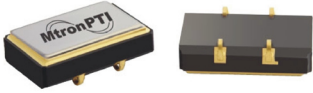
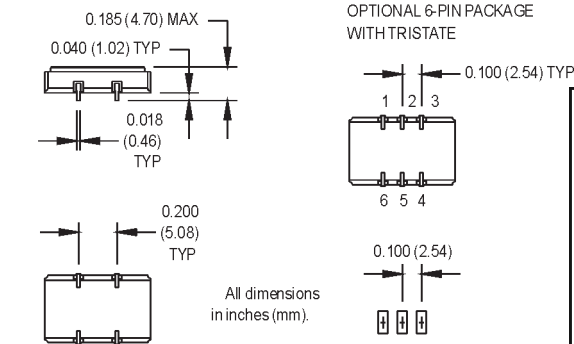
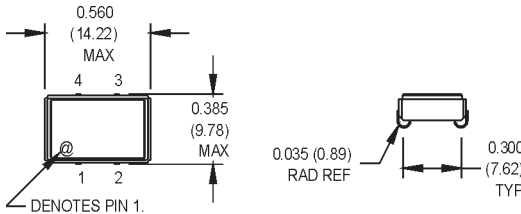


# M3V Series

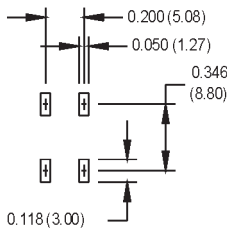
## 9x14 mm, 3.3 Volt, HCMOS/TTL, VCXO



- HCMOS/TTL output to 160 MHz and excellent jitter (2.1 ps typ.) in a SMT package
- Phase-Locked Loops (PLL's), Clock Recovery, Reference Signal Tracking, Synthesizers, Frequency Modulation/Demodulation



SUGGESTED SOLDER PAD LAYOUT



### 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

### Ordering Information

Product Series	M3V	1	3	V	2	C	J	-R	00.0000	MHz	
Temperature Range	1: 0°C to +70°C		2: -40°C to +85°C								
Stability	1: ±1000 ppm		2: ±500 ppm		3: ±100 ppm		4: ±50 ppm		5: ±35 ppm		6: ±25 ppm
Output Type	V: Voltage Controlled		T: Tristate								
Pull Range (Vc = 0.3 to 3.0 V)**	1: ±50 ppm min.		2: ±80 ppm min.								
Symmetry/Logic Compatibility	A: 40/60 CMOS/TTL		C: 45/55 CMOS								
Package/Lead Configurations	J: J Lead										
RoHS Compliance	Blank: non-RoHS compliant part		-R: RoHS compliant part								
Frequency (customer specified)											

\*Contact factory for availability.  
 \*\*Other pull ranges available. Contact factory.  
 M3005Sxxx - Contact factory for datasheet.

PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes	
Frequency Range	F	1.544		160	MHz	See Note 1	
Operating Temperature	T <sub>A</sub>	(See ordering information)					
Storage Temperature	T <sub>S</sub>	-55		+125	°C		
Frequency Stability	ΔF/F	(See ordering information)					
Aging							
1 <sup>st</sup> 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	V <sub>c</sub>	0.3	1.65	3.0	V		
Linearity				10	%	Positive Monotonic Slope	
Modulation Bandwidth	F <sub>m</sub>	10			kHz		
Input Impedance	Z <sub>in</sub>	50k			Ohms		
Input Voltage	V <sub>dd</sub>	3.135	3.3	3.465	V		
Input Current	I <sub>dd</sub>			20	mA	1.544 to 24 MHz	
				55	mA	24.001 to 96 MHz	
				65	mA	96.001 to 160 MHz	
Output Type							HCMOS/TTL
Load		10 TTL or 50 pF					See Note 2
		60.001 to 160 MHz					5 TTL or 30 pF
Symmetry (Duty Cycle)		(See ordering information)					See Note 3
Logic "1" Level	V <sub>oh</sub>	90% V <sub>dd</sub>			V	HCMOS Load	
	V <sub>dd</sub> -0.5				V	TTL Load	
Logic "0" Level	V <sub>ol</sub>			10% V <sub>dd</sub>	V	HCMOS Load	
				0.5	V	TTL Load	
Rise/Fall Time	T <sub>r</sub> /T <sub>f</sub>		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	φ <sub>J</sub>		3	5	ps RMS	Integrated 12 kHz – 20 MHz	
Phase Noise (Typical) @155.52 MHz		10 Hz	100 Hz	1 kHz	10 kHz	100 kHz	Offset from carrier
		-60	-90	-112	-123	-120	dBc/Hz
Mechanical Shock		Per MIL-STD-202, Method 213, Condition C (100 g's, 6 mS duration, ½ sine wave)					
Vibration		Per MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)					
Hermeticity		Per MIL-STD-202, Method 112, (1x10 <sup>-8</sup> atm. cc/s of Helium)					
Solderability		Per EIAJ-STD-002					
Max Soldering Conditions		See solder profile, Figure 1					

1. Frequencies above 70 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% V<sub>dd</sub> with HCMOS load.
4. Rise/Fall times are measured between 0.5 V and 2.4 V with TTL load, and between 10% V<sub>dd</sub> and 90% V<sub>dd</sub> with HCMOS load.

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# MtronPTI Lead Free Solder Profile

