

## SC-Cut Crystal - Sine Wave - 12.0 Volts

- Frequency Range 10.0MHz to 100.0MHz
- 36.2 x 27.7 x 16.0mm 5 pin metal, solder-sealed package
- Supply Voltage 12.0 Volts
- SC-Cut Crystal
- Sine Wave Output
- EFC (Voltage control) as standard



### DESCRIPTION

OC31E12S series oven-controlled crystal oscillators are close tolerance OCXOs with excellent phase noise performance.

### SPECIFICATION

Crystal Cut:	SC-cut
Output Waveform:	Sine Wave
Supply Voltage:	+12.0 VDC $\pm 0.5V$
Frequency Range:	1.25MHz to 100.0MHz
Initial Calibration Tolerance:	$\pm 0.5\text{ppm max. (at } V_{\text{CON}} + 2.5V)$
Frequency Stability	
over 0° to +60°C:	$\pm 0.01\text{ ppm}$
over -20° to +70°C:	$\pm 0.02\text{ ppm}$
over -40° to +85°C:	$\pm 0.03\text{ ppm}$
vs. Voltage Change:	$< \pm 20\text{ppb for } \pm 5\% \text{ change}$
vs. Ageing:	$\pm 2.0\text{ppb max per day}$ $\pm 0.1\text{ ppm per first year}$ $\pm 0.5\text{ ppm over 10 years}$
vs. Load Change:	$< \pm 20\text{ppb for } \pm 5\% \text{ change}$

Warm-up Time: 1 minutes max. to within  $\pm 0.1\text{ ppm}$  of nominal freq.

Voltage Control	
Control Voltage Centre:	+2.5 Volts ( $V_{\text{CON}}$ )
Freq. Deviation Range:	$\pm 0.5\text{ ppm min.}, \pm 2\text{ ppm max.}$ ref. to 25°C and O.T.R.
Control Voltage Range:	2.5V $\pm 2.0\text{ Volts}$
Transfer Function:	Positive: Increasing control voltage increases output frequency
Input Impedance:	100k $\Omega$ 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 $\Omega$ load
Harmonics:	-30dBc min.
Spurious:	-75dBc min.

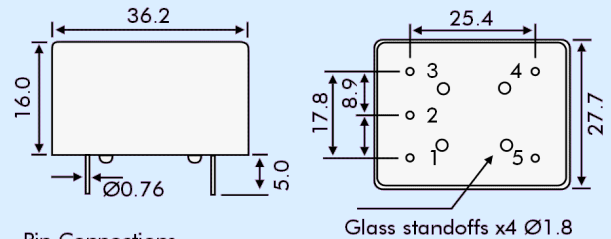
Reference Voltage: +4.0  $\pm 0.3\text{ VDC}$  or custom

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

### PHASE NOISE (at 10MHz)

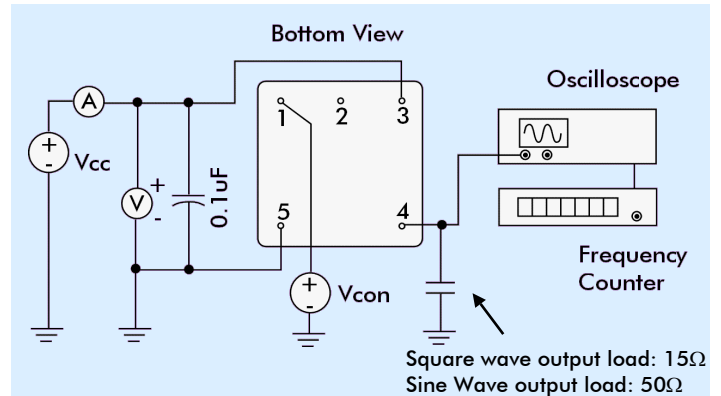
Offset	dBc/Hz
1Hz	-85
10Hz	-120
100Hz	-140
1kHz	-145
10kHz	-150

### 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: **OC31GE12S-10.000-0.02/-20+70**

