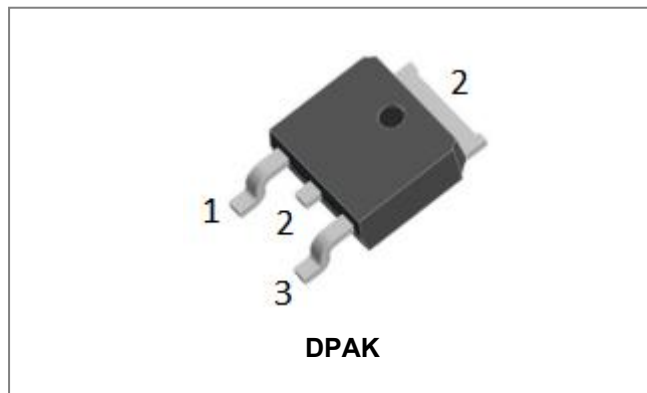


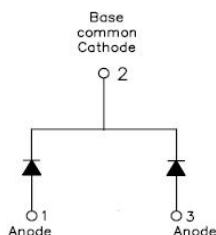
## MBRD10150CT SCHOTTKY RECTIFIER



### 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
- 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

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

### Maximum Ratings(T<sub>C</sub> =25°C unless otherwise specified)

| Characteristics                                      | Symbol             | Condition                                 | Max.                         | Units |
|--|--------------------|---|------------------------------|-------|
| Peak Repetitive Reverse Voltage                      | V <sub>RRM</sub>   | -   | 150                          | 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> | T <sub>C</sub> = 143°C, I <sub>n</sub> DC | 5(peg leg)<br>10(peg device) | A     |
| Peak One Cycle Non-Repetitive Surge Current(peg leg) | I <sub>FSM</sub>   | 8.3 ms, half Sine pulse                   | 100                          | A     |

### Electrical Characteristics:

| Characteristics                  | Symbol          | Condition   | Typ. | Max.   | Units |
|----------------------------------|-----------------|---|------|--------|-------|
| Forward Voltage Drop (per leg) * | V <sub>F1</sub> | @ 5A, Pulse, T <sub>J</sub> = 25 °C                                     | 0.83 | 0.90   | V     |
|                                  | V <sub>F2</sub> | @ 5A, Pulse, T <sub>J</sub> = 125 °C                                    | 0.67 | 0.80   | V     |
|                                  | V <sub>F3</sub> | @ 5A, Pulse, T <sub>J</sub> = 150 °C                                    | 0.65 | 0.75   | V     |
| Reverse Current (per leg) *      | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C         | 0.06 | 15     | uA    |
|                                  | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C        | 0.1  | 7.0    | mA    |
|                                  | I <sub>R3</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 150 °C        | 0.4  | 30     | mA    |
| Junction Capacitance (per leg)   | C <sub>T</sub>  | @V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C<br>f <sub>SIG</sub> = 1MHz | 107  | 200    | pF    |
| Voltage Rate of Change           | dv/dt           | -   | -    | 10,000 | V/μs  |

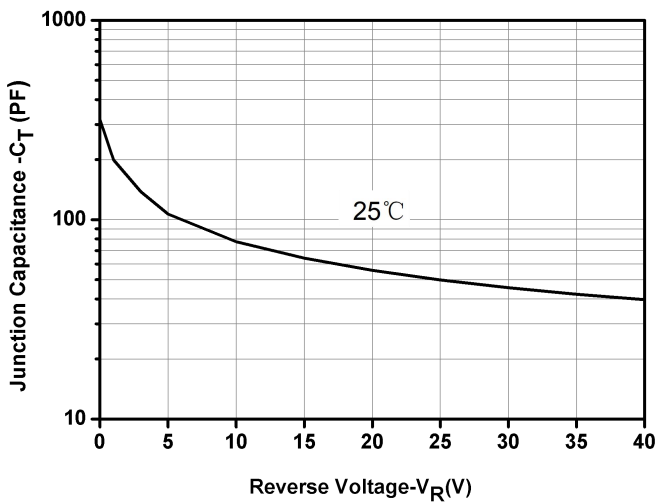
\* Pulse width < 300 μs, duty cycle < 2%

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

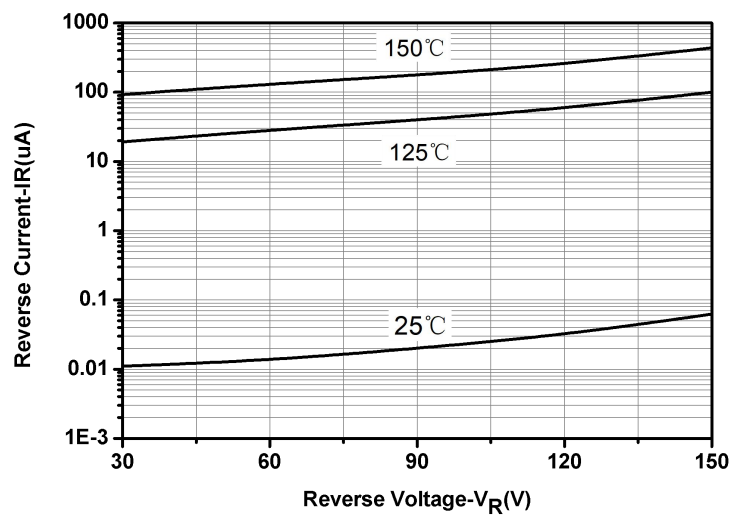
**Thermal-Mechanical Specifications:**

| Characteristics                             | Symbol          | Condition | Specification | Units |
|---|-----------------|-----------|---------------|-------|
| Junction Temperature                        | $T_J$           | -         | -55 to + 150  | °C    |
| Storage Temperature                         | $T_{stg}$       | -         | -55 to + 150  | °C    |
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$ | -         | 1.5           | °C/W  |
| Approximate Weight                          | wt              | -         | 0.39          | g     |
| Case Style                                  | DPAK            |           |               |       |

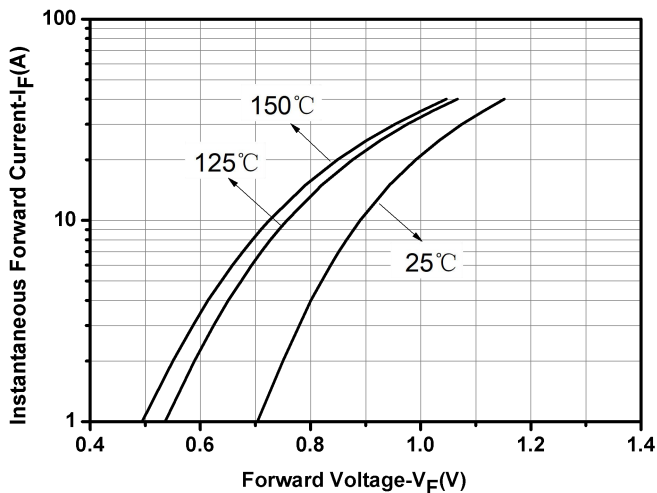
**Ratings and Characteristics Curves**



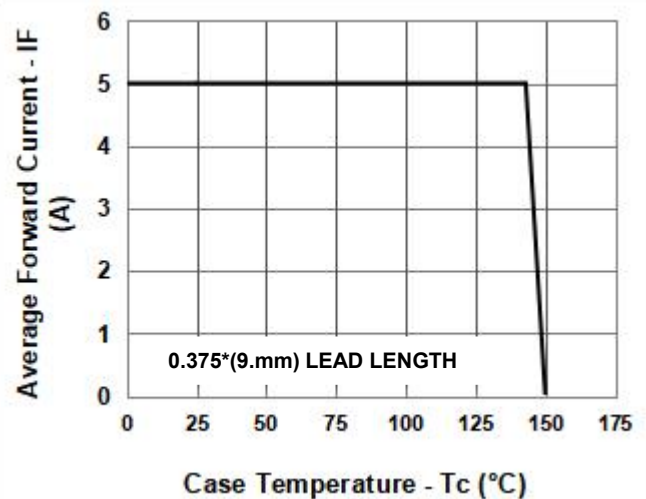
**Fig.1-Typical Junction Capacitance**



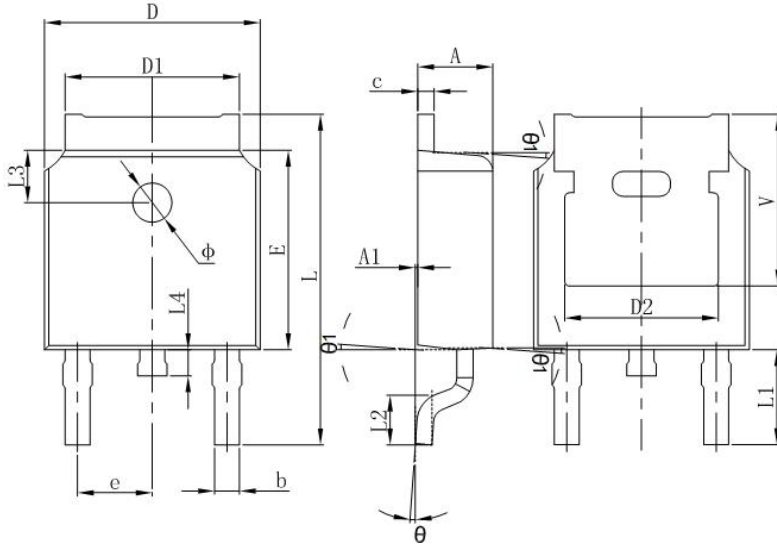
**Fig.2-Typical Reverse Characteristics**



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



**Fig.4-Forward Current Derating Curve**

**Mechanical Dimensions DPAK**


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

| 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                      | -       | -     |

**Ordering Information**

| Device        | Package           | Shipping       |
|---------------|-------------------|----------------|
| MBRD10150CT   | DPAK<br>(Pb-Free) | 2500pcs / reel |
| MBRD10150CTTR | DPAK<br>(Pb-Free) | 2500pcs / reel |

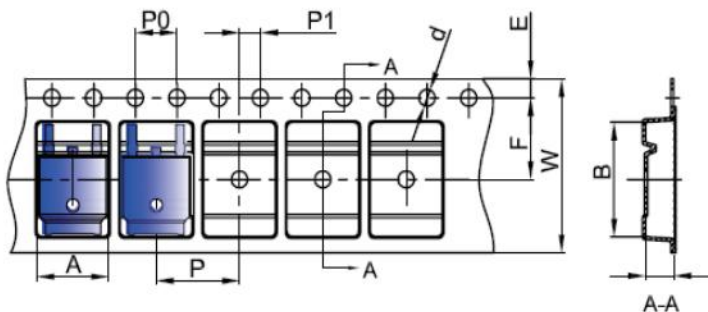
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel Packaging specification.

**Marking Diagram**


Where XXXXX is YYWWL

MBR = Device Type  
 D = Package type  
 10 = Forward Current (10A)  
 150 = Reverse Voltage (150V)  
 CT = Configuration  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

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

**Carrier Tape 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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