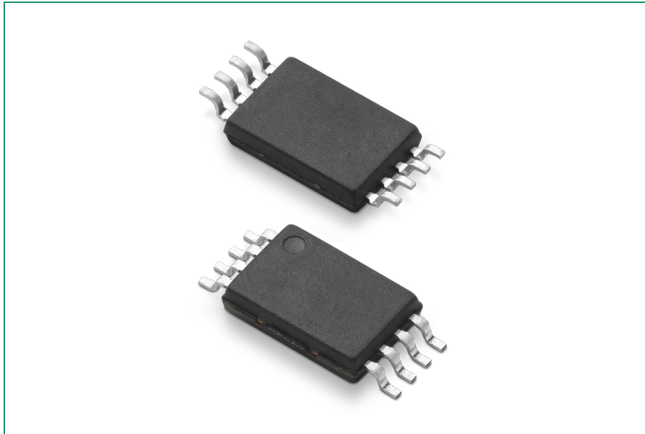


TSSOP8 LF53466-08TMR

Omnipolar Magnetic Sensor

RoHS



Additional Information



Resources

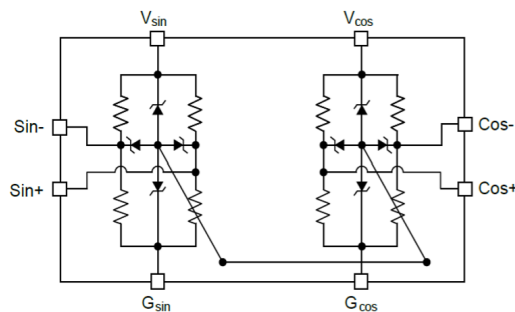


Accessories

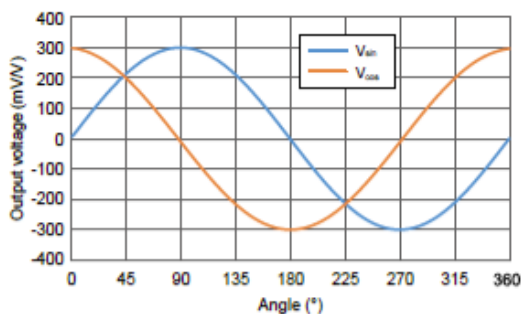


Samples

Functional Block Diagram



Typical Output Curve



Description

The LF53466TMR angle sensor features a dual-axis, orthogonal push-pull Wheatstone bridge architecture. Each bridge incorporates four high-sensitivity TMR (Tunnel Magnetoresistor) elements, providing excellent performance even in demanding temperatures and environments.

When a magnet is positioned above the chip to create a magnetic field parallel to its surface, the chip's dual-axis output produces voltage signals with a sine/cosine relationship proportional to the angle of the magnetic field.

The LF53466TMR delivers exceptional accuracy, maintaining an angular error of less than 0.8 degrees when operating within a magnetic field range of 200 to 800 Gauss. The LF53466-08TMR is offered in a compact TSSOP8 package.

Features & Benefits

- Tunneling Magnetoresistance technology (TMR)
- X-Y axis sensing direction
- Wide range supply voltage
- Differential sin/cos output
- Excellent thermal stability
- Two bridges in one package
- 0-360° angle measurement
- High precision measurement
- RoHS and REACH compliant

Applications

- Rotary position sensor
- Steering wheel angle sensor
- Contactless potentiometer
- Absolute angle sensor
- Pedal position sensor

TSSOP8 LF53466-08TMR

Omnipolar Magnetic Sensor

Electrical Ratings (@TA = +25°C, Vcc = 5V, B=200Gs)

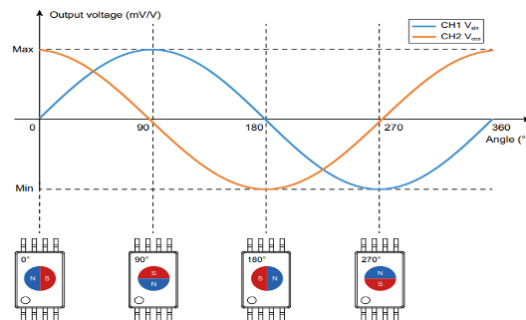
Symbol	Characteristics	Min.	Typ.	Max.	Unit
V_{CC}	Supply voltage	1.0	5.0	5.5	V
V_{Peak}	Output peak voltage	-	300	-	mV/ V_{CC}
V_{PP}	Output peak to peak voltage	-	600	-	mV/ V_{CC}
V_{Offset}	Offset Voltage	-5	-	5	mV/ V_{CC}
R_B	Bridge resistance	3	5	7	k Ω
$V_{ESD(HBM)}$	ESD performance (HBM)	-	-	4000	V
$V_{ESD(CDM)}$	ESD performance (CDM)	-	-	750	V
$T_{Storage}$	Storage temperature	-55	-	150	°C
$T_{working}$	Working temperature	-40	-	150	°C

Magnetic Characteristics (@TA = +25°C, Vcc = 5V)

Symbol	Characteristics	Min.	Typ.	Max.	Unit
Bop	Omnipolar Dynamic Range	200	-	800	G
BMax	Maximum magnetic field	-	-	4000	G
θ	Angle Range	0	-	360	°
$\Delta\theta$	Angular Error	-	0.8	-	°

Operation Principle

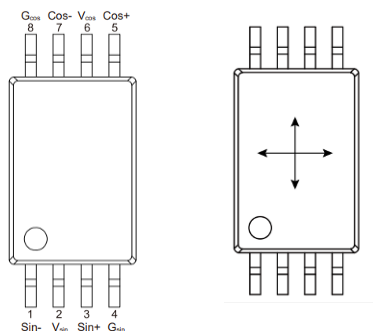
By rotating a small magnet placed on top of LF53466TMR, a rotating magnetic field parallel to the surface of the magnetic is generated and is at the same angle as the magnet. Below figure shows the typical output signals of the LF53466TMR in response to a rotating field.



TSSOP8 LF53466-08TMR

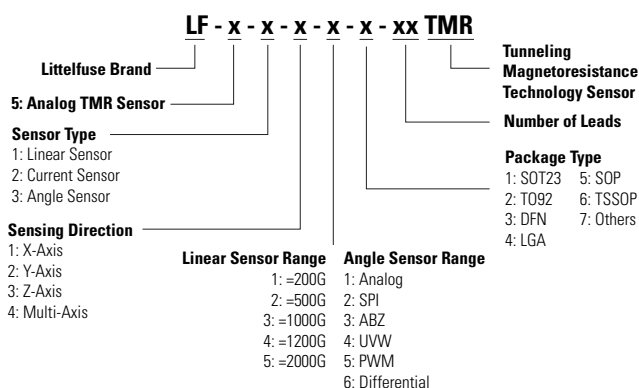
Omnipolar Magnetic Sensor

Pin Configuration and Sensing Direction of Magnetic Field



Pin Name	Pin No. TSSOP8	Pin Function
Sin-	1	Sin- signal output
Vsin	2	Sin bridge power supply
Sin+	3	Sin+ signal output
Gsin	4	Sin bridge power GND
Cos+	5	Cos+ signal output
Vcos	6	Cos bridge power supply
Cos-	7	Cos- signal output
Gcos	8	Cos bridge power GND

Part Numbering System



Example: LF53464-08TMR is Analog, Angle Sensor, Multi-axis, Differential, LGA8L

Notes:

1. Every combination is NOT offered. Contact Littelfuse for availability.

Part Marking System

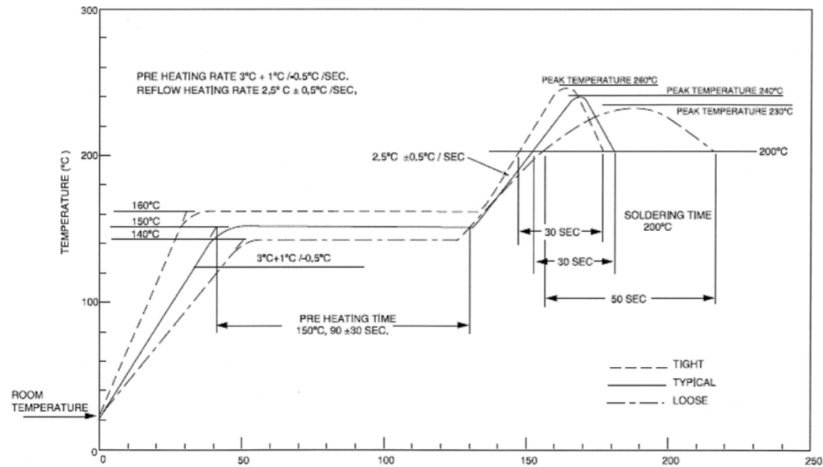
YWWab

Y = Year Ending Digit
 WW = Work Week
 aa = Serialized Switch Type (aa, ab, ac)
 EX: 514ab, where ab represents LF53466-08TMR.

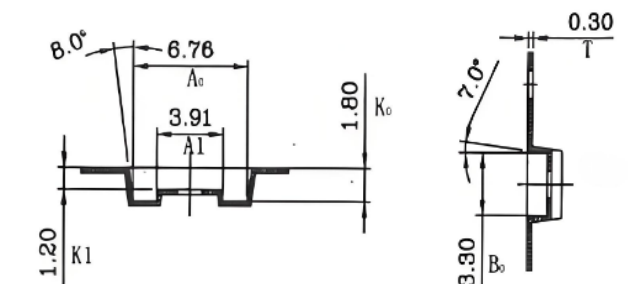
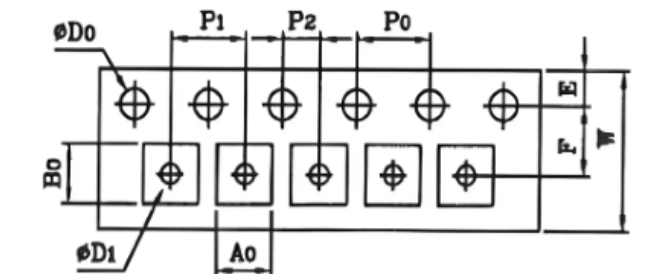
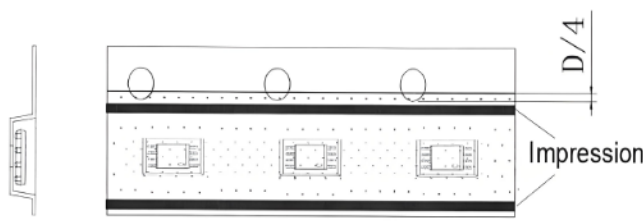
TSSOP8 LF53466-08TMR

Omnipolar Magnetic Sensor

Soldering Profile for Lead-free packages



Tape and Reel

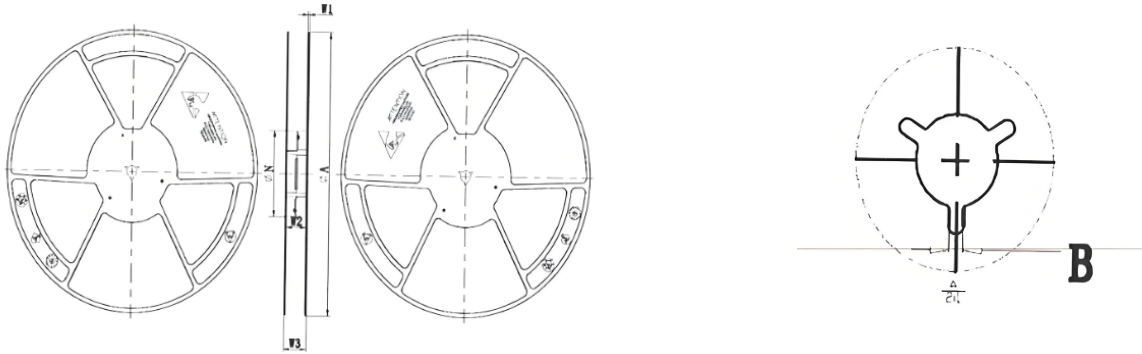


Dimensions in mm

W	P1	P2	P0	A0	B0	D0	D1	E	F	K0	T	A1	K1
12.0+0.3/-0.1	8.0±0.1	2±0.05	4±0.1	6.76+0.07/-0.1	3.3±0.1	1.5±0.1	1.5±0.25	1.75±0.1	5.5±0.05	1.8±0.1	0.3±0.03	3.91±0.1	1.2±0.1

TSSOP8 LF53466-08TMR

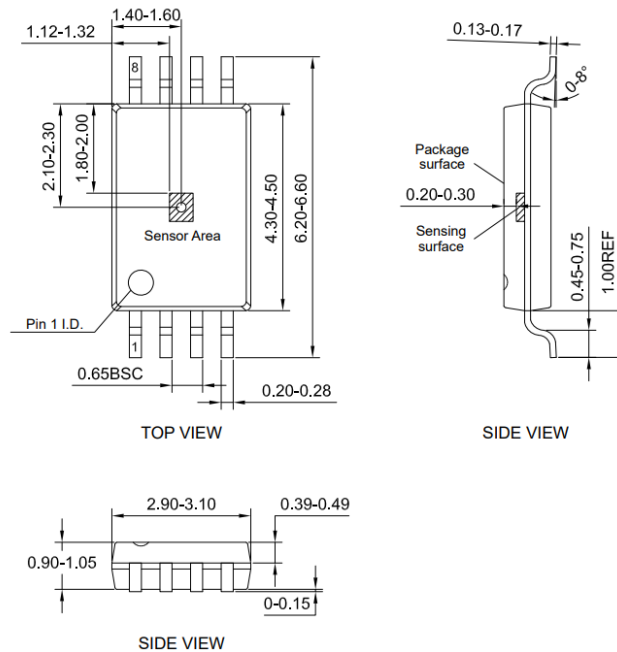
Omnipolar Magnetic Sensor



Item	Dimension(mm)
Ø A	330±2
Ø N	100±2
W1	2±1
W2	13.5±2
W3	18.5±2
B	2.4±0.3
Cos-	7
Gcos	8

TSSOP8 Package Information

Dimensions in mm



Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <http://www.littelfuse.com/disclaimer-electronics>.