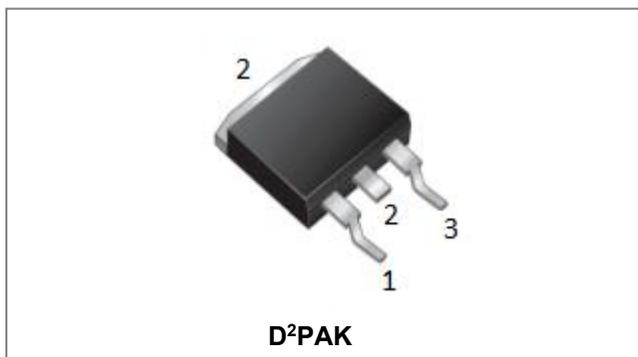


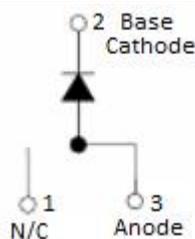
## MBRB1545 SCHOTTKY RECTIFIER



### Features

- 150 °C T<sub>J</sub> operation
- 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
- 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
- Center tap configuration

### Maximum Ratings:

| Characteristics  | Symbol   | Condition   | Max. | Units |
|--|--|---|------|-------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | -   | 45   | V     |
| Average Rectified Forward Current  | I <sub>F(AV)</sub>                                     | 50% duty cycle @T <sub>c</sub> =123°C,<br>rectangular wave form | 15   | A     |
| Peak One Cycle Non-Repetitive Surge Current  | I <sub>FSM</sub>                                       | 8.3ms, Half Sine pulse  | 240  | A     |

### Electrical Characteristics:

| Characteristics                  | Symbol          | Condition   | Typ. | Max.   | Units |
|----------------------------------|-----------------|---|------|--------|-------|
| Forward Voltage Drop*            | V <sub>F1</sub> | @ 15A, Pulse, T <sub>J</sub> = 25 °C                                    | 0.60 | 0.70   | V     |
|                                  | V <sub>F2</sub> | @ 15A, Pulse, T <sub>J</sub> = 125 °C                                   | 0.55 | 0.57   | V     |
| Reverse Current at DC condition* | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C         | 0.03 | 1.0    | mA    |
|                                  | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C        | 15   | 40     | mA    |
| Junction Capacitance             | C <sub>T</sub>  | @V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C<br>f <sub>SIG</sub> = 1MHz | 815  | 900    | pF    |
| Typical Series Inductance        | L <sub>S</sub>  | Measured lead to lead 5 mm from<br>package body                         | 8.0  | -      | nH    |
| Voltage Rate of Change           | dv/dt           | -   | -    | 10,000 | V/μs  |

\* 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                         | $T_{\text{stg}}$      | -            | -55 to +150   | $^{\circ}\text{C}$          |
| Typical Thermal Resistance Junction to Case | $R_{\theta\text{JC}}$ | DC operation | 1.6           | $^{\circ}\text{C}/\text{W}$ |
| Approximate Weight                          | wt                    | -            | 1.85          | g                           |
| Case Style                                  | D <sup>2</sup> PAK    |              |               |                             |

**Ratings and Characteristics Curves**

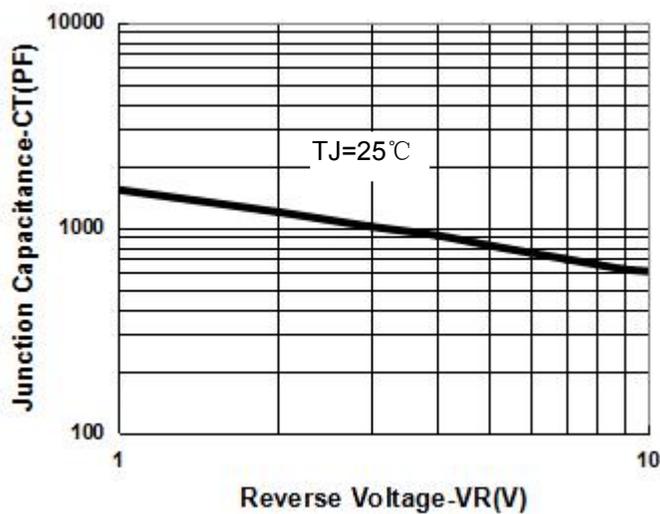


Fig.1-Typical Junction Capacitance

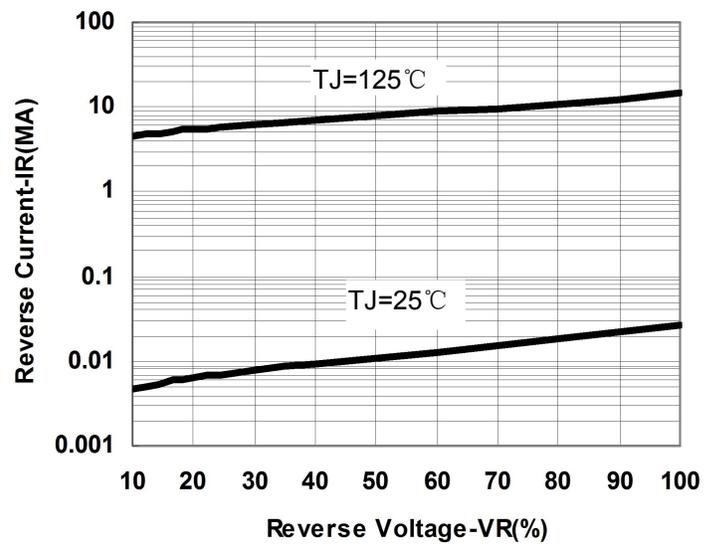


Fig.2-Typical Reverse Characteristics

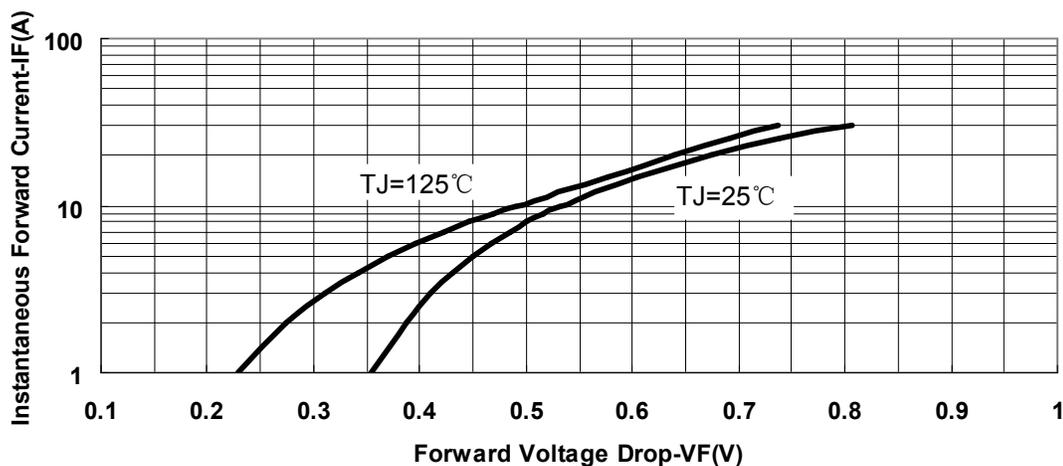
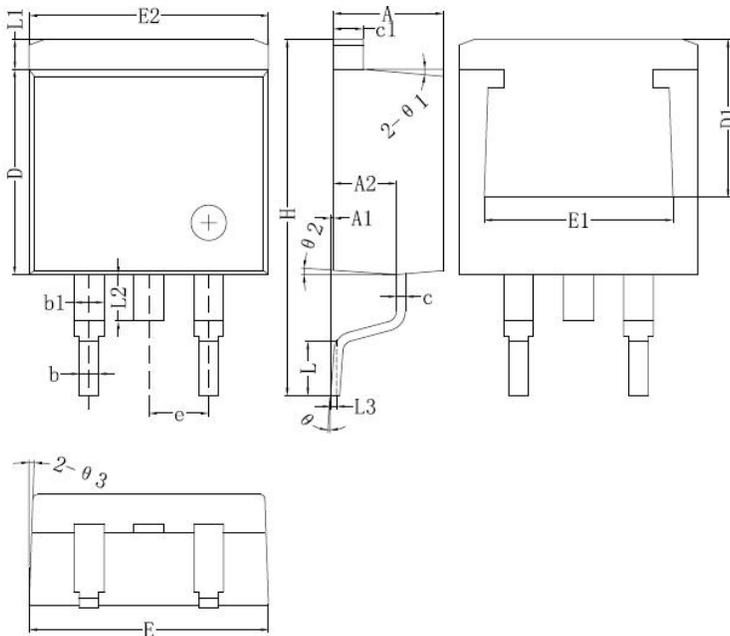


Fig.3-Typical Instantaneous Forward Voltage Characteristics

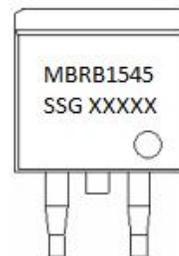
**Mechanical Dimensions D<sup>2</sup>PAK**


| Symbol | Dimensions in millimeters |         |       |
|--------|---------------------------|---------|-------|
|        | Min.                      | Typical | Max.  |
| A      | 4.47                      | 4.70    | 4.85  |
| A1     | 0                         | 0.10    | 0.25  |
| A2     | 2.59                      | 2.69    | 2.89  |
| b      | 0.71                      | 0.81    | 0.96  |
| b1     | 1.17                      | 1.27    | 1.37  |
| c      | 0.31                      | 0.38    | 0.61  |
| c1     | 1.17                      | 1.27    | 1.37  |
| D      | 8.50                      | 8.70    | 8.90  |
| D1     | 6.40                      |         |       |
| E      | 10.01                     | 10.16   | 10.31 |
| E1     | 7.6                       |         |       |
| E2     | 9.98                      | 10.08   | 10.31 |
| e      |                           | 2.54    |       |
| H      | 14.6                      | 15.1    | 15.6  |
| L      | 2.00                      | 2.30    | 2.74  |
| L1     | 1.12                      | 1.27    | 1.42  |
| L2     | 1.30                      |         | 2.20  |
| L3     |                           | 0.25BSC |       |
| e      | 0                         | -       | 8°    |
| e1     |                           | 5°      |       |
| e2     |                           | 4°      |       |
| e3     |                           | 4°      |       |

**Ordering Information**

| Device   | Package            | Shipping      |
|----------|--------------------|---------------|
| MBRB1545 | D <sup>2</sup> PAK | 800pcs / reel |

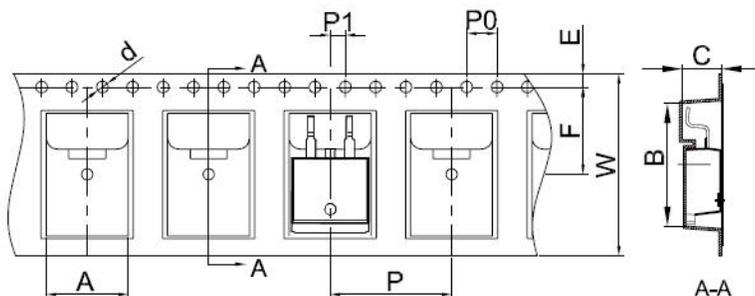
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**


Where XXXXX is YYWWL

MBR = Device Type  
 B = Package type  
 15 = Forward Current (15A)  
 45 = Reverse Voltage(45V)  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

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

**Carrier Tape Specification D<sup>2</sup>PAK**


| SYMBOL | Millimeters |       |
|--------|-------------|-------|
|        | Min.        | Max.  |
| A      | 10.70       | 10.90 |
| B      | 16.03       | 16.23 |
| C      | 5.11        | 5.31  |
| d      | 1.45        | 1.65  |
| E      | 1.65        | 1.85  |
| F      | 11.40       | 11.60 |
| P0     | 3.90        | 4.10  |
| P      | 15.90       | 16.10 |
| P1     | 1.90        | 2.10  |
| W      | 23.90       | 24.30 |

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