

OCXO (Oven Controlled Crystal Oscillators) +5.0 V; +12 V
OC22E Series 50 ohm Load Sine Wave



MERCURY
Since 1973

Mercury OC22T is 50.8X50.8 mm 7 pin solder sealed metal package with 38.1X38.1 mm pin-to-pin spacing high stability low aging OCXO. SC cut crystal is standard for OC22. ± 0.4 ppb stability and ± 150 ppb total aging over 10 years make the OC22 ideal for base stations, digital switching, instrumentation and frequency synthesizers. HCMOS output is available as OC22T series.

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

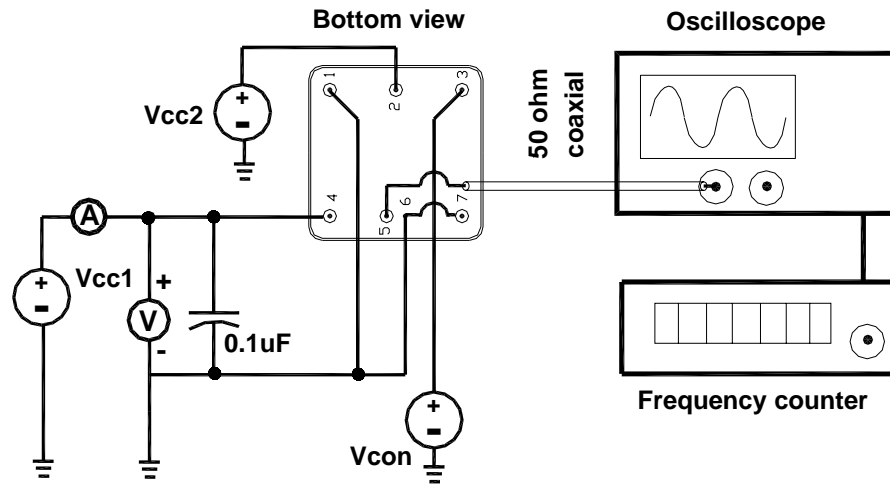
Output Wave Form		Sine wave. Wave form code is "E"				
Frequency Range		5.0 MHz ~20.0 MHz				
Type of Crystal Cut Used		AT-cut. Use "A" for crystal code or SC-cut: use "S" for crystal code. SC has better performance but higher cost. See technical note TN-031.				
Supply Voltage (Vcc)		+5.0 V _{D.C} $\pm 5\%$ (voltage code is "5"); +12.0 V _{D.C} $\pm 5\%$ (voltage code is "12")				
Initial Calibration Tolerance		± 0.5 ppm max. at time of shipment; Vcon = +2.5V				
Frequency Stability vs	Operating Temperature Range (custom spec. on request)	Best Stability	0°C to +60°C	-20°C to +70°C	-40°C to +85°C	
		For AT crystal	± 50 ppb	± 0.1 ppm	± 0.2 ppm	
		For SC crystal	± 0.4 ppb	± 5 ppb	± 15 ppb	
	Aging (after 72 hours of continuous operation)	AT: ± 3 ppb max./day; ± 0.5 ppm max./first year; ± 3 ppm max. over 10 years. SC: ± 0.5 ppb max./day; ± 50 ppb max./first year; ± 150 ppb max. over 10 years.				
	Supply Voltage $\pm 5\%$ Variation	± 1 ppb max.				
	Load $\pm 5\%$ variation:	± 1 ppb max.				
Warm-up time (at +25°C)		AT: 1 minute max. Within ± 0.2 ppm of its reference frequency. SC: 5 minute max. Within ± 10 ppb of its reference frequency.				
Voltage Control on pin 1 (EFC) (Electronics Frequency Tuning)	Freq. Deviation Range	AT: ± 5 ppm min. ± 20 ppm max.; SC: ± 0.5 ppm min. ± 2 ppm max.		Referenced to fo at +25°C and over operating temperature range.		
	Control Voltage Range	2.5 V ± 2.0 V				
	Transfer Function	Positive: Increasing control voltage increases output frequency.				
	Input Impedance	100 K ohms min.				
	EFC Linearity	$\pm 20\%$ max.				
Power	Oven Power Dissipation	2 Watts max. at steady-state; 6 Watts max. at turn-on. At +25°C.				
	Oscillator Power Dissipation	0.5 Watts max.				
Output	Output Level	2 dBm typical with 50Ω load				
	Harmonic	-30 dBc min.				
	Spurious	-75 dBc min.				
	Reference Voltage	+4.0 V _{D.C} . ± 0.3 V _{D.C} . or custom.				
	Phase Noise	Offset	1 Hz	10 Hz	100 Hz	1 KHz
10 MHz AT-cut XTAL		-75 dBc	-100 dBc	-130 dBc	-140 dBc	-150 dBc
10 MHz SC-cut XTAL		-90 dBc	-120 dBc	-140 dBc	-150 dBc	-150 dBc
Storage Temperature		-55°C to +125°C				
Shock		2000 G's, 0.3 ms ½ sine				
Vibration		10 to 2000 Hz / 10 G's				

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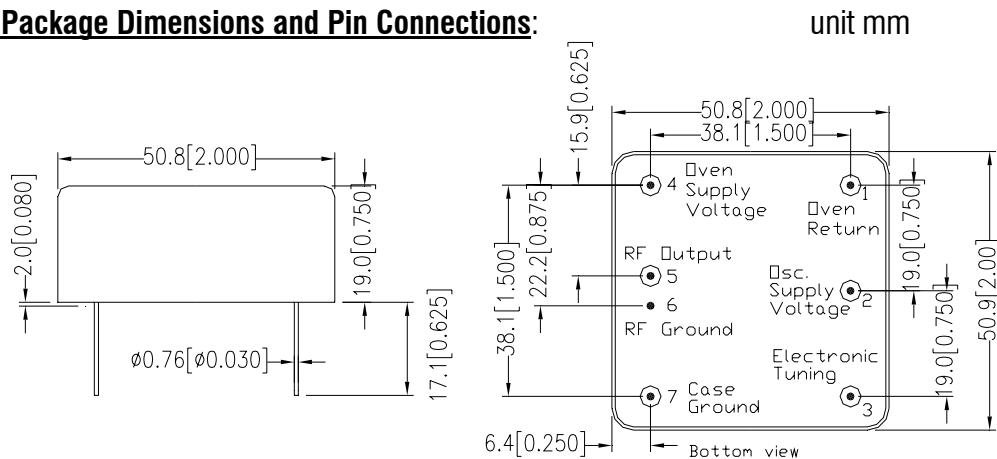
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OC22E Test Circuit



OC22E Series Package Dimensions and Pin Connections:



Part Number Format and Example:

Example: OC22E5S-10.000-0.01/-20+70

OC	22	E	5	S	—	10.000	—	0.01	/	-20+70
①	②	③	④	⑤	dash	⑥	dash	⑦	slash	⑧

①: "OC" Product Prefix for OCXO **②**: Package type. "22" for OC22 package
③: Output wave form code. "E" for 50 ohm load Sine wave.
④: Supply voltage code. "5" for +5.0V; "12" for +12.0V
⑤: Crystal type. Use "A" for AT-cut crystal; Use "S" for SC-cut crystal.
⑥: Frequency in MHz; **⑦**: Frequency stability in ppm;
⑧: Operating temperature range: -20°C to +70°C in this case.