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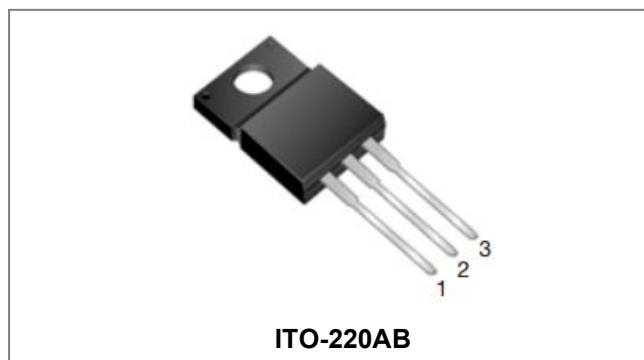
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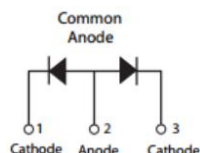
## MBRF2080CTR SCHOTTKY RECTIFIER



### 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
- 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

### Maximum Ratings:

| Characteristics                                      | Symbol              | Condition                                                    | Max.                          | Units |
|------------------------------------------------------|---------------------|--------------------------------------------------------------|-------------------------------|-------|
| Peak Repetitive Reverse Voltage                      | V <sub>RRM</sub>    | -                                                            | 80                            | 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> | 50% duty cycle @T <sub>c</sub> =116°C, rectangular wave form | 10(Per Leg)<br>20(Per Device) | A     |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | I <sub>FSM</sub>    | 8.3ms, Half Sine pulse                                       | 180                           | A     |

### Electrical Characteristics:

| Characteristics                                                              | Symbol           | Condition                                                                                               | Typ. | Max.   | Units |
|------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------|------|--------|-------|
| Forward Voltage Drop (Per Leg)*                                              | V <sub>F1</sub>  | @10A, Pulse, T <sub>J</sub> = 25 °C                                                                     | 0.80 | 0.85   | V     |
|                                                                              | V <sub>F2</sub>  | @10A, Pulse, T <sub>J</sub> = 125 °C                                                                    | 0.68 | 0.75   | V     |
| Reverse Current at DC condition (Per Leg)*                                   | I <sub>R1</sub>  | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C                                         | 0.05 | 1.0    | mA    |
|                                                                              | I <sub>R2</sub>  | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C                                        | 10   | 150    | mA    |
| Junction Capacitance(Per Leg)                                                | C <sub>T</sub>   | @V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C, f <sub>SIG</sub> = 1MHz                                   | 200  | 500    | pF    |
| Series Inductance(Per Leg)                                                   | L <sub>S</sub>   | Measured lead to lead 5 mm from package body                                                            | 8.0  | -      | nH    |
| Voltage Rate of Change                                                       | dv/dt            | -                                                                                                       | -    | 10,000 | V/μs  |
| RSM Isolation Voltage (t = 1.0 second, R. H. < =30%, T <sub>A</sub> = 25 °C) | V <sub>ISO</sub> | Clip mounting, the epoxy body away from the heatsink edge by more than 0.110" along the lead direction. | -    | 4500   | V     |
|                                                                              |                  | Clip mounting, the epoxy body is inside the heatsink.                                                   | -    | 3500   |       |
|                                                                              |                  | Screw mounting, the epoxy body is inside the heatsink.                                                  | -    | 1500   |       |

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

### 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(Per Leg) | $R_{\theta JC}$ | DC operation | 2             | °C/W  |
| Approximate Weight                                   | wt              | -            | 2             | g     |

### Ratings and Characteristics Curves

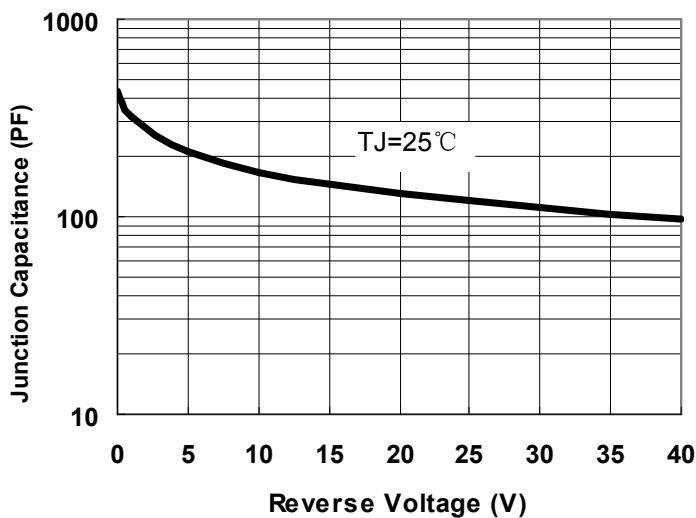


Fig.1-Typical Junction Capacitance

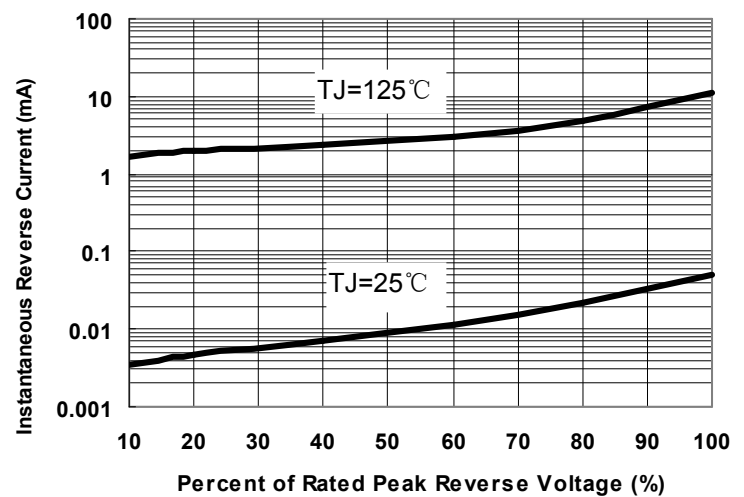


Fig.2-Typical Reverse Characteristics

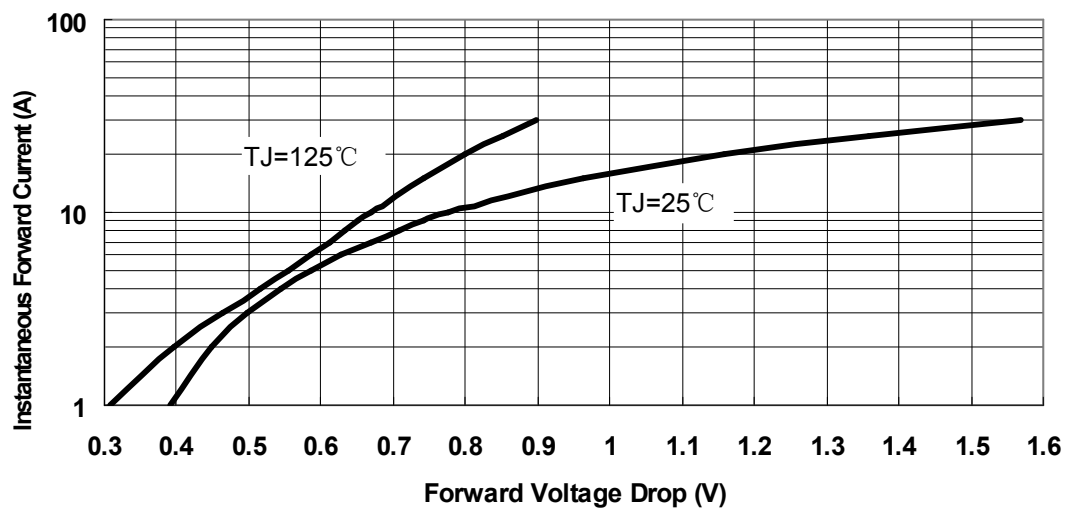
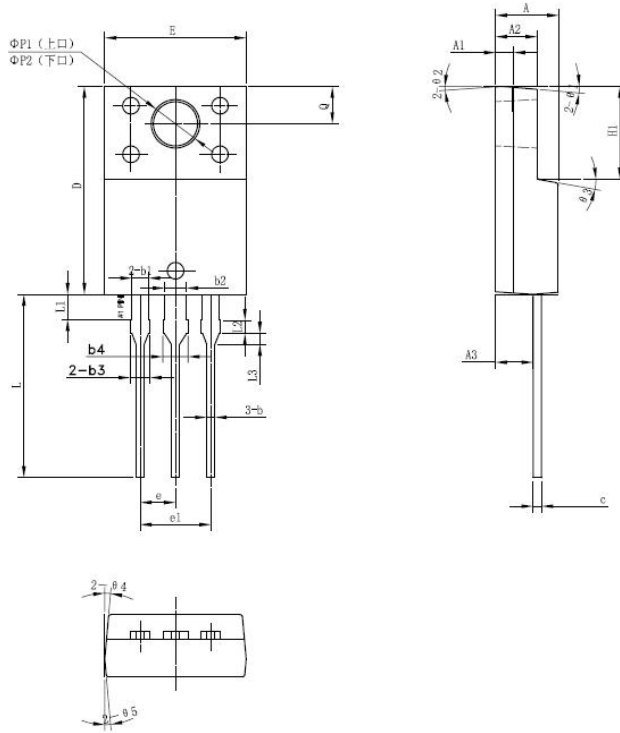


Fig.3-Typical Instantaneous Forward Voltage Characteristics

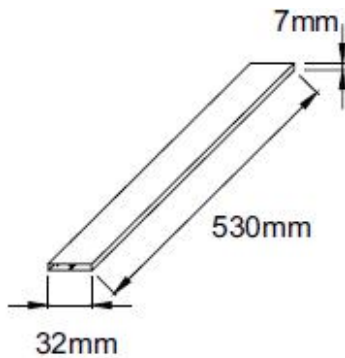


**Mechanical Dimensions ITO-220AB**

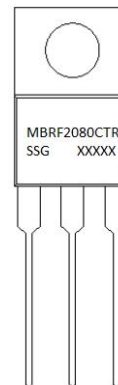


| SYMBOL  | Millimeters |       |       |
|---------|-------------|-------|-------|
|         | MIN.        | TYP.  | MAX.  |
| A       | 4.30        | 4.50  | 4.70  |
| A1      | 1.10        | 1.30  | 1.50  |
| A2      | 2.80        | 3.00  | 3.20  |
| A3      | 2.50        | 2.70  | 2.90  |
| b       | 0.50        | 0.60  | 0.75  |
| b1      | 1.10        | 1.20  | 1.35  |
| b2      | 1.50        | 1.60  | 1.75  |
| b3      | 1.20        | 1.30  | 1.45  |
| b4      | 1.60        | 1.70  | 1.85  |
| c       | 0.50        | 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  |
| 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°    |       |

**Tube Specification**



**Marking Diagram**



Where XXXXX is YYWWL

MBR = Device Type  
 F = Package type  
 20 = Forward Current (20A)  
 80 = Reverse Voltage (80V)  
 CTR = Configuration  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

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

**Ordering Information**

| Device      | Package                | Shipping     |
|-------------|------------------------|--------------|
| MBRF2080CTR | ITO-220AB<br>(Pb-Free) | 50 pcs/ tube |

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

**Technical Data**  
**Data Sheet N1324, Rev. A**



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