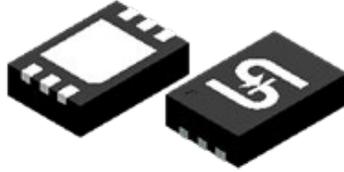




Integrated AMR for Cylinder Position Detection



TDFN2x3-6L

Pin Definition:

- 1. LED 6. OUT
- 2. LED 5. OUT
- 3. SEL 4. V_{CC}

Exposed pad connected to ground

Description

The TSHA2101 is produced with SIP (System in Package) technology, which builds AMR sensor & ASIC in one IC. It supports both 2-wire & 3-wire applications for cylinder position detection.

The TSHA2101 is an AMR (Anisotropic Magneto Resistance) based magnetic sensor, when combined with a magnet, it becomes a non-contact switch with low power consumption, high sensitivity and high reliability device. A horizontal magnetic field parallel to the electrode of the package can be detected by an arbitrary polarity.

TSHA2101 can be used in both pull-up load and pull-down load applications.

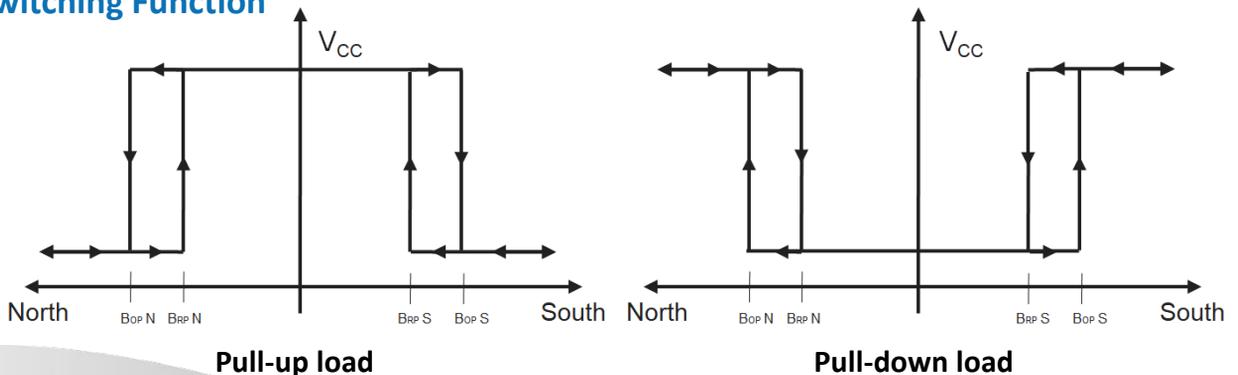
Key Features

- Omni-polar
- Supply voltage range 3.3V to 30V
- Operating frequency ≥4kHz
- -30V Reversed power supply protection
- Output over-current protection
- -40°C~105°C operating temperature
- Open-drain output with self-adaptation of Pull-up or Pull-down load (Equivalent loading ≤50kΩ @ 3-Wire)
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

Applications

- 2-wire & 3-wire cylinder position detection
- Pull-up & Pull-down load applications
- Packing machine
- Automation electronics equipment
- Semiconductor equipment
- Textile machinery
- Pneumatic drill machine

Switching Function





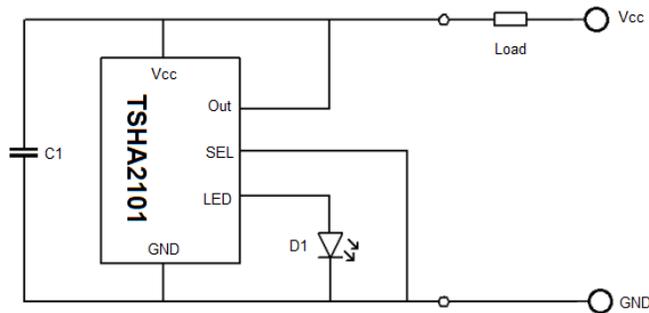
Product Portfolio

| Part Number | Package | ESD | V _{CC} (V) | I _{CC} (μA) Typ. | F (Hz) Typ. | I _{OUT} (mA) | B _{OP} (Gs) Typ. | B _{RP} (Gs) Typ. | B _{HYST} (Gs) Typ. |
|-------------|------------|-------|---------------------|---------------------------|-------------|-----------------------|---------------------------|---------------------------|-----------------------------|
| TSHA2101CQ | TDFN2x3-6L | 4.5KV | 3.3 ~ 30 | 60 | 4 | 500 | ±31 | ±26 | 4 |

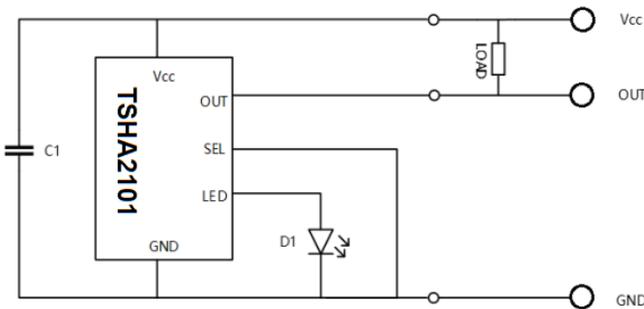
Ordering Information

| Ordering Part Number | Outline (Package) | Reel (pcs) | Reel Size (inch) | Inner Box (pcs) | Carton (pcs) | Carton Size (mm) | Gross Weight (kg/ carton) |
|----------------------|-------------------|------------|------------------|-----------------|--------------|------------------|---------------------------|
| TSHA2101CQ-L3 M3G | TDFN2x3-6L | 3,000 | 7 | 12,000 | 144,000 | 403 * 387 * 293 | 8.6 |

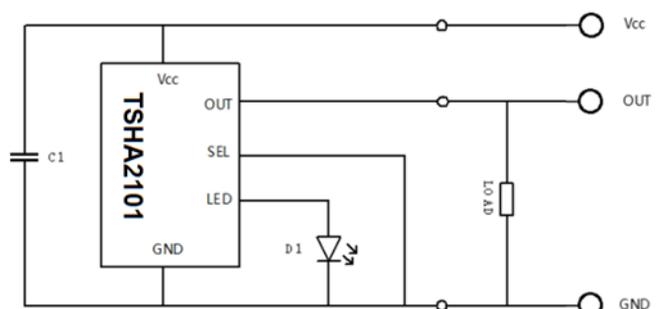
Typical Application Circuit



2-wire application circuit with Pull-up load



3-wire with pull-up load



3-wire with pull-down load

For more information or other products, please visit TSC website <https://www.taiwansemi.com/>