

Super Low Current Consumption, Low Voltage Operation  
Omnipolar Detection Type TMR Magnetic Sensor IC

# **S-5701 B** Series

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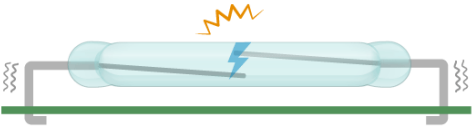



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**S-5701 B Series** 

# Durability, compact and long life. Solves Reed Switch Limitations !

 <p>Reed switch</p>	<ul style="list-style-type: none"><li>⊖ Sensitive to vibration and shock</li><li>⊖ Mounting is time-consuming</li></ul>
 <p><b>S-5701 B</b> TMR Sensor IC</p>	<ul style="list-style-type: none"><li>✓ Small resin-molded package</li><li>✓ No-contact for long life</li><li>✓ Enables surface mounting</li></ul>

## ● Excellent durability and mountability

The disadvantage of the reed switch is its encapsulation in a tube of glass, a material and structure that make it easily breakable due to its vulnerability to vibrations and shock.

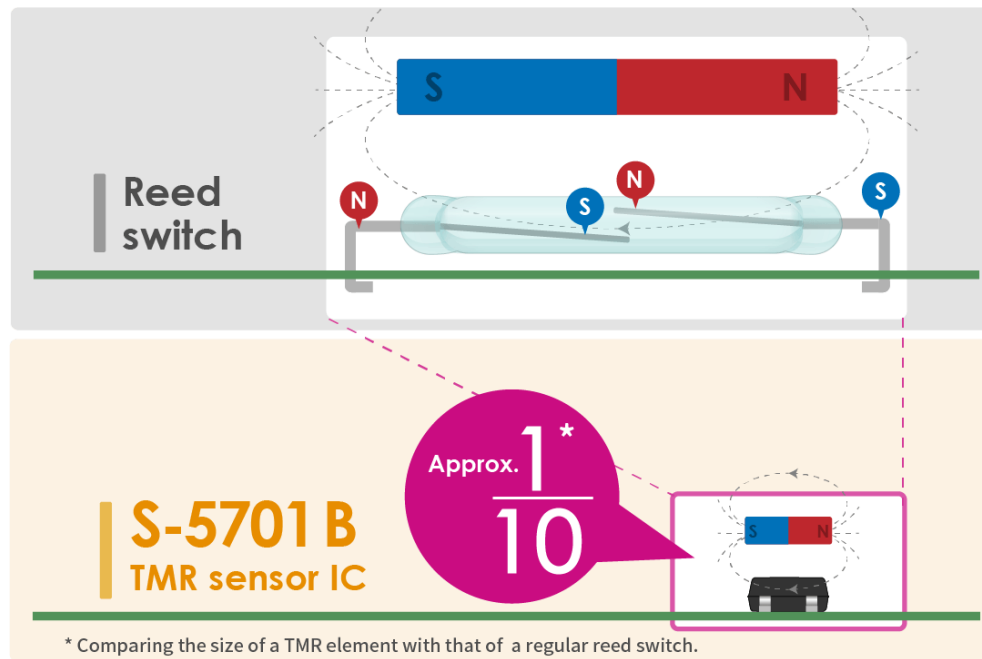
The configuration of the reed switch pins makes it difficult to simultaneously mount it with other components, which prolongs the mounting process.

Advantages of the new S-5701 B Series of TMR sensor ICs:

- The TMR element and the signal processing circuit are mounted and resin molded on the same silicon and are therefore **extremely durable**.
- **Available in a small and thin surface-mounted package**, it can also be mounted simultaneously with other components.

🔗 For more details: [Freedom from Vibration and Shock](#)

# Durability, compact and long life. Solves Reed Switch Limitations !



## ● Magnets and sensors can be downsized

In a reed switch, the magnetic field must affect a major portion of the reeds, which means that the magnet used for detection cannot be shrunk beyond a certain size.

The S-5701B Series uses a small TMR element that is 1/10 the size\* of the elements in a comparable reed switch. Small size magnets simplify placement, reduce the size of the final product and improve design friendliness.

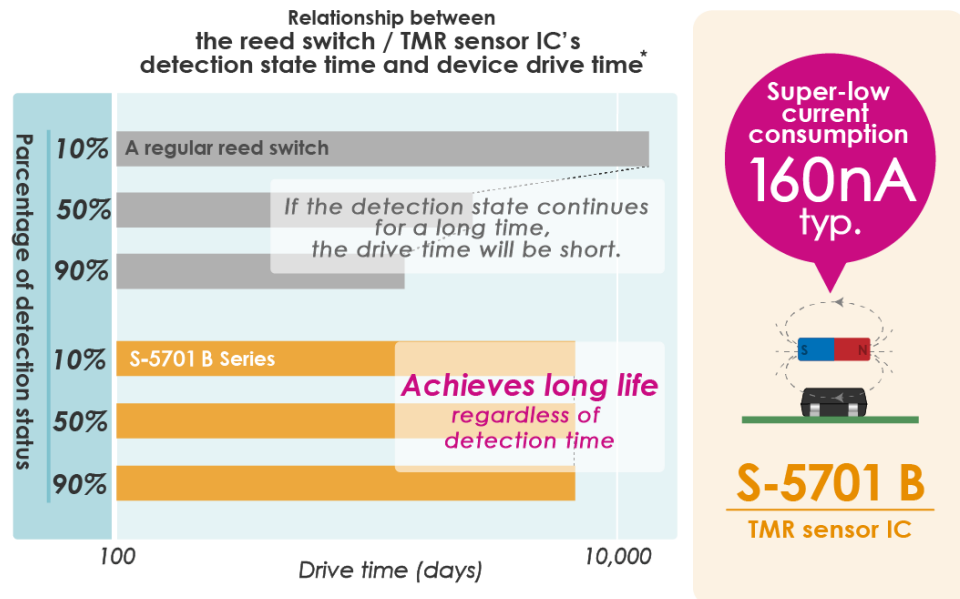
\*Comparing the size of a TMR element with the size of a regular reed switch.

🔗 For more details: [IC Package and Size of Magnets Used Make TMR Sensor ICs Far Superior to Reed Switches!](#)

In addition, the S-5701 B Series can do without a noise filter and a number of other peripheral equipment that a reed switch requires. This reduction in the number of components has improved product quality.

🔗 For more details: [No Need for Noise Filters!](#)

# Durability, compact and long life. Solves Reed Switch Limitations !



\* When the reed switch consumes 1μA current under driven and uses CR1025 (notarized capacity 30mAh).

## Stable, ultra-low current consumption extends operating life

A reed switch is a magnetic switch that consumes a very small amount of power as current flows only when it is on, but not when it is off.

However, its unstable current consumption is a disadvantage that lowers the reliability of battery operation.

The current consumption of the S-5701B Series is in the nano-level range both when on and off. The new TMR sensor IC provides reliable operation of battery-operated devices.

For more details: [Does Some Reed Switch Usage Make Battery Life Unreliable?](#)

Another factor is that the repeated on / off operations of a reed switch increase deterioration.

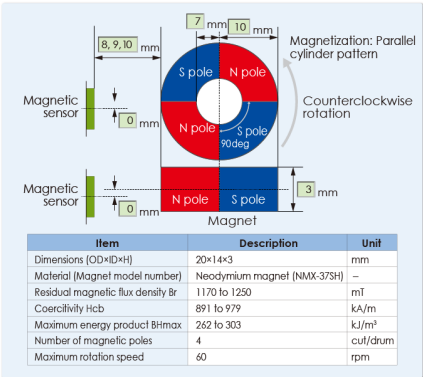
For more details: [What Is Life Switching, Reed Switch Feature, Semiconductors Do Not Have?](#)

# Durability, compact and long life. Solves Reed Switch Limitations !

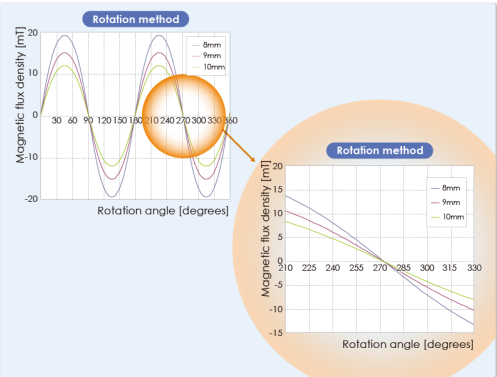
• Example of product development flow



• Verification simulation image



• Example of verification simulation results



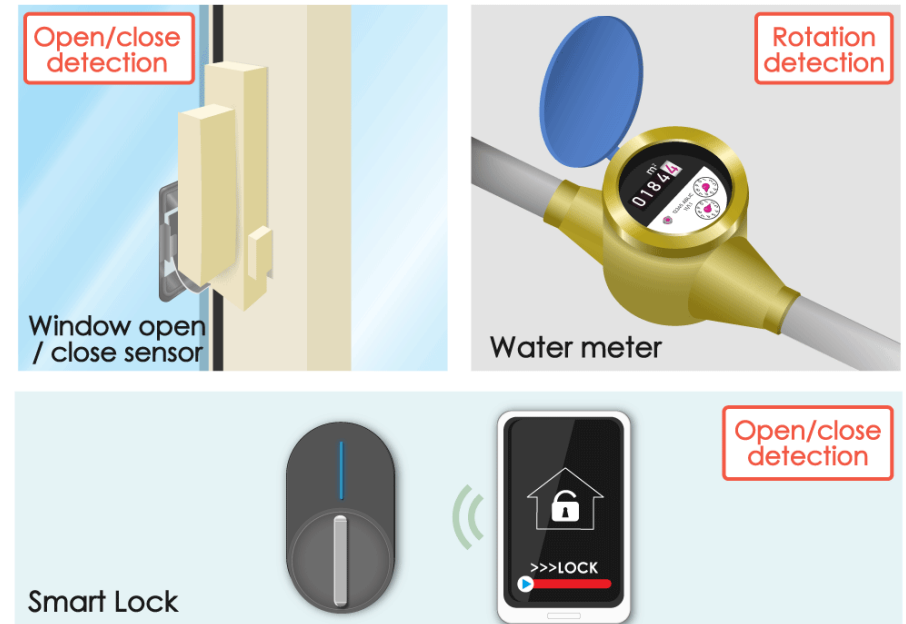
## Development support using magnetic simulation!

ABLIC offers a “magnetic simulation service” that provides the ideal combination of magnets and our magnetic sensor ICs for customer systems. Our magnetic simulation service will reduce prototype production, development period and development costs. In addition, it will contribute to optimization of parts to realize high cost performance.

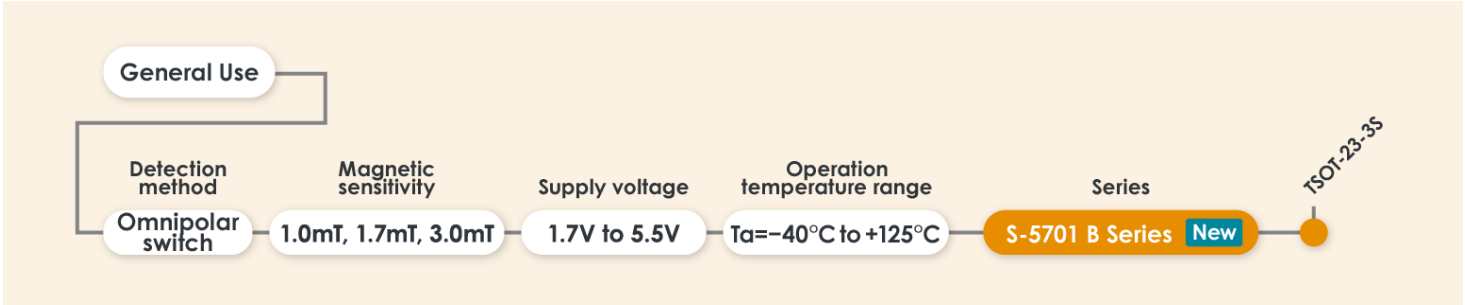
For further reading: [Units Used by Semiconductor Magnetic Sensors and Reed Switches Differ!?](#)

# Application


- Replacement for a reed switch
- Home security device (Window/door open/close sensor, Smart locks, or Smoke detectors)
- Utility meter (Gas meters, Water meters or Smart meters)



# TMR sensor ICs Line up



# Features

Product name	<a href="#">S-5701 B Series</a> <b>For General-use</b>
Power supply voltage range	1.7V to 5.5V
Pole detection	Omnipolar detection
Magnetic sensitivity	1.0mT, 1.7mT, 3.0mT
Current consumption	160nA typ.
Package	TSOT-23-3S
Operation temperature range	Ta=-40°C to +125°C
Datasheet	 <a href="#">S-5701 B Series Download Datasheet</a>



Thank you so much!

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