

M4003 & M4004 Series

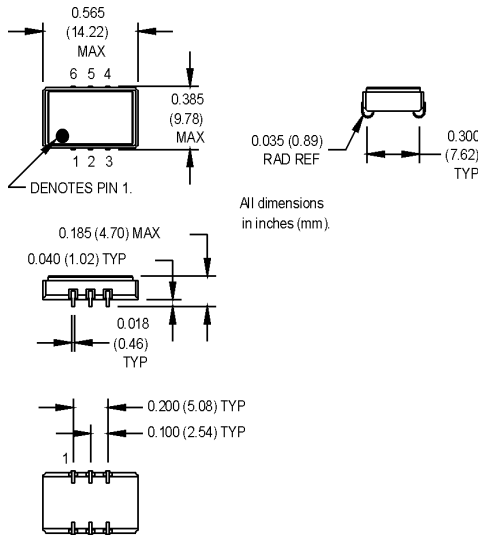
9x14 mm, 5.0 or 3.3 Volt, PECL, VCSO



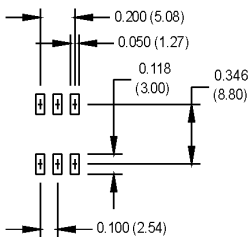
- Integrated phase jitter of less than 0.5 ps from 12 kHz to 20 MHz
- Ideal for SONET and 10 and 40 Gigabit Ethernet applications

Ordering Information									
	M4003/M4004	1	0	B	1	P	J	-R	00.0000 MHz
Product Series									
M4003=	3.3 V								
M4004=	5.0 V								
Temperature Range									
1:	0°C to +70°C	2:	-40°C to +85°C *						
Stability									
0:	Nominal per APR selection								
Output Type									
B:	Complementary, Enable (Enable High)								
S:	Complementary, Enable (Enable Low)								
U:	Complementary, Fixed								
Absolute Pull Range									
1:	±50 ppm	2:	±100 ppm						
Symmetry/Output Logic Type									
P:	45/55% PECL								
Package/Lead Configurations									
J:	J-lead	K:	FR-4						
RoHS Compliance									
Blank:	non-RoHS compliant part								
-R:	RoHS compliant part								
Frequency (customer specified)									

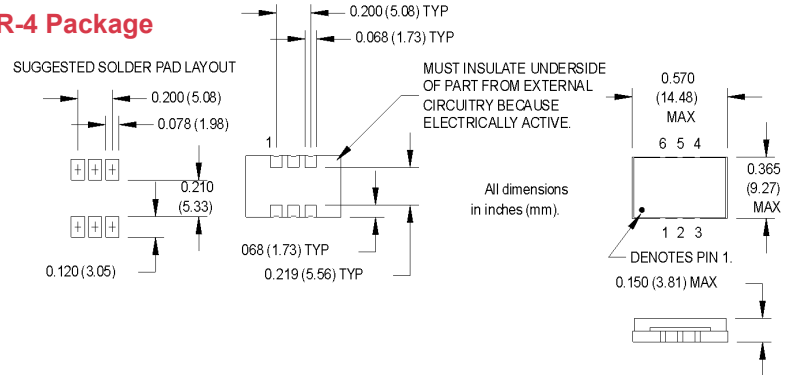
J-Lead Package



SUGGESTED SOLDER PAD LAYOUT



FR-4 Package



Pin Connections

PIN	FUNCTION
1	Control Voltage
2	Output Enable or N/C
3	Ground/Case
4	Output Q
5	Output Q or N/C
6	+Vcc

PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Frequency Range	F	500		1300	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 Thereafter (per year)						
Pullability/APR					ppm	See Note 2
Control Voltage	V _c	0		3.3	V	M4003
		0		5.0	V	M4004
Linearity			±3	±10	%	Positive Monotonic Slope
Modulation Bandwidth	f _m	500			kHz	-3 dB bandwidth
Input Impedance	Z _{in}	50k			Ohms	
Input Voltage	V _{cc}	3.135	3.3	3.465	V	M4003
		4.5	5.0	5.5	V	M4004
Input Current	I _{cc}		80	90	mA	M4003
			73	85	mA	M4004
Output Type						PECL
Load		50Ω to V _{cc} -2V or Thevenin Equivalent				
Symmetry (Duty Cycle)		45	50	55	%	V _{cc} -1.3
Output Skew						
Logic "1" Level	V _{oh}	V _{cc} -0.98			V	
Logic "0" Level	V _{ol}			V _{cc} -1.63	V	
Output Current				20	mA	
Rise/Fall Time	T _r /T _f			0.4	ns	@ 20/80%
Enable Function		PECL high or V _{cc} : output active				Output Option B
		PECL low or GND: output disables				
		PECL low, GND, or N/C: output active				Output Option S
		PECL high: output disables				
Start up Time						
Phase Jitter	φ _J					
@ 622.08 MHz			0.15	0.30	ps RMS	12 kHz - 20 MHz
			0.25	0.40	ps RMS	50 kHz - 80 MHz
Phase Noise (Typical)						Offset from carrier
@ 622.08 MHz	10 Hz	100 Hz	1 kHz	10 kHz	100 kHz	dBc/Hz
	-40	-70	-100	-120	-140	

1. Consult factory for extended temperature operation and exact frequency availability.
2. APR specification inclusive of initial calibration, deviation over temperature, shock, vibration, supply voltage, and aging.

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Please see www.mtronpti.com for our complete offering and detailed datasheets. Contact us for your application specific requirements: MtronPTI 1-800-762-8800.

MtronPTI Lead Free Solder Profile

