



M7S/M8S Series

9x14 mm, 5 or 3.3 Volt HCMOS/TTL

SMT Clock Oscillator

FEATURES

J-lead ceramic package
Low profile, Surface mount
Wide operating temperature range
Compliant to RoHS directive
Operating Voltage: 3.3/5.0 Volt

APPLICATIONS

Avionics and Aerospace
Communication and Navigation
Military Radios
Instrumentation and Industrial
Test and Measurement Equipment

ORDERING INFORMATION

	MxS	2	3	T	C	J	-R	00.0000 MHz
Product Series M7S = 5.0 V M8S = 3.3 V								
Temperature Range 1: 0°C to +70°C 6: -20°C to +70°C 2: -40°C to +85°C								
Stability 3: ± 100 ppm 4: ± 50 ppm								
Output Type F: Fixed T: Tristate								
Symmetry/Logic Compatibility A: 40/60% HCMOS/TTL C: 45/55% HCMOS D: 45/55% HCMOS/TTL (1.000 – 107.000 MHz)								
Package/Lead Configurations J: Gold Flash J-Leads S: Solder Dip								
RoHS Compliance Blank: non-RoHS Compliant part -R: RoHS Compliant part								

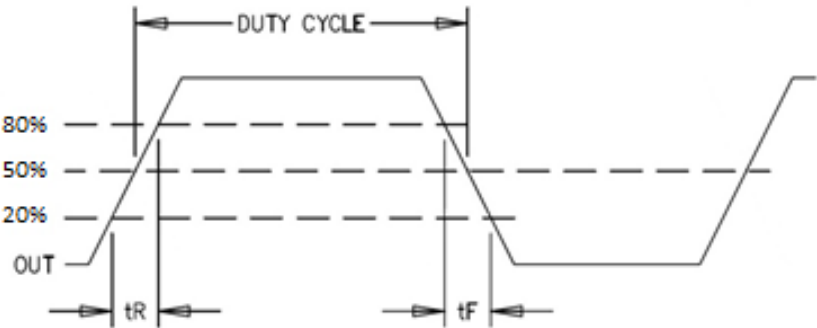
Example Part Number: M8S24TCJ-R 16 .0000 MHz

06/01/21 Rev. A

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency Range	F ₀	1		125	MHz	
Frequency Stabilities						
vs. Operating Temperature	ΔF/F	(See ordering information)			ppm	Includes initial tolerance @ +25°C and deviation over operating temperature range.
vs. Aging			±3		ppm	1st year
			±2		ppm	Thereafter (per year)
RF Output						
		HCMOS/TTL Compatible				
Output Load M7S M8S		10 TTL or 50 pF 10 TTL or 15 pF 15 pF				See Note 1 1.000 to 80.000 MHz 80.001 to 125.000 MHz 1.000 to 125.000 MHz
Symmetry (Duty Cycle)		(See Ordering Information)				
Logic "1" Level	V _{OH}	90% V _{DD} V _{DD} -0.5				HCMOS Load TTL Load
Logic "0" Level	V _{OL}			10%V _{DD} 0.5	V V	HCMOS Load TTL Load
Output Current 1 to 80 MHz 80.001 to 125 MHz 1 to 80 MHz 80.001 to 125 MHz			±16 +16/-8 ±4 ±4		mA mA mA mA	M7S M7S M8S M8S
Rise/Fall Time 1 to 40 MHz 40.001 to 125 MHz	T _R /T _F			7/6 5/4	ns ns	M7S/M8S M7S/M8S
Tristate Function		Input Logic "1" or floating: Input Logic "0":				Output Active Output Disables to High Z
Start-up Time	T _{SU}			10	ms	T _{ambient} = +25°C
Other Parameters						
Random Jitter (RMS)	R _J		5 12	12 100	ps RMS ps RMS	1.000 to 80.000 MHz 80.001 to 125.000 MHz
Operating Voltage and Current						
Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Operating Voltage	V _{DD}	4.5	5.0	5.5	V	M7S
		3.135	3.3	3.465	V	M8S
Operating Current	I _{DD}			85	mA	M7S
				35	mA	M8S

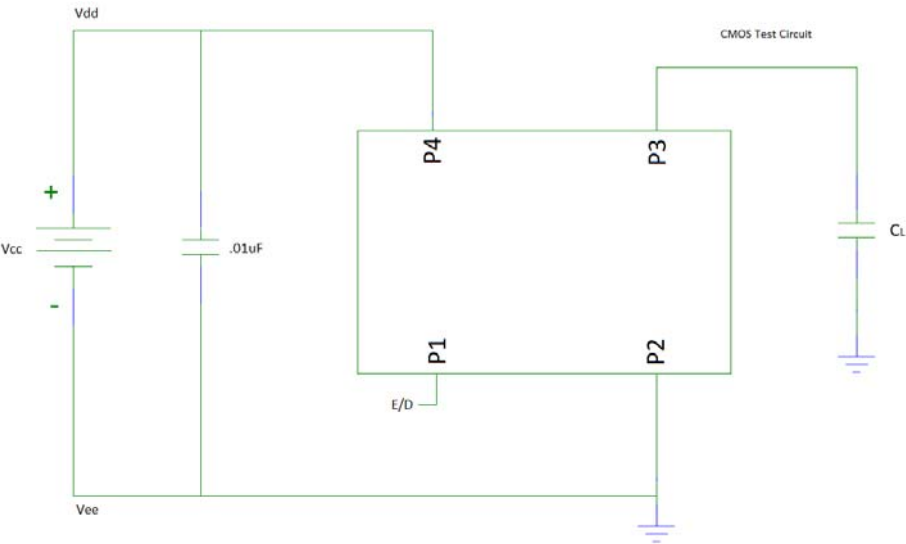
OUTPUT WAVEFORM



ENVIRONMENTAL CONDITIONS

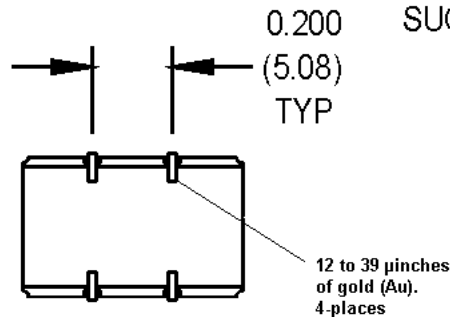
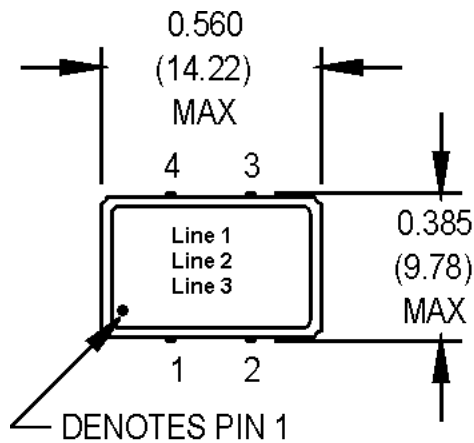
Temperature					
Operating Temperature	T _A	See ordering information			°C
Storage Temperature	T _S	-55		+125	°C
Shock	Per MIL-STD-202, Method 213, Condition C (100 g's, 6 ms duration, ½ sinewave)				
Vibration	Per MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)				
Solderability	Per EIAJ-STD-002				
Hermeticity	Per MIL-STD-202, Method 112 (1 x 10 ⁻⁸ atm cc/s of helium)				

LOAD CIRCUIT DIAGRAM

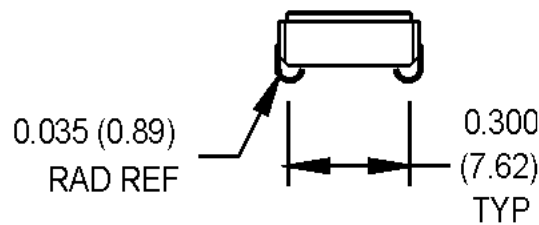
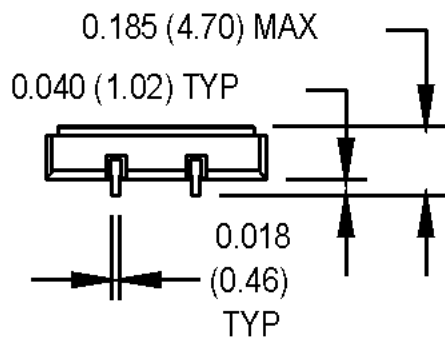
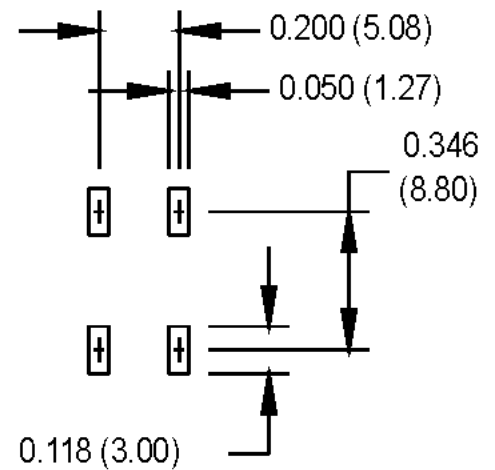


MECHANICAL AND PIN OUT INFORMATION

Pad	Function
1	Tristate or N/C
2	Ground
3	Output Q
4	Supply Voltage

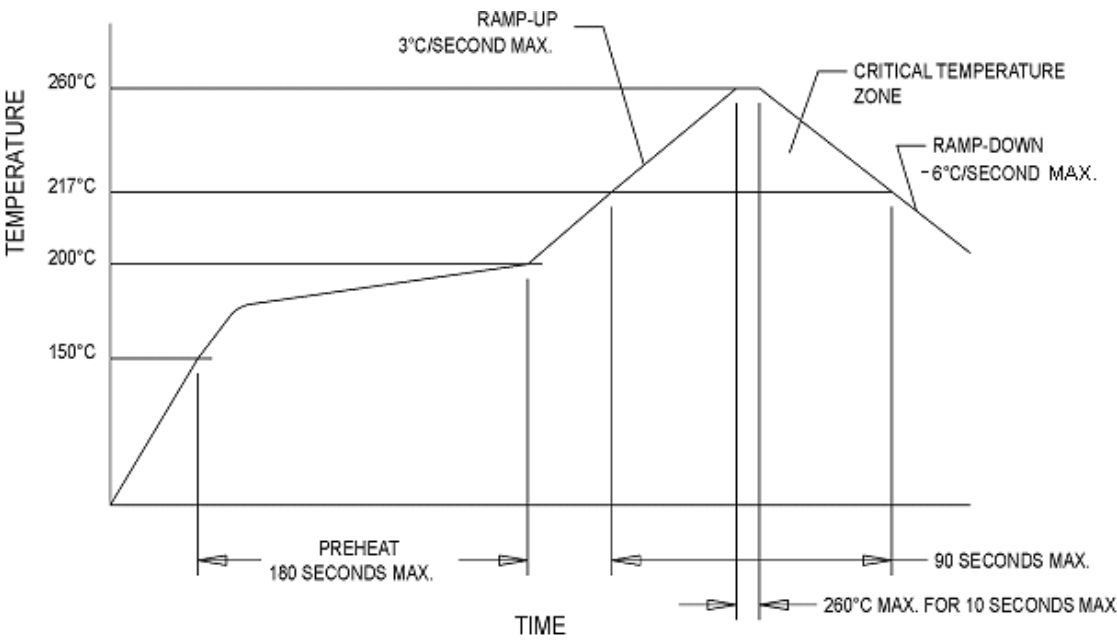


SUGGESTED SOLDER PAD LAYOUT



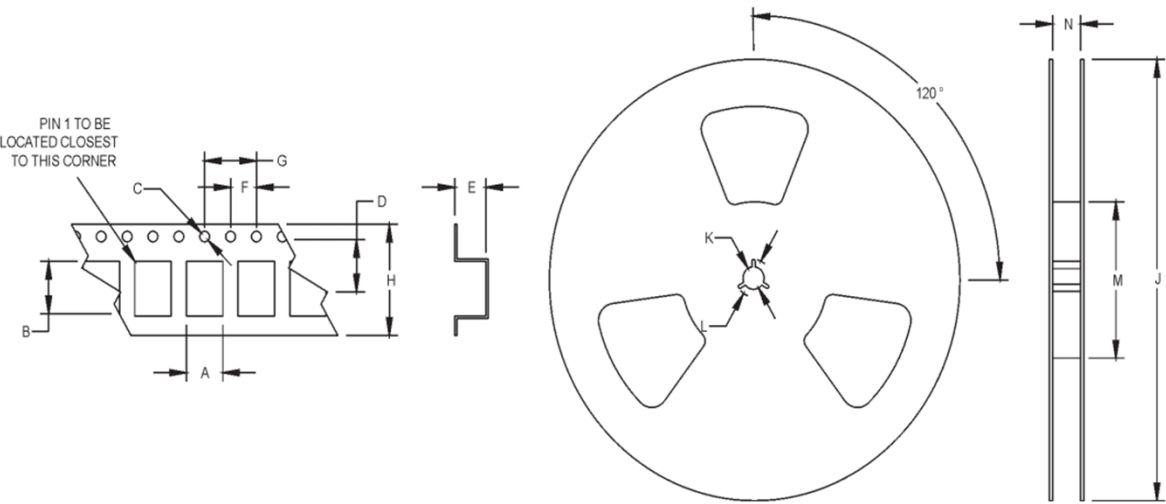
All dimensions in inches (mm)

LEAD FREE SOLDER PROFILE



TAPE AND REEL SPECIFICATIONS

All units in mm



A	B	C	D	E	F	G	H	J	K	L	M
9.54	14.62	1.5	11.5	5.4	4	12	24	330	6.5		100

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No liability is assumed as a result of their use or application.