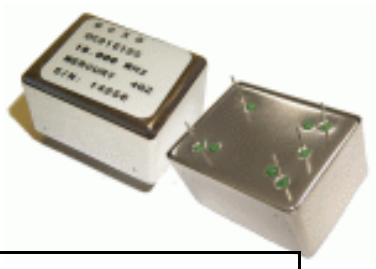
OCXO (Oven Controlled Crystal Oscillators) +12.0 V
OC31E12A; OC31E12S Series 50 Ω Load Sine Wave

MERCURY Since 1973

Mercury OC31E is 36.2x27.2 mm 5 pin solder sealed metal pacakge with 25.4x17.8 mm pin-to-pin spacing high stability low aging OCXO. Besides standard AT cut crystal, users can also choose SC cut crystal for better performance. HCMOS square wave output is available as OC31T series.



General Specifications

Output Wave Form			Sine wave. Wave form code is "**E**"			
Frequency Range			4.0 MHz ~100.0 MHz			
Type of Crystal Cut Used			**AT**-cut. Use "**A**" for crystal code or **SC**-cut: use "**S**" for crystal code. Please refer to technical note TN031 for SC and AT-cut crystal comparison			
Supply Voltage (Vcc)			+12.0 $V_{D.C}$ ±5% (voltage code is "**12**")			
Initial Calibration Tolerance			±0.05 ppm max. at time of shipment; Vcon=+2.5V			
Frequency Stability vs	**Operating Temperature Range (custom spec. on request)**		**AT-cut** crystal	**SC-cut** crystal		
			±0.03 ppm over -20°C to +70°C ±0.05 ppm over -20°C to +70°C ±0.1 ppm over -20°C to +70°C	±0.01 ppm over -20°C to +70°C ±0.03 ppm over -20°C to +70°C ±0.05 ppm over -20°C to +70°C		
			±0.05 ppm over -40°C to +85°C ±0.1 ppm over -40°C to +85°C ±0.5 ppm over -40°C to +85°C	±0.03 ppm over -40°C to +85°C ±0.05 ppm over -40°C to +85°C ±0.1 ppm over -40°C to +85°C		
	Aging		**AT-cut**: ±0.1 ppm typical first year. **SC-cut**: ±0.05 ppm typical first year.			
	Supply Voltage ±5% Variation		±10 ppb max.			
	Load ±5% variation		±10 ppb max.			
	Warm-up time (at +25°C)		3 minutes max. Within ±0.1 ppm of its reference frequency.			
Voltage Control on pin 1 (EFC) (Electronics Frequency Tuning)	**Freq. Deviation Range**		**AT-cut**: ±5 ppm typical **SC-cut**: ±0.7 ppm typical			
	Control Voltage Range		0.5 V to 4.5 V			
	Transfer Function		Positive: Increasing control voltage increases output frequency.			
	Input Impedance		100 K Ω min.			
	EFC Linearity		±10% max.			
Power	**Power Dissipation (at +25°C)**		**Warm-up**: 200 mA max. **Steady-state**: 120 mA max.			
Output	**Wave Form**		Sine wave			
	Load		50 Ω			
	Output Level		+3 dBm min.; +5 dBm typical; +7 dBm max.			
	Harmonic		-30 dB min.; -40 dB typical; -45 dB max.			
	Spurious		-75 dB min.; -80 dB typical; -85 dB max.			
	Phase Noise	**Offset**	10 Hz	100 Hz	1 KHz	10 KHz
		10 MHz AT-cut XTAL	-115 dBc typ.	-140 dBc typ.	-150 dBc typ.	-155 dBc typ.
Storage Temperature			-40°C to +105°C			
Shock			2000 G's, 0.3 ms ½ sine			

MERCURY www.mercury-crystal.com

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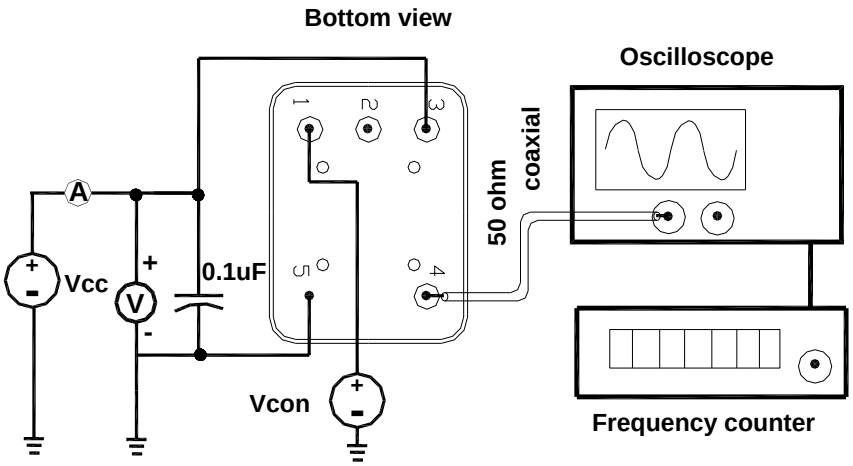
Vibration	10 to 2000 Hz / 10 G's

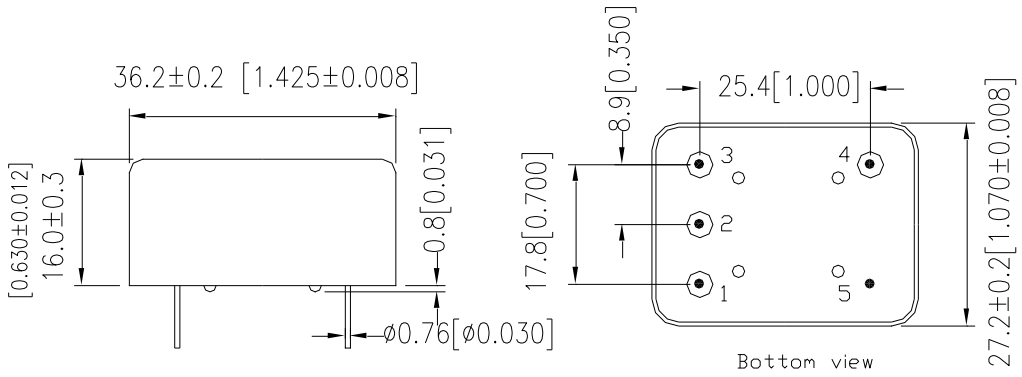
OC31E Test Circuit



OC31E Series Package Dimensions and Pin Connections:

unit mm

Pin 1: Voltage Control EFC Pin 2: Reference Voltage Output Pin 3: Supply Voltage
Pin 4: RF Output Pin 5: Ground / Case



Part Number Format and Example:

Example: OC31E12A-10.000-0.1/-20+70							
OC31E12	A	—	10.000	—	0.1	/	-20+70
❶	❷	dash	❸	dash	❹	slash	❺

❶: OC31E12: OC31 series; "E" for 50 ohm load sine wave; "12" for +12.0 V supply voltage
❷: Crystal type. "**A**" for AT-cut crystal; "**S**" for SC-cut crystal ❸: Frequency in MHz
❹: Frequency stability in ppm ❺: Operating temperature range in Celsius