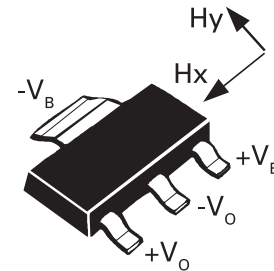


# ZMY20M

## 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

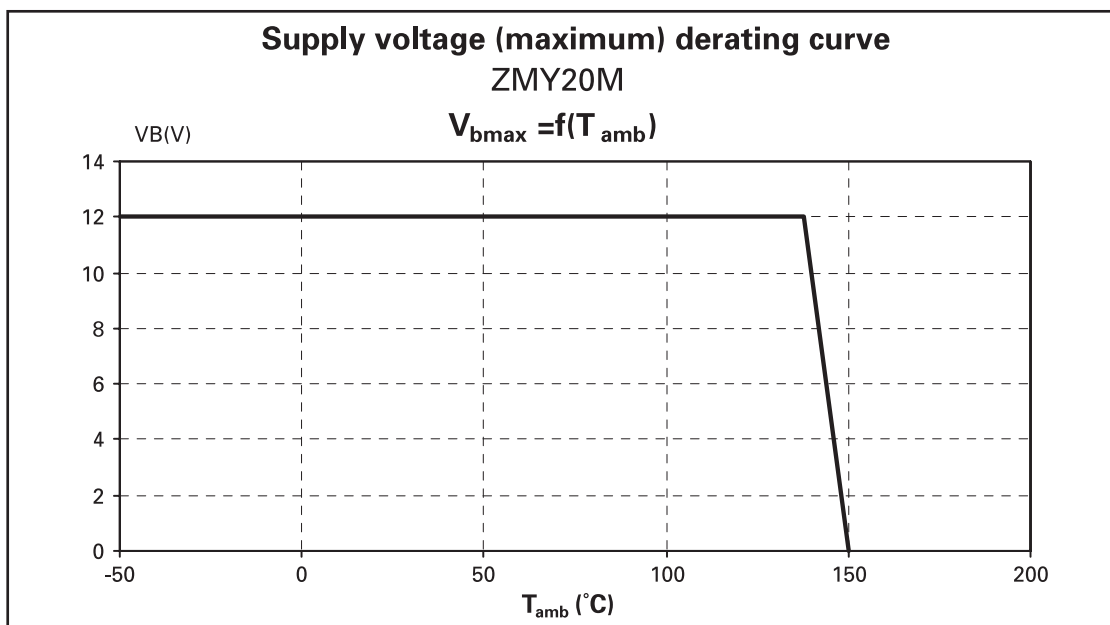
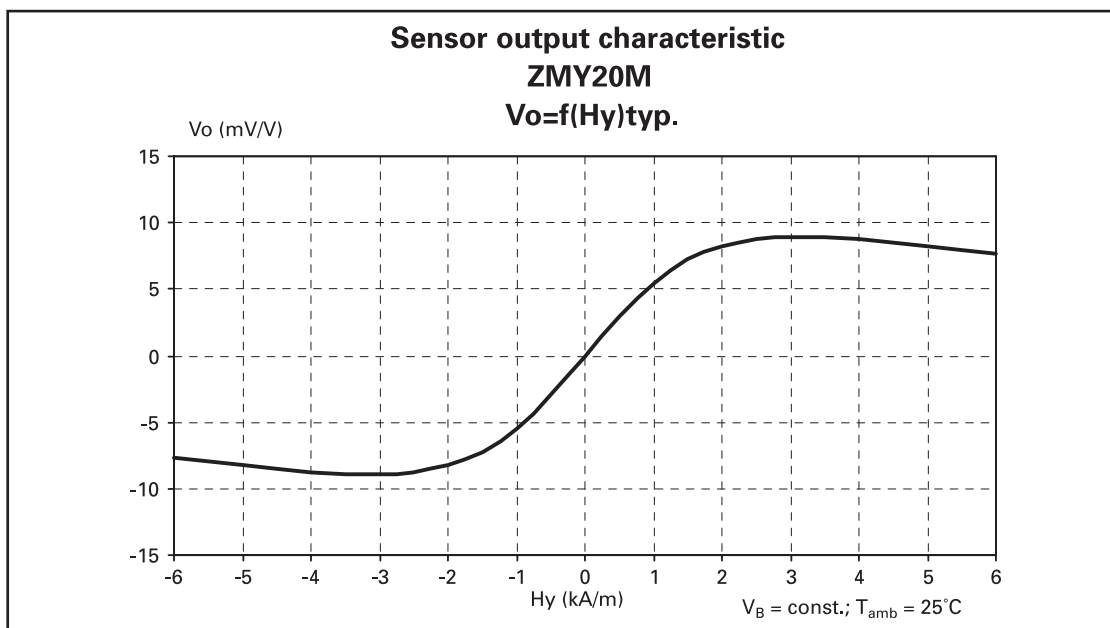
## ABSOLUTE MAXIMUM RATINGS

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	$k\Omega$	
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	$T_{amb} = -25 \text{ to } +125^\circ\text{C}$

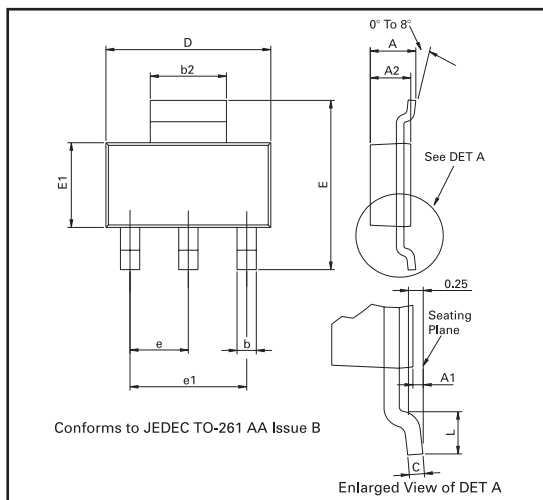
# ZMY20M



ISSUE 2 - JANUARY 2004

# 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
Telephone: (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](http://www.zetex.com)



ISSUE 2 - JANUARY 2004