

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

- Frequency Range 10.0MHz to 100.0MHz
- 25.4 x 25.4 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

OC11E12S 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:               | 10.0MHz 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:                    | $\pm 2.0\text{ppb max per day}$<br>$\pm 0.1\text{ppm per first year}$<br>$\pm 0.5\text{ppm over 10 years}$ |
| 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:  | $\pm 0.5\text{ppm min.}, \pm 2\text{ppm max.}$<br>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: 1.0W max. steady state  
3.0W max. at turn on

#### Output

|           |                                             |
|-----------|---------------------------------------------|
| Level:    | +3dBm typ., +8dBm max into 50 $\Omega$ load |
| Harmonic: | -30dBc min.                                 |
| Spurious: | -75 dBm min.                                |

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

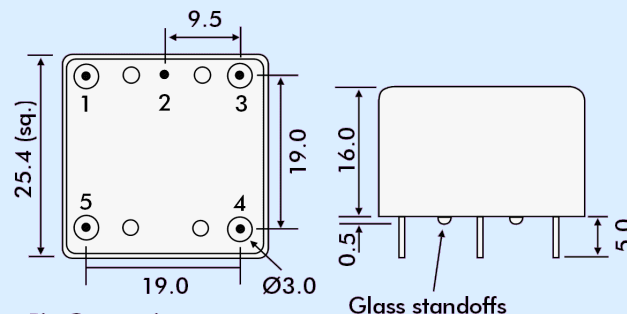
#### Environmental

|                      |                                 |
|----------------------|---------------------------------|
| 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    | 80     |
| 10Hz   | -120   |
| 100Hz  | -140   |
| 1kHz   | -145   |
| 10kHz  | -150   |

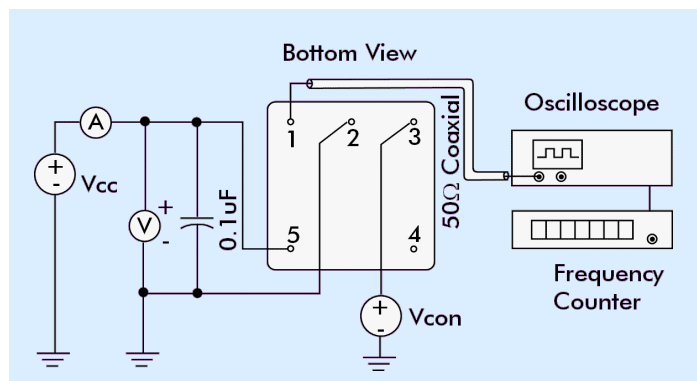
### OUTLINE & DIMENSIONS



#### Pin Connections

- 1 RF output
- 2 Ground/case
- 3 Voltage control (EFC)
- 4 Reference Voltage Output
- 5 Supply Voltage

### TEST CIRCUIT



### PART NUMBER FORMAT

Example: **OC11GE12S-10.000-0.02/-20+70**

OCXO Package: OC11

RoHS Compliance

G: RoHS Compliant

Blank: Non-compliant

E: Output Sine Wave

12: Supply Voltage 12.0Volts

S: SC-Cut Crystal

Nominal Frequency 10.0MHz

Stability in  $\pm\text{ppm}$

Operating Temperature Range °C

Lowest Temperature/Highest Temperature