America Semiconductor™

Silicon Power Schottky Diode

MBRF50020 thru MBRF50045R

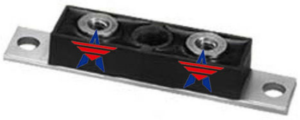
V_{RRM} = 20 V - 45 V

I_F = 500 A

Features

- High Surge Capability
- Types up to 45 V V_{RRM}

TO-244AB Package



Maximum ratings, at T_j = 25 °C, unless otherwise specified ("R" devices have leads reversed)

Parameter	Symbol	Conditions	MBRF50020 (R)	MBRF50030 (R)	MBRF50035 (R)	MBRF50040 (R)	MBRF50045 (R)	Unit
Repetitive peak reverse voltage	V_{RRM}		20	30	35	40	45	V
RMS reverse voltage	V_{RMS}		14	21	25	28	32	V
DC blocking voltage	V_{DC}		20	30	35	40	45	V
Continuous forward current	I_F	$T_C \leq$ 130 °C	500	500	500	500	500	A
Surge non-repetitive forward current, Half Sine Wave	$I_{F,SM}$	T_C = 25 °C, t_p = 8.3 ms	3500	3500	3500	3500	3500	A
Operating temperature	T_j		-40 to 175	-40 to 175	-40 to 175	-40 to 175	-40 to 175	°C
Storage temperature	T_{stg}		-40 to 175	-40 to 175	-40 to 175	-40 to 175	-40 to 175	°C

Electrical characteristics, at Tj = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions	MBRF50020 (R)	MBRF50030 (R)	MBRF50035 (R)	MBRF50040 (R)	MBRF50045 (R)	Unit
Diode forward voltage	V_F	I_F = 250 A, T_j = 25 °C	0.65	0.65	0.65	0.65	0.65	V
Reverse current	I_R	V_R = 20 V, T_j = 25 °C V_R = 20 V, T_j = 125 °C	8 200	8 200	8 200	8 200	8 200	mA
Thermal characteristics								
Thermal resistance, junction - case	R_{thJC}		0.30	0.30	0.30	0.30	0.30	°C/W

RoHS Compliant

Figure .1-Typical Forward Characteristics

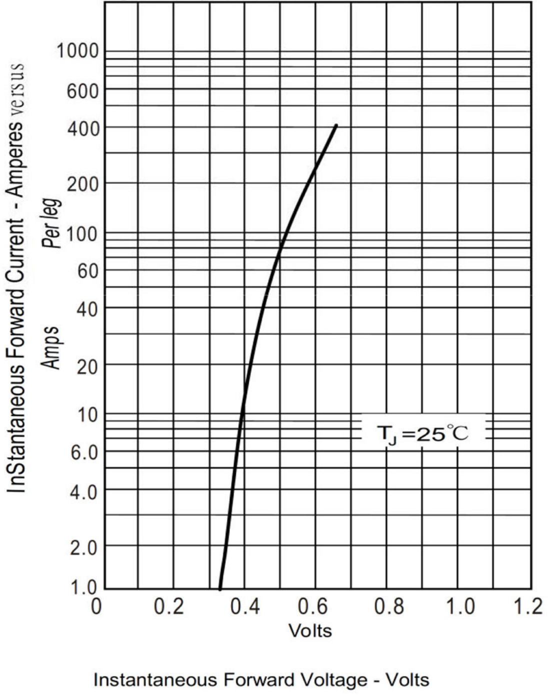


Figure .2- Forward Derating Curve

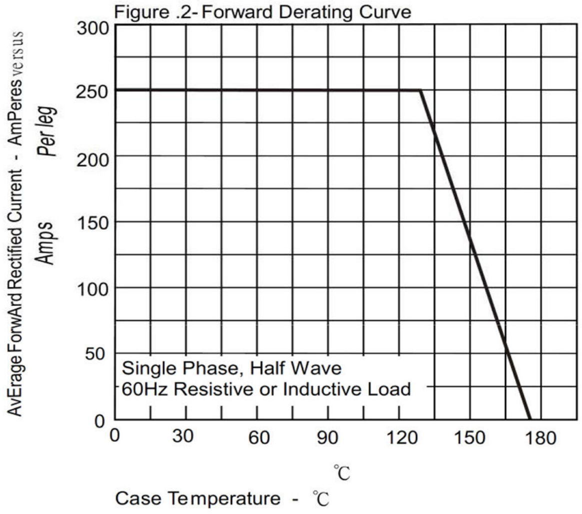


Figure .3-Peak Forward Surge Current

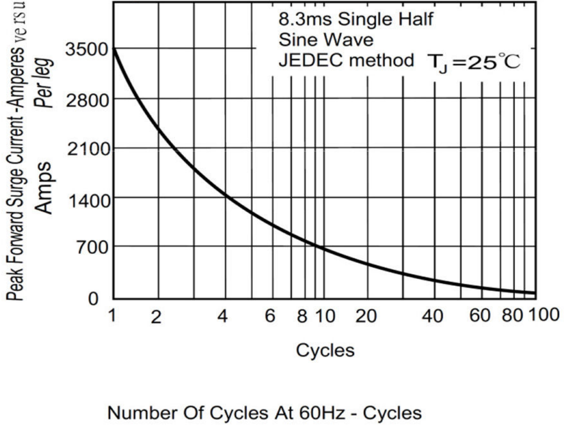


Figure .4- Typical Reverse Characteristics