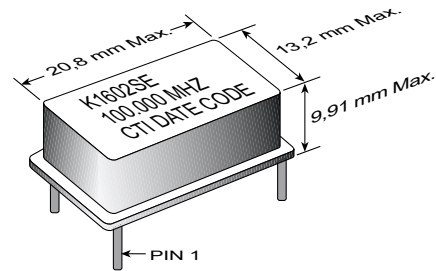


5V Temperature Compensated Voltage Controlled Crystal Oscillator

- **Applications:** Phase Locked Loops; SONET; Reference Signal; Signal Tracking; ATM
- 90 to 115 MHz Frequency Range
- ± 2 ppm Frequency Stability
- Superior Tolerance Performance Including up to 10 years of aging
- Low Phase Noise
- -40°C to 85°C Operating Temperature



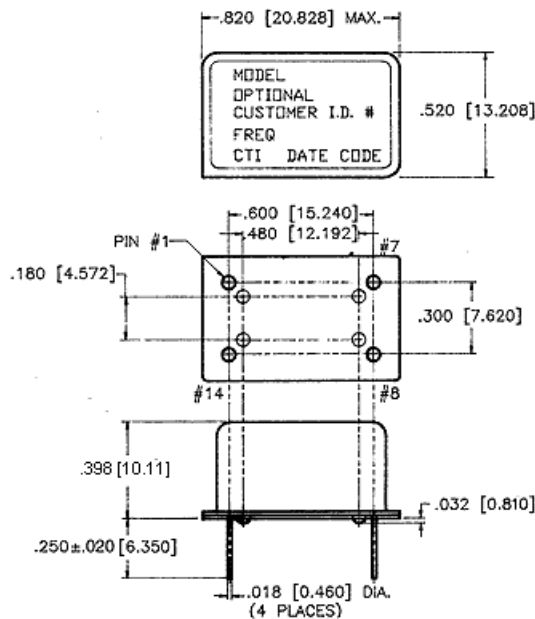
ELECTRICAL SPECIFICATIONS

Model	K1602SE	
Frequency Range (MHz)	90 to 115	
Input Current (mA)	< 20	
Frequency Control Function	(For Custom Deviation Range, Vc Range, etc. - Consult Factory)	
Voltage Control	Included	
EFC (Electronic Frequency Control) (V)	0 to 4	
Nominal Control Voltage (V)	2.0	
EFC Range	± 4 ppm to ± 15 ppm; $V_C = 0.5\text{V}$ to 3.5V	
Linearity (%)	10	
Transfer Function	Positive	
Input Impedance	> $50\text{K}\Omega$ @ 10KHz	
Frequency Stability (ppm)		
Overall	Inclusive of Calibration, Temperature, Voltage, Load, Aging	
25°C Calibration	± 3.0 @ $V_C = 2.0\text{V}$	
-40°C to 85°C	± 2.0	
Aging @ 50°C (10 Year)	< ± 2.0	
Temperature Range ($^{\circ}\text{C}$)		
Operating	-40°C to $+85^{\circ}\text{C}$	
Storage	-40°C to $+85^{\circ}\text{C}$	
Supply Voltage (V)	$+5.0\text{V} \pm 5\%$	
Symmetry	1.0 V p-p min into 50Ω	
Output Power (50Ω)	2dBm $\pm 2\text{dB}$	
Harmonics (dBc)	≤ 20	
Sub-Harmonics & Spurious Modes (dBc)	≤ 70	
Start Up Time (ms)	< 10	
Typical SSB Phase Noise (dBc/Hz)	10Hz	-65
Offset from Carrier	100Hz	-95
	1KHz	-120
	10KHz	-140
	100KHz	-150

PART NUMBERING GUIDE

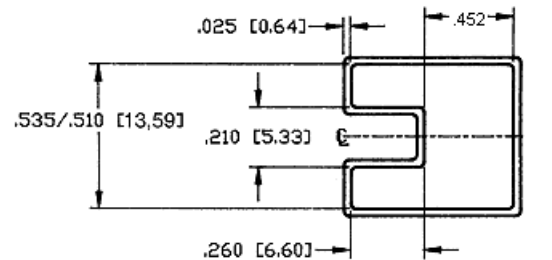
K1602SE - Specify Frequency

5V Temperature Compensated Voltage Controlled Crystal Oscillator



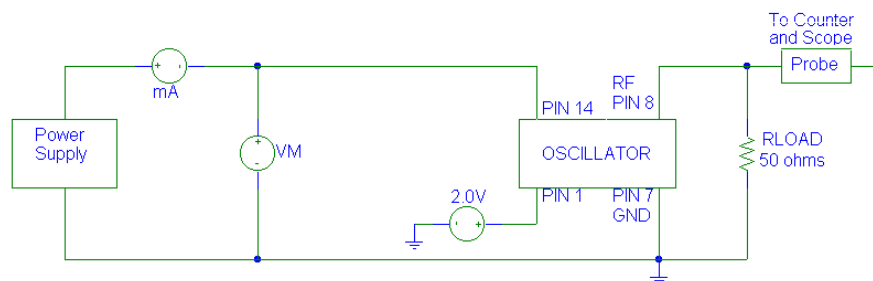
PIN	FUNCTION
1	EFC, Voltage Control
7	Gnd/ & Case Gnd
8	Output
14	+ V _{CC}

SHIPPING TUBE CROSS SECTION



ALL DIMENSIONS ARE INSIDE

TEST CIRCUIT DIAGRAM



MECHANICAL AND ENVIRONMENTAL SPECIFICATIONS

TEST METHODS	REFERENCE PROCEDURES	DESCRIPTION
Temperature Cycle	MIL-STD-833, Mtd 1010, Cond. B	-55°C to +125°C; Air-to-Air; 100 cycles; 10 min. dwell
Mechanical Shock	MIL-STD-883, Mtd 2002, Cond. B	1500 g's
Vibration	MIL-STD 883, Mtd 2007, Cond. B	20-2000 Hz; 0.06 inch; 15g's; 3 planes
Humidity Steady State	MIL-STD-202, Mtd 103	40°C; 90%-95% R.H.; 56 days
Thermal Shock	MIL-STD-883, Mtd 1011.7 Cond. B	100°C to 0°C; Water-to-Water; 15 cycles
Electrostatic Discharge	MIL-STD-883, Mtd 3015 Class II	2 KV to 4 KV Threshold
Solderability	MIL-STD-883, Mtd 2022.2	Solder dip; Meniscograph Criteria
Hermeticity	MIL-STD-883, Mtd 1014.8, Cond. A1	Mass spectro. 2 x 10 ⁻⁸ atmos. CC/sec He
Resistance to Soldering	MIL-STD-202, Mtd 210A, Cond. C	260°C; 10 seconds: 1 inch/sec.
Lead Integrity	MIL-STD-883, Mtd 2004.5, Cond. A, B1	Lead tension & bend stress
Marking Permanence	MIL-STD-883, Mtd 2015.8	Resistance to solvents
Life Test	MIL-STD-883, Mtd 1005.6	125°C, powered, 1000 hours minimum