

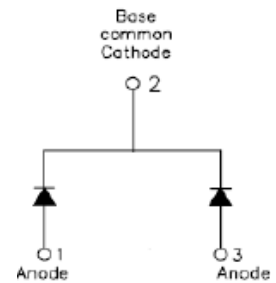
## MBRD1545CTL SCHOTTKY RECTIFIER

### Applications:

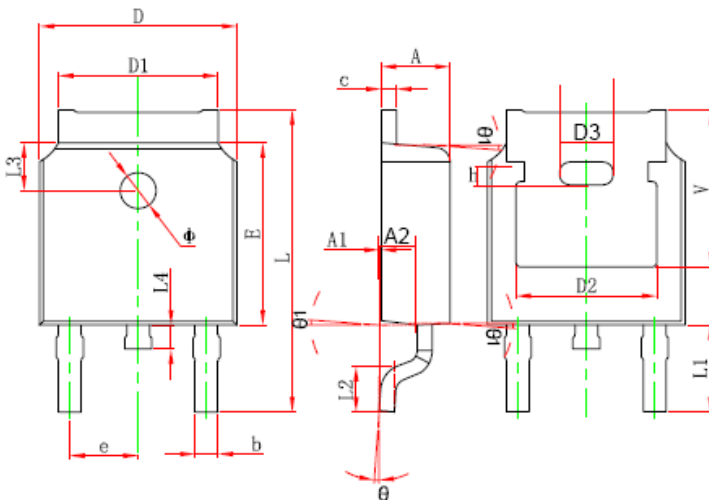
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

- 125 °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
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request



### Mechanical Dimensions: In Inches / mm and Marking



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min.                      | Max.   | Min.                 | Max.  |
| A      | 2.200                     | 2.380  | 0.087                | 0.094 |
| A1     | 0.000                     | 0.100  | 0.000                | 0.004 |
| b      | 0.710                     | 0.810  | 0.028                | 0.032 |
| c      | 0.460                     | 0.560  | 0.018                | 0.022 |
| D      | 6.500                     | 6.700  | 0.256                | 0.264 |
| D1     | 5.130                     | 5.460  | 0.202                | 0.215 |
| D2     | 4.830 REF.                |        | 0.190 REF.           |       |
| E      | 6.000                     | 6.200  | 0.236                | 0.244 |
| e      | 2.186                     | 2.386  | 0.086                | 0.094 |
| L      | 9.800                     | 10.400 | 0.386                | 0.409 |
| L1     | 2.900 REF.                |        | 0.114 REF.           |       |
| L2     | 1.400                     | 1.700  | 0.055                | 0.067 |
| L3     | 1.600 REF.                |        | 0.063 REF.           |       |
| L4     | 0.600                     | 1.000  | 0.024                | 0.039 |
| Φ      | 1.100                     | 1.300  | 0.043                | 0.051 |
| θ      | 0°                        | 8°     | 0°                   | 8°    |
| A2     | 0.910                     | 1.110  | 0.036                | 0.044 |
| V      | 5.350 REF.                |        | 0.211 REF.           |       |
| D3     | 1.778 REF.                |        | 0.070 REF.           |       |
| h      | 0.762 REF.                |        | 0.030 REF.           |       |
| θ1     | 7°                        |        | 7°                   |       |

### DPAK

**Marking Diagram:**



Where XXXXX is YYWWL

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

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

**Ordering Information:**

| Device      | Package           | Shipping       |
|-------------|-------------------|----------------|
| MBRD1545CTL | DPAK<br>(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.

**Maximum Ratings:**

| Characteristics                                                   | Symbol      | Condition                                                           | Max. | Units |
|-------------------------------------------------------------------|-------------|---------------------------------------------------------------------|------|-------|
| Peak Inverse Voltage                                              | $V_{RWM}$   | -                                                                   | 45   | V     |
| Max. Average Forward<br>(Per device)                              | $I_{F(AV)}$ | 50% duty cycle @ $T_C=105^\circ\text{C}$ ,<br>rectangular wave form | 15   | A     |
| Max. Peak One Cycle Non-<br>Repetitive Surge Current<br>(per leg) | $I_{FSM}$   | 8.3 ms, half Sine pulse                                             | 140  | A     |

**Electrical Characteristics:**

| Characteristics                                | Symbol   | Condition                                                                         | Max.   | Units            |
|------------------------------------------------|----------|-----------------------------------------------------------------------------------|--------|------------------|
| Max. Forward Voltage Drop (per leg)*           | $V_{F1}$ | @ 7.5A, Pulse, $T_J = 25\text{ }^\circ\text{C}$                                   | 0.6    | V                |
| Max. Reverse Current at DC condition (per leg) | $I_{R1}$ | @ $V_R = \text{rated } V_R$<br>$T_J = 25\text{ }^\circ\text{C}$                   | 1.0    | mA               |
| Max. Reverse Current (per leg)*                | $I_{R2}$ | @ $V_R = \text{rated } V_R$<br>$T_J = 125\text{ }^\circ\text{C}$                  | 40     | mA               |
| Max. Junction Capacitance (per leg)            | $C_T$    | @ $V_R = 5\text{V}$ , $T_C = 25\text{ }^\circ\text{C}$<br>$f_{SIG} = 1\text{MHz}$ | 400    | pF               |
| Typical Series Inductance (per leg)            | $L_S$    | Measured lead to lead 5 mm from package body                                      | 8.0    | nH               |
| Max. Voltage Rate of Change                    | dv/dt    | -                                                                                 | 10,000 | V/ $\mu\text{s}$ |

\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

**Thermal-Mechanical Specifications:**

| Characteristics                                       | Symbol          | Condition    | Specification | Units              |
|-------------------------------------------------------|-----------------|--------------|---------------|--------------------|
| Max. Junction Temperature                             | $T_J$           | -            | -55 to +125   | $^\circ\text{C}$   |
| Max. Storage Temperature                              | $T_{stg}$       | -            | -55 to +150   | $^\circ\text{C}$   |
| Maximum Thermal Resistance Junction to Case (per leg) | $R_{\theta JC}$ | DC operation | 3.5           | $^\circ\text{C/W}$ |
| Approximate Weight                                    | wt              | -            | 0.39          | g                  |
| Case Style                                            | DPAK            |              |               |                    |

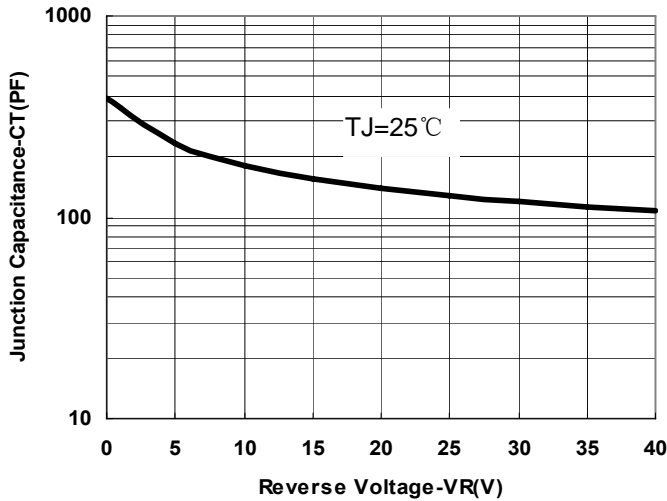


Fig.1-Typical Junction Capacitance

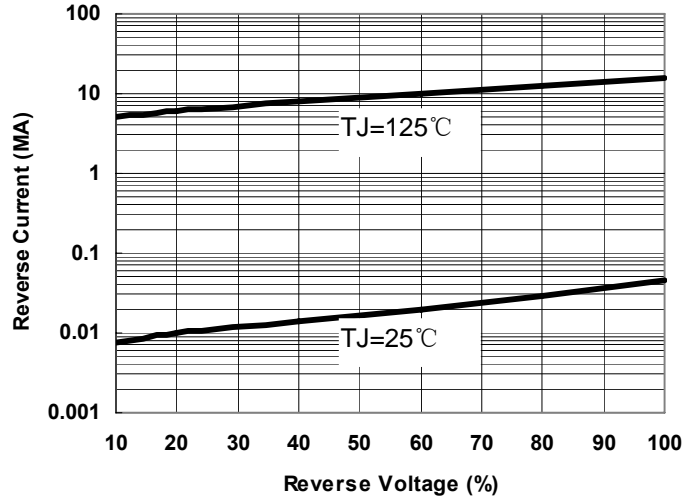


Fig.2-Typical Reverse Characteristics

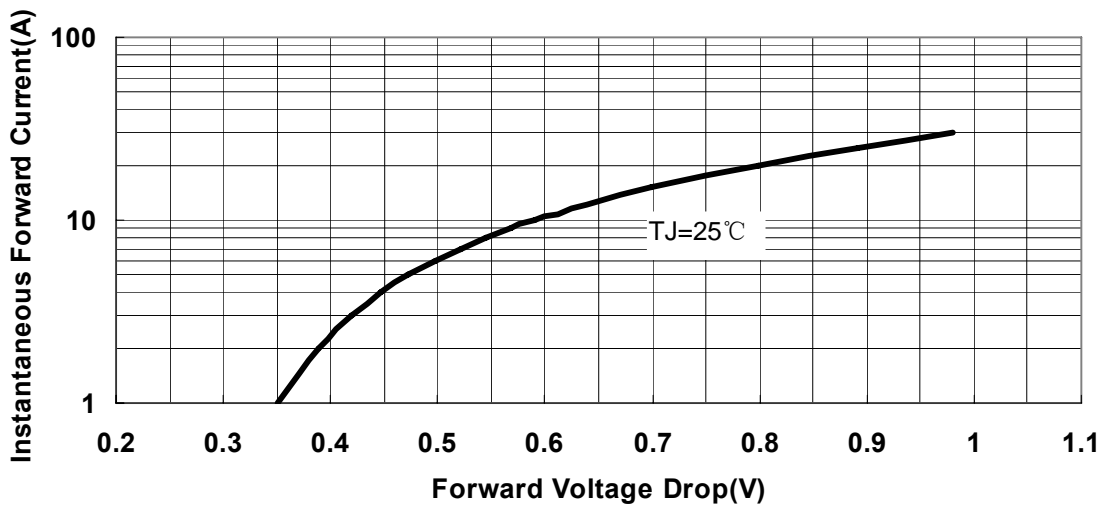


Fig.3-Typical Instantaneous Forward Voltage Characteristics

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