

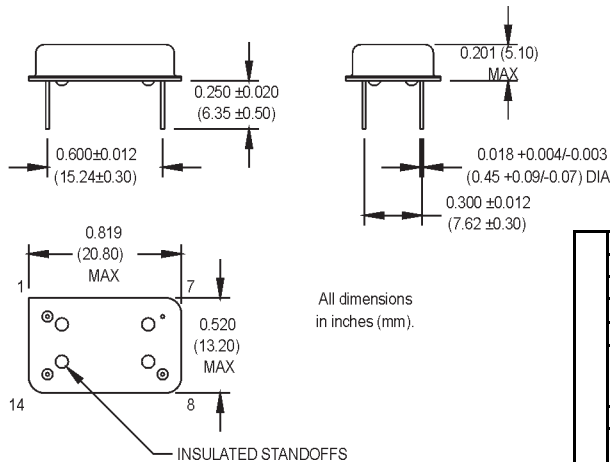
MHO+ Series

14 pin DIP, 5.0 Volt, HCMOS/TTL, Clock Oscillator



Features:

- Standard 14 DIP Package
- RoHS Compliant Version Available (-R)
- Tristate Option
- Wide Operating Temperature Range



All dimensions
in inches (mm).

INSULATED STANDOFFS

Pin Connections

PIN	FUNCTION
1	N/C or Tristate
7	Circuit/Case Ground
8	Output
14	+Vdd

Available Symmetry

FREQUENCY RANGE	STD.	OPTIONS
0.732 kHz to 50 MHz	A	B, C, D
50.001 to 60 MHz	A	B, C
60.001 to 67 MHz	A	C
67.001 to 80 MHz	F,G	C

Ordering Information

Product Series	MHO+	1	3	F	A	D	-R	00.0000	MHz
Temperature Range	1: 0°C to +70°C	2: -40°C to +85°C	3: -55°C to +105°C	4: -55°C to +125°C	5: -10°C to +85°C	6: -20°C to +70°C	7: 0°C to +85°C		
Stability	1: ±1000 ppm	2: ±500 ppm	3: ±100 ppm	4: ±50 ppm	5: ±35 ppm	6: ±25 ppm	7: ±0/-200 ppm	*8: ±20 ppm	
Output Type	F: Fixed	T: Tristate (1.000 to 80.000 MHz)							
Symmetry/Logic Compatibility (See Table Below)	A: 40/60 HCMOS/TTL	B: 45/55 TTL	C: 45/55 HCMOS	D: 45/55 HCMOS/TTL	F: 40/60 TTL	G: 40/60 HCMOS			
Package/Lead Configurations	D: DIP; Nickel Header	G: Gull Wing; Nickel Header							
RoHS Compliance	Blank: non-RoHS compliant part	-R: RoHS compliant part							
Frequency (customer specified)									

*Contact factory for availability
M2014Sxxx - Contact factory for datasheet.

PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Frequency Range	F	.732 kHz		80	MHz	See Note 1
Operating Temperature	Ta	(See ordering information)				
Storage Temperature	Ts	-55		+125	°C	
Frequency Stability	ΔF/F	(See ordering information)				
Aging						
1st Year			±3		ppm	
Thereafter (per year)			±2		ppm	
Input Voltage	Vdd	4.5	5.0	5.5	V	
Input Current	Idd			15 25 60	mA mA mA	.732 kHz to 2.999 MHz 3.000 to 25.999 MHz 26.000 to 80.000 MHz
Output Type						HCMOS/TTL
Load						See Note 2 5 TTL or 50 pF 10 TTL or 50 pF 10 TTL or 15 pF
Symmetry (Duty Cycle)						(See ordering information)
Logic "1" Level	Voh	90% Vdd Vdd-0.5			V V	HCMOS Load TTL Load
Logic "0" Level	Vol			10% Vdd 0.5	V V	HCMOS Load TTL Load
Output Current				±8 ±16	mA mA	.732 kHz to 2.999 MHz 3.000 to 80.000 MHz
Rise/Fall Time	Tr/Tf			20 10	ns ns	See Note 4 .732 kHz to 2.999 MHz 3.000 to 80.000 MHz
Tristate Function		Input Logic "1" or floating: output active Input Logic "0": output to high-Z				
Start up Time				10	ms	
Random Jitter	Rj		5	12	ps RMS	1-Sigma
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 Wave Soldering Conditions		+260°C for 10 seconds				

1. Contact the factory for availability of higher frequencies.
2. TTL load - see Load Circuit Diagram #1. HCMOS load - see Load Circuit Diagram #2.
3. Symmetry is measured at 1.4 V with TTL load and at 50% Vdd with HCMOS load.
4. Rise/fall times are frequency dependent and measured between 0.4 V and 2.4 V with TTL load, and between 10% Vdd and 90% Vdd with HCMOS Load.

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