

M4003 & M4004 Series

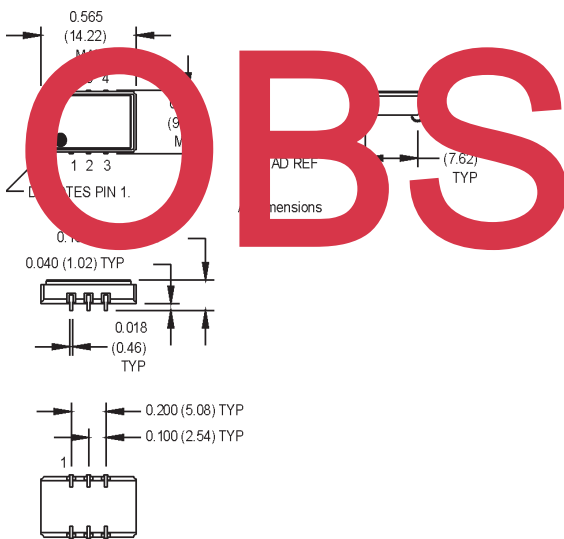
9x14 mm, 5.0 or 3.3 Volt, PECL, VCSO



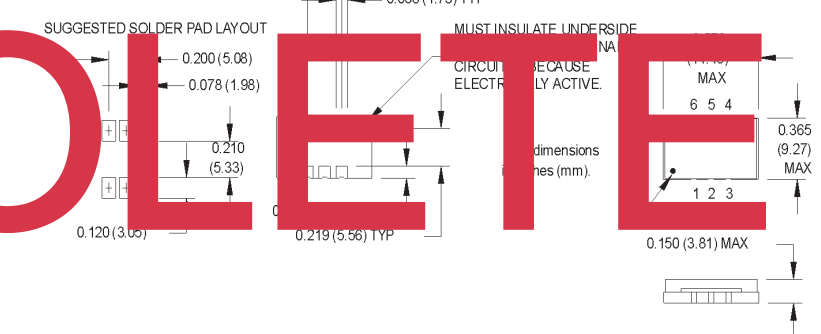
- Integrated phase jitter of less than 0.5 ps from 12 kHz to 20 MHz
- Ideal for SONET and 10 and 40 Gigabit Ethernet applications

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)	

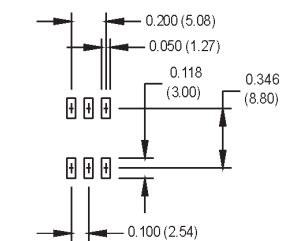
J-Lead Package



FR-4 Package



SUGGESTED SOLDER PAD LAYOUT



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				
Logic "0" Level	V _{ol}	V _{cc} -1.63				
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)		10 Hz	100 Hz	1 kHz	10 kHz	100 kHz
@ 622.08 MHz		-40	-70	-100	-120	-140
						Offset from carrier dBc/Hz

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.

MtronPTI reserves the right to make changes to the product(s) and service(s) described herein without notice. No liability is assumed as a result of their use or application.

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

