

## AT-Cut Crystal - Square Wave - 12.0 Volts

- 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
- AT-Cut Crystal
- Squarewave Output
- EFC (Voltage control) as standard



### DESCRIPTION

OC31T12A series oven-controlled crystal oscillators are close tolerance OCXOs with good phase noise performance.

### SPECIFICATION

Crystal Cut:	AT-cut
Output Waveform:	Square Wave
Supply Voltage:	+12.0 VDC $\pm 0.5V$
Frequency Range:	1.25MHz to 100.0MHz
Initial Calibration Tolerance:	$\pm 0.5\text{ppm max. (at } V_{CON} + 2.5V)$
Frequency Stability	
over 0° to +60°C:	$\pm 0.03\text{ppm}$
over -20° to +70°C:	$\pm 0.08\text{ppm}$
over -40° to +85°C:	$\pm 0.2\text{ppm}$
vs. Voltage Change:	$< \pm 20\text{ppb for } \pm 5\% \text{ change}$
vs. Ageing:	$\pm 5.0\text{ppb max per day}$ $\pm 0.5\text{ppm per first year}$ $\pm 3.0\text{ppm over 10 years}$
vs. Load Change:	$< \pm 20\text{ppb for } \pm 5\% \text{ change}$

Warm-up Time: 3 minutes max. to within  $\pm 0.5\text{ppm}$  of nominal freq.

Voltage Control	
Control Voltage Centre:	+2.5 Volts ( $V_{CON}$ )
Freq. Deviation Range:	$\pm 5.0\text{ppm min.}, \pm 20\text{ppm max.}$ 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

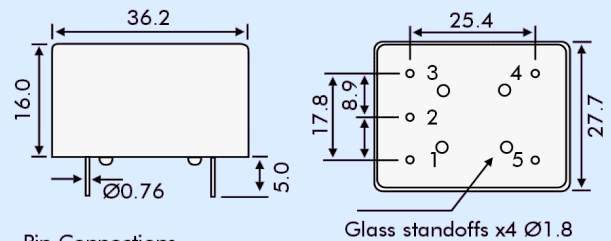
Output	
Load:	15pF HCMOS
Output Logic HIGH:	+4.5V minimum
Output Logic LOW:	0.5V maximum
Duty Cycle:	50% $\pm 10\%$
Rise/Fall Time:	5ns max (20%~80%) Frequency dependant
Reference Voltage:	+4.0 $\pm 0.3\text{VDC}$ or custom

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	-75
10Hz	-100
100Hz	-130
1kHz	-140
10kHz	-150

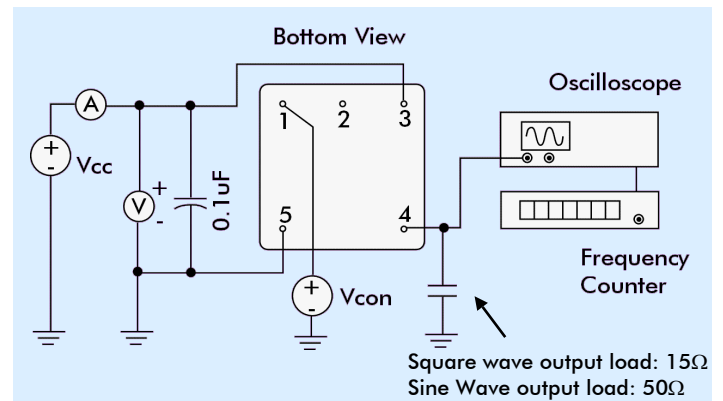
### OUTLINE & DIMENSIONS



#### 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: **OC31GT12A-10.000-0.08/-20+70**

