



TMR2104

Large Dynamic Range TMR linear sensor

General Description

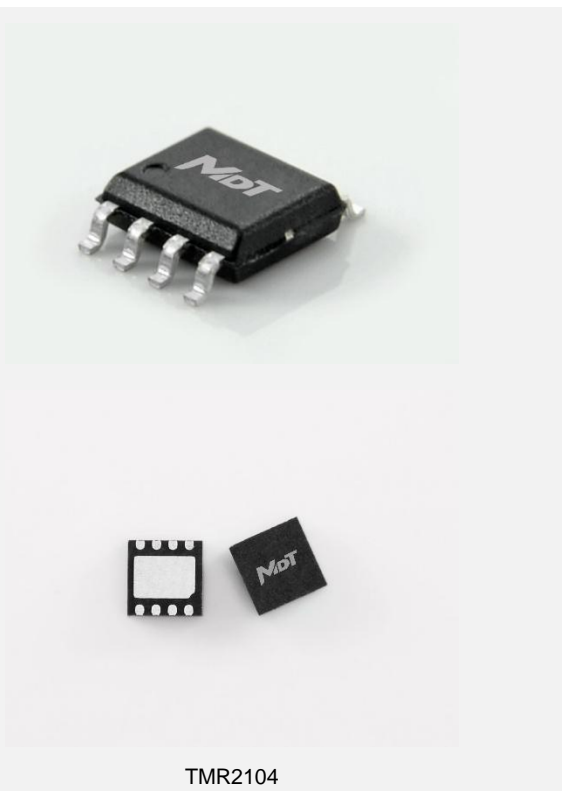
The TMR2104 linear sensor utilizes a unique push-pull Wheatstone bridge composed of four unshielded TMR sensor elements. The unique bridge design provides a high sensitivity differential output that is linearly proportional to a magnetic field applied parallel to the surface of the sensor package, and it provides superior temperature compensation of the output. The TMR2104 is available in 6 mm X 5 mm X 1.5 mm SOP8 and 3mmx3mmx0.75mm DFN8L package.

Features and Benefits

- Tunneling Magneto resistance (TMR) Technology
- High Sensitivity
- Large Dynamic Range
- Low Power Consumption
- Excellent Thermal Stability

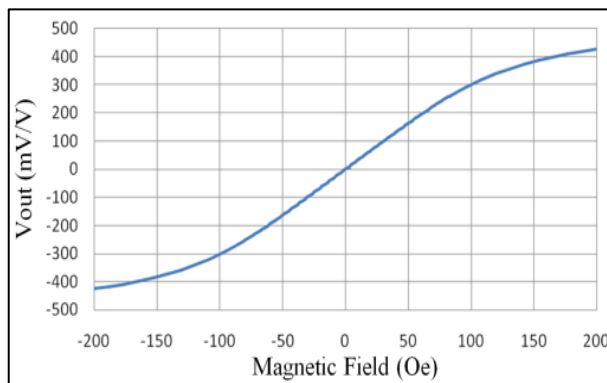
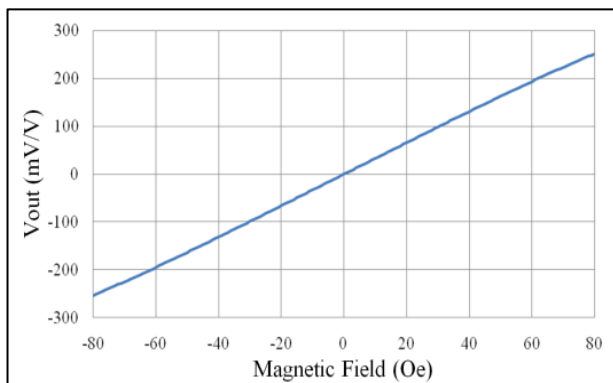
Applications

- Magnetic Field Sensing
- Current Sensors
- Displacement Sensing
- Rotary Position Sensors



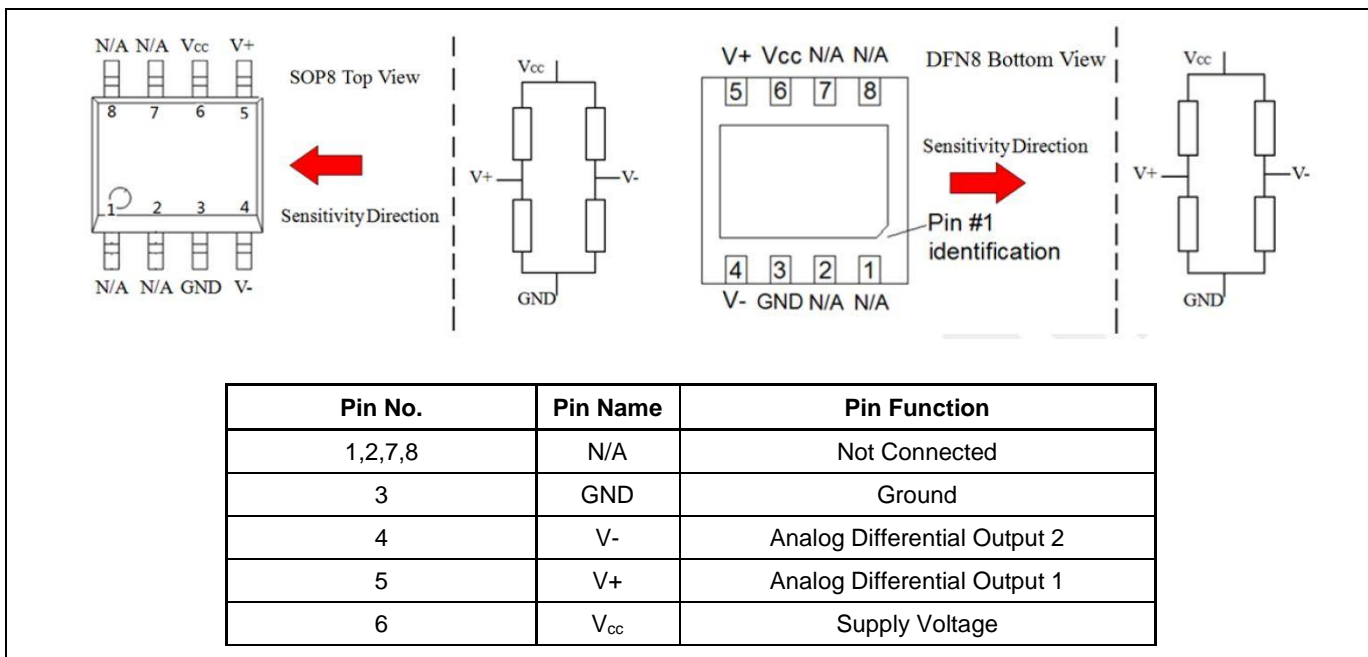
Transfer Curve

The following figure shows the response of the TMR2104 to an applied magnetic field in the range of ± 80 Oe (left) and ± 200 Oe (right) when the TMR2104 is biased at 1 V.



Pin Configuration

(Arrow indicates direction of applied field that generates a positive output voltage after a SET pulse.)



Absolute Maximum Ratings

Parameter	Symbol	Limit	Unit
Supply Voltage	V _{CC}	7	V
Reverse Supply Voltage	V _{RCC}	7	V
Max Exposed Field	H _E	4000	Oe ⁽¹⁾
ESD Voltage	V _{ESD}	4000	V
Operating Temperature	T _A	-40~125	°C
Storage Temperature	T _{stg}	-50 ~150	°C

Specification (V_{CC}=1.0V, T_A=25°C, Differential Output)

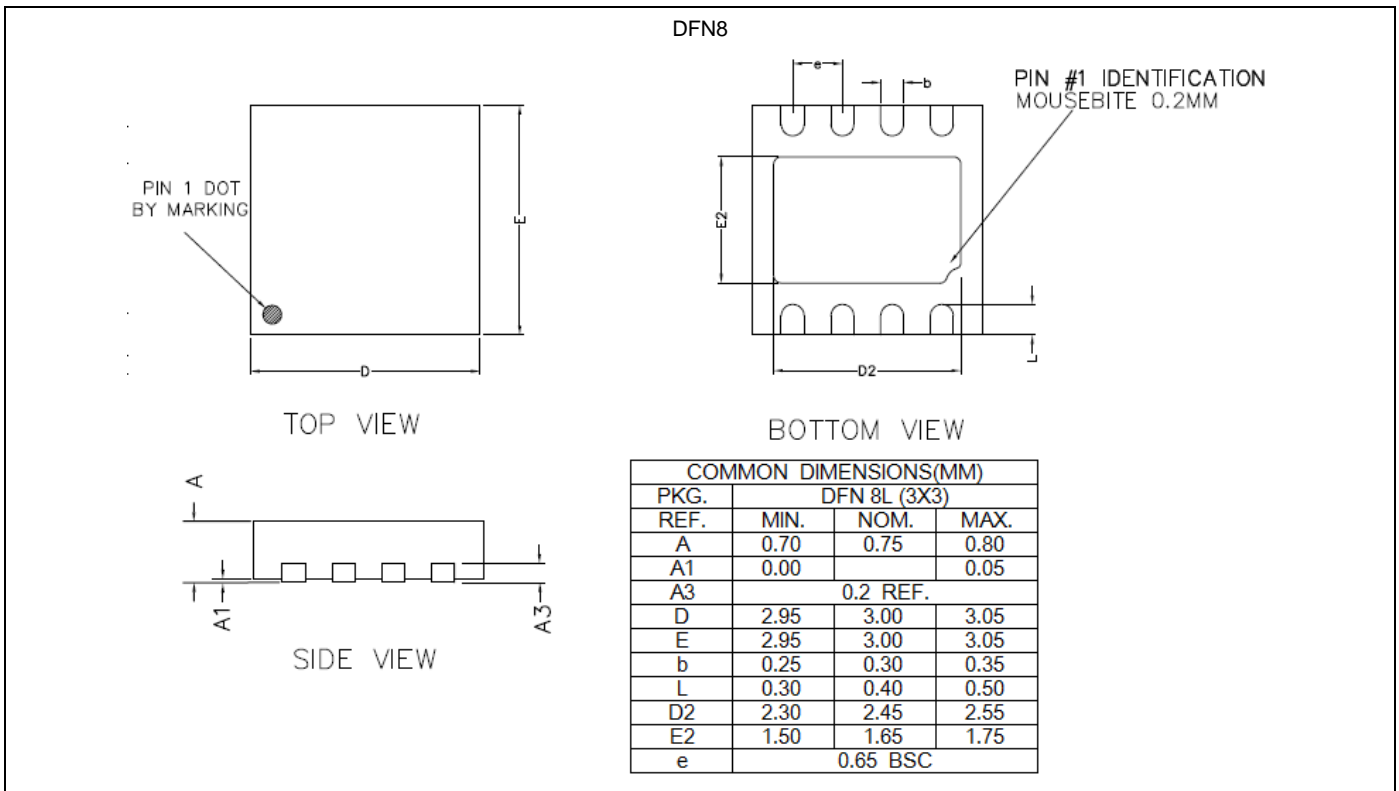
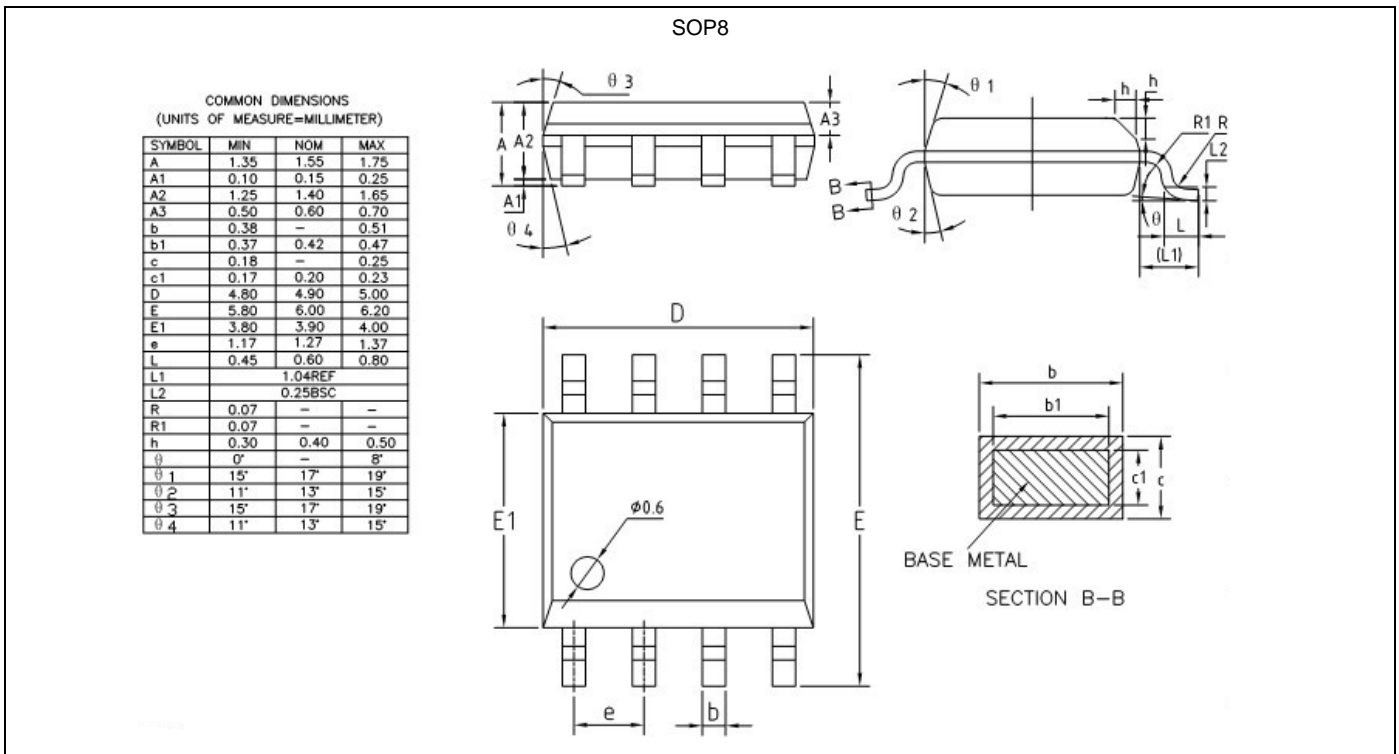
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Supply Voltage	V _{CC}	Operating		1	7	V
Supply Current	I _{CC}	Output Open		33 ⁽²⁾		μA
Resistance(SOP8)	R			30 ⁽²⁾		KOhm
Sensitivity	SEN	Fit @±80Oe		3.1		mV/V/Oe
Saturation Field	H _{sat}			±150		Oe
Non-Linearity	NONL	Fit @±80Oe		1.5		%FS
Offset Voltage	V _{offset}		-8		8	mV/V
Hysteresis	Hys	Fit @±80Oe		0.5		Oe
Temperature Coefficient of Resistance	TCR	H = 0 Oe		-600		PPM/°C
Temperature Coefficient of Sensitive	TCS			-300		PPM/°C

Notes:

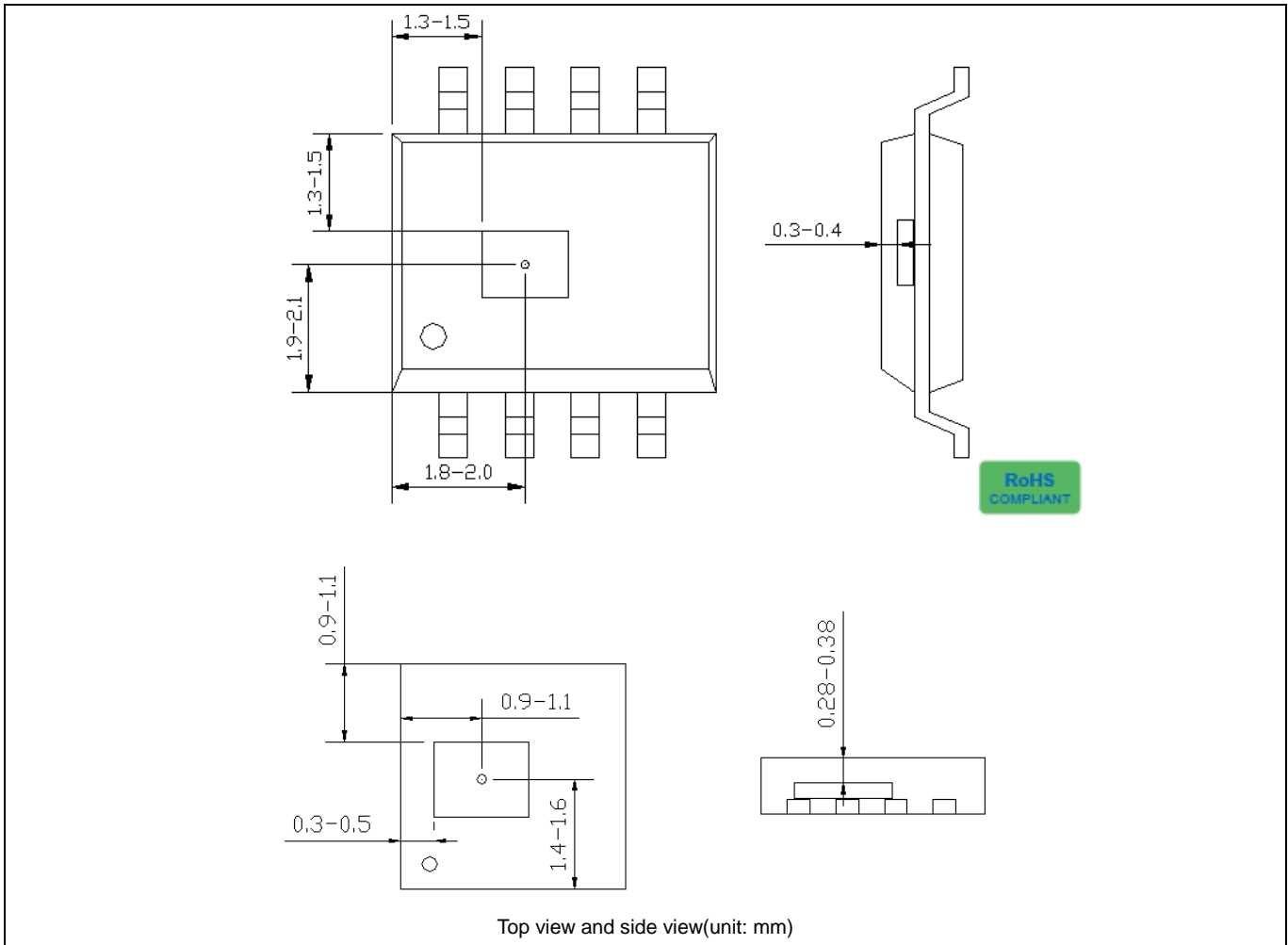
(1) 1 Oe (Oersted) = 1 Gauss in air = 0.1 millitesla = 79.8 A/m.

(2) Custom resistance may be available upon request.

Package Information



TMR Sensor Position



8HLFDQDFURQDF&PSRWRE

Address:/DIDHWWH6WBHW(ONKDW,QLDQ 8QWHG6WDWHVRIDHLFD

Web: www.DHFVHQDFRFP

Email: VDOHVDFHFVHQDFRFP

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