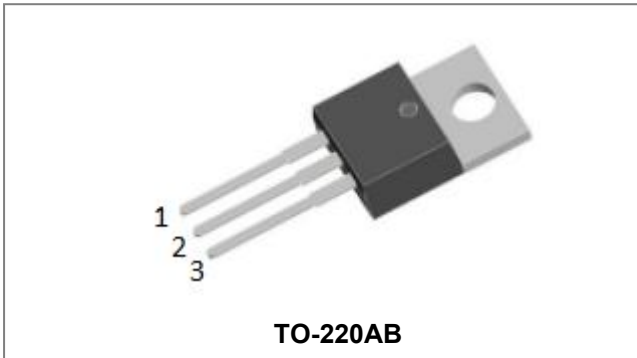


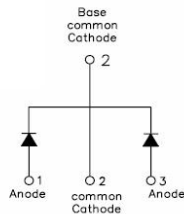
MBR1080CTL SCHOTTKY RECTIFIER



Features

- 125°C T_J 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 _{RRM} | - | 80 | 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 | 5(Per Leg) 10(Per Device) | A |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | I _{FSM} | 8.3ms, Half Sine pulse | 125 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|--------------------------------|-----------------|---|------|--------|-------|
| Forward Voltage Drop(Per Leg)* | V _{F1} | @ 5A, Pulse, T _J = 25 °C | 0.67 | 0.69 | V |
| | V _{F2} | @ 5A, Pulse, T _J = 125 °C | 0.60 | 0.64 | V |
| Reverse Current(Per Leg)* | I _{R1} | @V _R = rated V _R , T _J = 25 °C | 0.07 | 1.0 | mA |
| | I _{R2} | @V _R = rated V _R , T _J = 125 °C | 10 | 30 | mA |
| Junction Capacitance(Per Leg) | C _T | @V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz | 120 | 220 | pF |
| Series Inductance(Per Leg) | 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%

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Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|-----------------------|--------------|---------------|-----------------------------|
| Junction Temperature | T_J | - | -55 to +125 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{stg} | - | -55 to +125 | $^{\circ}\text{C}$ |
| Typical Thermal Resistance Junction to Case | $R_{\theta\text{JC}}$ | DC operation | 3.5 | $^{\circ}\text{C}/\text{W}$ |
| Approximate Weight | wt | - | 2 | g |

Ratings and Characteristics Curves

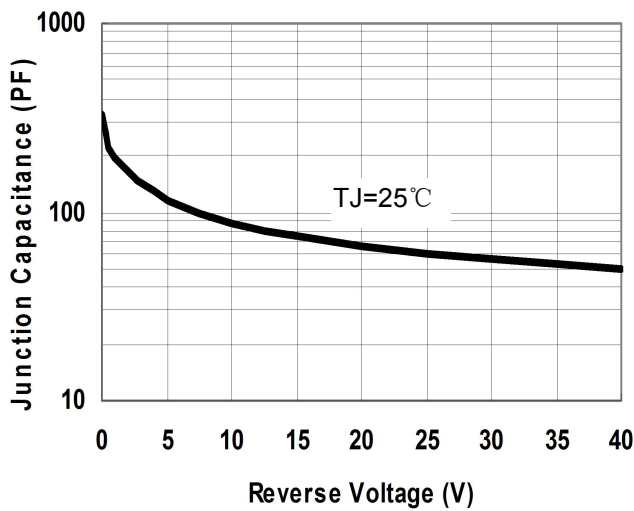


Fig.1-Typical Junction Capacitance

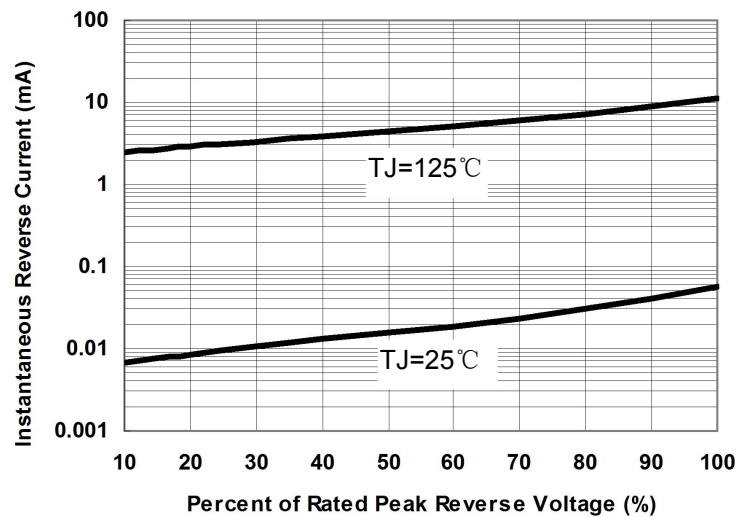


Fig.2-Typical Reverse Characteristics

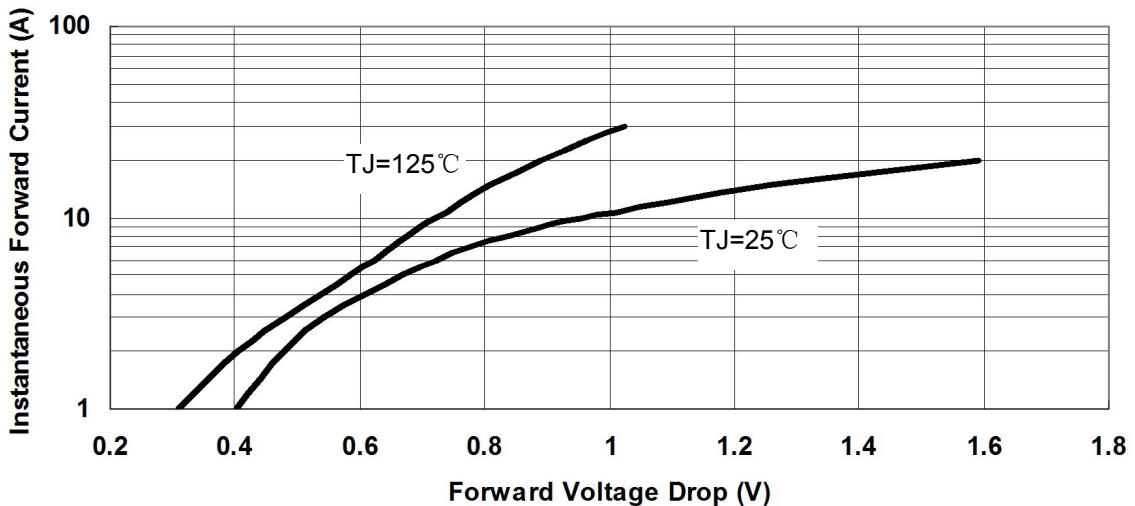


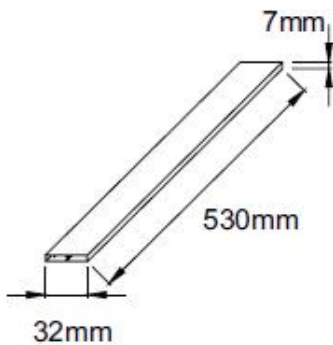
Fig.3-Typical Instantaneous Forward Voltage Characteristics

Mechanical Dimensions TO-220AB

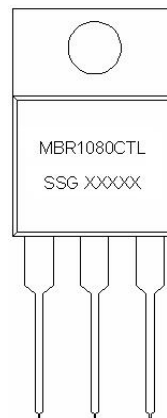


| Symbol | Dimensions in millimeters | | |
|--------|---------------------------|---------|-------|
| | Min | Typical | Max |
| A | 4.42 | 4.57 | 4.72 |
| A1 | 1.17 | 1.27 | 1.37 |
| A2 | 2.52 | 2.69 | 2.89 |
| b | 0.71 | 0.81 | 0.96 |
| b1 | 1.17 | 1.27 | 1.37 |
| c | 0.31 | 0.38 | 0.61 |
| D | 14.94 | 15.24 | 15.54 |
| D1 | 8.85 | 9.00 | 9.15 |
| E | 10.01 | 10.16 | 10.31 |
| e | | 2.54 | |
| e1 | 4.98 | 5.06 | 5.18 |
| H1 | 6.04 | 6.24 | 6.44 |
| L | 12.7 | 13.56 | 13.80 |
| L1 | 3.56 | 3.5 | 3.96 |
| ΦP | 3.74 | 3.84 | 4.04 |
| Q | 2.54 | 2.74 | 2.94 |
| θ1 | | 7° | |
| θ2 | | 3° | |
| θ3 | | 4° | |

Tube Specification



Marking Diagram



Where XXXXX is YYWWL

- MBR = Device Type
- 10 = Forward Current (10A)
- 80 = Reverse Voltage(80V)
- CTL = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

Ordering Information

| Device | Package | Shipping |
|------------|--------------------|--------------|
| MBR1080CTL | TO-220AB (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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