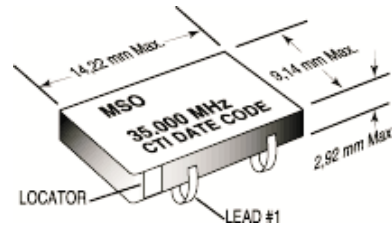


## 5V 9x14mm Surface Mount Crystal Clock Oscillators

- TTL/CMOS Compatible
- Anti-Static Tube or Tape & Reel Packaging
- 1.5 to 40 MHz Frequency Range
- 40/60% Symmetry Standard  
45/55% Symmetry Available
- ±100ppm Stability Standard  
±50ppm Stability Available
- Enable/Disable Standard



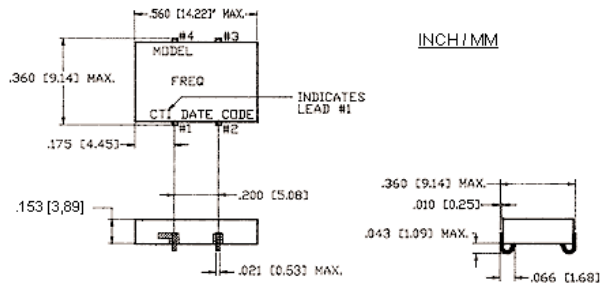
**Not Recommended for New Designs. Refer to CMO5 Series as an Alternative.**

ELECTRICAL SPECIFICATIONS		
MODEL	MSO	MSO5
Frequency Range (MHz)	1.5 to 40	
Frequency Stability (ppm)		
Overall (Typical)	Inclusive of calibration, temperature, voltage, load, shock, vibration, aging	
0°C to 70°C	±100	±50
-40°C to +85°C	±100	N/A
Temperature Range (°C)		
Operating	-40°C to 70°C	
Storage	-55°C to 125°C	
Supply Voltage (V)	+5.0 ± 1%	
Voltage Stability (mV)	±3	
Input Current (mA)		
1.5MHz to 20MHz	<17	
> 20MHz	<26	
Symmetry (%) TTL/CMOS	40/60	
T <sub>R</sub> and T <sub>F</sub> (ns)	<5	
Load	10TTL/CMOS Compatible	
"0" Level (V <sub>OL</sub> )	0.5V max. @ I <sub>OL</sub> = 16mA	
"1" Level (V <sub>OH</sub> )	VCC-0.4V min. @ I <sub>OH</sub> = -1mA	
Start up Time (ms)	<5	

OBSOLETE

PART NUMBERING GUIDE	
<b>MSOXXXE</b> - Specify Frequency	
	"Blank" = 0°C to 70°C Operating Temperature
	"M" = -40°C to 85°C Operating Temperature
	"Blank" = 40/60% Symmetry
	"S" = 45/55% Symmetry
	"Blank" = ±100ppm Stability
	"5" = ±50ppm Stability

## 5V 9x14mm Surface Mount Crystal Clock Oscillators

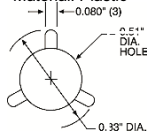


PIN	FUNCTION
1	Enable/Disable
2	Ground
3	Output
4	+V <sub>CC</sub>

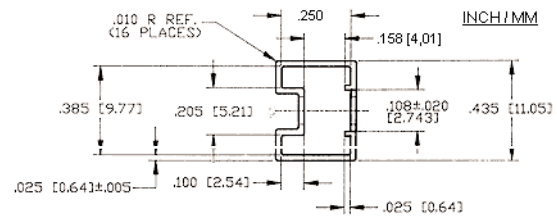
### TAPE & REEL SPECIFICATIONS

**Tape & Reel**  
**Shipping Tape**  
 Size: 24mm  
 Material: Black PVC,  
 Conductive .012" thick  
**Shipping Reel**  
 Size: 13" diameter  
 Material: Plastic

**13" Reel**  
 Tape Length 16.5 yds  
 Max. No. of Pockets: 750  
 Leader Length: 16" min.  
 Trailer Length: 14" min.  
 Q.C. Sample Quantity: 10 pcs.  
 Product/Reel: 500  
 Cover Tape Thickness: .002"  
 Cover Peel Strength: 75g  
 Note: Minimum Order is 500

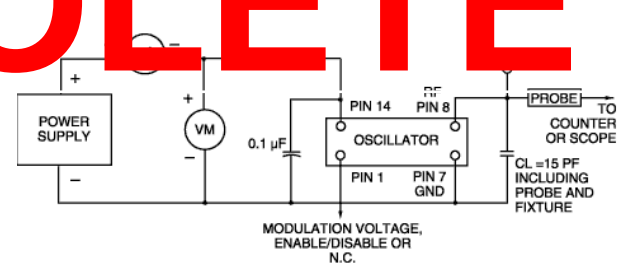
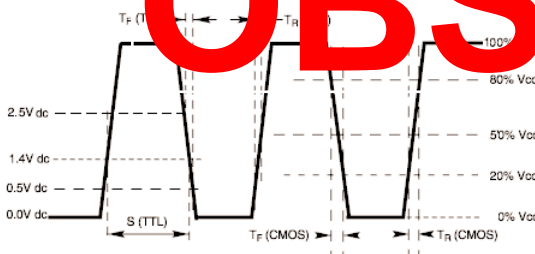


### SHIPPING TUBE CROSS SECTION



ALL DIMENSIONS ARE INSIDE

## OBSOLETE



### 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 <sup>-8</sup> atmos. CC/sec He
Resistance to Soldering	MIL-STD-202, Mtd 210D, Cond. J	235°C; 30 seconds
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