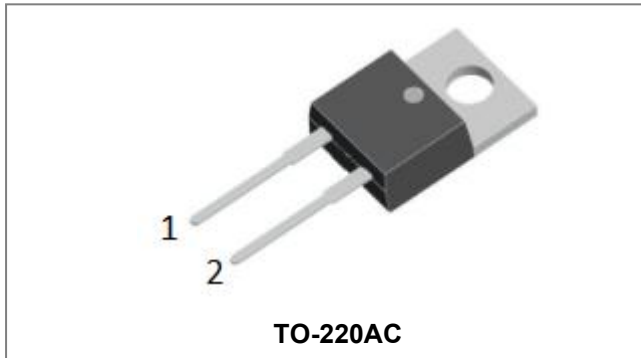


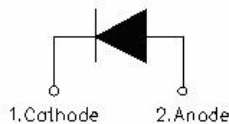
MBR20200 SCHOTTKY RECTIFIER



Features

- 150 °C T_J operation
- 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 _{RRM} | - | 200 | V |
| Working Peak Reverse Voltage | V _{RWM} | | | |
| DC Blocking Voltage | V _R | | | |
| Average Rectified Forward Current | I _{F(AV)} | 50% duty cycle @T _c =133°C, rectangular wave form | 20 | A |
| Peak One Cycle Non-Repetitive Surge Current | I _{FSM} | 8.3ms, Half Sine pulse | 230 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|------------------------|-----------------|---|-------|--------|-------|
| Forward Voltage Drop* | V _{F1} | @ 20A, Pulse, T _J = 25 °C | 0.89 | 0.95 | V |
| | V _{F2} | @ 20A, Pulse, T _J = 125 °C | 0.75 | 0.80 | V |
| Reverse Current* | I _{R1} | @V _R = rated V _R , T _J = 25 °C | 0.001 | 1.0 | mA |
| | I _{R2} | @V _R = rated V _R , T _J = 125 °C | 0.1 | 6.0 | mA |
| Junction Capacitance | C _T | @V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz | 200 | 400 | pF |
| Series Inductance | L _S | Measured lead to lead 5 mm from package body | 8.0 | - | nH |
| Voltage Rate of Change | dv/dt | - | - | 10,000 | V/μs |

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

Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|-----------------------|--------------------------------------|---------------|-----------------------------|
| Junction Temperature | T_J | - | -55 to +150 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{stg} | - | -55 to +150 | $^{\circ}\text{C}$ |
| Typical Thermal Resistance Junction to Case | $R_{\theta\text{JC}}$ | DC operation | 2.0 | $^{\circ}\text{C}/\text{W}$ |
| Typical Thermal Resistance, Case to Heat Sink | $R_{\theta\text{CS}}$ | Mounting surface, smooth and greased | 0.50 | $^{\circ}\text{C}/\text{W}$ |
| Approximate Weight | wt | - | 1.6 | g |
| Case Style | TO-220AC | | | |

Ratings and Characteristics Curves

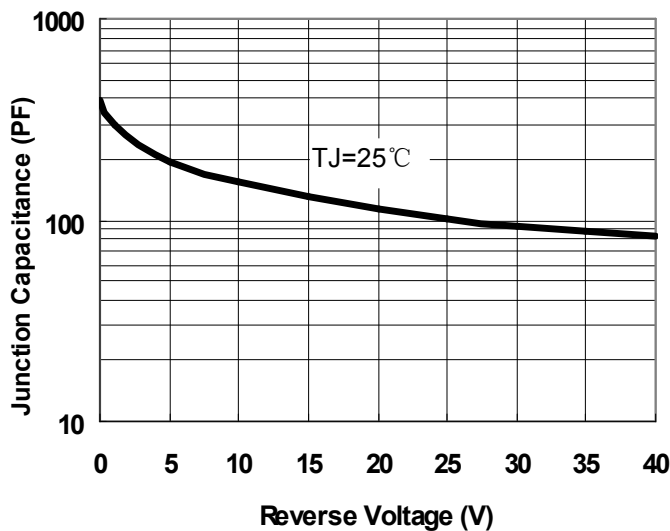


Fig.1-Typical Junction Capacitance

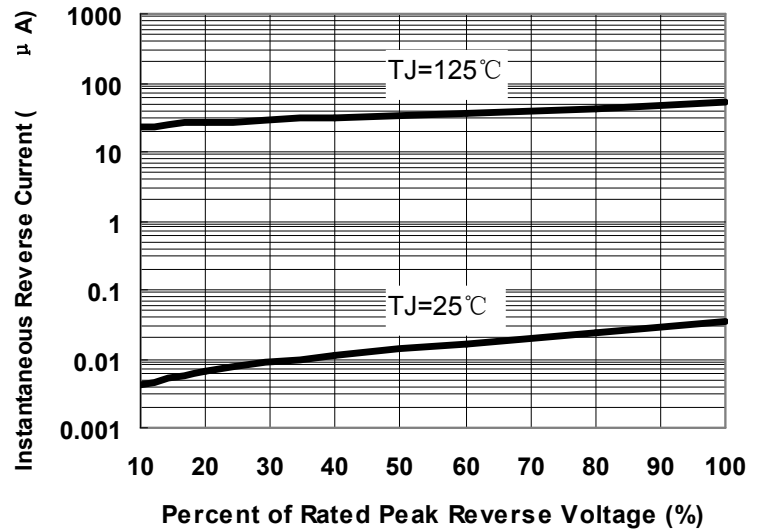


Fig.2-Typical Reverse Characteristics

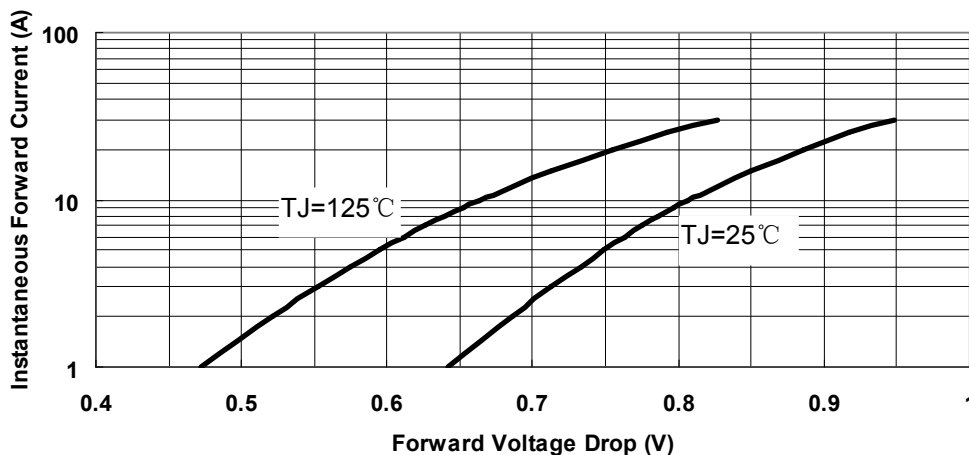
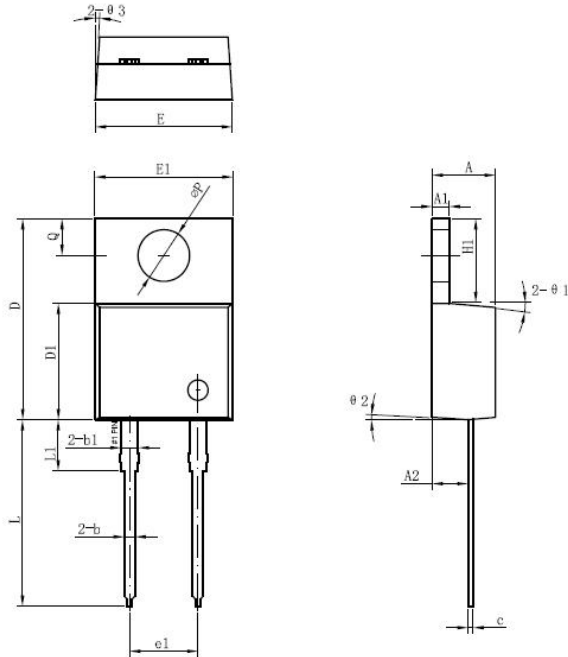
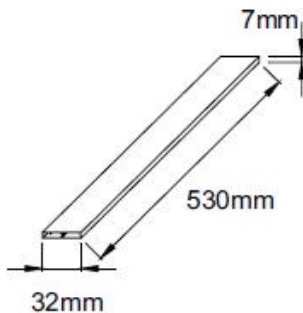
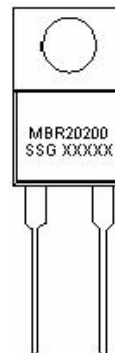


Fig.3-Typical Instantaneous Forward Voltage Characteristics

Mechanical Dimensions TO-220AC


| Symbol | Dimensions in millimeters | | |
|--------|---------------------------|---------|-------|
| | Min. | Typical | Max. |
| A | 4.47 | 4.70 | 4.85 |
| A1 | 1.17 | 1.27 | 1.37 |
| A2 | 2.52 | 2.69 | 2.89 |
| b | 0.71 | 0.81 | 0.96 |
| b1 | 1.17 | 1.27 | 1.37 |
| c | 0.31 | 0.38 | 0.61 |
| D | 14.64 | 14.94 | 15.24 |
| D1 | 8.50 | 8.07 | 8.90 |
| E | 10.01 | 10.16 | 10.31 |
| E1 | 9.98 | 10.18 | 10.38 |
| e1 | 4.98 | 5.08 | 5.18 |
| H1 | 6.04 | 6.24 | 6.44 |
| L | 13.00 | 13.86 | 14.08 |
| L1 | 3.56 | 3.80 | 3.96 |
| ΦP | 3.74 | 3.84 | 4.04 |
| Q | 2.54 | 2.74 | 2.94 |
| Θ1 | | 5° | |
| Θ2 | | 4° | |
| Θ3 | | 4° | |

Tube Specification

Marking Diagram


Where XXXXX is YYWWL

MBR = Device 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 |
|----------|--------------------|--------------|
| MBR20200 | TO-220AC (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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