

Silicon Power Schottky Diode

$V_{RRM} = 20\text{ V} - 45\text{ V}$

$I_F = 500\text{ A}$

Features

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

TO-244AB Package



Maximum ratings, at $T_j = 25\text{ °C}$, 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	$T_C \leq 130\text{ °C}$	500	500	500	500	500	A
Surge non-repetitive forward current, Half Sine Wave	$I_{F,SM}$	$T_C = 25\text{ °C}$, $t_p = 8.3\text{ ms}$	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 $T_j = 25\text{ °C}$, unless otherwise specified

Parameter	Symbol	Conditions	MBRF50020 (R)	MBRF50030 (R)	MBRF50035 (R)	MBRF50040 (R)	MBRF50045 (R)	Unit
Diode forward voltage	V_F	$I_F = 250\text{ A}$, $T_j = 25\text{ °C}$	0.65	0.65	0.65	0.65	0.65	V
Reverse current	I_R	$V_R = 20\text{ V}$, $T_j = 25\text{ °C}$	8	8	8	8	8	mA
		$V_R = 20\text{ V}$, $T_j = 125\text{ °C}$	200	200	200	200	200	

Thermal characteristics

Thermal resistance, junction - case	R_{thJC}		0.30	0.30	0.30	0.30	0.30	°C/W
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Figure .1- Typical Forward Characteristics

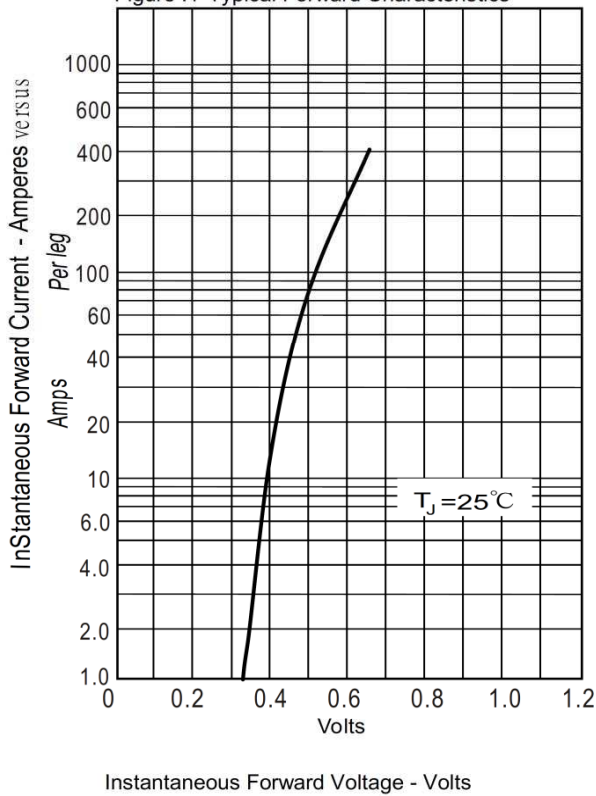
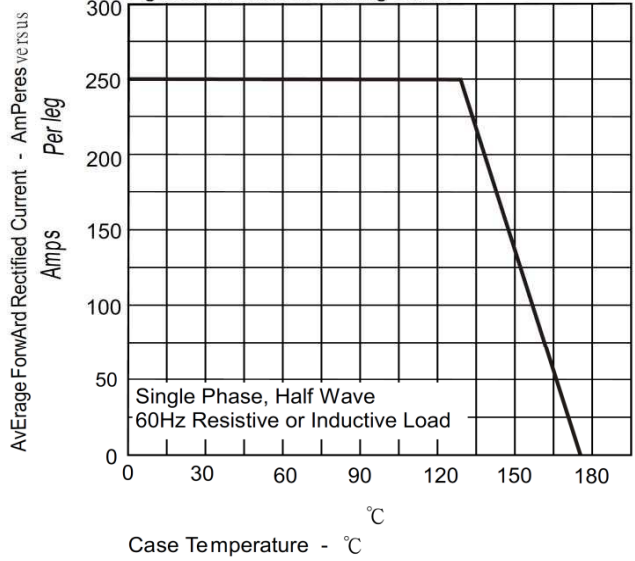


Figure .2- Forward Derating Curve



Instantaneous Forward Voltage - Volts

Figure .3- Peak Forward Surge Current

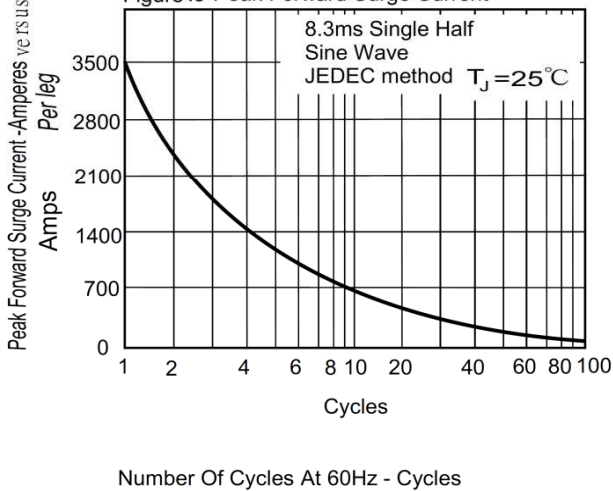
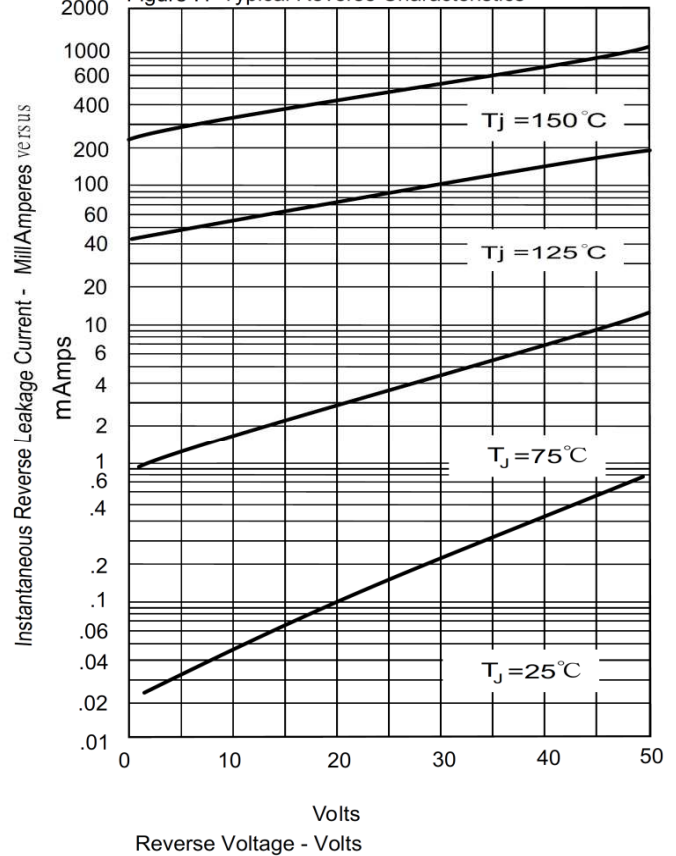
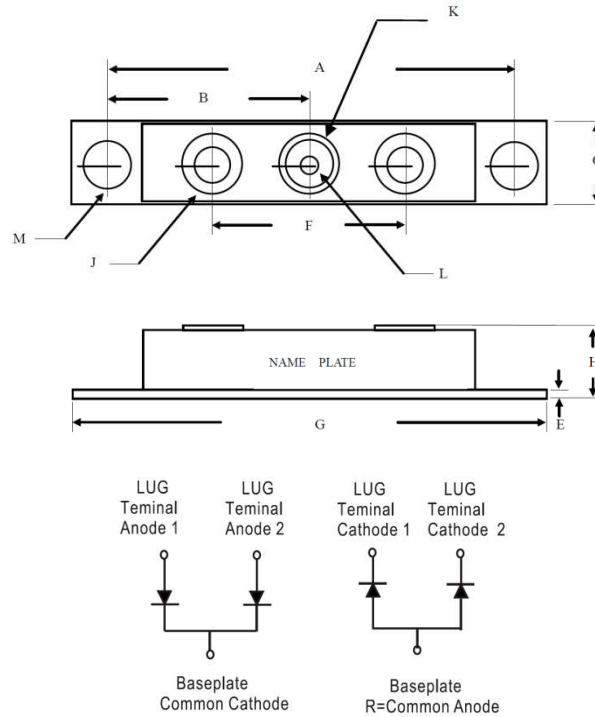


Figure .4- Typical Reverse Characteristics



Package dimensions and terminal configuration

Product is marked with part number and terminal configuration.



DIM	Inches		Millimeters	
	Min	Max	Min	Max
A	3.144	NOM	79.85	NOM
B	1.565	1.585	39.75	40.26
C	0.700	0.800	17.78	20.32
E	0.119	0.14	3.02	3.50
F	1.358	REF.	34.50	REF.
G	3.55	3.65	90.17	92.71
H	0.604	0.65	15.35	16.51
J	1/4-20 UNC FULL			
K	0.380	0.410	9.65	10.41
L	0.185	0.195	4.70	4.95
M	0.275	0.295	6.99	7.49