

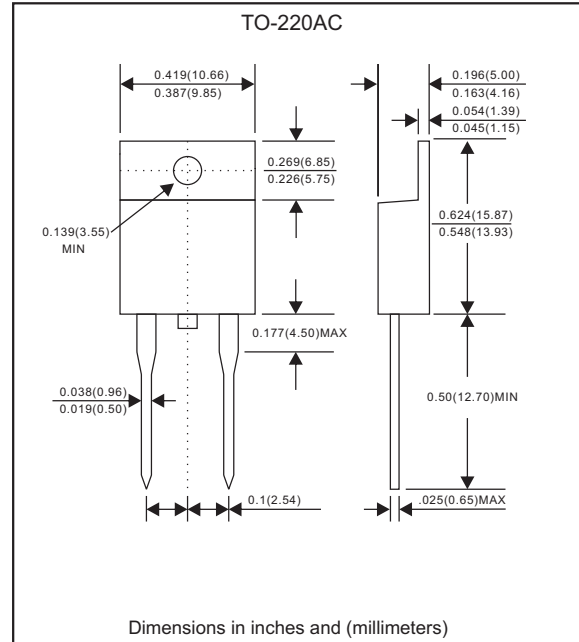
### Features

- 150°C operating junction temperature.
- Low power loss, high efficiency.
- High current capability
- High surge capability.
- Guardring for overvoltage protection.
- Low stored charge majority carrier conduction
- Silicon epitaxial planar chip, metal silicon junction.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Suffix "-H" indicates Halogen-free parts, ex. MBR1040-H.

### Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : JEDEC TO-220AC molded plastic body over passivated chip
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: As marked
- Mounting Position : Any

### Package outline



### Maximum ratings and Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig. 1	$I_o$			10.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	$I_{FSM}$			150	A
Reverse current	$V_R = V_{RRM}$ $T_J = 25^\circ\text{C}$	$I_R$			0.1	mA
	$V_R = V_{RRM}$ $T_J = 125^\circ\text{C}$				15	
Thermal resistance (1)	Junction to case	$R_{\theta JC}$		2		$^\circ\text{C/W}$
Storage temperature range		$T_{STG}$	-65		+175	$^\circ\text{C}$

NOTE : (1) Device mounted on additional heatsink, (50mm x 50mm x 23mm Al heatsink).

SYMBOLS	$V_{RRM}^{*1}$ (V)	$V_{RMS}^{*2}$ (V)	$V_R^{*3}$ (V)	$V_F^{*4}$ (V)	Operating temperature $T_J$ , ( $^\circ\text{C}$ )
MBR1040	40	28	40	0.70	-55 to +150
MBR1045	45	31.5	45		
MBR1050	50	35	50	0.80	
MBR1060	60	42	60		
MBR1080	80	56	80	0.85	
MBR10100	100	70	100		
MBR10150	150	105	150	0.95	
MBR10200	200	140	200		

\*1 Repetitive peak reverse voltage

\*2 RMS voltage

\*3 Continuous reverse voltage

\*4 Maximum forward voltage, @ $I_F=10\text{A}$ ,  $25^\circ\text{C}$

## Rating and characteristic curves (MBR1040 THRU MBR10200)

FIG. 1 – FORWARD CURRENT DERATING CURVE

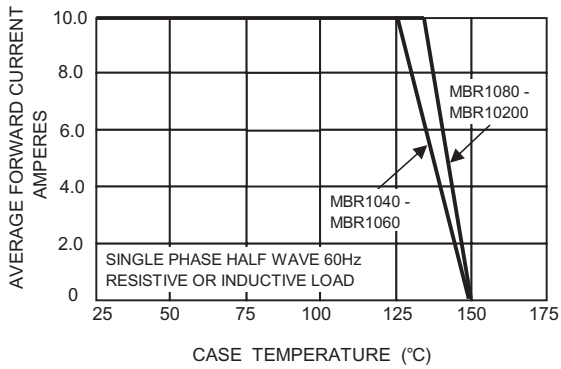


FIG. 2 – MAXIMUM NON-REPETITIVE SURGE CURRENT

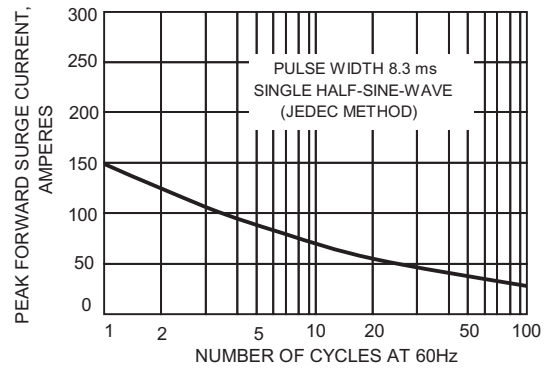


FIG.3-TYPICAL REVER CHARACTERISTICS

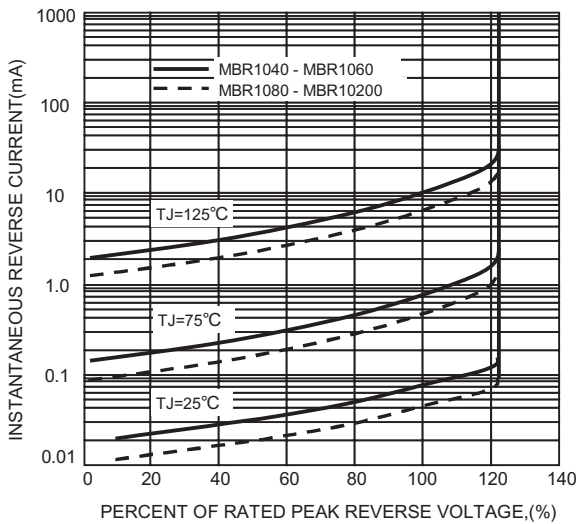


FIG.4-TYPICAL FORWARD CHARACTERISTICS

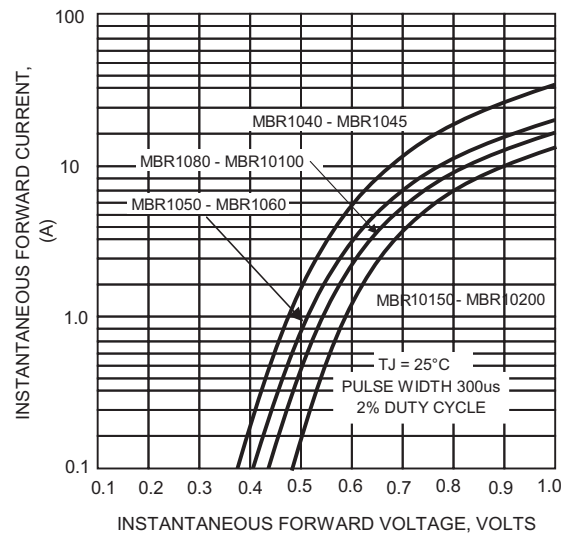
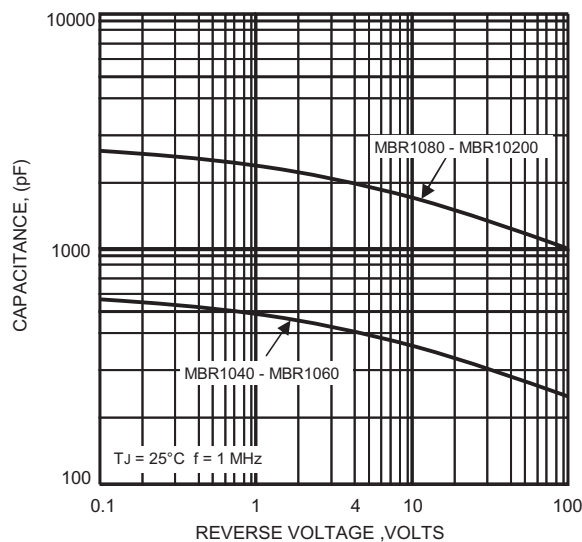


FIG.5 – TYPICAL JUNCTION CAPACITANCE



## Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

## Marking

Type number	Marking code
MBR1040	MBR1040
MBR1045	MBR1045
MBR1050	MBR1050
MBR1060	MBR1060
MBR1080	MBR1080
MBR10100	MBR10100
MBR10150	MBR10150
MBR10200	MBR10200