

5V FR-4 Based Surface Mount Voltage Controlled Crystal Oscillators

- **Applications:** Clock Recovery; PLL; Optic Transmission Equipment; Digital Cross Connect Equipment
- FR-4 Based SMT
- -10°C to 70°C Operating Temperature
"M" Models Operate From -40°C to 85°C
- 45/55% Symmetry Standard
- TTL/CMOS Compatible
- For Other Discrete Frequencies Consult Factory
- Tape & Reel Packaging



ELECTRICAL SPECIFICATIONS

Model		F1535AD	
Frequency Range (MHz)	52.0		
Input Current (mA)	< 50		
Frequency Control Function	(For Custom Deviation Range, Vc Range, etc. - Consult Factory)		
Deviation (ppm)			
Minimum	±40		
Maximum	±70		
Linearity (%)	< 10		
Modulation Bandwidth (±3dB)	> 20KHz		
Nominal Control Voltage (V)	2.5		
Control Voltage Range (V)	0.5 to 4.5		
Transfer Function	Positive		
Input Impedance	> 50KΩ @ 10KHz		
Frequency Stability (ppm)			
Overall	Inclusive of Calibration, Temperature, Voltage, Load and 20 Years of Aging		
0°C to +70°C	±25		
-40°C to +85°C	±50		
Temperature Range (°C)			
Operating	-40°C to +85°C		
Storage	-40°C to +125°C		
Supply Voltage (V)	+5.0V ±10%		
Symmetry (%)	45/55		
Rise & Fall Times (ns)	≤ 6		
Start Up Time (ms)	<10		
VOH @ IOH = -12mA	≥ 0.9Vcc		
VOL @ IOL = 24mA	≤ 0.1Vcc		
Typical SSB Phase Noise (dBC/Hz)	100Hz		-70
Offset from Carrier	1KHz		-100
	10KHz		-120
	100KHz		-140

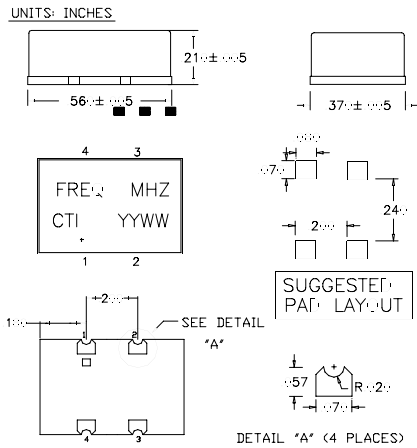
PART NUMBERING GUIDE

F1535AD X - Specify Frequency

 "Blank" = -10°C to 70°C Operating Temp.

 "M" = -40°C to +85°C Operating Temp.

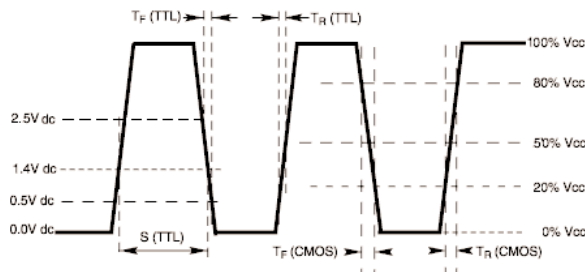
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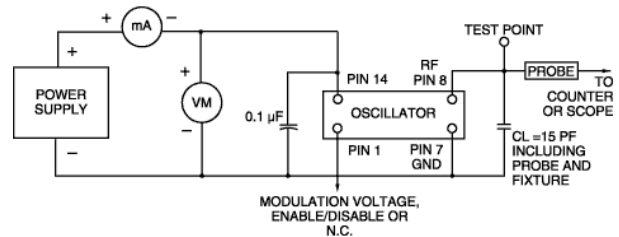
PIN	FUNCTION
1	Voltage Control
2	Gnd/ & Case Gnd
3	Output
4	+ V _{CC}

Specifications Subject to Change Without Notice

OUTPUT WAVEFORM



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 210D, 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

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