

MHR Series

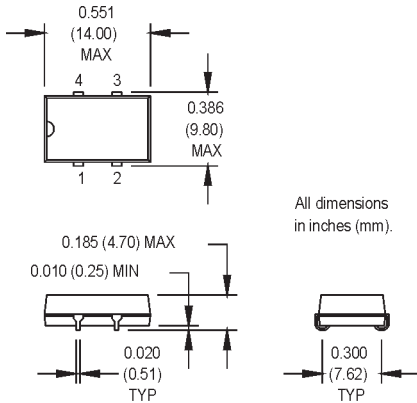
9x14 mm, 5.0 Volt, HCMOS/TTL, Clock Oscillator



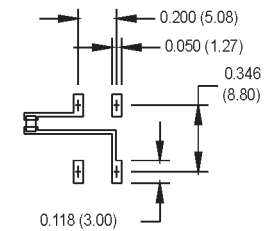
Ordering Information

	MHR	1	3	T	A	J	-R	00.0000	MHz
Product Series									
Temperature Range	1: 0°C to +70°C		2: -40°C to +85°C						
Stability	3: ±100 ppm		4: ±50 ppm		6: ±25 ppm		*8: ±20 ppm		
Output Type	F: Fixed				T: Tristate				
Symmetry/Logic Compatibility	A: 40/60 TTL/HCMOS (Standard for 1.000 to 50.000 MHz)								
	*B: 45/55 TTL								
	*C: 45/55 HCMOS								
	F: 40/60 TTL (50.001 to 67.000 MHz)								
	G: 40/60 HCMOS (50.001 to 80.000 MHz)								
Package/Lead Configurations	J: J Lead								
RoHS Compliance	-R: RoHS Compliant								
Frequency (customer specified)									

* Consult factory regarding availability of "B" and "C" symmetry codes, and "8" Stability code.



SUGGESTED SOLDER PAD LAYOUT



NOTE: A capacitor of value 0.01 μF or greater between Vdd and Ground is recommended.

Pin Connections

PIN	FUNCTION
1	N/C or Tristate
2	Ground
3	Output
4	+Vdd

PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes	
Frequency Range	F	1		80	MHz		
Operating Temperature	T _A	(See ordering information)					
Storage Temperature	T _S	-55		+125	°C		
Frequency Stability	ΔF/F	(See ordering information)					
Aging							
1st Year		-5		+5	ppm		
Thereafter (per year)		-5		+5	ppm		
Input Voltage	V _{dd}	4.5	5.0	5.5	V		
Input Current	I _{dd}			30	mA	1.000 to 40.000 MHz	
				50	mA	40.001 to 50.000 MHz	
				55	mA	50.001 to 80.000 MHz	
Output Type						HCMOS/TTL	
Load						See Note 1	
1 to 50 MHz				10	TTL or 50 pF		
50.001 to 67 MHz				5	TTL or 30 pF		
67.001 to 80 MHz				15	pF		
Symmetry (Duty Cycle)		(See ordering information)					See Note 2
Logic "1" Level	V _{oh}	90% V _{dd}			V	HCMOS Load	
		V _{dd} -0.5			V	TTL Load	
Logic "0" Level	V _{ol}			10% V _{dd}	V	HCMOS Load	
				0.5	V	TTL Load	
Output Current				±12	mA		
Rise/Fall Time	Tr/Tf					See Note 3	
1 to 40 MHz				10	ns		
40.001 to 50 MHz				8	ns		
50.001 to 80 MHz				6	ns		
Tristate Function		Input Logic "1" or floating: output active					
		Input Logic "0": output disables to high-Z					
Start up Time				10	ms		
Random Jitter	R _j		5	12	ps RMS	1-Sigma	
Environmental							
Mechanical Shock		MIL-STD-202, Method 213, C (100 g's)					
Vibration		MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)					
Thermal Cycle		MIL-STD-883, Method 1010, B (-55°C to +125°C, 15 min dwell, 10 cycles)					
Hermeticity		MIL-STD-202, Method 112					
Solderability		Per EIAJ-STD-002					
Max Soldering Conditions		See solder profile, Figure 1					

1. TTL load - see Load Circuit Diagram #1. HCMOS load - see Load Circuit Diagram #2.
2. Symmetry is measured at 1.4 V with TTL load and at 50% V_{dd} with HCMOS load.
3. Rise/Fall times are measured between 0.5 V and 2.4 V for TTL load, and between 10% and 90% V_{dd} for HCMOS load.

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MtronPTI Lead Free Solder Profile

