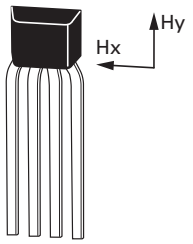
ZMZ20M

MAGNETIC FIELD SENSORS

DESCRIPTION

The ZMZ20M is an extremely sensitive magnetic field sensor in a 4 pin E-line package employing the magneto-resistive effects of thin film Permalloy. It allows the measurement of magnetic fields or the detection of metallic parts. The sensor consists of a chip covered with Permalloy stripes which form a Wheatstone bridge, whose output voltage is proportional to the magnetic field component Hy. A perpendicular field Hx is necessary to suppress the hysteresis and this is provided by an internal permanent magnet.



E-LINE

FEATURES

- Output voltage proportional to magnetic field Hy
- Magnetic fields vertical to the chip level are not effective

APPLICATIONS

- Linear position sensors for process control, door interlocks, proximity detectors, machine tool sensing
- Scalar measurement for compassing
- Automotive - door switches, engine position and speed sensing
- Metering of fluids by sensing rotation of impeller
- Traffic counting & vehicle-type sensing
- Measurement of current in a conductor without connection

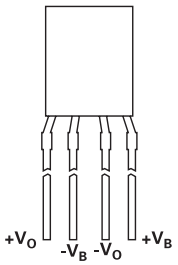
ORDERING INFORMATION

DEVICE	BOX
ZMZ20M	Bulk in box (2,000 components per box)

DEVICE MARKING

- M2M

PINOUT



SIDE VIEW

ZMZ20M

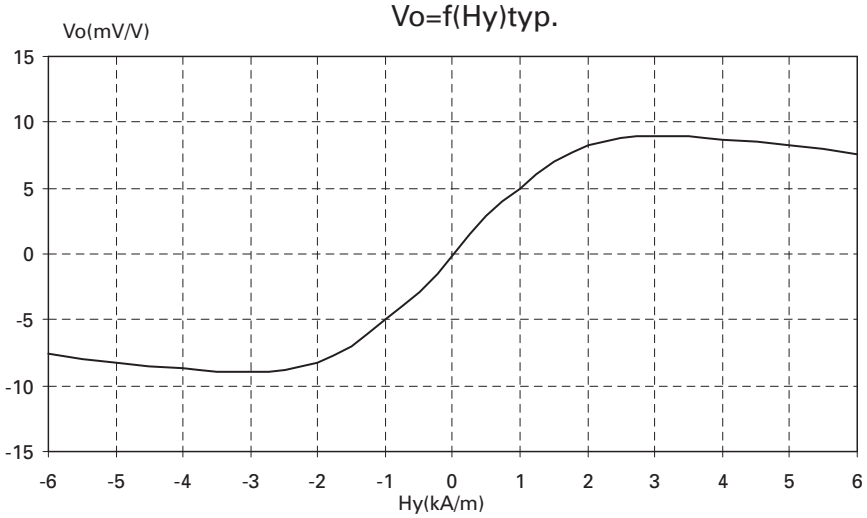
ABSOLUTE MAXIMUM RATINGS

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

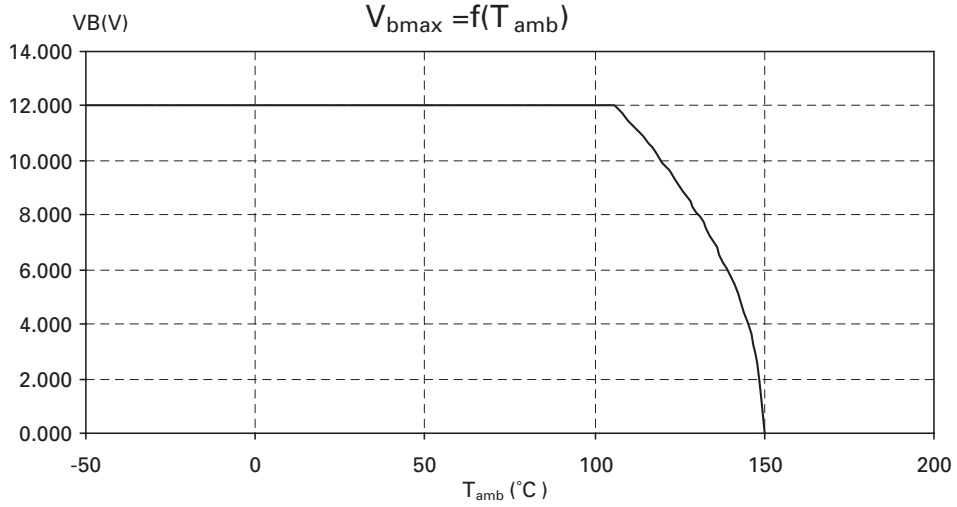
ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Bridge resistance	R_{br}	1.2	1.7	2.2	kΩ	
Output voltage range	V_O/V_B	12	18	24	mV/V	
Auxiliary field	Hx	-	2.5	-	kA/m	
Disturbing field	H_d	-	-	30	kA/m	
Open circuit sensitivity	S	3.0	5.0	7.0	(mV/V)/(kA/m)	No disturbing field H_d allowed
Hysteresis of output voltage	V_{OH}/V_B	-	-	50	µV/V	Hy ≤ 2kA/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	(µV/V)/K	T_{amb} = -25 to +125°C
Temperature coefficient of bridge resistance	TCR_{br}	0.25	0.3	0.35	%/K	T_{amb} = -25 to +125°C
Temperature coefficient of open circuit sensitivity V_B =5V	TCS_V	-0.25	-0.3	-0.35	%/K	T_{amb} = -25 to +125°C

Sensor output characteristic
ZMZ20M
Vo=f(Hy)typ.

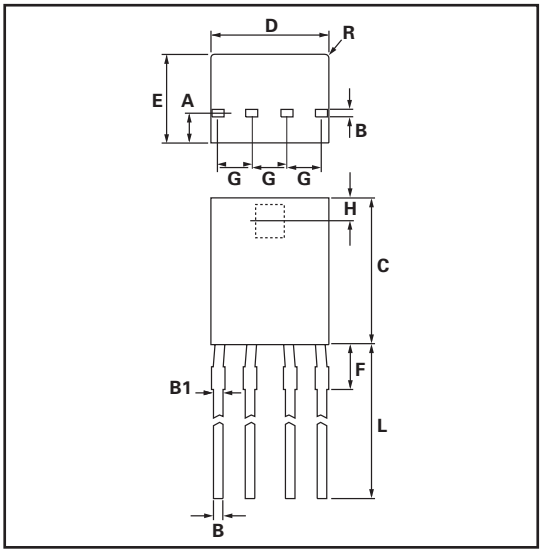


Supply voltage (maximum) derating curve
ZMZ20M
V_{bmax} =f(T_{amb})



ZMZ20M

PACKAGE OUTLINE



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

PACKAGE DIMENSIONS

DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.8	1.0	0.032	0.039
B	0.35	0.48	0.014	0.019
B1	0.45	0.60	0.018	0.024
C	4.0	4.4	0.158	0.173
D	3.8	4.2	0.150	0.165
E	2.4	2.8	0.094	0.110
F	1.2	-	0.047	-
G	1.25	-	0.049	-

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