

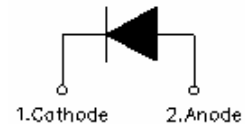
## MBR20150 SCHOTTKY RECTIFIER

### Applications:

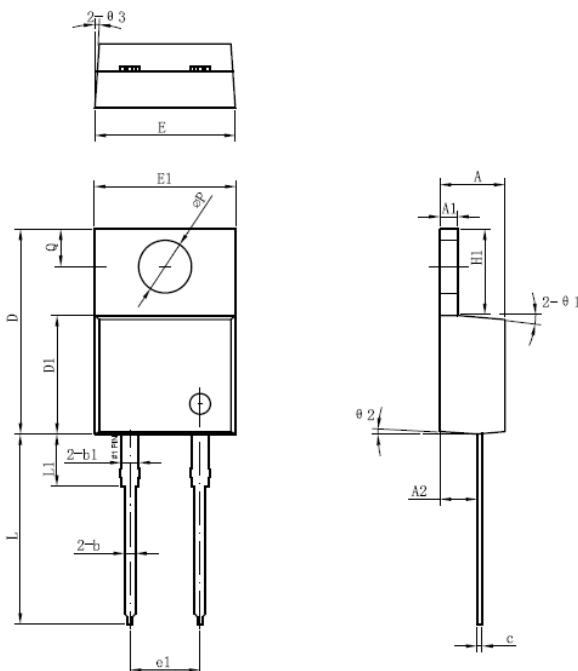
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### 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
- 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

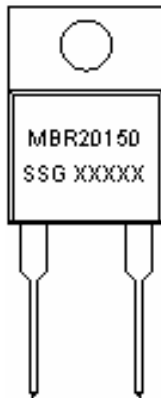


| Symbol | Dimensions in millimeters |         |       |
|--------|---------------------------|---------|-------|
|        | Min.                      | Typical | Max.  |
| A      | 4.55                      | 4.70    | 4.85  |
| A1     | 1.17                      | 1.27    | 1.37  |
| A2     | 2.59                      | 2.69    | 2.89  |
| b      | 0.71                      | 0.81    | 0.96  |
| b1     |                           | 1.27    |       |
| c      | 0.36                      | 0.38    | 0.61  |
| D      | 14.64                     | 14.94   | 15.24 |
| D1     | 8.55                      | 8.07    | 8.85  |
| E      | 10.01                     | 10.16   | 10.31 |
| E1     | 9.98                      | 10.18   | 10.38 |
| e1     |                           | 5.08    |       |
| H1     | 6.04                      | 6.24    | 6.44  |
| L      | 13.00                     | 13.86   | 14.08 |
| L1     |                           | 3.80    |       |
| ΦP     | 3.74                      | 3.84    | 4.04  |
| Q      | 2.54                      | 2.74    | 2.94  |
| Q1     |                           | 5°      |       |
| Q2     |                           | 4°      |       |
| Q3     |                           | 4°      |       |

### TO-220AC



**Marking Diagram:**



Where XXXXX is YYWWL

MBR = Device Type  
B = Package type  
20 = Forward Current (20A)  
150 = Reverse Voltage (150V)  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

**Ordering Information:**

| Device   | Package               | Shipping     |
|----------|-----------------------|--------------|
| MBR20150 | TO-220AC<br>(Pb-Free) | 50pcs / tube |

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                             | $V_{RWM}$   | -   | 150  | V     |
| Max. Average Forward                             | $I_{F(AV)}$ | 50% duty cycle @ $T_C=110^\circ\text{C}$ ,<br>rectangular wave form | 20   | A     |
| Max. Peak One Cycle Non-Repetitive Surge Current | $I_{FSM}$   | 8.3 ms, half Sine pulse   | 250  | A     |



**Electrical Characteristics:**

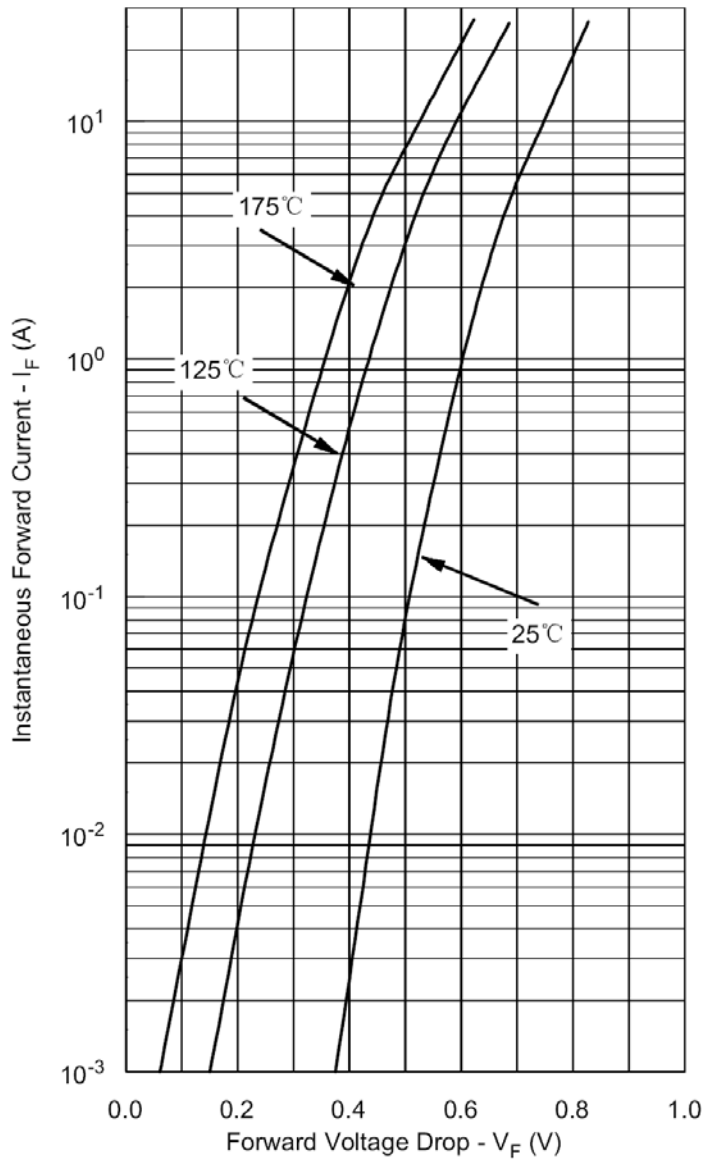
| Characteristics                      | Symbol   | Condition   | Max.   | Units            |
|--------------------------------------|----------|---|--------|------------------|
| Max. Forward Voltage Drop*           | $V_{F1}$ | @ 20A, Pulse, $T_J = 25\text{ }^\circ\text{C}$                                      | 0.95   | V                |
|                                      | $V_{F2}$ | @ 20 A, Pulse, $T_J = 125\text{ }^\circ\text{C}$                                    | 0.92   | V                |
| Max. Reverse Current at DC condition | $I_{R1}$ | @ $V_R = \text{rated } V_R$<br>$T_J = 25\text{ }^\circ\text{C}$                     | 1.0    | mA               |
| Max. Reverse Current *               | $I_{R2}$ | @ $V_R = \text{rated } V_R$<br>$T_J = 125\text{ }^\circ\text{C}$                    | 15.0   | mA               |
| Non-Repetitive Avalanche Energy      | $E_{AS}$ | $T_J = 25\text{ }^\circ\text{C}$ , $I_{AS} = 2\text{ A}$ ,<br>$L = 1\text{ mH}$     | 2      | mJ               |
| Max. Junction Capacitance            | $C_T$    | @ $V_R = 5\text{ V}$ , $T_C = 25\text{ }^\circ\text{C}$<br>$f_{SIG} = 1\text{ MHz}$ | 900    | 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%

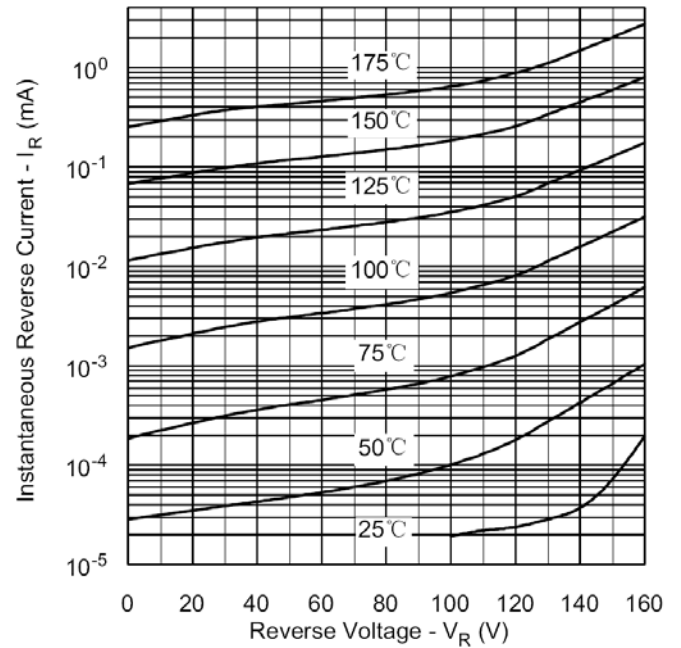
**Thermal-Mechanical Specifications:**

| Characteristics                                       | Symbol          | Condition    | Specification | Units              |
|---|-----------------|--------------|---------------|--------------------|
| Max. Junction Temperature                             | $T_J$           | -            | -55 to +150   | $^\circ\text{C}$   |
| Max. Storage Temperature                              | $T_{stg}$       | -            | -55 to +150   | $^\circ\text{C}$   |
| Maximum Thermal Resistance Junction to Case (per leg) | $R_{\theta JC}$ | DC operation | 3.0           | $^\circ\text{C/W}$ |
| Approximate Weight                                    | wt              | -            | 1.6           | g                  |
| Case Style  | TO-220AC        |              |               |                    |

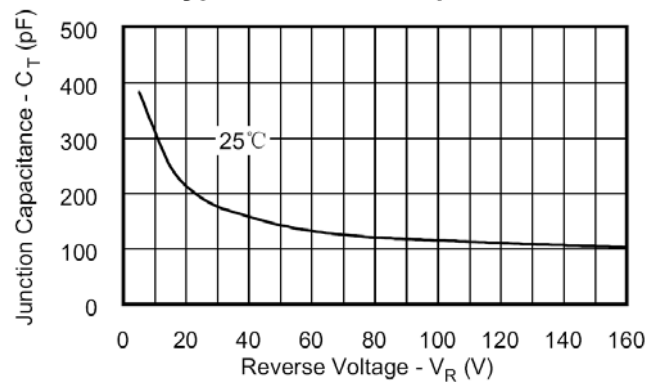
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**





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