

Features

- High Current Capability, High Efficiency
- Guard Ring for Enhanced Ruggedness
- Lead Free Finish/RoHS Compliant (Note 1)("P" Suffix Designates Compliant. See Ordering Information)
- Halogen Free. "Green" Device (Note 2)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1

30 Amp Schottky Barrier Rectifier 100 Volts

Maximum Ratings @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	V_{RMS}	70	V
Average Rectified Forward Current @ $T_C=100^\circ\text{C}$	$I_{F(AV)}$	30	A
Non-Repetitive Peak Surge Current @ 8.3ms Half Sine Wave	I_{FSM}	250	A
Current Squared Time @ $1\text{ms} \leq t \leq 8.3\text{ms}$	I^2t	259	A^2s

DFN5060

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.031	0.047	0.80	1.20	
B	0.010		0.254		TYP.
C	0.193	0.222	4.90	5.64	
D	0.232	0.250	5.90	6.35	
E	0.148	0.167	3.75	4.25	
F	0.126	0.154	3.20	3.92	
G	0.189	0.213	4.80	5.40	
H	0.222	0.239	5.65	6.06	
K	0.045	0.059	1.15	1.50	
J	0.012	0.020	0.30	0.50	
L	0.046	0.054	1.17	1.37	
M	0.012	0.028	0.30	0.71	
N	0.016	0.028	0.40	0.71	

Internal Structure

Pin	Description	Simplified outline	Graphic symbol
5~8	Cathode		
1~4	Anode		

Note:

1. High temperature solder exemption applied, see EU directive annex 7a.
2. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
T_J	Operating Junction Temperature Range		-55		150	°C
T_{stg}	Storage Temperature Range		-55		150	°C
$R_{th(J-L)}$	Thermal Resistance from Junction to Case	Note 1		2		°C /W
$R_{th(J-A)}$	Thermal Resistance from Junction to Ambient	Note 1		42		°C /W

Note:

1. Mounted on 1in² FR-4 board with 2oz. copper bond pad.

Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F=30A; T_J=25^{\circ}C$ $I_F=30A; T_J=125^{\circ}C$		0.81 0.75	0.85 0.80	V
Reverse Current	I_R	at Rated $V_R; T_J=25^{\circ}C$ at Rated $V_R; T_J=125^{\circ}C$		0.013	0.1 20	mA
Junction Capacitance	C_J	$V_R=4V; f=1MHz; T_J=25^{\circ}C$		1.35		nF

Curve Characteristics

Fig. 1 - Forward Current Derating Curve

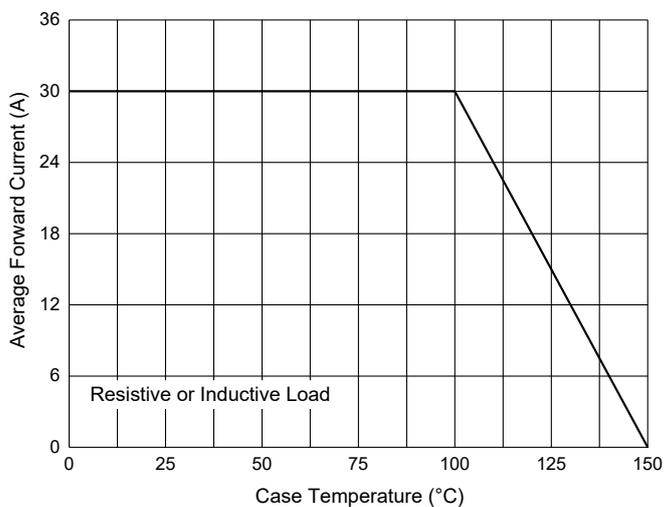


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

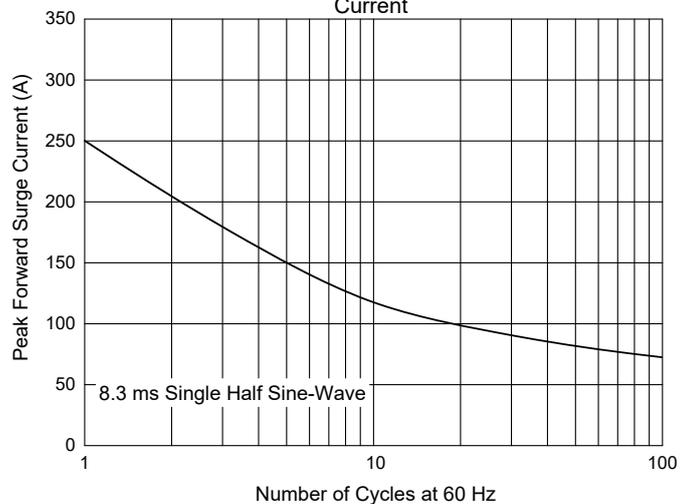


Fig. 3 - Typical Forward Characteristics

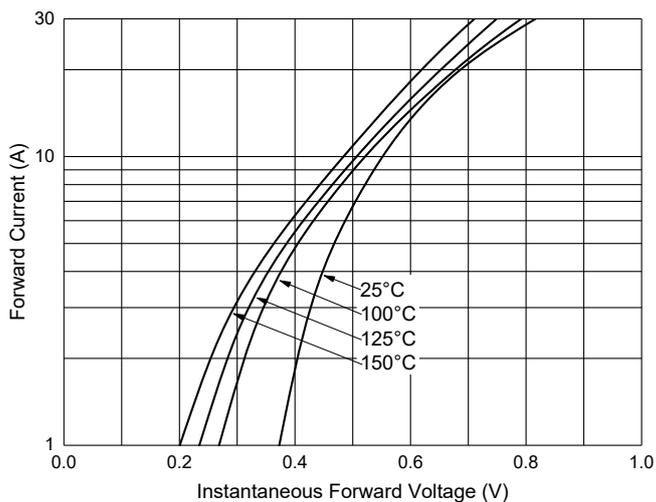


Fig. 4 - Typical Reverse Leakage Characteristics

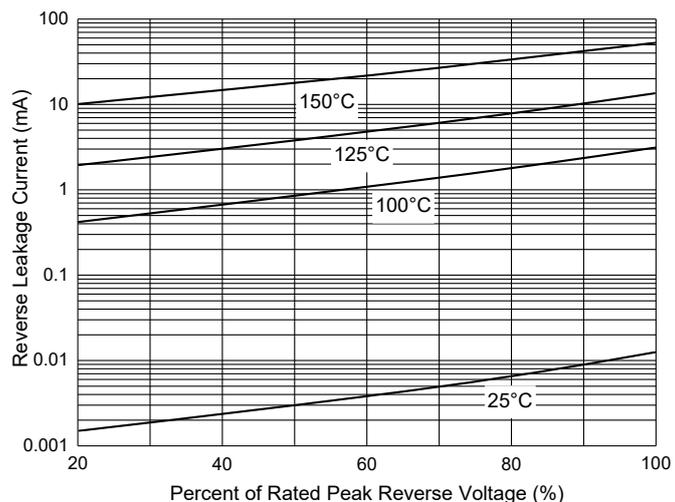
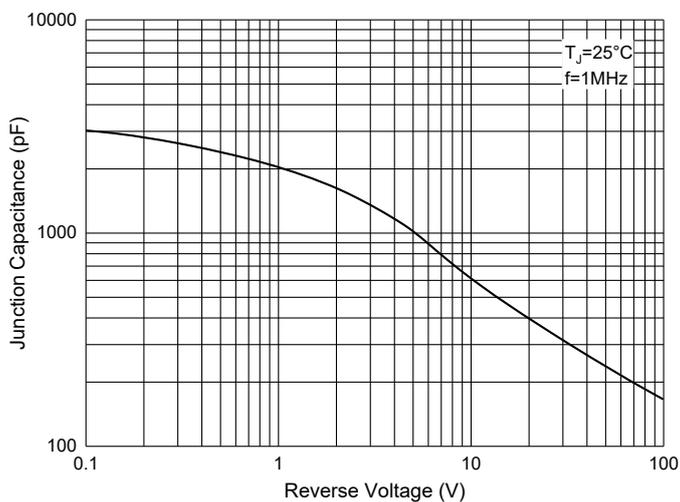


Fig. 5 - Typical Capacitance Characteristics



Ordering Information

Device	Packing
MBRL30P100-TP	Tape&Reel:5Kpcs/Reel

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