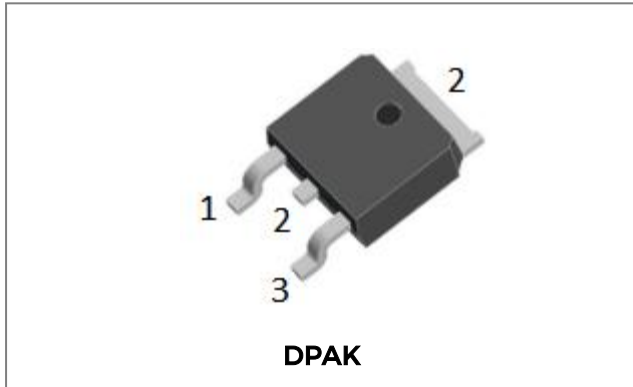


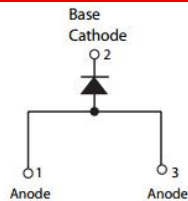
## MBRD1045 SCHOTTKY RECTIFIER



### Features

- 150°C T<sub>J</sub> operation
- Center tap configuration
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- "-A" is an AEC-Q101 qualified device
- Terminals finish: Tin Lead-free plated
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Applications

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Battery charging

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	45	V
Working Peak Reverse Voltage	V <sub>RWM</sub>			
DC Blocking Voltage	V <sub>R</sub>			
Average Rectified Forward Current	I <sub>F(AV)</sub>	50% duty cycle @T <sub>c</sub> =105°C, rectangular wave form	10	A
Peak One Cycle Non-Repetitive Surge Current	I <sub>FSM</sub>	8.3ms, Half Sine pulse	150	A

### Electrical Characteristics:

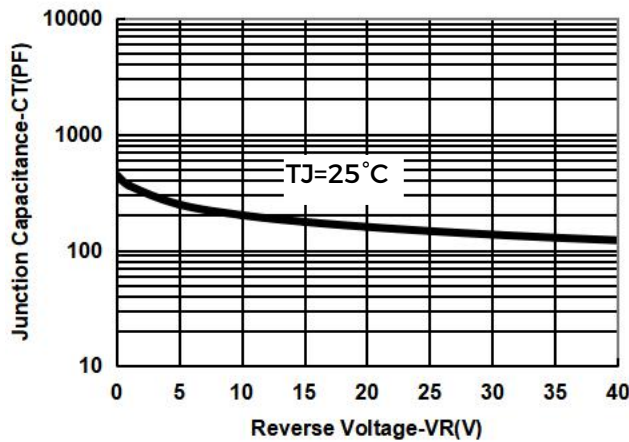
Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V <sub>F1</sub>	@10A, Pulse, T <sub>J</sub> = 25 °C	0.58	0.7	V
	V <sub>F2</sub>	@10A, Pulse, T <sub>J</sub> = 125 °C	0.55	0.6	V
Reverse Current *	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C	0.3	1.0	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C	9	15	mA
Junction Capacitance	C <sub>T</sub>	@V <sub>R</sub> = 5.0V, T <sub>C</sub> = 25 °C f <sub>sig</sub> = 1MHz	280	400	pF

\* Pulse width < 300 μs, duty cycle < 2%

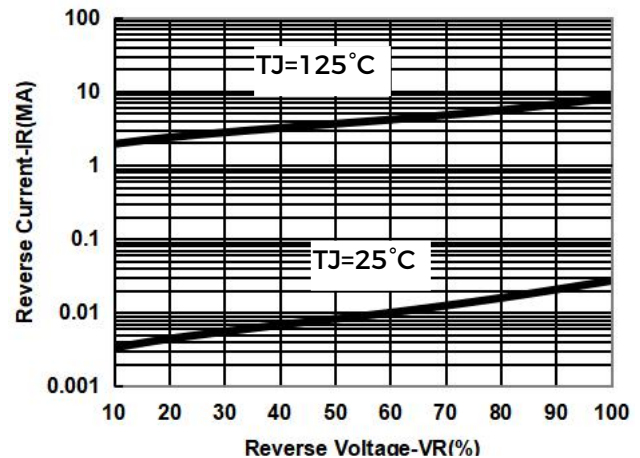
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	$T_{stg}$	-	-55 to +150	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	-	5	$^{\circ}\text{C/W}$
Approximate Weight	wt	-	0.39	g
Case Style	DPAK			

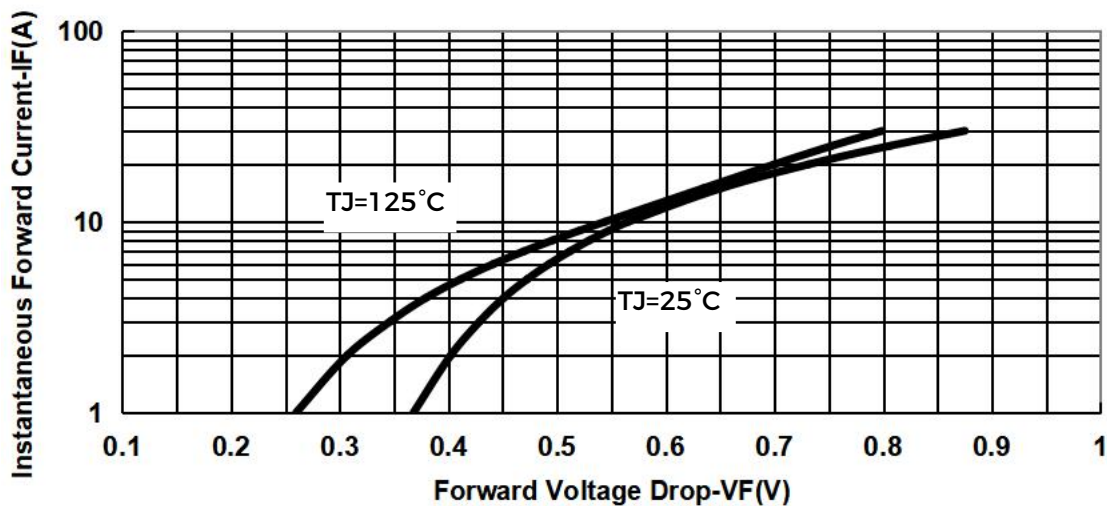
**Ratings and Characteristics Curves**



**Fig.1-Typical Junction Capacitance**

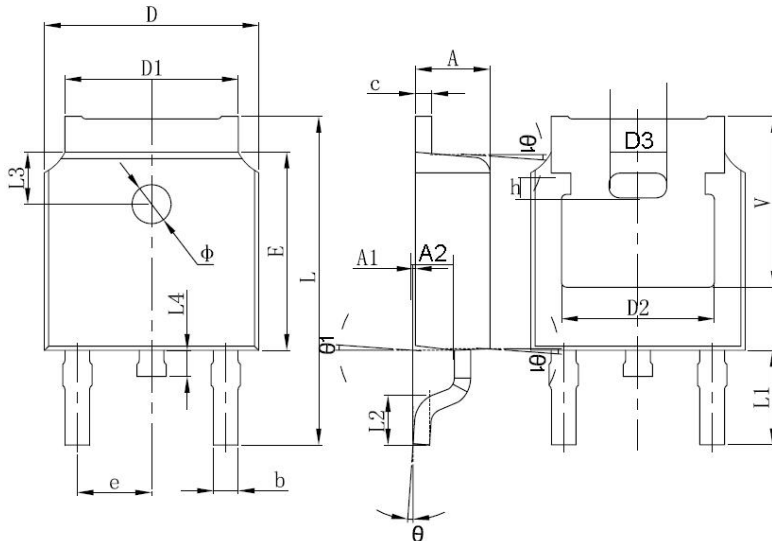


**Fig.2-Typical Reverse Characteristics**



**Fig.3-Typical Instantaneous Forward Voltage Characteristics**

**Mechanical Dimensions DPAK**



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	2.18	-	2.39
A1	-	-	0.13
b	0.64	-	0.89
c	0.46	-	0.89
D	6.35	-	6.73
D1	4.95	-	5.46
D2	4.32	-	-
E	5.97	6.1	6.22
e	2.29BSC		
L	9.4	-	10.41
L1	2.90 REF.		
L2	1.4	1.52	1.78
L3	1.60 REF.		
L4	-	-	1.02
Φ	1.1	-	1.3
θ	0°	-	10°
V	5.21	-	-

The outline from different package houses may have slight differences. So the outline above is just schematic. The dimensions are controlled per specifications.

**Ordering Information**

Device	Package	Shipping
MBRD1045	DPAK (Pb-Free)	2500pcs / reel
MBRD1045TR	DPAK (Pb-Free)	2500pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**

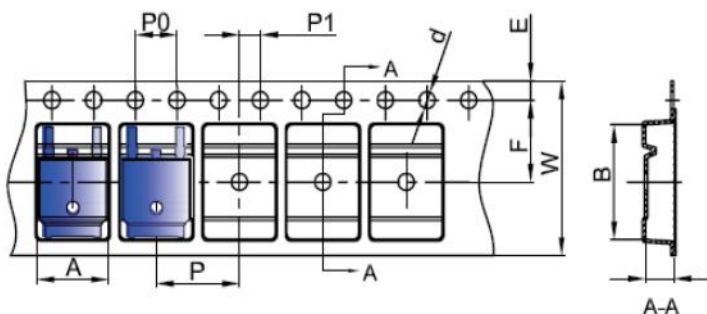


Where XXXXX is YYWWL

MBRD1045 = Part Name  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**Carrier Tape & Reel Specification DPAK**



SYMBOL	Millimeters	
	Min.	Max.
A	6.80	7.00
B	10.40	10.60
C	2.60	2.80
d	Φ1.45	Φ1.65
E	1.65	1.85
F	7.40	7.60
P0	3.90	4.10
P	7.90	8.10
P1	1.90	2.10
W	15.90	16.30



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