

**OCXO (Oven Controlled Crystal Oscillators)  
OC14E12A, OC14E12GA (RoHS version) Series**

**+12.0 V  
Sine Wave**



**MERCURY**  
Since 1973

- Full size 4 pin DIP full metal package
- +12.0 V D.C supply Voltage
- 50 ohm load Sine wave output
- AT-cut crystal
- Voltage control (Electronic Frequency Tuning) on pin 1



**General Specifications** ( 10 MHz at +25°C, at +12.0 V Vcc and +2.5 V Vcon)

<b>Output Wave Form</b>		Sine wave. Wave form code is "E"				
<b>Frequency Range</b>		10 MHz ~40.0 MHz				
<b>Type of Crystal Cut Used</b>		AT-cut. Use "A" for crystal code.				
<b>Supply Voltage (Vcc)</b>		+12.0 V ±0.5 V (voltage code is "12")				
<b>Initial Calibration Tolerance</b>		±0.5 ppm max. at the time of shipment; Vcon= +2.5V				
<b>Frequency Stability vs</b>	<b>Operating Temperature Range (custom spec. on request)</b>	Operating Temperature	0°C to +60°C	-20°C to +70°C	-40°C to +85°C	
		Best Stability Available	±0.05 ppm	±0.1 ppm	±0.2 ppm	
		Typical Stability	±0.2 ppm	±0.3 ppm	±0.5 ppm	
	<b>Aging</b>	< ±0.7 ppm first year. < ±4.0 ppm over 10 years.				
	<b>Short Term Stability</b>	< 5 E <sup>-10</sup> (0.1 sec to 30 sec ); typical 5 E <sup>-11</sup> at 1 sec.				
	<b>Supply Voltage ±0.5 Variation</b>	< ±0.1 ppm				
	<b>Load ±5% variation</b>	< ±0.01 ppm				
<b>Warm-up time (at +25°C)</b>	3 minutes max. Within ±0.5 ppm of its reference frequency.					
<b>Voltage Control on pin 1 (EFC) (Electronics Frequency Tuning)</b>	<b>Frequency Deviation Range</b>	±4 ppm min. Referenced to fo at +25°C.				
	<b>Control Voltage Range</b>	0.0 V to 5.0 V				
	<b>Transfer Function</b>	Positive: Increasing control voltage increases output frequency.				
	<b>Input Impedance</b>	47 K ohms min.				
	<b>EFC Linearity</b>	±10% max.				
<b>Power</b>	<b>Power Dissipation (at +25°C)</b>	1 W max. at steady-state; 2 W max. at turn-on.				
<b>Output</b>	<b>Output Level</b>	3 dBm typical with 50Ω load				
	<b>Harmonic</b>	-10 dBc min.				
	<b>Spurious</b>	-70 dBc min.				
	<b>Phase Noise</b>	<b>Offset</b>	1 Hz	10 Hz	100 Hz	1 KHz
<b>10 MHz at static condition</b>		-70 dBc	-100 dBc	-130 dBc	-140 dBc	-145 dBc
<b>Storage Temperature</b>		-65°C to +125°C				
<b>Shock</b>		2000 G's, 0.3 ms ½ sine				
<b>Vibration</b>		10 to 2000 Hz / 10 G's				

**MERCURY** [www.mercury-crystal.com](http://www.mercury-crystal.com)

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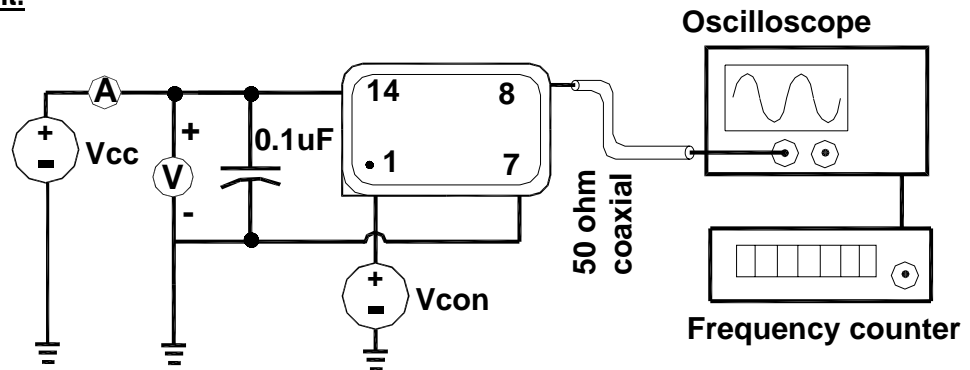
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**OC14E12A Test Circuit:**

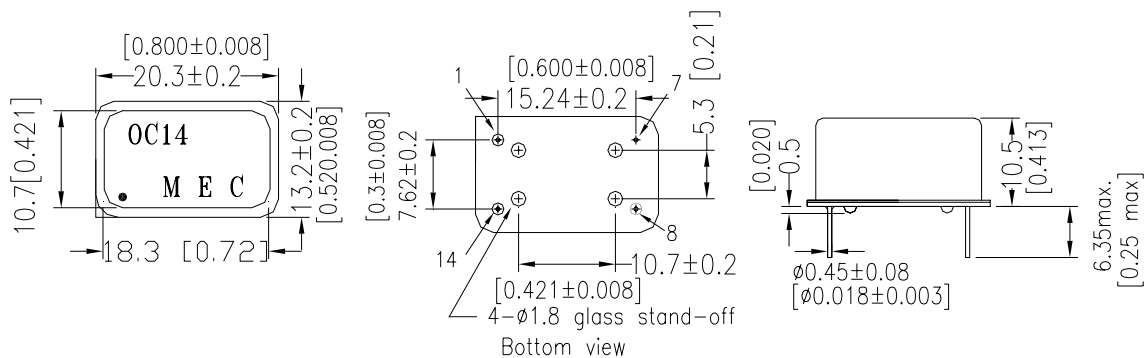


**OC14E12A Package Dimensions and Pin Connections:**

Pin 1: Voltage Control (EFC)  
Pin 8: Output

Pin 7: Ground / Case  
Pin 14: Supply Voltage

unit mm [inches]  
Square corner is pin No. 1



**Part Number Format and Example:**

<b>Example:</b> OC14E12GA-10.000-0.1/-20+70											
OC	14	E	12	G	A	—	10.000	—	0.1	/	-20+70
①	②	③	④	⑤	⑥	dash	⑦	dash	⑧	slash	⑨
<p>①: "OC" Product Prefix for OCXO      ②: Package type. "14" for 4 pin DIP.          ③: Output wave form code. "E" for 50 ohm load Sine wave.          ④: Supply voltage code. "12" for +12.0V;          ⑤: "G" for RoHS compliant equivalent, " " (blank) for non-RoHS part.          ⑥: Crystal type. "A" for AT-cut crystal;          ⑦: Frequency in MHz;          ⑧: Frequency stability in ppm;          ⑨: Operating temperature range: -20°C to +70°C in this case.</p>											