TMR6501

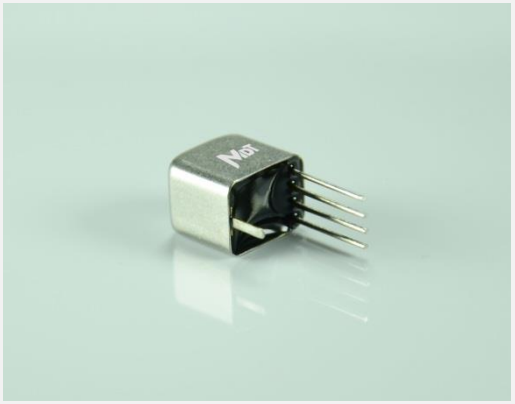
Single Channel TMR Magnetic Pattern Recognition Sensor

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

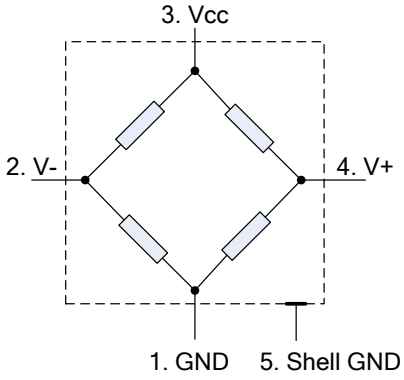


TMR6501

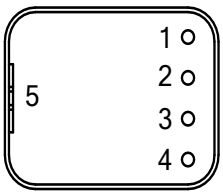
Applications

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

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°C)

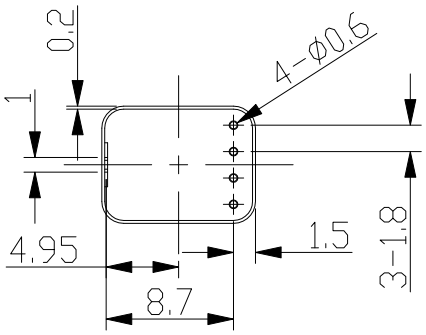
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Sensitivity	$S^{(1)}$			TBD		V
Resistance	R	No external magnetic field	1		5	kOhm
Output Offset Voltage	V_{offset}			2.5		V
Noise	$V_{nw}^{(2)}$			50		μVpp
Surface Magnetic Field	B	On sensing surface(S pole)		800		G
Detecting Width	W			5		mm
Resolution	T		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

Notes:

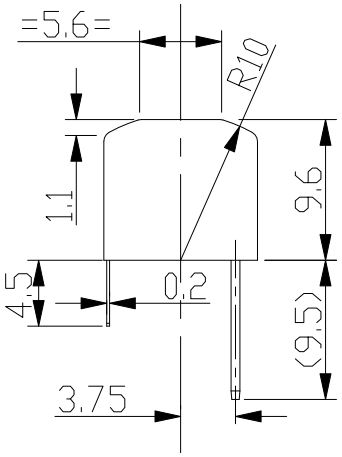
(1) According to the MultiDimension sensitivity measurement.

(2) The amplifier's gain is 80dB@1kHz, no external magnetic field applied, measure the peak-to-peak voltage Vpp, then Vnw = Vpp/10000.

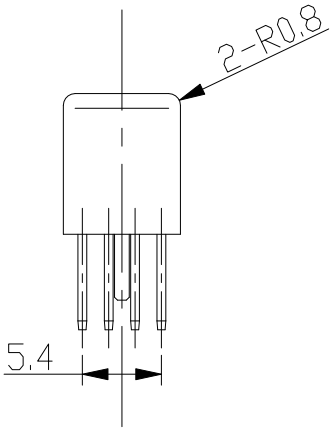
Outline Drawing and Dimensions (Unit: mm)



Bottom View

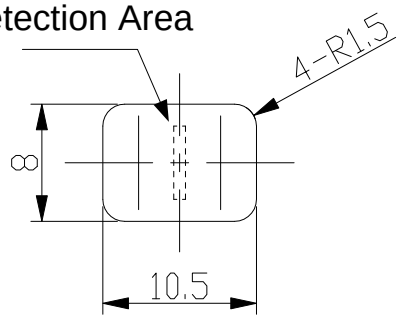


Front View



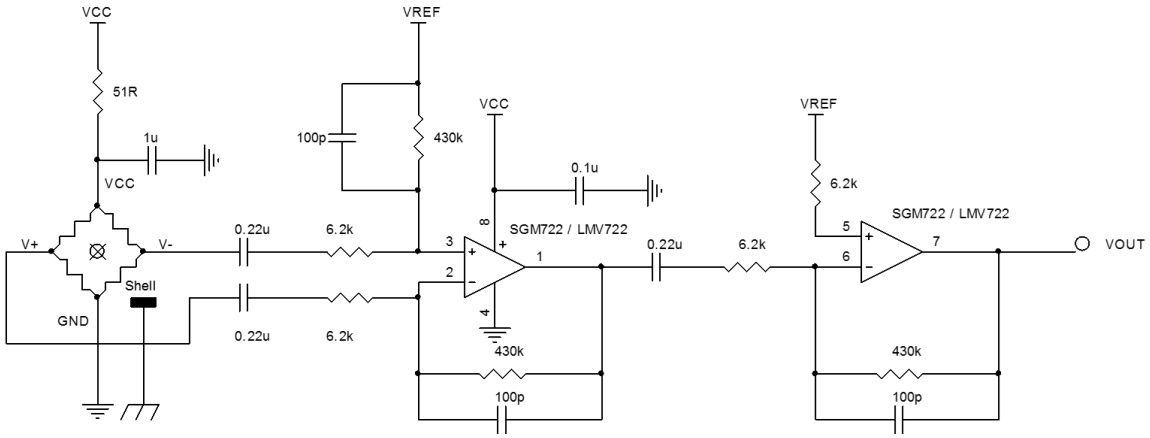
Side View

Detection Area



Top View

Recommended Application Circuit



Notes:

Shell GND pin should be connected to the shielding ground.

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