TMR6403A

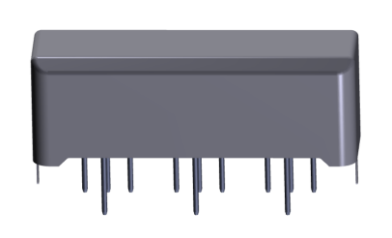
3 Channels TMR Magnetic Pattern Recognition Sensor

General Description

The TMR6403A is a type of 3 channels 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. TMR6403A covers wide detection area provides a low cost solution for scanning multi-currencies. The TMR6403A 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
- 10mm x 3ch detection width
- Downsizing appearance
- Simple structure for low cost solutions

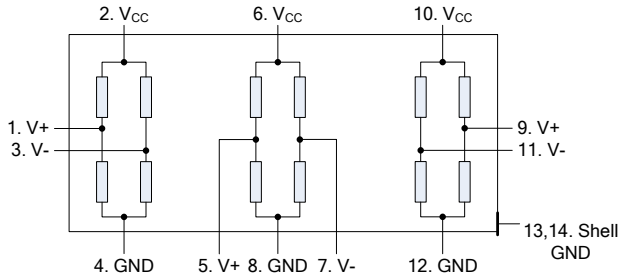


TMR6403A

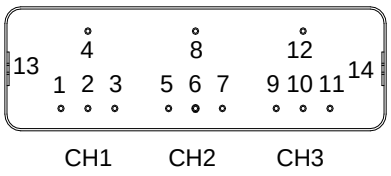
Applications

- 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	Description
1, 5, 9	V+	Positive output of each channel
2, 6, 10	V_{CC}	Power supply of each channel
3, 7, 11	V-	Negative output of each channel
4, 8, 12	GND	Ground of each channel
13, 14	Shell GND	Shell ground, connected to shielding ground

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)

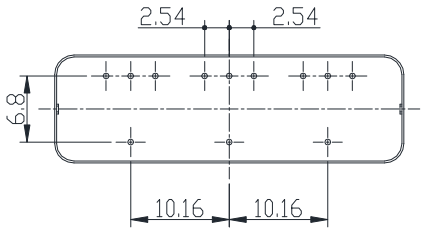
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Sensitivity	$S^{(1)}$			TBD		V
Resistance	R	No external magnetic field	0.5		3	kOhm
Output Offset Voltage	V_{offset}		-75		75	mV/V
Noise	$V_{nw}^{(2)}$			50		μVpp
Surface Magnetic Field	B	On sensing surface(S pole)		800		G
Detecting Width	W			10		mm
Number of Channels	C			3		
Resolution	T			0.475		mm

Notes:

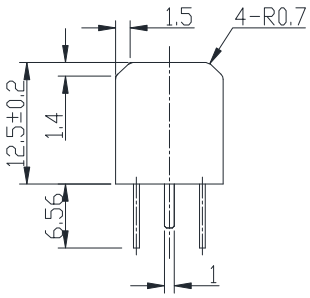
(1) According to the MultiDimension sensitivity measurement.

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

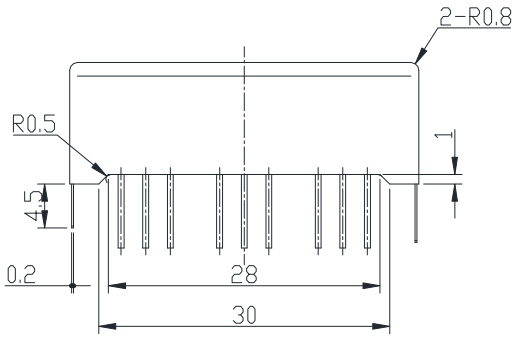
Outline Drawing and Dimensions (Unit: mm)



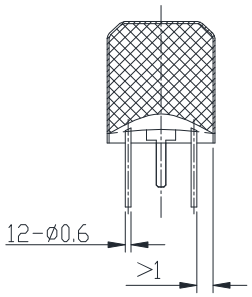
Bottom View



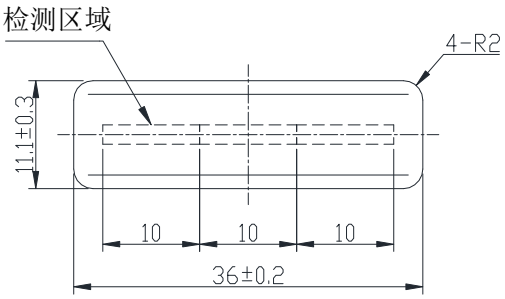
Side View



Front View



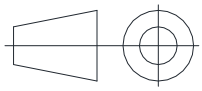
Section View



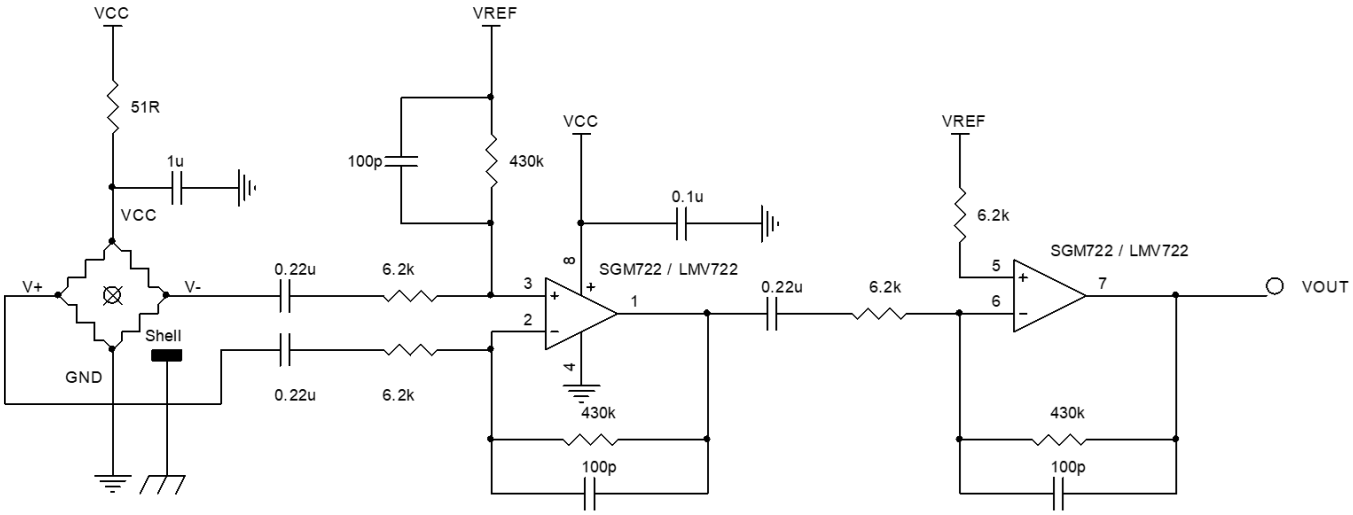
Vertical View

Cover: stainless steel thickness0.2mm

unit:mm



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