## **MHO+ Series**

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





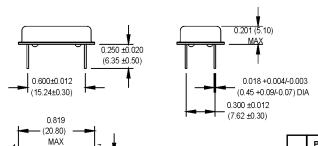


### Features:

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



All dimensions

in inches (mm).

#### Ordering Information 00.0000 мно+ 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 80.000 MHz) Symmetry/Logic Compatibility (See Table Below) C: 45/55 HCMOS A: 40/60 HCMOS/TTL B: 45/55 TTL D: 45/55 HCMOS/TTL F: 40/60 TTL G: 40/60 HCMOS Package/Lead Configurations G: Gull Wing; Nickel Header D: DIP; Nickel Header RoHS Compliance Blank: non-RoHS compliant part -R: RoHS compliant part Frequency (customer specified)

# **Pin Connections**

0

0.520

(13.20)MAX

INSULATED STANDOFFS

1 111 0 0 1111 0 0 11 0 11 0					
PIN	FUNCTION				
1	N/C or Tristate				
7	Circuit/Case Ground				
8	Output				
14	+Vdd				

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1	N/C or Tristate				
7	Circuit/Case Ground				
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14	+Vdd				

## **Available Symmetry**

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

PARAMETER	Symbol	Min.	Тур.	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	∆ <b>F/F</b>	(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	ldd			15	mA	.732 kHz to 2.999 MHz
				25	mA	3.000 to 25.999 MHz
				60	mA	26.000 to 80.000 MHz
Output Type						HCMOS/TTL
Load						See Note 2
						.732 kHz to 2.999 MHz
		10 TTL or 50 pF 10 TTL or 15 pF				3.000 to 67.000 MHz
						67.001 to 80.000 MHz
Symmetry (Duty Cycle)		(See Ordering Information)				See Note 3
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
Output Current				±8	mA	0.732 kHz to 2.999 MHz
				±16	mA	3.000 to 80.000 MHz
Rise/Fall Time	Tr/Tf					See Note 4
				20	ns	.732 kHz to 2.999 MHz
				10	ns	3.000 to 80.000 MHz
Tristate Function		Input Logic Input Logic	"1" or floa "0"; outpu			
Start up Time			5		ms	
Random Jitter	Rj		5	12	ps RMS	1-Sigma
	Frequency Range Operating Temperature Storage Temperature Frequency Stability Aging 1st Year Thereafter (per year) Input Voltage Input Current  Output Type Load  Symmetry (Duty Cycle) Logic "1" Level  Logic "0" Level  Output Current  Rise/Fall Time  Tristate Function  Start up Time	Frequency Range Operating Temperature TA Storage Temperature TS Frequency Stability Aging 1st Year Thereafter (per year) Input Voltage Input Current Idd  Output Type Load  Symmetry (Duty Cycle) Logic "1" Level Vol  Output Current  Rise/Fall Time Tristate Function Start up Time	Frequency Range F .732 kHz Operating Temperature TA (See Order Storage Temperature Ts -55 Frequency Stability ΔF/F (See Order Aging 1st Year Thereafter (per year) Input Voltage Vdd 4.5 Input Current Idd  Output Type Load 5 TTL or 50 10 TT	Frequency Range	Frequency Range	Frequency Range

- 1. Consult factory for availability of higher frequencies.
- 2. TTL load See load circuit diagram #1. HCMOS load See load circuit diagram #2.
- Symmetry is measured at 1.4 V with TTL load, and at 50% Vdd with HCMOS load.
   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.

MtronPTI reserves the right to make changes to the product(s) and service(s) described herein without notice. No liability is assumed as a result of their use or application.

<sup>\*</sup>Contact factory for availability