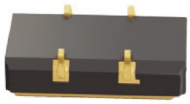
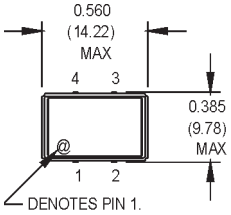
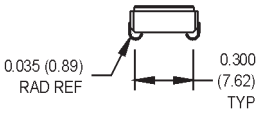
MVS Series

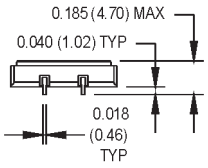
9x14 mm, 5.0 Volt, HCMOS/TTL, VCXO



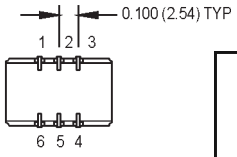
- General purpose VCXO for Phase Lock Loops (PLL), Clock Recovery, Reference Signal Tracking and Synthesizers
- Frequencies up to 160 MHz and tri-state option

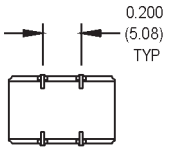




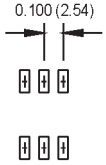


OPTIONAL 6-PIN PACKAGE WITH TRISTATE

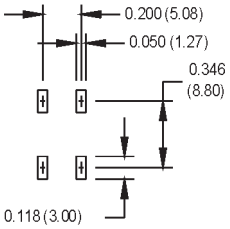




All dimensions in inches (mm).



SUGGESTED SOLDER PAD LAYOUT



Ordering Information

MVS 1 3 V 2 C J -R 00.0000 MHz

- **Product Series**
- **Temperature Range**
  - 1: 0°C to +70°C
  - 2: -40°C to +85°C
  - 6: -20°C to +70°C
- **Stability**
  - 1: ±1000 ppm
  - 2: ±500 ppm
  - 3: ±100 ppm
  - 4: ±50 ppm
  - 5: ±35 ppm
  - 6: ±25 ppm
  - *8: ±20 ppm
- **Output Type**
  - V: Voltage Controlled
  - T: Tristate
- **Pull Range (Vc = .5 to 4.5 V)**
  - 1: ±50 ppm min.
  - 2: ±100 ppm min. (Up to 70.000 MHz)
- **Symmetry/Logic Compatibility**
  - A: 40/60 CMOS/TTL
  - C: 45/55 HCMOS
- **Package/Lead Configurations**
  - J: J Lead
- **RoHS Compliance**
  - Blank: non-RoHS compliant part
  - -R: RoHS compliant part
- **Frequency (customer specified)**

*Contact factory for availability.
M3001Sxxx - Contact factory for datasheet.

Pin Connections

FUNCTION	4 Pin Pkg.	6 Pin Pkg.
Control Voltage	1	1
Tristate		2
Circuit/Case Ground	2	3
Output	3	4
N/C		5
+Vdd	4	6

	PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Electrical Specifications	Frequency Range	F	1.544		160	MHz	See Note 1
	Operating Temperature	T_A	(See ordering information)				
	Storage Temperature	T_S	-55		+125	°C	
	Frequency Stability	ΔF/F	(See ordering information)				
	Aging						
	1st Year		-3/-5		+3/+5	ppm	<52 MHz / >=52MHz
	Thereafter (per year)		-1/-2		+1/+2	ppm	<52 MHz / >=52MHz
	Pullability/APR		(See ordering information)				Over Control Voltage
	Control Voltage	Vc	0.5	2.5	4.5	V	
	Linearity				10	%	Positive Monotonic Slope
	Modulation Bandwidth	Fm	10			kHz	
	Input Impedance	Zin	50k			Ohms	
	Input Voltage	Vdd	4.75	5.0	5.25	V	
	Input Current	Idd		25	35	mA	1.544 to 24.999 MHz
				35	60	mA	25 to 9 9.999 MHz
				55	90	mA	70 to 160 MHz
	Output Type						HCMOS/TTL
	Load						See Note 2
	1.544 to 45 MHz		10 TTL or 50 pF				
	45.001 to 160 MHz		5 TTL or 30 pF				
	Symmetry (Duty Cycle)		(See ordering information)				See Note 3
	Logic "1" Level	Voh	90% Vdd			V	HCMOS Load
			Vdd –0.5			V	TTL Load
	Logic "0" Level	Vol			10% Vdd	V	HCMOS Load
					0.5	V	TTL Load
	Rise/Fall Time	Tr/Tf		3	10	ns	See Note 4
	Tristate Function		Input Logic "1" or floating: output active Input Logic "0": output disables to high-Z				
	Start up Time				10	ms	
	Phase Jitter @ 155.52 MHz	ϕJ		10	15	ps RMS	Integrated 12 kHz – 20 MHz
	Phase Noise (Typical)	**10 Hz**	**100 Hz**	**1 kHz**	**10 kHz**	**100 kHz**	**Offset from carrier**
	@155.52 MHz	-62	-93	-113	-115	-114	dBc/Hz
Environmental	Mechanical Shock	Per MIL-STD-202, Method 213, Condition C (100 g's, 6 mS duration, ½ sinewave)					
	Vibration	Per MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)					
	Hermeticity	Per MIL-STD-202, Method 112, (1x10-8 atm. cc/s of Helium)					
	Solderability	Per EIAJ-STD-002					
	Max Soldering Conditions	See solder profile, Figure 1					

1. Frequencies above 90 MHz utilize a PLL design. Fundamental and PLL designs are available at other frequencies. Contact factory for availability.
2. TTL load – see load circuit diagram #1. HCMOS load – see load circuit diagram #2.
3. Symmetry is measured at 1.4 V with TTL load, and at 50% Vdd with HCMOS load.
4. Rise/Fall times are measured between 0.5 V and 2.4 V with TTL load, and between 10% Vdd and 90% Vdd with HCMOS load.

MtronPTI Lead Free Solder Profile