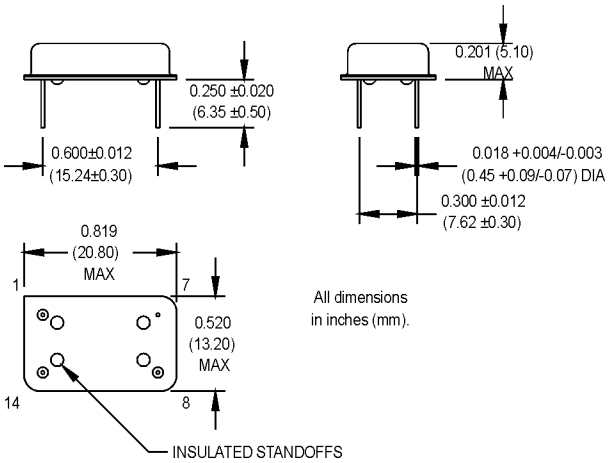
MHO+ Series 5.0 Volt HCMOS/TTL Compatible Oscillators



All dimensions in inches (mm).

See page 90 for gull wing configuration.

Ordering Information

MHO+ 1 3 F A D 00.0000 MHz

Product Series

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 67.000 MHz)

Symmetry/Logic Compatibility (See Table Below)
- **A:** 40/60 CMOS/TTL
- **B:** 45/55 TTL
- **C:** 45/55 CMOS
- **D:** 45/55 CMOS/TTL
- **F:** 40/60 TTL
- **G:** 40/60 CMOS

Package/Lead Configurations
- **D:** DIP; Nickel Header
- **G:** Gull Wing; Nickel Header

Frequency (customer specified)

* Contact factory for availability.

Available Symmetry

FREQUENCY RANGE	STD.	OPTIONS
0.732 kHz to 50.000 MHz	A	B, C, D
50.001 to 60.000 MHz	A	B, C
60.001 to 67.000 MHz	A	C
67.001 to 80.000 MHz	F,G	

Pin Connections

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

	PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition
Electrical Specifications	Frequency Range	F	.732 kHz		80	MHz	
	Frequency Stability	ΔF/F	(See Ordering Information)				
	Operating Temperature	TA	(See Ordering Information)				
	Storage Temperature	Ts	-55		+125	°C	
	Input Voltage	Vdd	4.5	5.0	5.5	V	
	Input Current	Idd			15	mA	0.732 kHz to 2.999 MHz
					25	mA	3.000 to 25.999 MHz
					60	mA	26.000 to 80.000 MHz
	Symmetry (Duty Cycle) [1]		(See Ordering Information)				
	Load [2]		5 TTL or 50 pF				0.732 kHz to 2.999 MHz
			10 TTL or 50 pF				3.000 to 67.000 MHz
			10 TTL or 15 pF				67.001 to 80.000 MHz
	Rise/Fall Time [3]	Tr/Tf					
	0.732 kHz to 2.999 MHz				20	ns	
	3.000 to 80.000 MHz				10	ns	
	Logic "1" Level	Voh	90% Vdd			V	HCMOS Load
			Vdd -0.5			V	TTL Load
	Logic "0" Level	Vol			10% Vdd	V	HCMOS Load
					0.5	V	TTL Load
	Cycle to Cycle Jitter			7	18	ps RMS	1 Sigma
	Tri-State Function		Input Logic "1" or floating; output active				
			Input Logic "0"; output to high-Z				
Environmental	Mechanical Shock	Per MIL-STD-202, Method 213, Condition C					
	Vibration	Per MIL-STD-202, Method 201 & 204					
	Wave Solder Conditions	260°C for 10 s max.					
	Hermeticity	Per MIL-STD-202, Method 112 (1 x 10^{-8} atm.cc/s of helium)					
	Solderability	Per EIAJ-STD-002					

1. Symmetry is measured at 1.4 V with TTL load, and at 50% Vdd with HCMOS load.
2. TTL load - See load circuit diagram #1 on page 92. HCMOS load - See load circuit diagram #2 on page 92.
3. Rise/Fall times are measured between 0.5 V and 2.4 V with TTL load, and between 10% Vdd and 90% Vdd with HCMOS load.

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