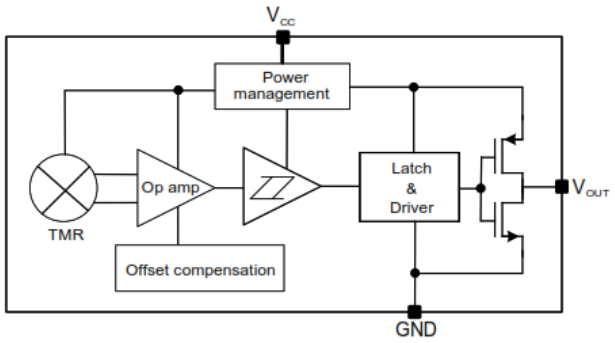
Product image serves as example only.

# TS-324R-03-0300

**Omnipolar**

Flatpack TMR Sensor

## Block Diagram




## Features

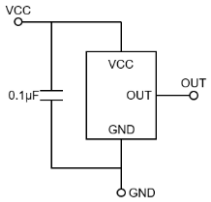
- Compact size
- CMOS push-pull output
- Ultra-Low power consumption
- Excellent thermal stability
- High frequency response

## Approvals

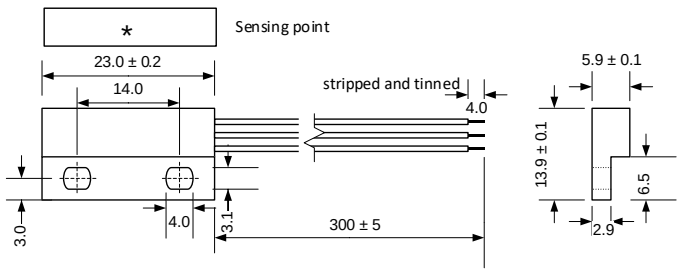
RoHS REACH IP67

## Application Information

In our products an external bypass capacitor is connected in close proximity to the device between the supply and ground pins to reduce noise. The value for the external bypass capacitor is 0.1 µF.




## Dimensions




* other positions on request

## Wire Assignment

| Symbol | Function | Wire Colour |
|---|---|---|
| $V_{CC}$ | Supply Voltage | Blue |
| $V_{OUT}$ | Output | White |
| GND | Ground | Black |

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Wire Length [mm]

## Material Information

| | Material | Colour |
|---|---|---|
| Housing | ABS | Black |
| Wire | UL1007/1569, AWG24 | Blue, White, Black |
| Potting Compound | Epoxy | Black |

## Environmental Characteristics

| | | |
|---|---|---|
| Operating Temperature | °C | - 20 to + 85 |



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## Electrical Characteristics

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Supply voltage | VCC | operating | 1,8 | 3 | 5,5 | V |
| Output high voltage | VOH | RP status | VCC-0.3 | - | VCC | V |
| Output low voltage | VOL | OP status | 0 | - | 0,2 | V |
| Supply current | ICC | output open | 0,5 | 1,5 | 2 | µA |
| Response frequency | F | - | 0 to 1000 | | | Hz |
| | | | 0 to 5000 unavailable | | | Hz |

**Note:** A 100 nF capacitor is connected between VCC and GND during all tests on the above table.

## Absolute Maximum Ratings

| Parameters | Symbol | Min. | Max. | Unit |
|---|---|---|---|---|
| Supply voltage | VCC | -0,3 | 7 | V |
| Output current | ISINK and ISOURCE | - | 9 | mA |
| Magnetic flux density | B | - | 400 | mT |
| ESD performance (HBM) | VESD | - | 4 | kV |

**Note:** $I_{SINK}$ is the current flowing through the high side MOSFET, when the high side MOSFET is turned on and $I_{SOURCE}$ is the current flowing through the low side MOSFET when the low side MOSFET is turned on.

## Magnetic Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Operate point | $B^{OPS}$ | 2,3 | 3,5 | 4,7 | mT |
| | $B^{OPN}$ | -4,7 | -3,5 | -2,3 | mT |
| Release point | $B^{RPS}$ | 1 | 2,2 | 4 | mT |
| | $B^{RPN}$ | -4 | -2,2 | -1 | mT |
| Hysteresis | $B^{H}$ | 0,3 | - | 1,6 | mT |



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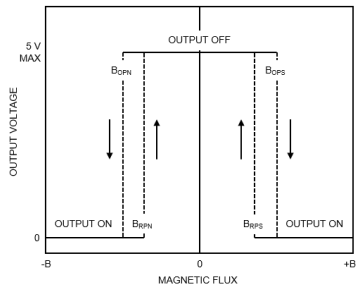
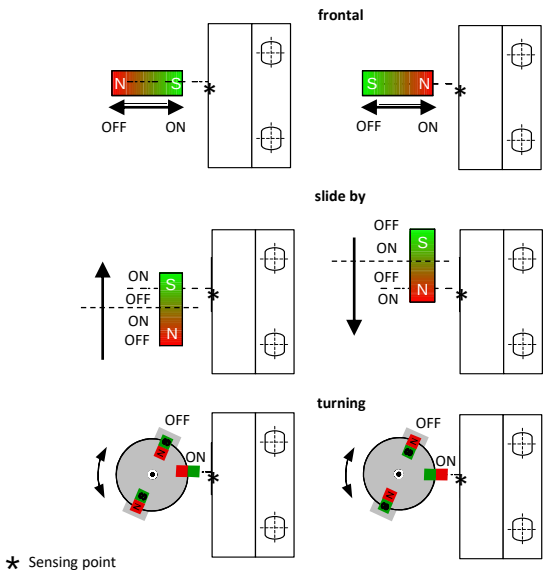
## Output Behavior vs. Magnetic Pole

| Parameter | Test Conditions | Output |
|---|---|---|
| South Pole | $B > B_{OPS}$ | Low (On) |
| | $0 < B < B_{RPS}$ | High (Off) |
| North Pole | $B < B_{OPN}$ | Low (On) |
| | $0 > B > B_{RPN}$ | High (Off) |

**Note:** When power is turned on under zero magnetic field, the output is “High”.




## Magnetic Approach (for example) for Omnipolar Type




By sliding by two turn on and turn off operations possible



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