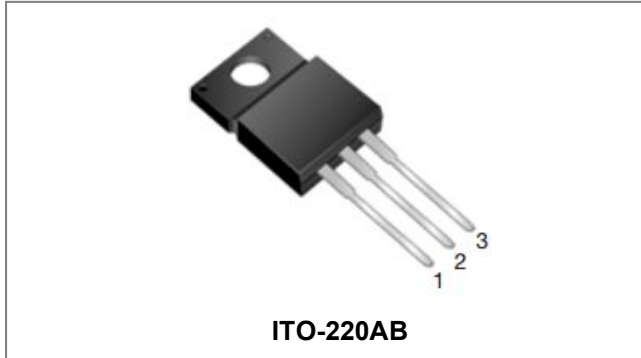


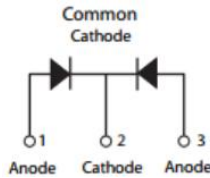
## MBRF2060CTL SCHOTTKY RECTIFIER



### 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

### Circuit Diagram



### Applications

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

### Maximum Ratings:

| Characteristics  | Symbol   | Condition   | Max.                          | Units |
|--|--|---|-------------------------------|-------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | -   | 60                            | V     |
| Average Rectified Forward Current  | I <sub>F(AV)</sub>                                     | 50% duty cycle @T <sub>c</sub> =80°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                                      | 150                           | 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   | 0.62 | 0.69   | V     |
| Reverse Current (Per Leg)*  | I <sub>R1</sub>  | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C   | 0.15 | 1.0    | 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                                   | 250  | 400    | 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<br>(t = 1.0 second, R. H. <=30%,<br>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   |       |

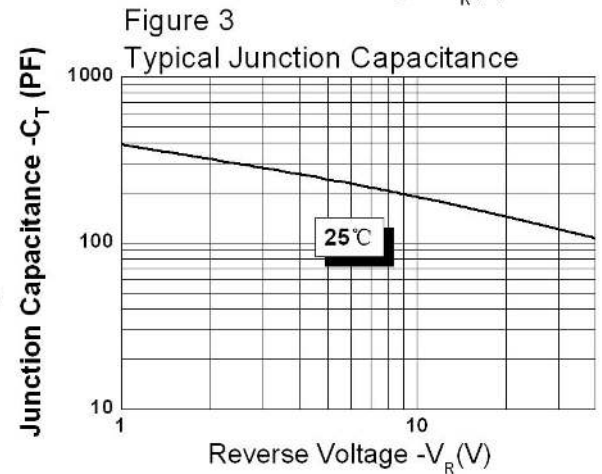
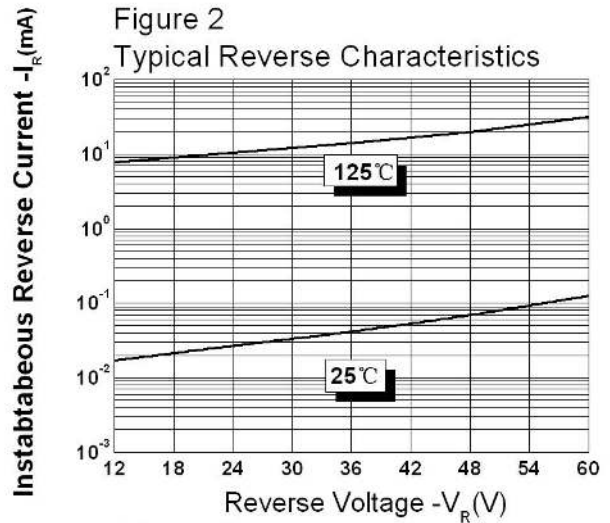
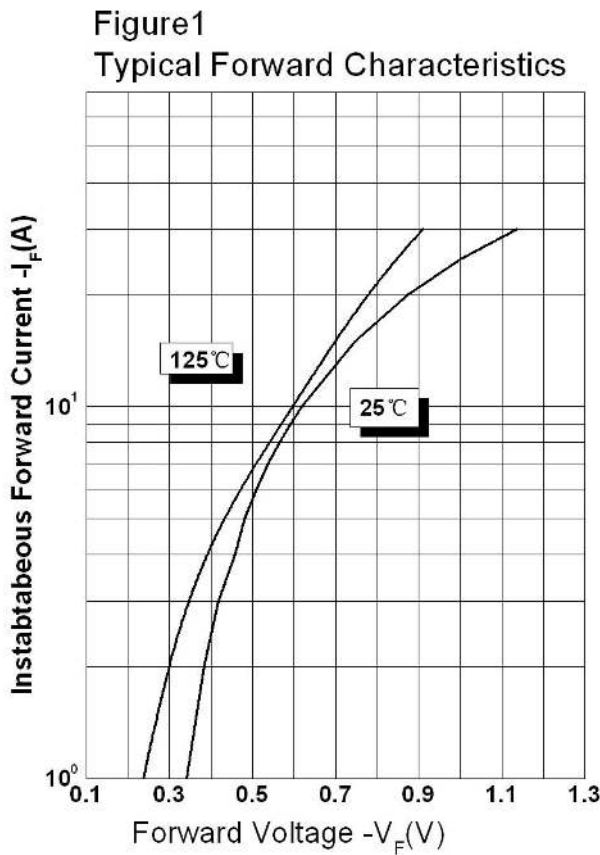
\* Pulse width < 300 μs, duty cycle < 2%

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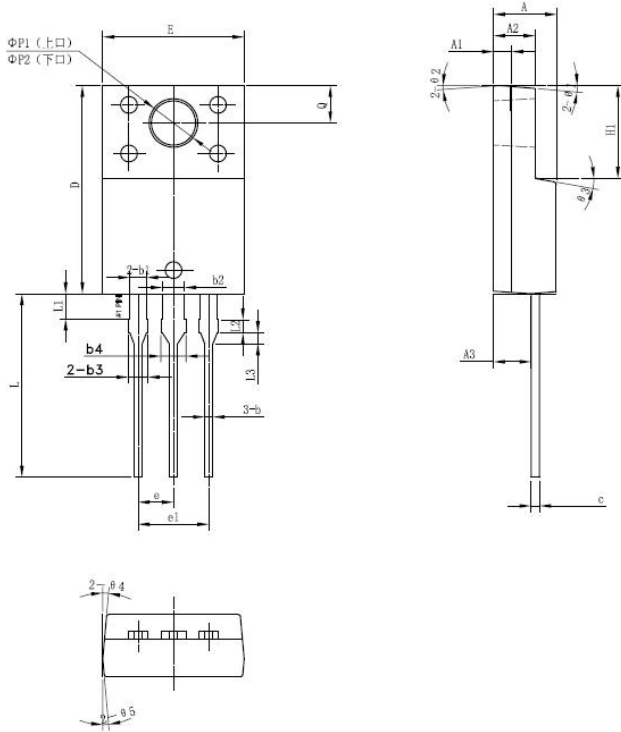
**Thermal-Mechanical Specifications:**

| Characteristics                              | Symbol          | Condition   | Specification | Units |
|--|-----------------|---|---------------|-------|
| Junction Temperature                         | $T_J$           | -   | -55 to +125   | °C    |
| Storage Temperature                          | $T_{stg}$       | -   | -55 to +125   | °C    |
| Typical Thermal Resistance Junction to Case  | $R_{\theta JC}$ | DC operation  | 2.3           | °C/W  |
| Typical Thermal Resistance Case to Heat Sink | $R_{\theta CS}$ | Mounting surface, smooth and greased(only for TO-220) | 0.50          | °C/W  |
| Approximate Weight                           | wt              | -   | 2             | g     |
| Case Style                                   | ITO-220AB       |   |               |       |

**Ratings and Characteristics Curves**

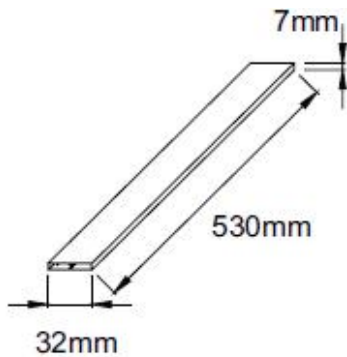


**Mechanical Dimensions ITO-220AB**

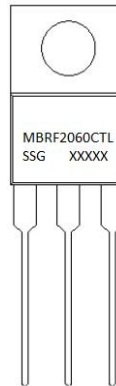


| SYMBOL  | Millimeters |       |       |
|---------|-------------|-------|-------|
|         | MIN.        | TYP.  | MAX.  |
| A       | 4.30        | 4.50  | 4.70  |
| A1      | 1.10        | 1.30  | 1.50  |
| A2      | 2.80        | 3.00  | 3.20  |
| A3      | 2.50        | 2.70  | 2.90  |
| b       | 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)
- 60 = Reverse Voltage (60V)
- CTL = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

**Ordering Information**

| Device      | Package                | Shipping     |
|-------------|------------------------|--------------|
| MBRF2060CTL | 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.

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