



Technical Data  
Data Sheet N0082, Rev. A

*Green Products*

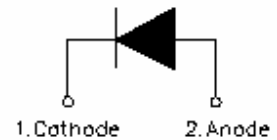
## MBRF20200 SCHOTTKY RECTIFIER

### Applications:

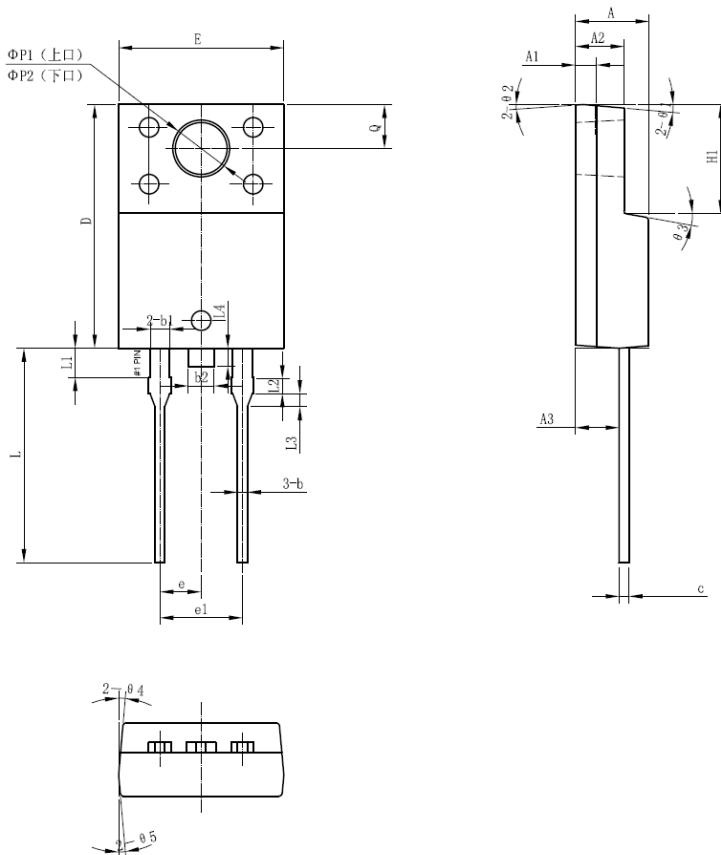
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Center tap configuration

### 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



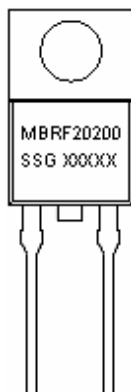
### Mechanical Dimensions: In mm



| SYMBOL  | MIN.  | TYP.  | MAX.  |
|---------|-------|-------|-------|
| A       | 4.30  | 4.50  | 4.70  |
| A1      | 1.10  | 1.30  | 1.50  |
| A2      | 2.80  | 3.00  | 3.20  |
| A3      | 2.50  | 2.70  | 2.90  |
| b       | 0.50  | 0.60  | 0.75  |
| b1      | 1.10  | 1.20  | 1.35  |
| b2      | 1.50  | 1.60  | 1.75  |
| c       | 0.55  | 0.60  | 0.75  |
| D       | 14.80 | 15.00 | 15.20 |
| E       | 9.96  | 10.16 | 10.36 |
| e       | -     | 2.55  | -     |
| e1      | -     | 5.10  | -     |
| H1      | 6.50  | 6.70  | 6.90  |
| L       | 12.70 | 13.20 | 13.70 |
| L1      | 1.60  | 1.80  | 2.00  |
| L2      | 0.80  | 1.00  | 1.20  |
| L3      | 0.60  | 0.80  | 1.00  |
| L4      | -     | 1.10  | 1.50  |
| ΦP1(上口) | 3.30  | 3.50  | 3.70  |
| ΦP2(下口) | 2.99  | 3.19  | 3.39  |
| Q       | 2.50  | 2.70  | 2.90  |
| θ1      |       | 5°    |       |
| θ2      |       | 4°    |       |
| θ3      |       | 10°   |       |
| θ4      |       | 5°    |       |
| θ5      |       | 5°    |       |

### ITO-220AC(HD)

**Marking Diagram:**



Where XXXXX is YYWWL

MBR = Device Type  
F = Package type  
20 = Forward Current (20A)  
200 = Reverse Voltage (200V)  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

**Ordering Information:**

| Device    | Package                | Shipping     |
|-----------|------------------------|--------------|
| MBRF20200 | ITO-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                                       | $V_{RWM}$   | -   | 200  | V     |
| Max. Average Forward Current                               | $I_{F(AV)}$ | 50% duty cycle @ $T_C=133^\circ\text{C}$ ,<br>rectangular wave form | 20   | A     |
| Max. Peak One Cycle Non-Repetitive Surge Current (per leg) | $I_{FSM}$   | 8.3 ms, half Sine pulse   | 230  | A     |



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**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                |
|                                     | $V_{F2}$ | @ 20A, Pulse, $T_J = 125\text{ }^\circ\text{C}$                                   | 0.80   | V                |
| Max. Reverse Current (per leg)*     | $I_{R1}$ | @ $V_R = \text{rated } V_R$<br>$T_J = 25\text{ }^\circ\text{C}$                   | 1.0    | mA               |
|                                     | $I_{R2}$ | @ $V_R = \text{rated } V_R$<br>$T_J = 125\text{ }^\circ\text{C}$                  | 6.0    | 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 +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                         | 2.0           | $^\circ\text{C/W}$ |
| Typical Thermal Resistance, Case to Heat Sink         | $R_{\theta CS}$ | Mounting surface, smooth and greased | 0.50          | $^\circ\text{C/W}$ |
| Approximate Weight                                    | wt              | -                                    | 1.6           | g                  |
| Case Style  |                 | ITO-220AC                            |               |                    |

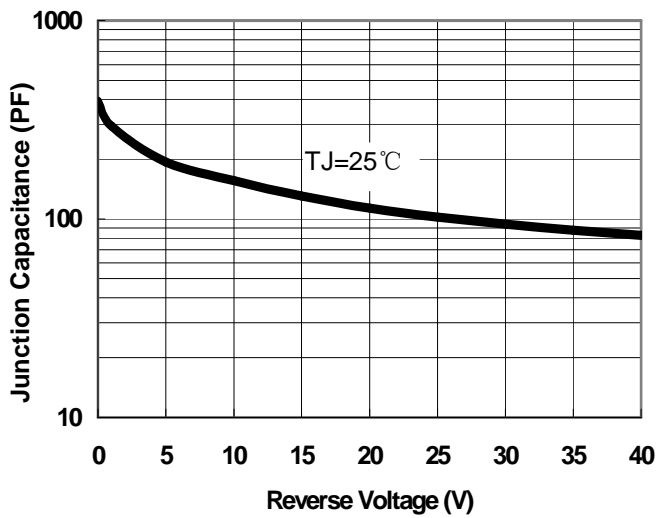


Fig.1-Typical Junction Capacitance

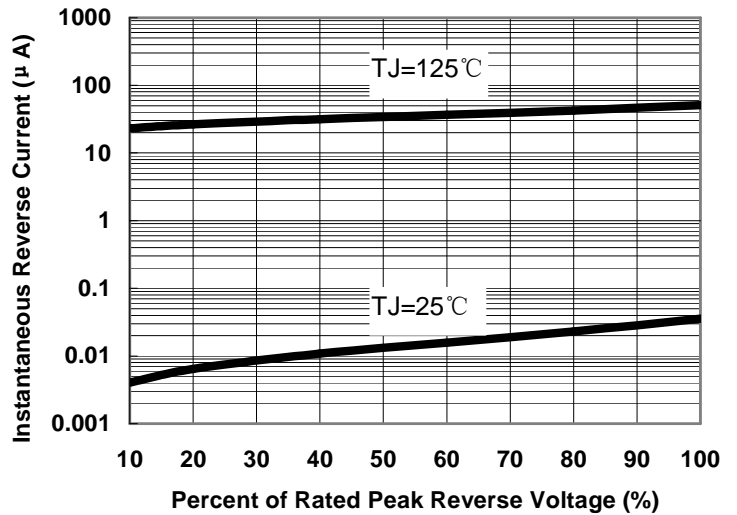


Fig.2-Typical Reverse Characteristics

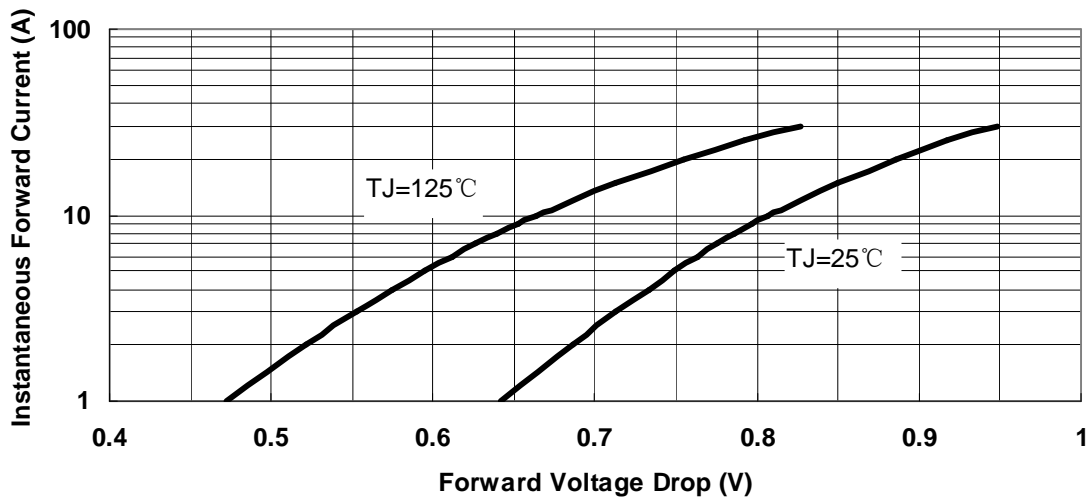


Fig.3-Typical Instantaneous Forward Voltage Characteristics

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