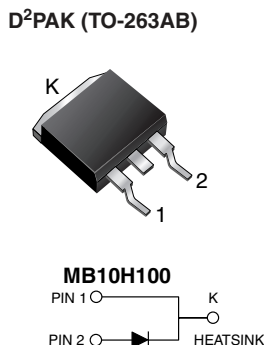
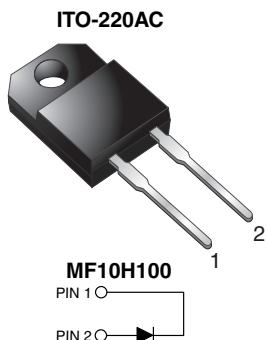


## High Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



### FEATURES

- Power pack
- Guardring for overvoltage protection
- Low power loss, high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for D²PAK (TO-263AB) package)
- Solder bath temperature 275 °C maximum, 10 s, per JESD 22-B106 (for ITO-220AC package)
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
Available

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	10 A
$V_{RRM}$	100 V
$I_{FSM}$	250 A
$V_F$	0.64 V
$I_R$	4.5 $\mu$ A
$T_J$ max.	175 °C
Package	ITO-220AC, D²PAK (TO-263AB)
Circuit configuration	Single

### 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:** ITO-220AC, D²PAK (TO-263AB)

Molding compound meets UL 94 V-0 flammability rating

Base P/NHE3\_X - RoHS-compliant, AEC-Q101 qualified ("X" denotes revision code e.g. A, B,.....)

Base P/NHM3 - RoHS-compliant, halogen-free, AEC-Q101 qualified

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

HE3 and HM3 suffix meets JESD 201 class 2 whisker test

**Polarity:** as marked

**Mounting Torque:** 10 in-lbs maximum

### MAXIMUM RATINGS ( $T_C = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	MB10H100	MF10H100	UNIT
Device marking code		<b>MBRB10H100</b>	<b>MBRF10H100</b>	
Maximum repetitive peak reverse voltage	$V_{RRM}$	100		V
Working peak reverse voltage	$V_{RWM}$	100		
Maximum DC blocking voltage	$V_{DC}$	100		
Maximum average forward rectified current	$I_{F(AV)}$	10		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	250		
Peak repetitive reverse current at $t_p = 2.0$ $\mu$ s, 1 kHz	$I_{RRM}$	0.5		
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000		V/ $\mu$ s
Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +175		°C
Isolation voltage (ITO-220AC only) from terminal to heatsink $t = 1$ min	$V_{AC}$	1500		V



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUE	UNIT
Maximum instantaneous forward voltage	$V_F^{(1)}$	$I_F = 10\text{ A}$	$T_C = 25\text{ }^{\circ}\text{C}$	0.77	V
		$I_F = 10\text{ A}$	$T_C = 125\text{ }^{\circ}\text{C}$	0.64	
		$I_F = 20\text{ A}$	$T_C = 25\text{ }^{\circ}\text{C}$	0.88	
		$I_F = 20\text{ A}$	$T_C = 125\text{ }^{\circ}\text{C}$	0.73	
Maximum reverse current	$I_R^{(2)}$	Rated $V_R$	$T_J = 25\text{ }^{\circ}\text{C}$	4.5	$\mu\text{A}$
			$T_J = 125\text{ }^{\circ}\text{C}$	6.0	mA

**Notes**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

(2) Pulse test: pulse width  $\leq 40\text{ ms}$

<b>THERMAL CHARACTERISTICS</b> ( $T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MB10H100	MF10H100	UNIT
Typical thermal resistance	$R_{\theta JC}$	2.7	5.8	$^{\circ}\text{C/W}$

<b>ORDERING INFORMATION</b>					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
ITO-220AC	MF10H100HE3_B/P	1.94	P	50/tube	Tube
D <sup>2</sup> PAK (TO-263AB)	MB10H100HM3/I	1.33	I	800/reel	Tape and reel



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

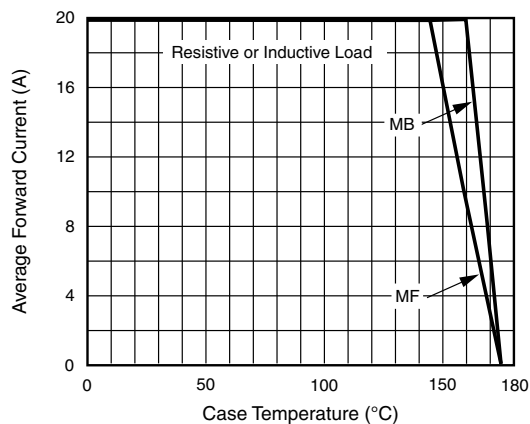


Fig. 1 - Forward Current Derating Curve

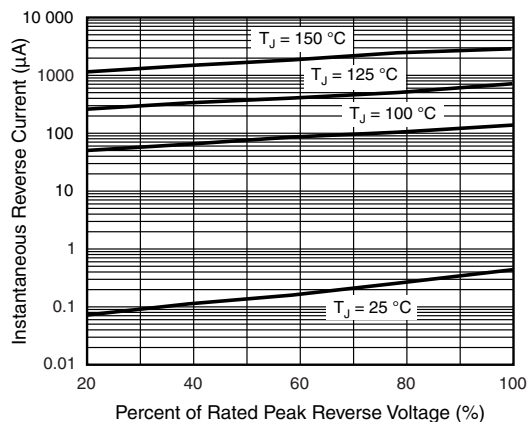


Fig. 4 - Typical Reverse Characteristics

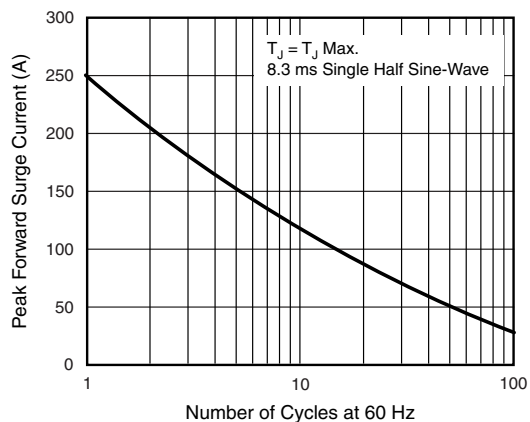


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

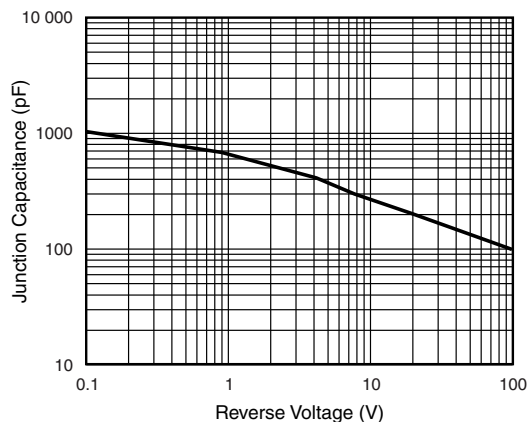


Fig. 5 - Typical Junction Capacitance

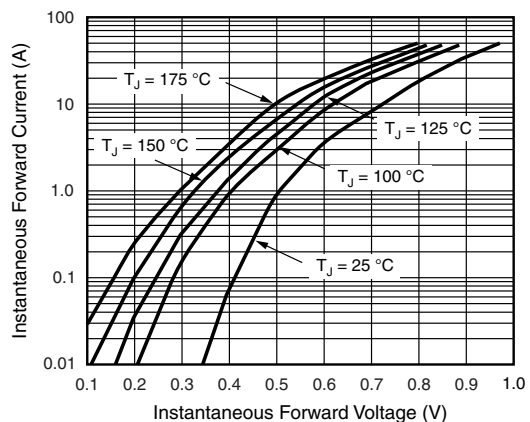


Fig. 3 - Typical Instantaneous Forward Characteristics

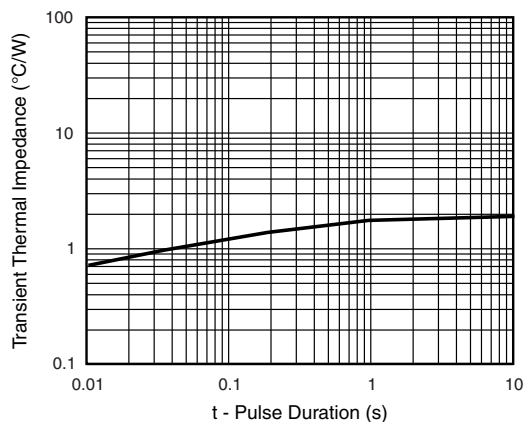
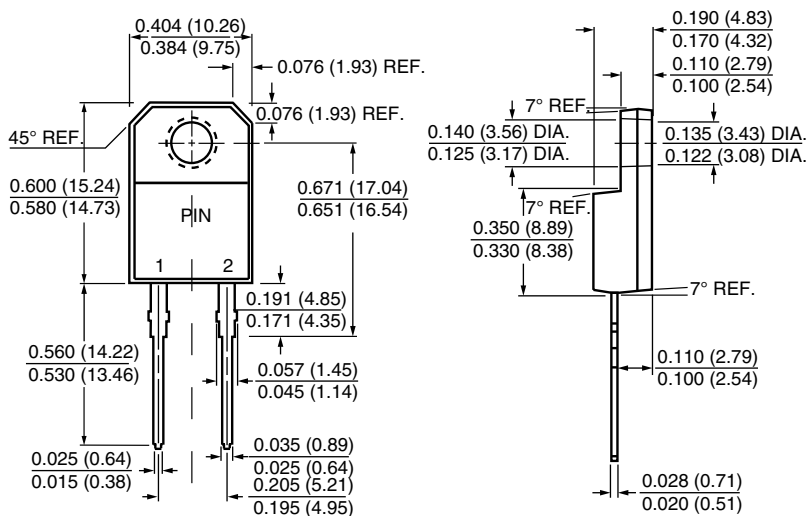


Fig. 6 - Typical Transient Thermal Impedance

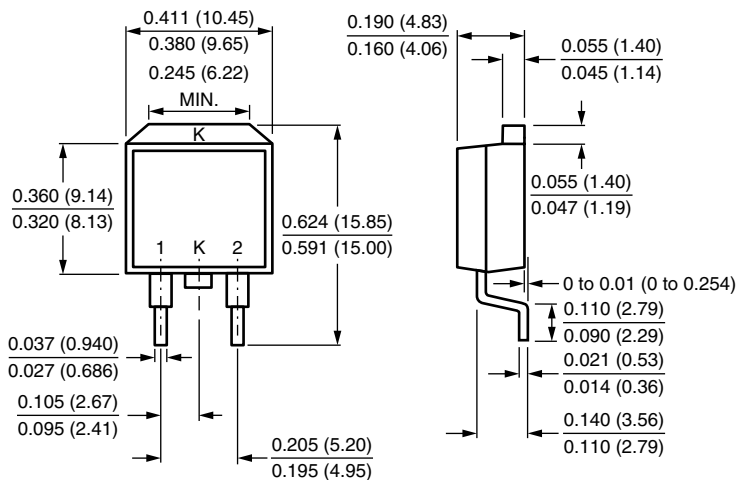


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

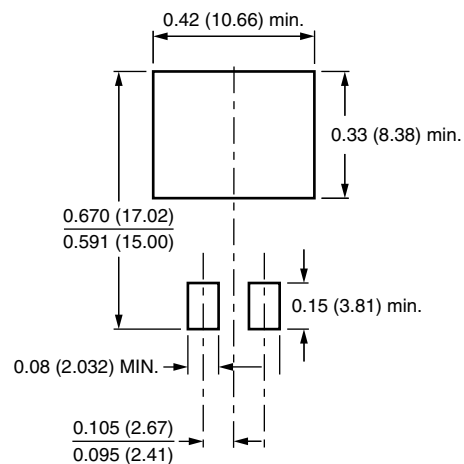
ITO-220AC



D<sup>2</sup>PAK (TO-263AB)



Mounting Pad Layout





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