

# TMR6401

## TMR Magnetic Pattern Recognition Sensor

### General Description

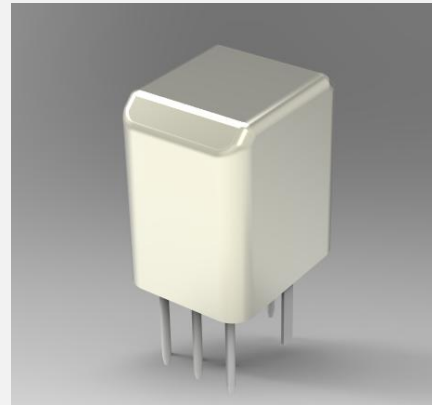
The TMR6401 is a type of single channel magnetic pattern recognition sensor with high sensitivity, high signal-to-noise ratio performance, it is used for detecting paper bills, bank notes and security documents with magnetic anti-counterfeiting consists. The TMR6401 consists of high sensitivity TMR magneto-resistance 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
- Downsizing appearance
- Simple structure for low cost solutions

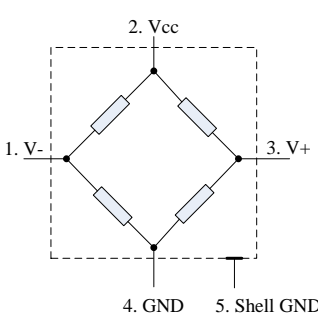
### Applications

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

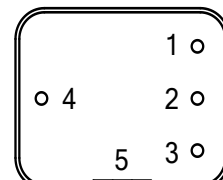


TMR6401

### Pin Configuration



原理框图



底视图

脚位	符号
1	V+
2	V <sub>CC</sub>
3	V-
4	GND
5	Shell GND

## Absolute Maximum Ratings

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

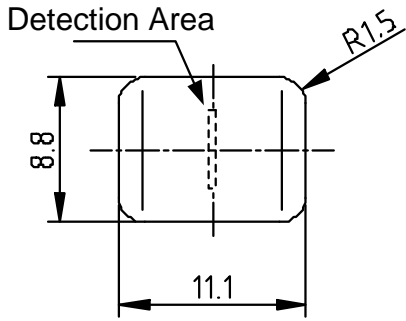
## Electrical Property (TA=25°C)

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

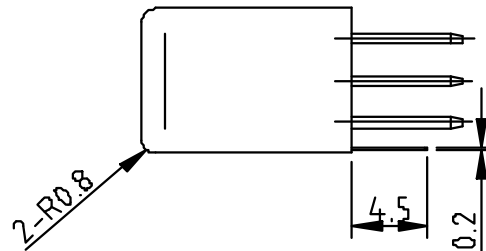
### Notes:

- (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  $V_{nw} = V_{pp}/10000$ .

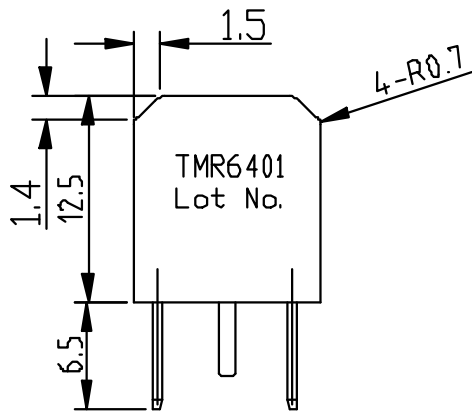
### Outline Drawing and Dimensions (mm)



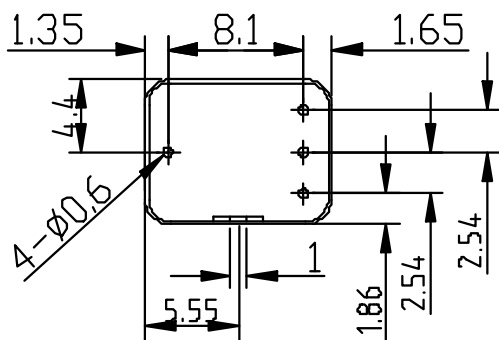
Top View



Side View

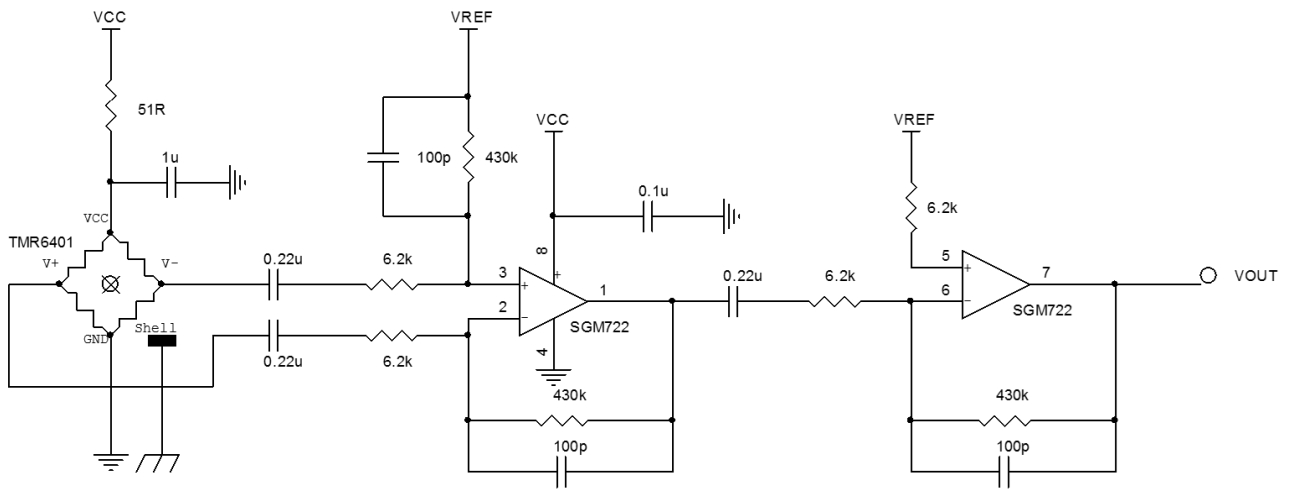


Front View



Bottom View

## Recommended Application Circuit



### Notes:

Shell GND pin should be connected to the shielding ground.



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