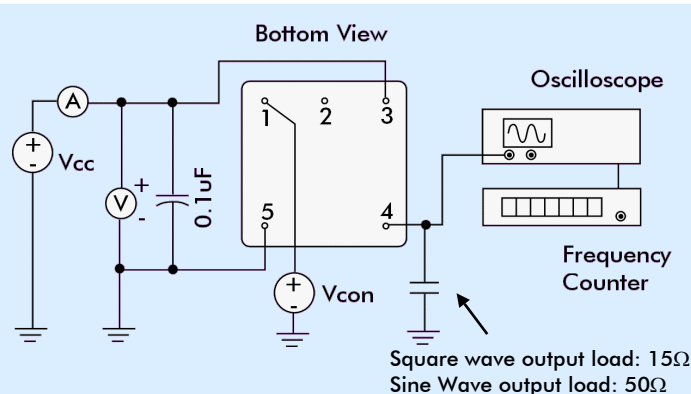
OUTLINE & DIMENSIONS



Pin Connections

1. Voltage Control EFC
2. Ground/case
3. RF Output
4. Reference Voltage Output
5. Supply Voltage

TEST CIRCUIT



PART NUMBER FORMAT

Example:

OC31GE5A-10.000-0.08/-20+70

OCXO Package: OC31
 RoHS Compliance
 G: RoHS Compliant
 Blank: Non-compliant
 E: Output Sine Wave
 5: Supply Voltage 5.0Volts
 A: AT-Cut Crystal
 Nominal Frequency 10.0MHz
 Stability in \pm ppm
 Operating Temperature Range °C
 Lowest Temperature/Highest Temperature