

## Micro Machined Sensors

### DESCRIPTION

The MMS is a ultra-small magnetically actuated reed sensor (SPST) that requires no power. It is manufactured by using semiconductor wafer technology. Its biggest advantages are the small dimensions with 4.8 mm x 2.05 mm (0.189" x 0.081").

### APPLICATIONS

- Medical pacemakers and insulin pumps
- Telecommunications
- CMOS gates and other low power signals switching



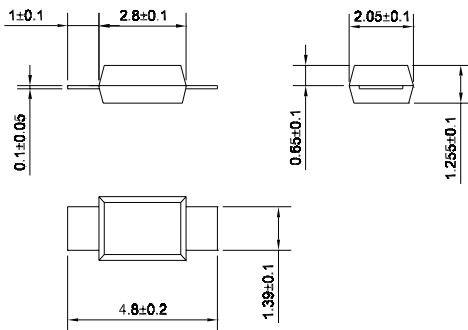
### FEATURES

- SMT reed sensors (SPST) in miniature size
- requires no power
- ultra-small dimensions
- designed for switching low power devices (max. 3 VDC)
- $10^9$  Ohm insulation resistance across the contacts
- magnetic sensitivity ranges from 1.8 to 4.0 milliTesla
- preferably packaged in tape & reel according to IEC 286/part 3, waffle package possible
- electrostatic sensitive device!!

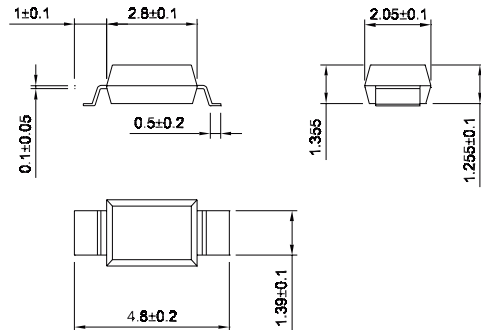
### DIMENSIONS

All dimensions in mm [inches] unspecified tolerances +/- 0.1 mm

Lead design 1

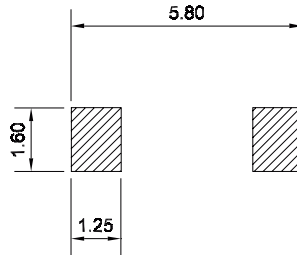


Lead design 2

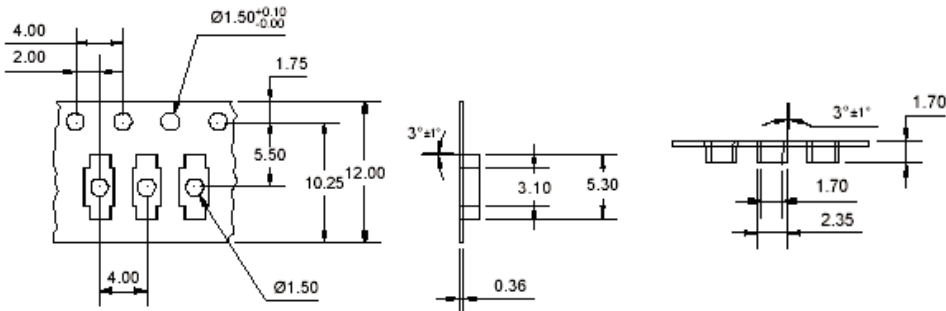


## PAD LAYOUT

Lead design 1+2



## PACKAGING



## ORDER INFORMATION

Series	Sensitivity Class	Lead Design
MMS	B -	1,2

### Part Number Example

MMS - B - 1

B is the magnetic sensitivity  
1 defines the lead design

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### CONTACT DATA

All Data at 20° C	Contact Form -->	Form A / <sub>Dev</sub>			Units
		Min.	Typ.	Max.	
Contact Ratings	Conditions				
Switching Power	Any DC combination of V & A not to exceed their individual max.'s			0.3	W
Switching Voltage	DC or peak AC			3.0	V
Switching Current	DC or peak AC			100	µA
Carry Current	DC or peak AC			100	µA
Static Contact Resistance	Measured w/ 0.5 V & 50 µA		50	1000	Ω
Insulation Resistance across Contacts	25 Volt applied	10 <sup>9</sup>			Ω
Breakdown Voltage across Contacts		50			VDC
Operation Time incl. Bounce	Measured w/ 40 % overdrive		0.1	0.1	ms
Release Time	Measured w/ no coil suppression		0.05	0.5	ms
Capacitance	at 10 kHz across contact		0.2	0.5	pF
<b>Life Expectancies</b>					
	Switching Voltage 1.5 V & 15 µA	10 <sup>7</sup>			Cycles
<b>Magnetic Characteristics</b>					
Pull-In	Ramped in 0.1 mT/ms steps	1.8		4.0	mT
Drop-Out	Ramped in 0.1 mT/ms steps	0.5		28	mT
<b>Environmental Data</b>					
Shock Resistance	Any direction	5000			g
Vibration Resistance	From 10 - 2000 Hz	30			g
Ambient Temperature	10°C/ minute max. allowable	-20		100	°C
Stock Temperature	10°C/ minute max. allowable	-55		150	°C
Soldering Temperature	3.5 sec. at			260	°C
Cleaning		fully sealed			
Packaging	Tape & Reel	17.78 mm Reel (7 inch), 12 mm width, 4 mm pitch			
Marking	On Tape & Reel Packaging	A: Supplier Part Number B: Supplier Lot Number / Date Code C: Quantity			

## ATTENTION



These devices are especially designed for low voltage and low power switching! The following points must be respected when the device is connected in a circuit:

- Voltage spikes (electrostatic or otherwise) across the terminals in the open mode are limited to 10 dv/dt
- Switched voltages and current are limited to the maximum ratings
- The parallel capacitance added across the switch is less than 100 pF
- Minimize stray capacitance to less than 100 pF in any lead circuit
- The mounting and test equipment are properly grounded, as they may induce voltage spikes across the terminals
- All handling is performed on a conductive mat, and the operator is also grounded through a wrist contact bracelet
- Permanent sticking or damage of the contacts may result whenever any of the above warnings is not respected.