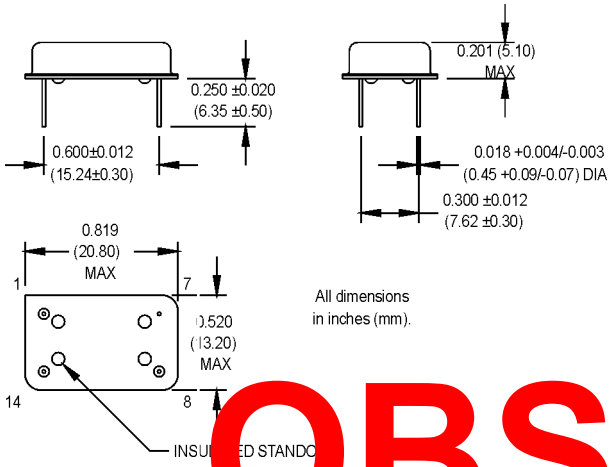
ML Series Micropower CMOS Oscillators



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

	S	2	3	9
T		A	S	A
		A	[illegible]	N
5	A	N	N	
6	A	N	N	

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	

	PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition
Electrical Specifications	Frequency Range	F	2 Hz		32.768	kHz	See "Divider Output Frequencies" table for available frequencies
	Frequency Stability	ΔF/F	(See Ordering Information)				
	Operating Temperature	TA	(See Ordering Information)				
	Storage Temperature	Ts	-55		+125	°C	
	Input Voltage	Vcc	3.0	5.0	6.0	V	Except as Noted
	Input Current[1]	Idd			15	µA	Vdd = 3.0 V
	32.768 kHz only				25	µA	Vdd = 5.0 V
					35	µA	Vdd = 6.0 V
	Symmetry (Duty Cycle)		40	50	60	%	½ Vdd
	Load[2]				15	pF	
	Rise/Fall Time[3]	Tr/Tf					
	< 32.768 kHz				50	ns	
	32.768 kHz				10	ns	
	Logic "1" Level	Voh	80% Vdd			V	
	Logic "0" Level	Vol			20% Vdd	V	
	Startup Time	Ts		500		ms	@ 32.768 kHz
Environmental	Mechanical Shock	Per MIL-STD-202, Method 213, Condition C					
	Vibration	Per MIL-STD-202, Method 201 & 204					
	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 that listed.
2. See load circuit diagram #2 on page 148.
3. Rise/Fall times are measured between 20% Vdd and 80% Vdd.

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