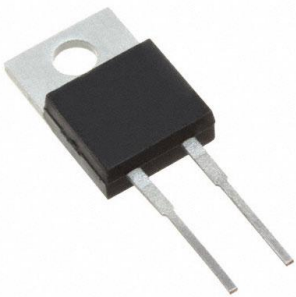


MBR10100-M3/4W Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	MBR10100-M3/4W-DG
Manufacturer	Vishay General Semiconductor - Diodes Division
Manufacturer Product Number	MBR10100-M3/4W
Description	DIODE SCHOTTKY 100V 10A TO220AC
Detailed Description	Diode 100 V 10A Through Hole TO-220AC

This model MBR10100-M3/4W is available at DiGi.Electronics.

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Purchase and inquiry

Manufacturer Product Number:

MBR10100-M3/4W

Series:

-

Technology:

Schottky

Current - Average Rectified (Io):

10A

Speed:

Fast Recovery =< 500ns, > 200mA (Io)

Capacitance @ Vr, F:

-

Package / Case:

TO-220-2

Operating Temperature - Junction:

-65°C ~ 150°C

Manufacturer:

Vishay General Semiconductor - Diodes Division

Product Status:

Active

Voltage - DC Reverse (Vr) (Max):

100 V

Voltage - Forward (Vf) (Max) @ If:

800 mV @ 10 A

Current - Reverse Leakage @ Vr:

100 µA @ 100 V

Mounting Type:

Through Hole

Supplier Device Package:

TO-220AC

Base Product Number:

MBR1010

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0080

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

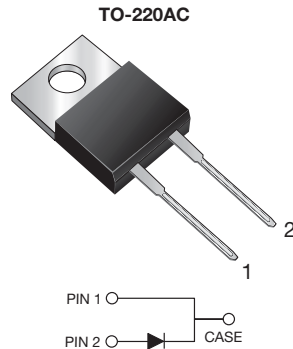


www.vishay.com

MBR1090-M3, MBR10100-M3

Vishay General Semiconductor

High Voltage TMBS[®] (Trench MOS Barrier Schottky) Rectifier



FEATURES

- Trench MOS Schottky technology
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters or polarity protection application.

MECHANICAL DATA

Case: TO-220AC

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs maximum

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	10 A
V_{RRM}	90 V, 100 V
I_{FSM}	150 A
V_F	0.65 V
T_J max.	150 °C
Package	TO-220AC
Circuit configuration	Single

MAXIMUM RATINGS ($T_C = 25\text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MBR1090	MBR10100	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	90	100	V
Working peak reverse voltage	V_{RWM}	90	100	V
Maximum DC blocking voltage	V_{DC}	90	100	V
Maximum average forward rectified current at $T_C = 133\text{ °C}$	$I_{F(AV)}$	10		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	150		A
Voltage rate of change (rated V_R)	dV/dt	10 000		V/ μ s
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 150		°C

ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ °C}$ unless otherwise noted)				
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT
Maximum instantaneous forward voltage	$I_F = 10\text{ A}$	V_F (1)	$T_C = 25\text{ °C}$	0.80
			$T_C = 125\text{ °C}$	0.65
	$I_F = 20\text{ A}$			0.75
Maximum reverse current per diode at working peak reverse voltage		I_R (2)	$T_J = 25\text{ °C}$	100
			$T_J = 100\text{ °C}$	6.0

Notes

- (1) Pulse test: 300 μ s pulse width, 1 % duty cycle
 (2) Pulse test: Pulse width \leq 40 ms



MBR1090-M3, MBR10100-M3

Vishay General Semiconductor

THERMAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MBR1090	MBR10100	UNIT
Typical thermal resistance	$R_{\theta JA}$		60	$^\circ\text{C}/\text{W}$
	$R_{\theta JC}$		2.0	

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AC	MBR10100-M3/4W	1.845	4W	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

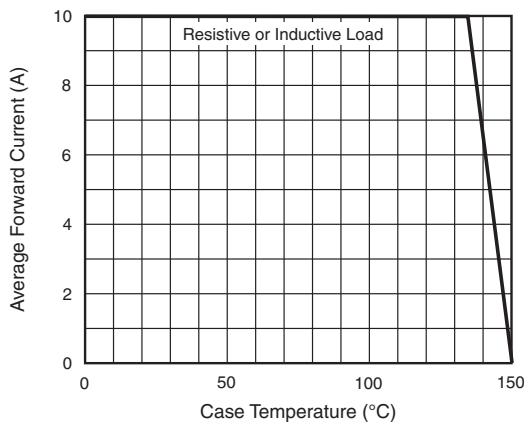


Fig. 1 - Forward Current Derating Curve

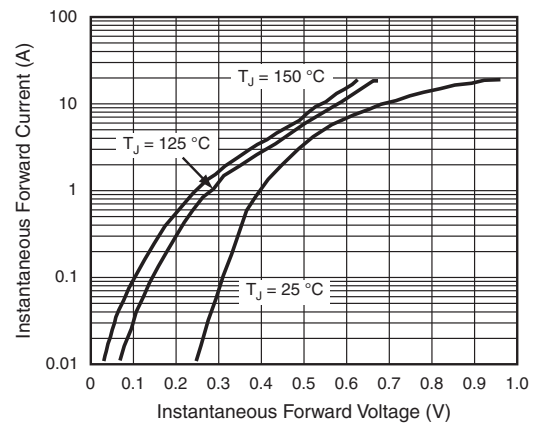


Fig. 3 - Typical Instantaneous Forward Characteristics

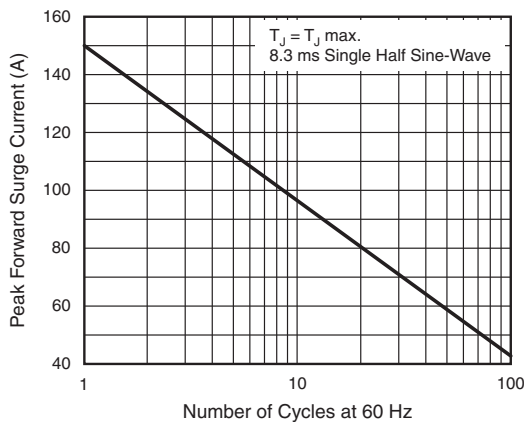


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

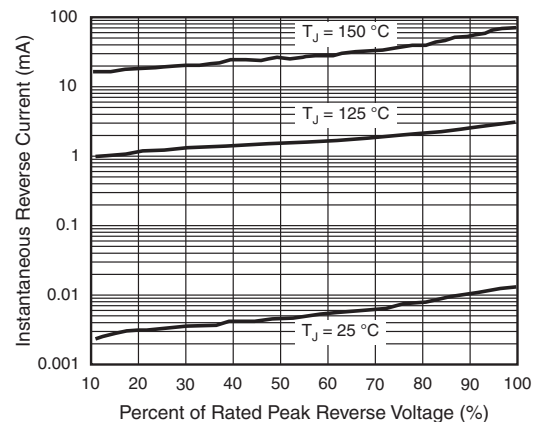


Fig. 4 - Typical Reverse Characteristics



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MBR1090-M3, MBR10100-M3

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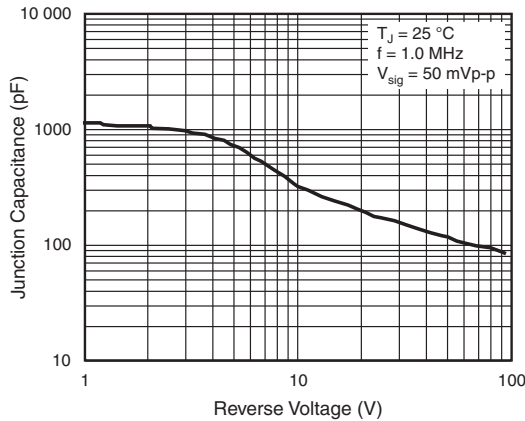


Fig. 5 - Typical Junction Capacitance

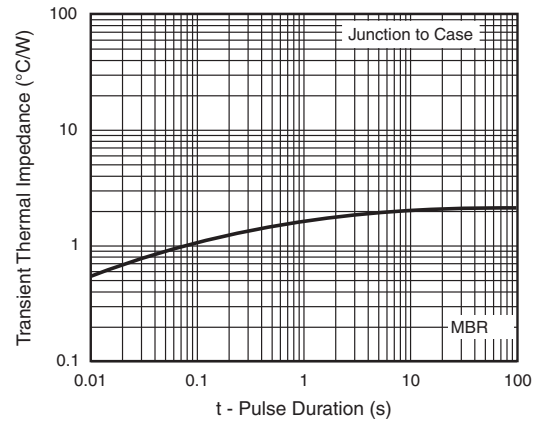
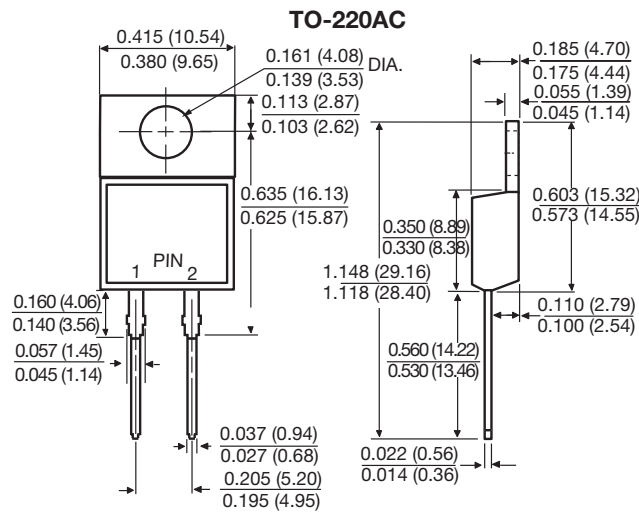


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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