

TMR6501

Single Channel TMR Magnetic Pattern Recognition Sensor

General Description

The TMR6501 is a type of single channel magnetic pattern recognition sensor with high sensitivity, high signal-to-noise ratio performance, it is used for detecting paper bills, bank notes and security documents with magnetic anti-counterfeiting consists. The TMR6501 consists of high sensitivity TMR magneto-resistance sensor, high-quality magnet and durable metal case.

Features and Benefits

- High sensitivity and excellent gap performances
- Output voltage is independent of scanning speed
- Differential output, high CMRR performance
- Single channel detection, 5mm detection width
- Compact size: L 10.5mm x W 8mm x H 9.6mm
- Simple structure for low cost solutions

Applications

- Bill counter and validator
- Bill sorter
- Magnetic ink document reader
- Automatic vending machines and validator modules



TMR6501

Pin Configuration

Block Diagram

Bottom View

Pin No.	Symbol
1	GND
2	V-
3	V _{CC}
4	V+
5	Shell GND

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Maximum Supply Voltage	V_{CC}	5.5	V
Operating Temperature	T_A	-20 ~ 65	°C
Storage Temperature	T_{stg}	-30 ~ 85	°C
Operating Humidity	HMD	10 ~ 90 (no dew)	%RH
ESD (HBM)	V_{HBM}	2000	V

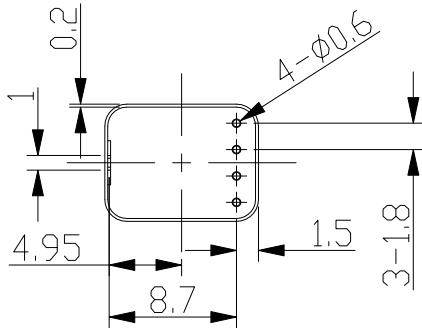
Electrical Property ($V_{CC}=5V$, $T_A=25^{\circ}C$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Sensitivity	$S^{(1)}$			TBD		V
Resistance	R	No external magnetic field	1		5	kOhm
Output Offset Voltage	V_{offset}			2.5		V
Noise	$V_{nw}^{(2)}$			50		μV_{pp}
Surface Magnetic Field	B	On sensing surface(S pole)		800		G
Detecting Width	W			5		mm
Resolution	T			0.475		mm

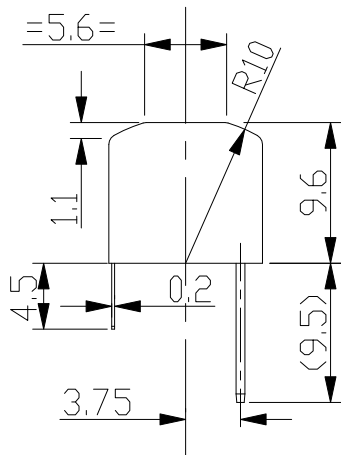
Notes:

- (1) According to the MultiDimension sensitivity measurement.
- (2) The amplifier's gain is 80dB@1kHz, no external magnetic field applied, measure the peak-to-peak voltage V_{pp} , then $V_{nw} = V_{pp}/10000$.

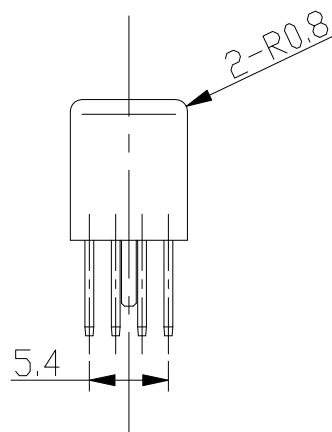
Outline Drawing and Dimensions (Unit: mm)



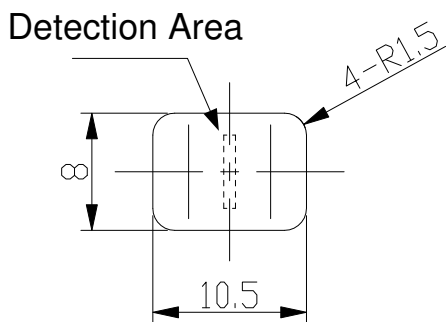
Bottom View



Front View

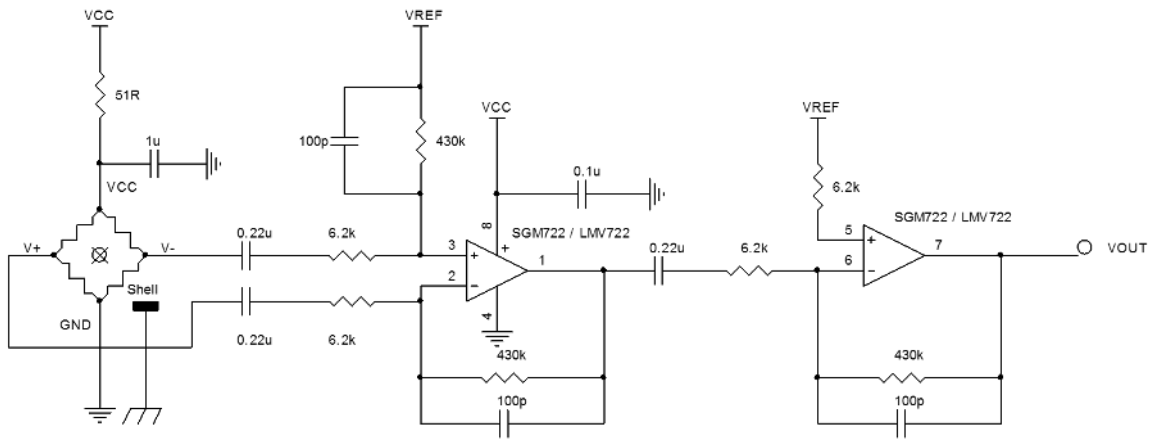


Side View



Top View

Recommended Application Circuit



Notes:

Shell GND pin should be connected to the shielding ground.



MultiDimension Technology Co., Ltd.

Address: No.7 Guangdong Road, Zhangjiagang Free Trade Zone, Jiangsu, 215634, China

Web: www.dowaytech.com/en

Email: info@dowaytech.com

The information provided herein by MultiDimension Technology Co., Ltd. (hereinafter MultiDimension) is believed to be accurate and reliable. Publication neither conveys nor implies any license under patent or other industrial or intellectual property rights. MultiDimension reserves the right to make changes to product specifications for the purpose of improving product quality, reliability, and functionality. MultiDimension does not assume any liability arising out of the application and use of its products. MultiDimension's customers using or selling this product for use in appliances, devices, or systems where malfunction can reasonably be expected to result in personal injury do so at their own risk and agree to fully indemnify MultiDimension for any damages resulting from such applications.