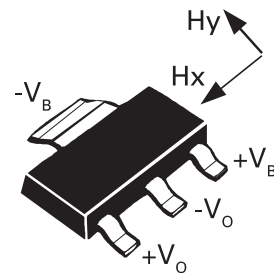


ZMY20M

MAGNETIC FIELD SENSOR WITH INTERNAL MAGNET

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 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

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

DEVICE MARKING

- ZMY20M

ZMY20M

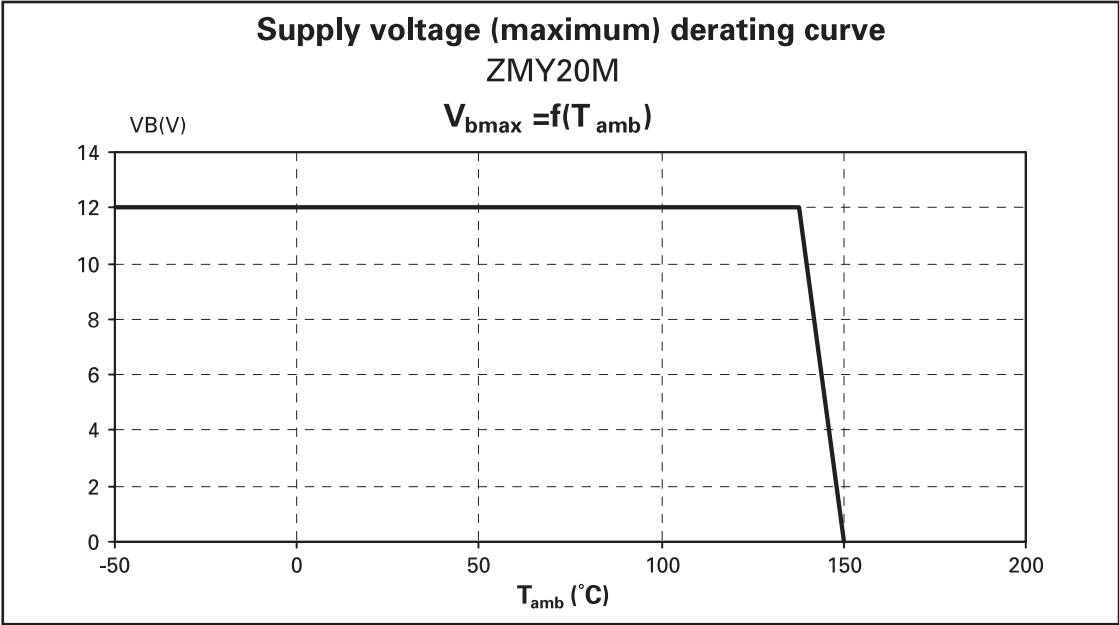
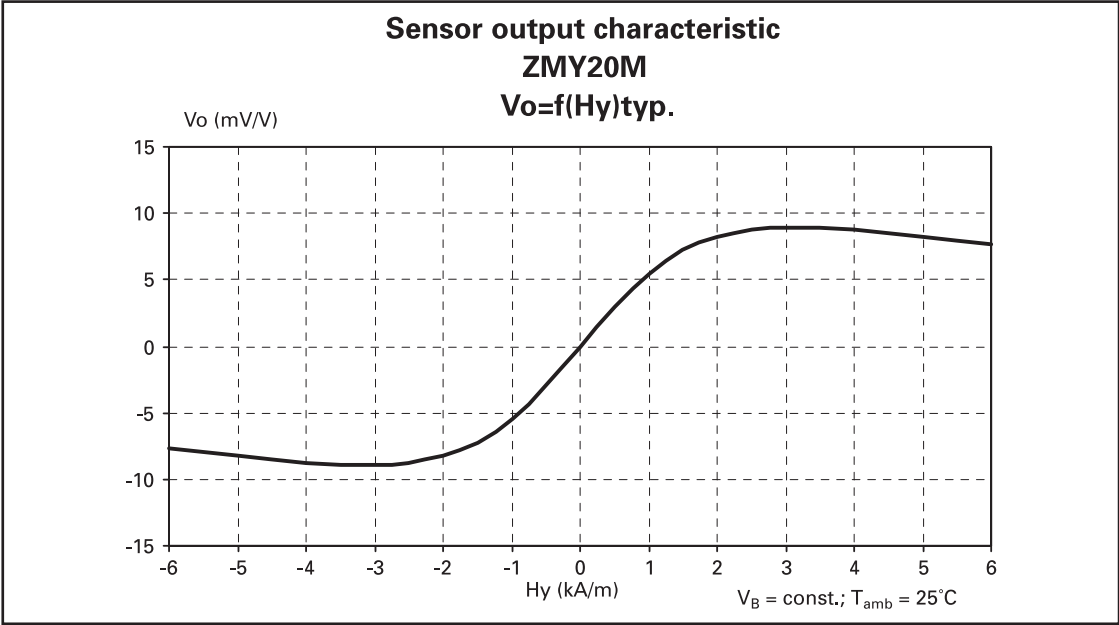
ABSOLUTE MAXIMUM RATINGS

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 (at $T_{amb} = 25^\circ\text{C}$ unless otherwise stated)

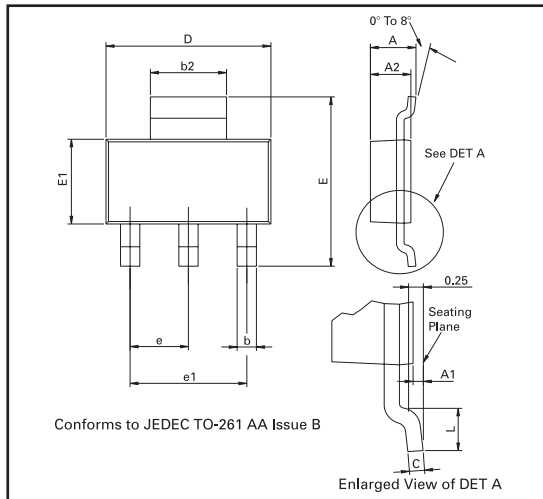
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Bridge resistance	R_{br}	1.2	1.7	2.2	k Ω	
Output voltage range	V_O/V_B	12	18	24	mV/V	
Auxiliary field	H_x	-	2	-	kA/m	
Disturbing field	H_d	-	-	30	kA/m	
Open circuit sensitivity	S	3.0	5.5	7.0	(mV/V)/(kA/m)	No disturbing field H_d allowed $V_B = \text{const.}$
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	$T_{amb} = -25 \text{ to } +125^\circ\text{C}$

ZMY20M



ZMY20M

PACKAGE OUTLINE



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

PACKAGE DIMENSIONS

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	-	-	-	-	-

© Zetex plc 2003

Europe	Americas	Asia Pacific	Corporate Headquarters
Zetex GmbH Streitfeldstraße 19 D-81673 München Germany	Zetex Inc 700 Veterans Memorial Hwy Hauppauge, NY 11788 USA	Zetex (Asia) Ltd 3701-04 Metroplaza Tower 1 Hing Fong Road, Kwai Fong Hong Kong	Zetex plc Fields New Road, Chadderton Oldham, OL9 8NP United Kingdom
Telefon: (49) 89 45 49 49 0 Fax: (49) 89 45 49 49 49 europe.sales@zetex.com	Telephone: (1) 631 360 2222 Fax: (1) 631 360 8222 usa.sales@zetex.com	Telephone: (852) 26100 611 Fax: (852) 24250 494 asia.sales@zetex.com	Telephone (44) 161 622 4444 Fax: (44) 161 622 4446 hq@zetex.com

These offices are supported by agents and distributors in major countries world-wide.

This publication is issued to provide outline information only which (unless agreed by the Company in writing) may not be used, applied or reproduced for any purpose or form part of any order or contract or be regarded as a representation relating to the products or services concerned. The Company reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service.

For the latest product information, log on to www.zetex.com



ISSUE 2 - JANUARY 2004