

### SCHOTTKY BARRIER RECTIFIER

VOLTAGE RANGE: 30 - 100 V  
CURRENT: 10 A

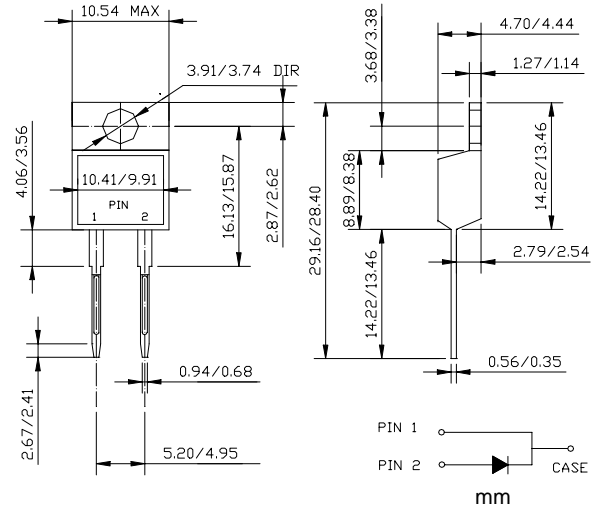
#### FEATURES

- ◇ High surge capacity.
- ◇ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.
- ◇ Metal silicon junction, majority carrier conduction.
- ◇ High current capacity, low forward voltage drop.
- ◇ Guard ring for over voltage protection.

#### MECHANICAL DATA

- ◇ Case: JEDEC TO-220AC, molded plastic body
- ◇ Terminals: Leads, solderable per MIL-STD-750, Method 2026
- ◇ Polarity: As marked
- ◇ Position: Any
- ◇ Weight: 0.064 ounces, 1.81 gram

#### TO-220AC



#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

		MBR 1030	MBR 1035	MBR 1040	MBR 1045	MBR 1050	MBR 1060	MBR 1090	MBR 10100	UNITS
Maximum recurrent peak reverse voltage	$V_{RRM}$	30	35	40	45	50	60	90	100	V
Maximum RMS Voltage	$V_{RMS}$	21	25	28	32	35	42	63	70	V
Maximum DC blocking voltage	$V_{DC}$	30	35	40	45	50	60	90	100	V
Maximum average forward total device rectified current @ $T_c = 125^\circ\text{C}$	$I_{F(AV)}$	10								A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	150								A
Maximum forward voltage ( $I_F=10\text{A}, T_c=25^\circ\text{C}$ ) ( $I_F=10\text{A}, T_c=125^\circ\text{C}$ ) (Note 1) ( $I_F=20\text{A}, T_c=25^\circ\text{C}$ ) ( $I_F=20\text{A}, T_c=125^\circ\text{C}$ )	$V_F$	-	0.57			0.80	0.70	0.80	0.65	V
Maximum reverse current @ $T_c=25^\circ\text{C}$ at rated DC blocking voltage @ $T_c=125^\circ\text{C}$	$I_R$	0.1						15	6.0 <sup>3)</sup>	m A
Maximum thermal resistance (Note2)	$R_{\theta JC}$	2.0								°C/W
Operating junction temperature range	$T_J$	- 55 ---- + 150								°C
Storage temperature range	$T_{STG}$	- 55 ---- + 150								°C

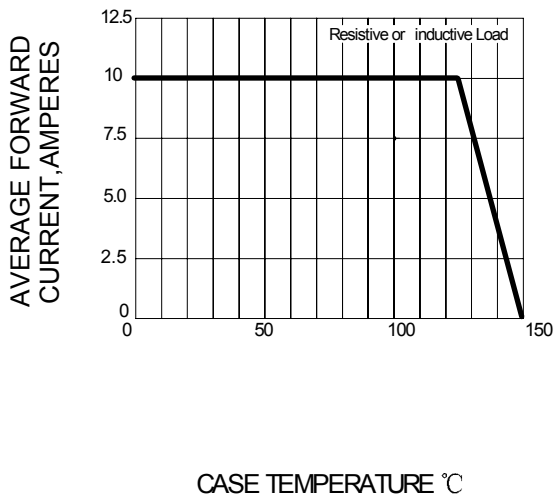
NOTE: 1. Pulse test: 300µs pulse width, 1% duty cycle.

2. Thermal resistance from junction to case.

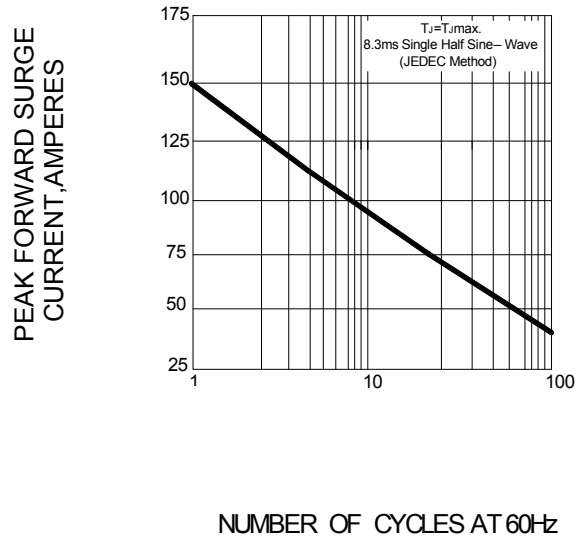
3.  $T_c=100^\circ\text{C}$

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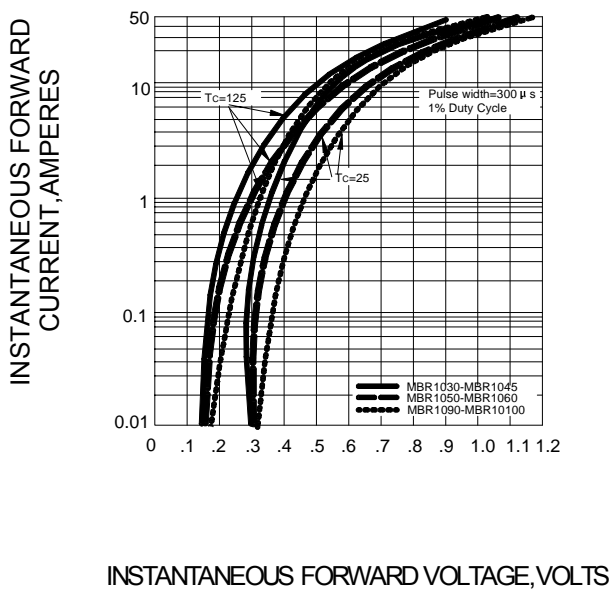
**FIG.1 – FORWARD CURRENT DERATING CURVE**



**FIG.2 – MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG**



**FIG.3 – TYPICAL INSTANTANEOUS FORWARD CHARACTERISTIC PER LEG**



**FIG.4 – TYPICAL REVERSE CHARACTERISTICS**

