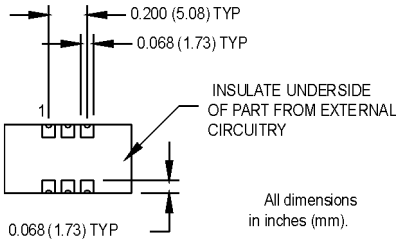
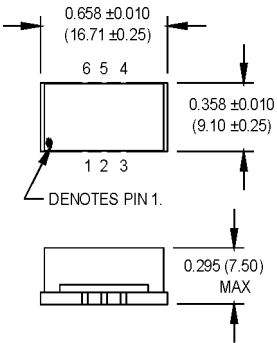


# M5004 Series

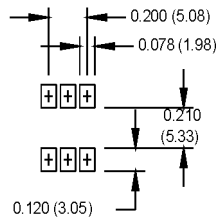
## 9x16 mm FR-4, 5.0 Volt, CMOS/TTL/PECL/LVDS, HPVCXO



- Ideal for applications requiring long term (20 year) all-inclusive stability



SUGGESTED SOLDER PAD LAYOUT



### Pin Connections

PIN	FUNCTION
1	Control Voltage
2	Tristate
3	Ground
4	Output 1
5	N/C or Output 2
6	+Vdd

**Ordering Information**

M5004 2 0 R 1 P K -R 00.0000 MHz

**Product Series** M5004

**Temperature Range**  
 1: 0°C to +70°C      2: -40°C to +85°C  
 6: -20°C to +70°C    7: 0°C to +85°C

**Stability**  
 0: Nominal per APR selection

**Output Type**  
 R: Complementary tri-state (PECL/LVDS)  
 T: Tri-state (CMOS)

**Absolute Pull Range (APR)**  
 1: ±25 ppm  
 2: ±15 ppm

**Symmetry/Logic Compatibility**  
 D: 45/55% CMOS/TTL      L: 45/55% LVDS  
 P: 45/55% PECL

**Package/Lead Configurations**  
 K: FR-4, 6-Pad

**RoHS Compliance**  
 Blank: non-RoHS compliant part  
 -R: RoHS compliant part

**Frequency (customer specified)** 00.0000 MHz

PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes	
Frequency Range	F	10		30	MHz	CMOS/TTL/PECL/LVDS	
Operating Temperature	T <sub>A</sub>	(See Ordering Information)					
Storage Temperature	T <sub>s</sub>	-55		+105	°C		
Frequency Stability	ΔF/F	(See Ordering Information)					See Note 1
Aging							
1st Year				1.5	ppm		
Thereafter (per year)				0.5	ppm		
Pullability/APR		(See Ordering Information)					Over Control Voltage
Control Voltage	V <sub>c</sub>	0.5	2.5	4.5	V		
Tuning Range				15	ppm/V		
Modulation Bandwidth	f <sub>m</sub>	10			kHz		
Input Impedance	Z <sub>in</sub>	50K			Ohms		
Input Voltage	V <sub>cc</sub> /V <sub>dd</sub>	4.75	5.0	5.25	V		
Input Current	I <sub>cc</sub> /I <sub>dd</sub>	2		25	mA	CMOS/TTL	
		50		75	mA	PECL	
		5		35	mA	LVDS	
Output Type						CMOS/TTL/PECL/LVDS	
Load		2 TTL or 15 pF Max. 50 Ohms to V <sub>cc</sub> -2 Volts 100 Ohm differential load					CMOS/TTL PECL LVDS
Symmetry (Duty Cycle)		(See Ordering Information)					
Output Skew				50	ps	PECL	
Differential Voltage		250	375	500	mV	LVDS	
Logic "1" Level	V <sub>oh</sub>	4.5		4.1	V	CMOS/TTL	
		3.9			V	PECL	
		1.375			V	LVDS	
Logic "0" Level	V <sub>ol</sub>			0.5	V	CMOS/TTL	
				3.4	V	PECL	
				1.125	V	LVDS	
Rise/Fall Time	T <sub>r</sub> /T <sub>f</sub>	2.0		10	ns	CMOS/TTL	
		0.25		3.0	ns	PECL/LVDS	
Tristate Function		Input Logic "1": output active Input Logic "0": output disables					Opposite tristate logic Available upon request
Start up Time		10			ms		
Phase Noise (Typical)							
@ 19.44 MHz	10 Hz	100 Hz	1 kHz	10 kHz	100 kHz	Offset from carrier dBc/Hz	
	-60	-90	-120	-135	-148		

1. Stability includes initial tolerance, deviation over temperature, supply and load variation, and aging for 20 years @ 25°C.

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# MtronPTI Lead Free Solder Profile



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