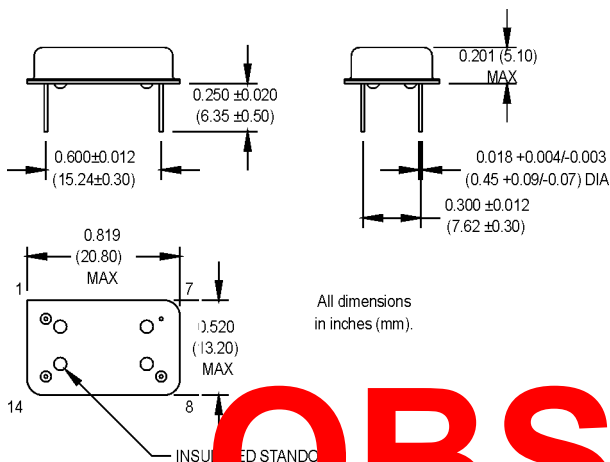


ML Series Micropower CMOS Oscillators



All dimensions
in inches (mm).

See page 146 for gull wing configuration.

Ordering Information

	ML	1	3	F	A	D	00.0000 MHz
Product Series							
Temperature Range							
1: 0°C to +70°C	2: -40°C to +85°C						
5: -10°C to +85°C	6: -20°C to +70°C						
Stability							
2: ±500 ppm	3: ±100 ppm						
9: ±200 ppm							
Output Type							
F: Fixed							
Symmetry/Logic Compatibility							
A: 40/60	C: 45/55 CMOS (only on divider freq.)						
Package/Lead Configurations							
D: DIP; Nickel Header							
G: Gull Wing; Nickel Header							
Frequency (customer specified)							

Available Stabilities vs. Temperature

Temp. Range	Stability	Temp. Range	Stability
1	A	5	A
2	A	6	A
3	A	9	A
4	A		
5	A		
6	A		

Pin Connections

PIN	FUNCTION(S)
1	N/C
7	Circuit/Case Ground
8	Output
14	+Vdd

Divider Output Frequencies

2048 Hz	128 Hz	4 Hz
1024 Hz	64 Hz	2 Hz
512 Hz	32 Hz	
256 Hz	8 Hz	

Electrical Specifications	PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition
	Frequency Range	F	2 Hz		32.768	kHz	
	See "Divider Output Frequencies" table for available frequencies						
	Frequency Stability	$\Delta F/F$	(See Ordering Information)				
	Operating Temperature	T _A	(See Ordering Information)				
	Storage Temperature	T _S	-55		+125	°C	
	Input Voltage	V _{CC}	3.0	5.0	6.0	V	Except as Noted
	Input Current ¹	I _{DD}			15	μA	V _{DD} = 3.0 V
					25	μA	V _{DD} = 5.0 V
					35	μA	V _{DD} = 6.0 V
	Symmetry (Duty Cycle)		40	50	60	%	½ V _{DD}
	Load ²				15	pF	
	Rise/Fall Time ³	T _r /T _f			50	ns	
					10	ns	
Environmental	Logic "1" Level	V _{OH}	80% V _{DD}			V	
	Logic "0" Level	V _{OL}			20% V _{DD}	V	
	Startup Time	T _S		500		ms	@ 32.768 kHz
	Mechanical Shock	Per MIL-STD-202, Method 213, Condition C					
	Vibration	Per MIL-STD-202, Method 201 & 204					
Environmental	Reflow Solder Conditions	See page 147					
	Hermeticity	Per MIL-STD-202, Method 112 (1 x 10 ⁻⁸ atm.cc/s of helium)					
	Solderability	Per EIAJ-STD-002					

1. Supply current for divided output is slightly higher than listed.

2. See load circuit diagram #2 on page 148.

3. Rise/Fall times are measured between 20% V_{DD} and 80% V_{DD}.

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