

# M2032, M2033, and M2034 Series 3.2 x 5.0 x 1.3 mm HCMOS Compatible Surface Mount Oscillators



- $\pm 20$  ppm stability
- Tri-state or standby function
- Ideal for WLAN and IEEE802.11 Applications
- Low power applications



Ordering Information	
Product Series	M203X
Temperature Range	D 8 Q C N
Stability	00.0000 MHz
Output Type	
Symmetry/Logic Compatibility	
Package/Lead Configurations	
Frequency (customer specified)	

**Product Series:**  
 M2032 = 2.85V  
 M2033 = 3.0V  
 M2034 = 3.3V

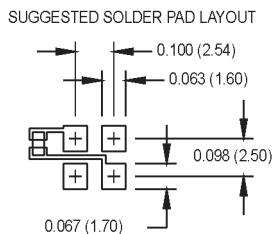
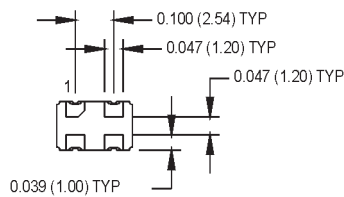
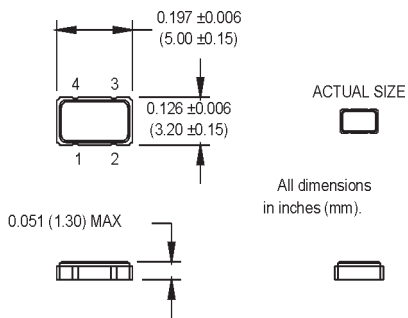
**Temperature Range:**  
 D: -10°C to +70°C  
 6: -20°C to +70°C  
 2: -40°C to +85°C

**Stability:**  
 3:  $\pm 100$  ppm    4:  $\pm 50$  ppm  
 6:  $\pm 25$  ppm    8:  $\pm 20$  ppm\*\*

**Output Type:**  
 Q: Standby Function    T: Tristate

**Symmetry/Logic Compatibility:**  
 C: 45/55 CMOS    G: 40/60 CMOS

**Package/Lead Configurations:**  
 N: Leadless



## Pin Connections

PIN	Function
1	Standby/Tristate
2	Ground
3	Output
4	+Vdd

	PARAMETER	Symbol	Min.	Typ.	Max.	Units.	Condition	
Electrical Specifications	Frequency Range	F	1.5		80	MHz	See Note 1	
	Frequency Stability	$\Delta F/F$			$\pm 20$	ppm	See Note 2	
	Operating Temperature	T <sub>A</sub>	(See Ordering Information)					
	Input Voltage	V <sub>dd</sub>		3.15	3.3	3.45	V	3.3V
				2.85	3.0	3.15	V	3.0V
				2.7	2.85	3.0	V	2.8V
	Input Current	I <sub>dd</sub>				15	mA	3.3V
						20	mA	
						45	mA	
	Symmetry (Duty Cycle)		45		55	%	$\frac{1}{2}$ V <sub>dd</sub>	
	Rise/Fall Time	T <sub>r</sub> /T <sub>f</sub>			6	ns		10% to 90% V <sub>dd</sub>
					4	ns		10% to 90% V <sub>dd</sub>
	Logic "1" Level	V <sub>oh</sub>	90% V <sub>dd</sub>			V		
	Logic "0" Level	V <sub>ol</sub>			10% V <sub>dd</sub>	V		
	Output Current	I <sub>oh</sub>	-2			mA		
I <sub>ol</sub>		+2			mA			
Output Load				15	pF			
Start-up Time				5	ms			
Standby Current				10	ms			
Standby/Tristate Function			Pin 1 high or floating: clock signal output Pin 1 low: output disables to high impedance					
Output Disable Time				150	ns			
Output Enable Time				5	ms			
Environmental	Mechanical Shock	Per MIL-STD-202, Method 213, Condition C						
	Vibration	Per MIL-STD-202, Method 201 & 204						
	Reflow Solder Conditions	240°C for 10 s max						
	Hermeticity	Per MIL-STD-202, Method 112 (1 x 10 <sup>-8</sup> atm.cc/s of helium)						
	Solderability	Per EIAJ-STD-002						

1. Consult factory for available frequencies in this range.
2. Inclusive of calibration, deviation over temperature, supply voltage change, load change, shock, vibration, and 10 years aging

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