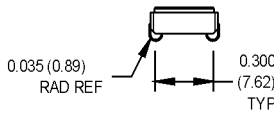# M7S & M8S Series
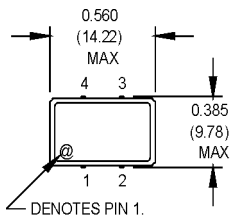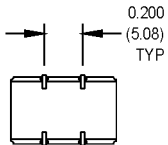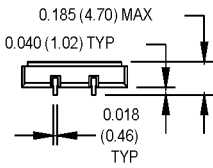## 9x14 mm, 5.0 or 3.3 Volt, HCMOS/TTL, Clock Oscillator

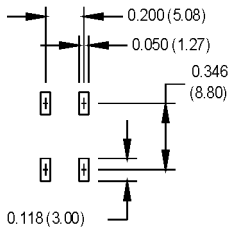**MtronPTI**

- J-lead ceramic package
- Wide operating temperature range
- RoHS version (-R) available

Ordering Information

00.0000

M7S/M8S   1   3   F   A   J   -R   MHz

Product Series
- M7S = 5.0 Volt
- M8S = 3.3 Volt

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
- ***8:** ±20 ppm

Output Type
- **F:** Fixed   **T:** Tristate

Symmetry/Logic Compatibility
- **A:** 40/60 HCMOS/TTL   **B:** 45/55 TTL
- **C:** 45/55 HCMOS
- **D:** 45/55 HCMOS/TTL (1.000 - 107.000 MHz)

Package/Lead Configurations
- **J:** J Lead (Gold Flash Leads)

RoHS Compliance
- Blank: non-RoHS compliant part
- **-R:** RoHS compliant part

Frequency (customer specified)

* Contact factory for availability.

Dimensions

0.560 (14.22) MAX

0.385 (9.78) MAX

0.035 (0.89) RAD REF

0.300 (7.62) TYP

DENOTES PIN 1.

All dimensions in inches (mm).

0.185 (4.70) MAX
0.040 (1.02) TYP
0.018 (0.46) TYP

0.200 (5.08) TYP

SUGGESTED SOLDER PAD LAYOUT

0.200 (5.08)
0.050 (1.27)
0.346 (8.80)
0.118 (3.00)

Pin Connections

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

Electrical Specifications

PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Frequency Range	F	1		125	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			±3		ppm	
Thereafter (per year)			±2		ppm	
Input Voltage	Vdd	4.5	5.0	5.5	V	M7S
		3.135	3.3	3.465	V	M8S
Input Current	Idd			85	mA	M7S
				35	mA	M8S
Output Type						HCMOS/TTL
Load (M7S)		10 TTL or 50 pF				See Note 1 / 1.000 to 80.000 MHz
		10 TTL or 15 pF				80.001 to 125.000 MHz
Load (M8S)		10 TTL or 15 pF				1.000 to 125.000 MHz
Symmetry (Duty Cycle)		(See Ordering Information)				See Note 2
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						
1 to 80 MHz				±16	mA	M7S
80.001 to 125 MHz				+16/-8	mA	M7S
1 to 80 MHz				±8	mA	M8S
80.001 to 125 MHz				+8/-4	mA	M8S
Rise/Fall Time	Tr/Tf					See Note 3
1 to 40 MHz				7/6	ns	M7S/M8S
40.001 to 125 MHz				5/4	ns	M7S/M8S
Tristate Function		Input Logic "1" or floating; output active Input Logic "0"; output disables to high-Z				
Maximum Reflow Conditions		+240°C for 10 seconds +260°C for 10 seconds				non-RoHS part RoHS Compliant part
Start up Time			5		ms	
Random Jitter	Rj		5	12	ps RMS	1.000 to 80.000 MHz
1-Sigma			40	100	ps RMS	80.001 to 125.000 MHz

1. TTL load - See load circuit diagram #1. HCMOS load - See load circuit diagram #2.

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.

Please see **www.mtronpti.com** for our complete offering and detailed datasheets. Contact us for your application specific requirements: MtronPTI **1-800-762-8800.**

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