

TMR6406L

6 Channels TMR Magnetic Pattern Recognition Sensor

General Description

The TMR6406L is a type of six 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. TMR6406L covers wide detection area provides a low cost solution for scanning multi-currencies. The TMR6406L consists of high sensitivity TMR magneto-resistance sensor, high-quality magnet, high-strength plastic base and durable non-magnetic stainless steel cover.

Features and Benefits

- High sensitivity and excellent gap performances
- Output voltage is independent of scanning speed
- Differential output, high CMRR performance
- Durable metal case, suitable for long time and heavy load situations
- High uniformity magnet
- 10mm x 6ch detection width
- No non-detection area between channels

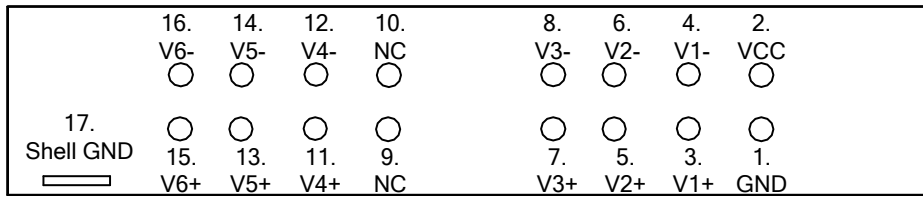
Applications

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



TMR6406L

Pin Configuration



Bottom View

Pin No.	Symbol	Description
1	GND	Ground
2	VCC	Power Supply
3	V1+	Positive output of channel 1
4	V1-	Negative output of channel 1
5	V2+	Positive output of channel 2
6	V2-	Negative output of channel 2
7	V3+	Positive output of channel 3
8	V3-	Negative output of channel 3
9, 10	NC	Internal not connected
11	V4+	Positive output of channel 4
12	V4-	Negative output of channel 4
13	V5+	Positive output of channel 5
14	V5-	Negative output of channel 5
15	V6+	Positive output of channel 6
16	V6-	Negative output of channel 6
17	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

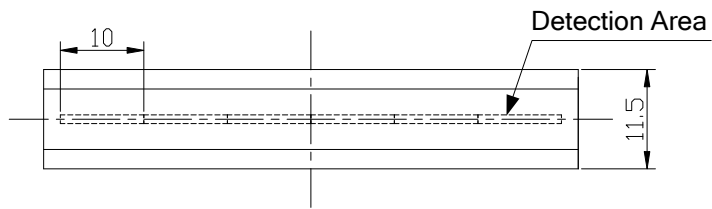
Electrical Property ($V_{CC}=5V$, $T_A=25^{\circ}C$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Sensitivity	$S^{(1)}$			TBD		V
Resistance Per Channel	R	No external magnetic field	0.5		3	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			10		mm
Number of Channels	C			6		
Resolution	T			0.475		mm

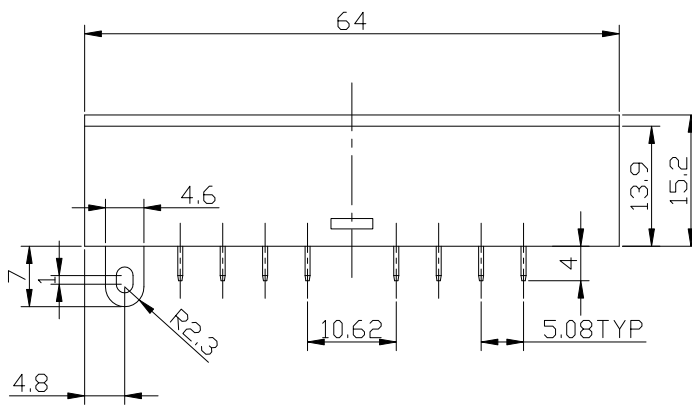
Notes:

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

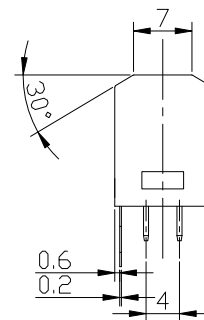
Outline Drawing and Dimensions



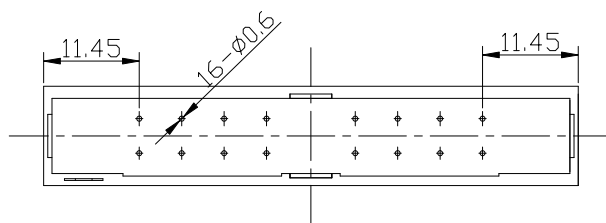
Top View



Front View



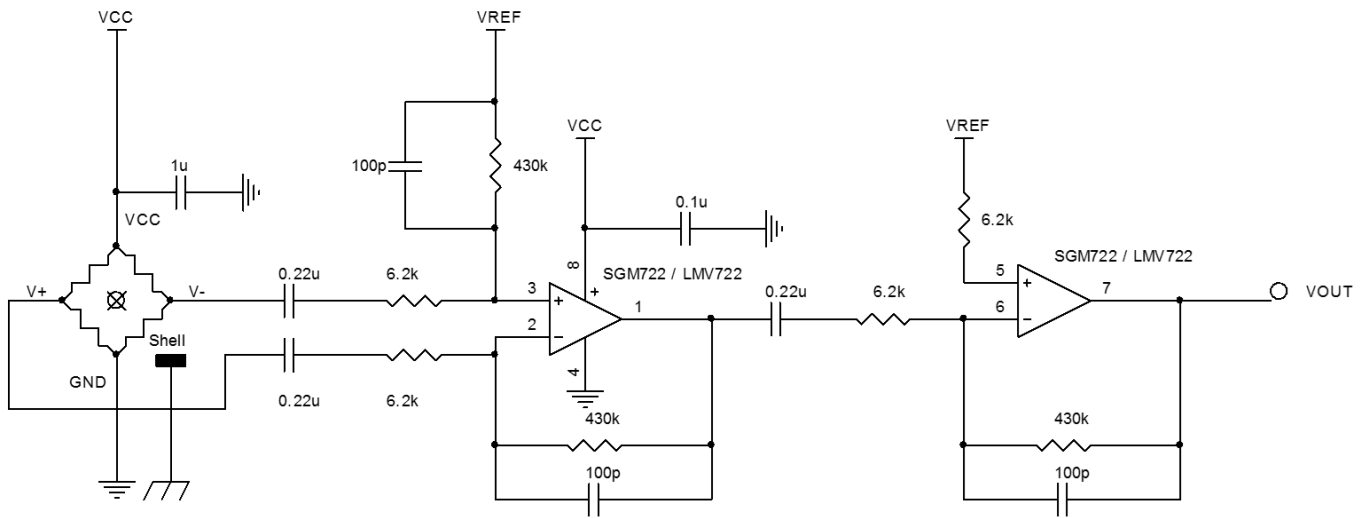
Side View



Bottom View

TMR6406L Mechanical Drawings (Unit: mm)

Recommended Application Circuit



Notes:

- (1) Shell GND pin should be connected to the equipment ground.



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