

## SC-Cut Crystal - Square Wave - 12.0 Volts 1.25MHz ~ 100.0MHz

- Frequency Range 1.25MHz 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
- Squarewave Output
- EFC (Voltage control) as standard



### DESCRIPTION

OC31T12S series oven-controlled crystal oscillators are close tolerance OCXOs with excellent phase noise performance.

### SPECIFICATION

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

Warm-up Time: 1 minute max. to within  $\pm 0.1$  ppm of nominal freq.

### Voltage Control

Control Voltage Centre:	+2.5 Volts ( $V_{CON}$ )
Freq. Deviation Range:	$\pm 0.5$ ppm min., $\pm 2$ ppm max. ref. to 25°C and O.T.R.
Control Voltage Range:	2.5V $\pm 2.0$ 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

Load:	15pF HCMOS
Output Logic HIGH:	+4.5V minimum
Output Logic LOW:	0.5V maximum
Duty Cycle:	50% $\pm 10\%$
Rise/Fall Time:	5ns max (20%~80%) <i>Frequency dependant</i>

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

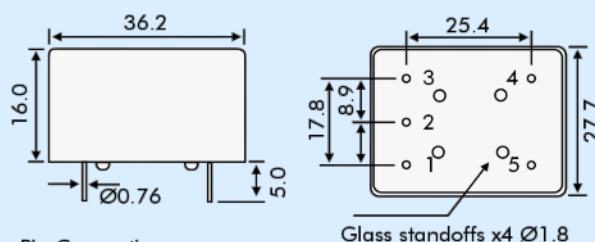
### Environmental

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

### PHASE NOISE (at 10MHz)

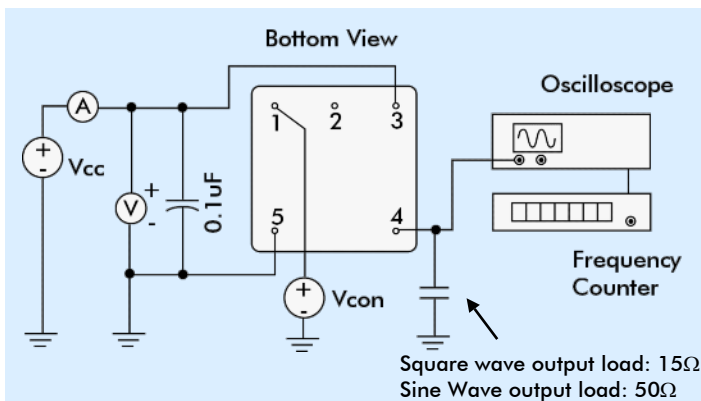
Offset	dBc/Hz
1Hz	-85
10Hz	-120
100Hz	-140
1kHz	-145
10kHz	-150

### 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: **OC31GT12S-10.000-0.02/-20+70**

OCXO Package: OC31  
RoHS Compliance  
G: RoHS Compliant  
Blank: Non-compliant  
T: Output Squarewave  
12: Supply Voltage 12.0Volts  
S: SC-Cut Crystal  
Nominal Frequency 10.0MHz  
Stability in  $\pm$ ppm  
Operating Temperature Range °C  
Lowest Temperature/Highest Temperature