

REDROCK™ RR130 TMR DIGITAL SWITCH



RedRock™ RR130 TMR Digital Switch

The RedRock 130 Series is an integrated digital magnetic switch ideal for use in medical, industrial, automotive and consumer switching applications. It is based on patented Tunneling Magnetoresistance (TMR) technology with integrated CMOS process. The RR130 Series can operate in low magnetic fields with large air gaps. The open drain output can interface with a system voltage up to 6V for added design flexibility. The RR130 Series provides high sensitivity with low power consumption in a small footprint package.

Features

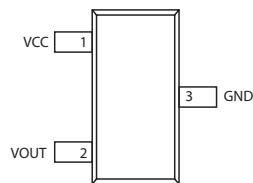
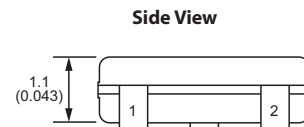
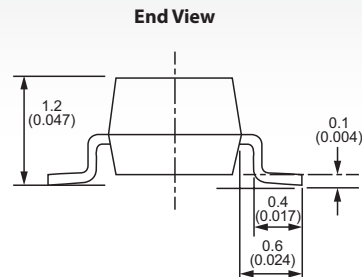
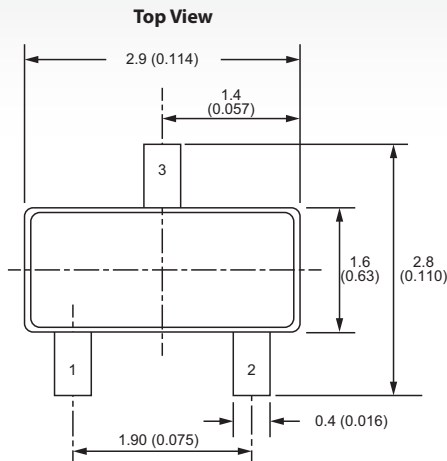
- ▶ High sensitivity
- ▶ Stable temperature performance
- ▶ Resistant to mechanical stress
- ▶ Low power consumption
- ▶ High frequency performance
- ▶ Open drain MOSFET for design flexibility
- ▶ REACH Compliant
- ▶ RoHS Compliant 

IDEAL APPLICATIONS

- ▶ Door or lid closure detection
- ▶ Smart phones, tablets and laptops
- ▶ Bare glass reed switch replacement
- ▶ Motor controllers
- ▶ Proximity detection
- ▶ Power switch or open-close detection
- ▶ Water, electric and gas meters
- ▶ Fluid level detection
- ▶ “Wake-Up” functionality

DIMENSIONS

in Millimeters (Inches)



Ordering Information

Part Number	RR130-A X 1 X-X 0	Package
Model Number		0 - SOT-23
Magnetic Sensitivity (G)		Special Feature
A - Op = 30 Rel = 15		0 - N/A
Temp Rating (°C)		Sensitivity Pattern
1 - Industrial (-40~+85)		0 = Omnipolar
Power Rating		1 = Unipolar
1 - Default Value		

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rev. 0915016

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REDROCK™		RR130		
Parameters	Units	Min	Typ	Max
OPERATING CHARACTERISTICS¹				
Operate Sensitivity	G	20	30	40
Release Sensitivity	G	8	15	25
Hysteresis	%		50	
Operate Time	nS		600	
Release Time	nS		600	
ELECTRICAL CHARACTERISTICS¹				
Supply Voltage ² (V _{cc})	V	2.7	3.0	3.3
Average Current Drain	nA		350	400
System Voltage ² (V _{sys})	V			6
System Current ² (I _{sys})	mA			15
ABSOLUTE ENVIRONMENTAL RATINGS				
Operating Temperature: Industrial	°C	-40		85
Storage Temperature	°C	-55		150
Soldering Temperature	°C			260
Max. Exposed Magnetic Field	G			100
ESD Level (HBM)	V			4000

Notes:

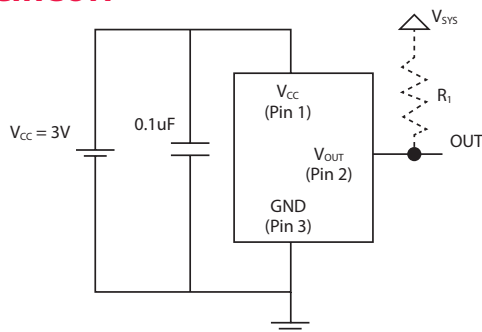
1. All characteristics as measured at 25°C
2. See "Application Circuit" for more information.

APPLICATION CIRCUIT

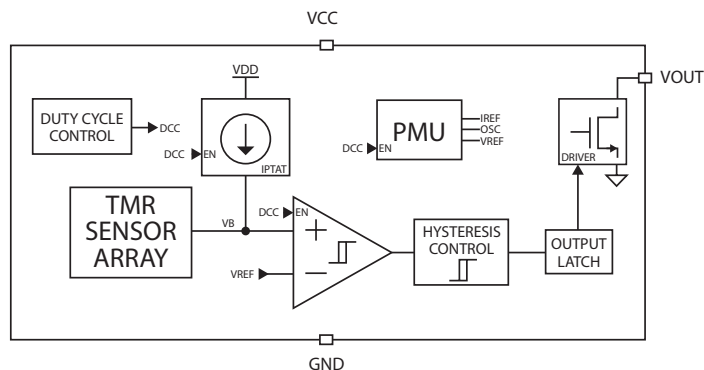
RR130

Open Drain Output Application Circuit

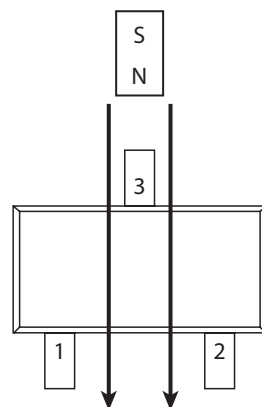
With the open drain output, the system voltage can range up to 6V. Please keep in mind the supply to the RR130 must remain at 3V. A decoupling capacitor between the supply voltage and ground is recommended with placement close to the magnetic sensor. A typical capacitor value of 0.1 uF will suffice.



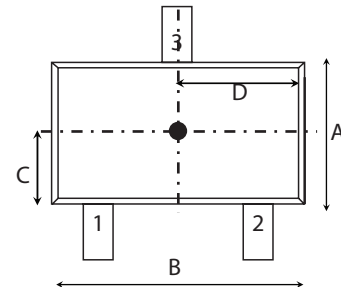
RR130 DIGITAL FUNCTION BLOCK DIAGRAM



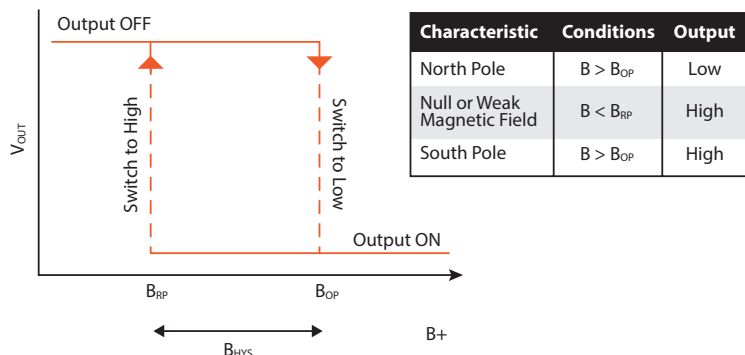
SENSOR POLARITY DIAGRAM



MLU SENSOR LOCATION DIAGRAM



OUTPUT BEHAVIOR VS. MAGNETIC FIELD



Symbols	Nominal Dimensions
A	1.60
B	2.90
C	0.80
D	1.45

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