

Description

The ZMY20M is an extremely sensitive magnetic sensor employing the magneto-resistive effect of thin film permalloy. It allows the measurement of magnetic fields or the detection of magnetic parts. The highly sensitive and small size magnetoresistive sensors consist of a chip covered with thin film permalloy stripes. These stripes form a Wheatstone bridge, whose output voltage is proportional to the magnetic field component H_y . The required perpendicular field H_x which is necessary to stabilize sensor operation, is created by an internal permanent magnet.

Features

- Package: SOT223
- Supply voltage 12V
- Internal magnet for creation of auxiliary field H_x
- Available on 12mm tape
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](https://www.diodes.com/quality/product-definitions/) or your local Diodes representative.**

Applications

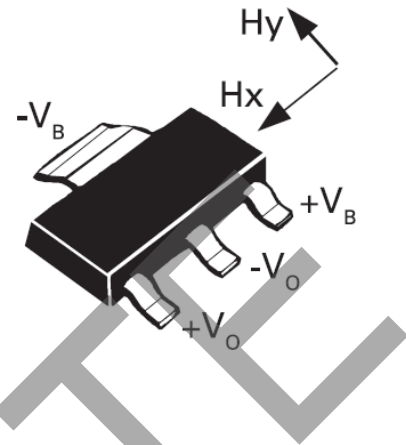
- Linear position measurement
- Angular position measurement
- Navigation (electronic compass)
- Revolution measurement

Ordering Information

DEVICE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
ZMY20MTA	7"	12mm	1,000
ZMY20MTC	13"	12mm	4,000

Marking Information

- ZMY20M



Absolute Maximum Ratings

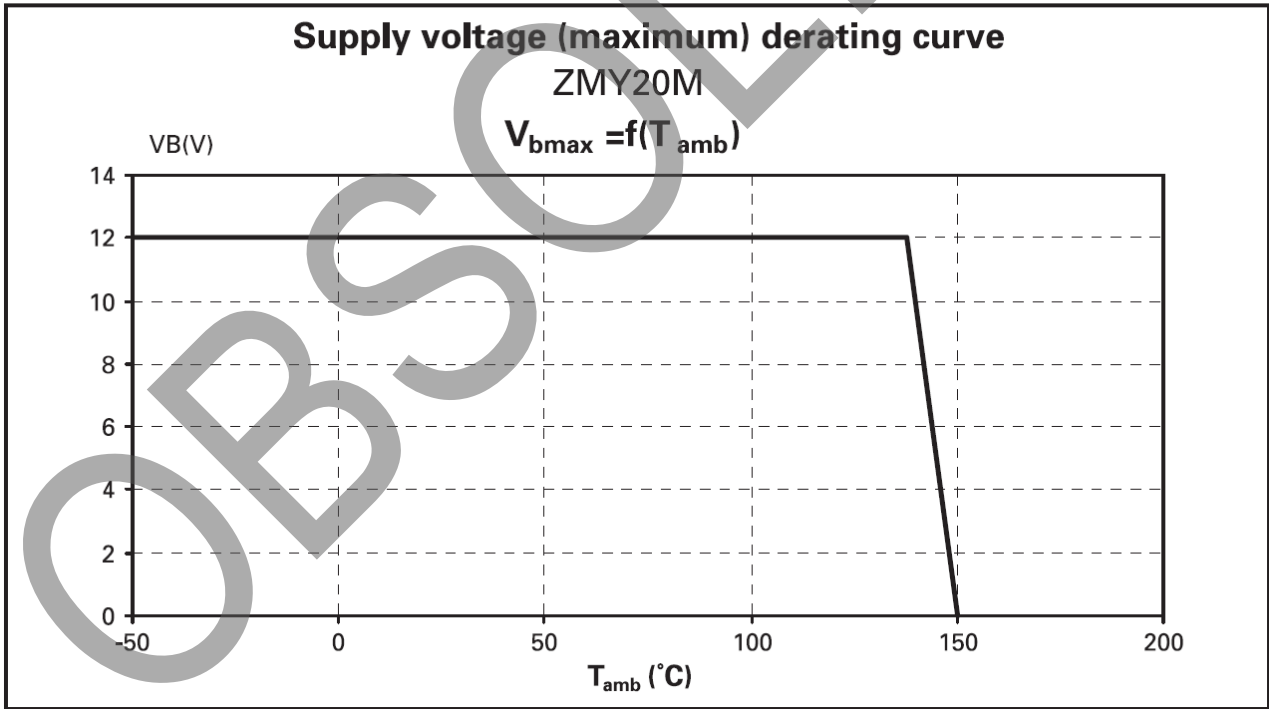
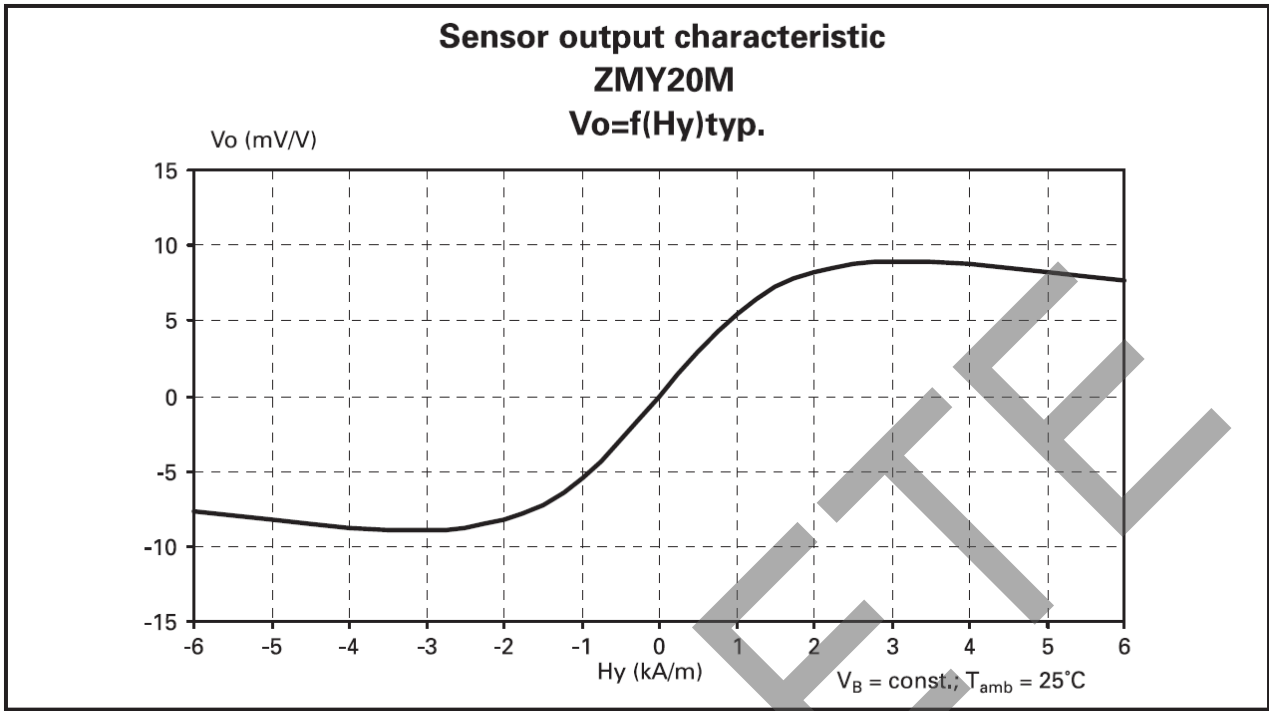
PARAMETER	SYMBOL	LIMIT	UNIT
Supply voltage	V_B	12	V
Total power dissipation	P_{TOT}	120	mW
Operating temperature range	T_{amb}	-25 to +125	°C
Storage temperature range	T_{stg}	-25 to +125	°C

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise stated.)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Bridge resistance	R_{br}	1.2	1.7	2.2	k Ω	
Output voltage range	V_O/V_B	12	18	24	mV/V	
Auxiliary field	H_x	-	2	-	kA/m	
Disturbing field	H_d	-	-	30	kA/m	
Open circuit sensitivity	S	3.0	5.5	7.0	(mV/V)/(kA/m)	No disturbing field H_d allowed $V_B = \text{const.}$
Hysteresis of output voltage	V_{OH}/V_B	-	-	50	$\mu\text{V/V}$	$H_y \leq 2\text{kA/m}$
Offset voltage	V_{off}/V_B	-1.5	-	+1.5	mV/V	
Operating frequency	f_{max}	0	-	1	MHz	
Temperature coefficient of offset voltages	TCV_{off}	-3	-	+3	($\mu\text{V/V}$)/K	$T_{amb} = -25 \text{ to } +125^\circ\text{C}$
Temperature coefficient of bridge resistance	TCR_{br}	0.25	0.3	0.35	%/K	$T_{amb} = -25 \text{ to } +125^\circ\text{C}$
Temperature coefficient of open circuit sensitivity $V_B = 5\text{V}$	TCS_V	-0.25	-0.3	-0.35	%/K	$T_{amb} = -25 \text{ to } +125^\circ\text{C}$
Temperature coefficient of open circuit sensitivity $I_B = 3\text{mA}$	TCS_I	-	0.05	-	%/K	$T_{amb} = -25 \text{ to } +125^\circ\text{C}$

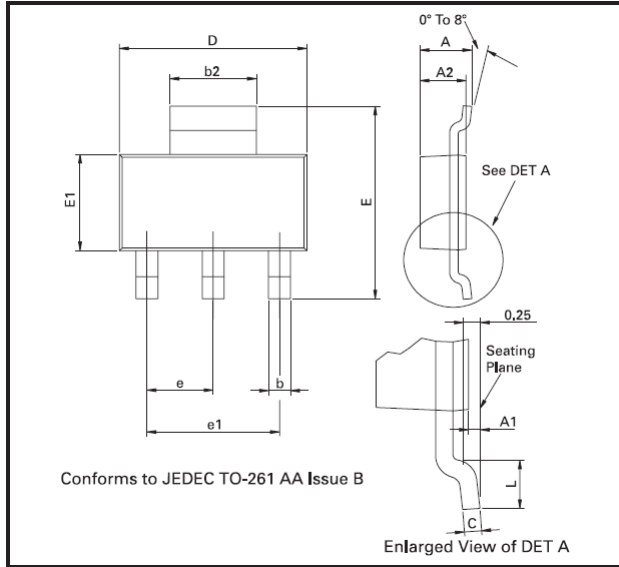
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Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.



Controlling dimensions are in millimeters. Approximate conversions are given in inches

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A	-	1.80	-	0.071	e	2.30 BSC		0.0905 BSC	
A1	0.02	0.10	0.0008	0.004	e1	4.60 BSC		0.181 BSC	
b	0.66	0.84	0.026	0.033	E	6.70	7.30	0.264	0.287
b2	2.90	3.10	0.114	0.122	E1	3.30	3.70	0.130	0.146
C	0.23	0.33	0.009	0.013	L	0.90	-	0.355	-
D	6.30	6.70	0.248	0.264	-	-	-	-	-

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OBSOLETE

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