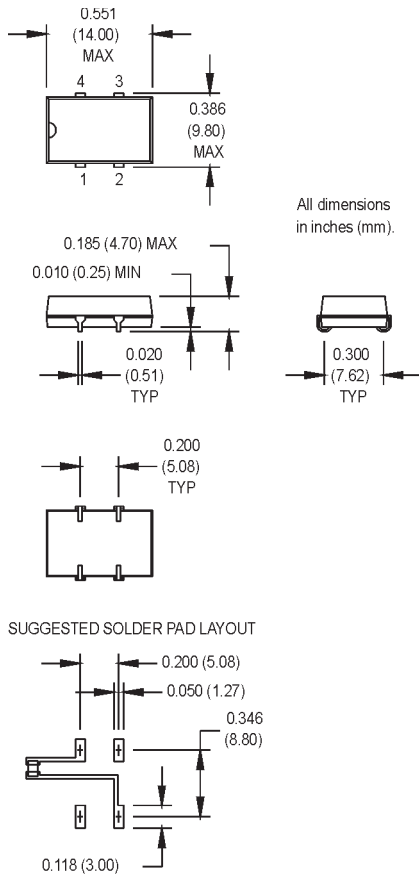


MHR Series

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



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

Pin Connections

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

Ordering Information

Product Series	MHR	1	3	T	A	J	-R	00.0000 MHz
Temperature Range	1: 0°C to +70°C	2: -40°C to +85°C	6: -20°C to +70°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.

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	$\Delta F/F$	(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)				
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	T _r /T _f			10	ns	See Note 3
1 to 40 MHz				8	ns	
40.001 to 50 MHz				6	ns	
50.001 to 80 MHz						
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

