

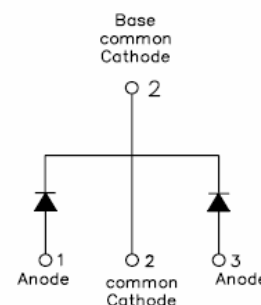
MBR30100CTP SCHOTTKY RECTIFIER

Applications:

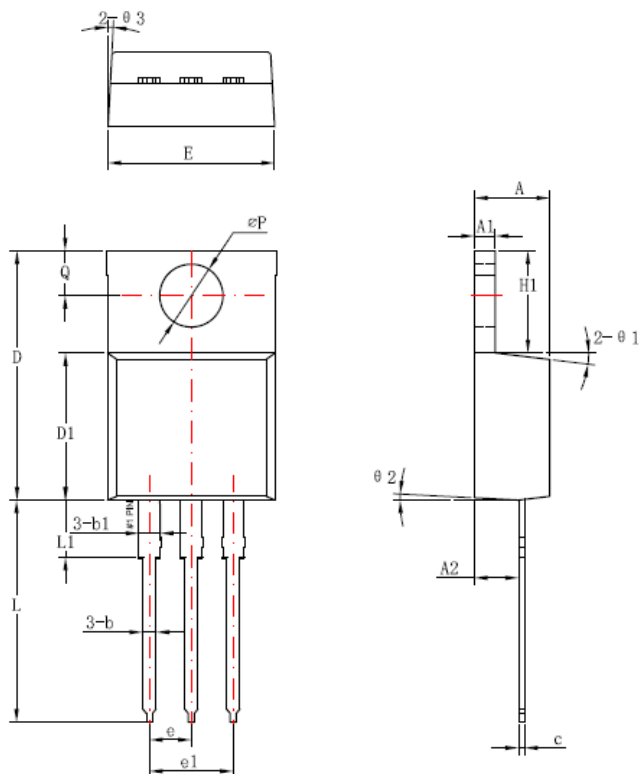
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

Features:

- 150°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



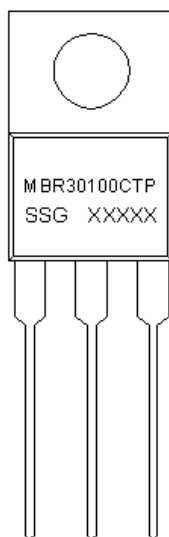
Mechanical Dimensions: In mm



| Symbol | Dimensions in millimeters | | |
|--------|---------------------------|---------|-------|
| | Min | Typical | Max |
| A | 4.42 | 4.57 | 4.72 |
| A1 | 1.17 | 1.27 | 1.37 |
| A2 | 2.59 | 2.69 | 2.89 |
| b | 0.71 | 0.81 | 0.96 |
| b1 | | 1.27 | |
| c | 0.36 | 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 | | 5.06 | |
| H1 | 6.04 | 6.24 | 6.44 |
| L | 12.7 | 13.56 | 13.78 |
| L1 | | 3.5 | |
| ΦP | 3.74 | 3.84 | 4.04 |
| Q | 2.54 | 2.74 | 2.94 |
| θ1 | | 7° | |
| θ2 | | 3° | |
| θ3 | | 4° | |

TO-220AB

Marking Diagram:



Where XXXXX is YYWWL

MBR = Device Type
30 = Forward Current (30A)
100 = Reverse Voltage (100V)
CTP = Configuration
SSG = SSG
YY = Year
WW = Week
L = Lot Number

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

Ordering Information:

| Device | Package | Shipping |
|-------------|-----------------------|--------------|
| MBR30100CTP | TO-220AB (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} | - | 100 | V |
| Max. Average Forward | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 133^\circ\text{C}$, rectangular wave form | 30 | A |
| Peak Repetitive Forward Current(per leg) | I_{FRM} | Rated V_R square wave, 20KHz $T_C = 133^\circ\text{C}$ | 20 | A |
| Max. Peak One Cycle Non-Repetitive Surge Current (per leg) | I_{FSM} | Surge applied at rated load conditions halfwave, single phase,60Hz | 150 | A |



Electrical Characteristics:

| Characteristics | Symbol | Condition | Max. | Units |
|---------------------------------------|-----------------|---|--------|-------|
| Max. Forward Voltage Drop (per leg) * | V _{F1} | @ 15 A, Pulse, T _J = 25 °C | 0.85 | V |
| | V _{F2} | @ 15 A, Pulse, T _J = 125 °C | 0.70 | V |
| Max. Reverse Current (per leg) * | I _{R1} | @V _R = rated V _R T _J = 25 °C | 1.00 | mA |
| | I _{R2} | @V _R = rated V _R T _J = 125 °C | 6.0 | mA |
| Max. Junction Capacitance (per leg) | C _T | @V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz | 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/μs |

* Pulse Width < 300μs, Duty Cycle <2%

Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|------------------|--------------------------------------|---------------|-------|
| Max. Junction Temperature | T _J | - | -55 to +150 | °C |
| Max. Storage Temperature | T _{stg} | - | -55 to +150 | °C |
| Maximum Thermal Resistance Junction to Case | R _{θJC} | DC operation | 2.0 | °C/W |
| Maximum Thermal Resistance, Case to Heat Sink | R _{θJA} | DC operation | 50 | °C/W |
| Maximum Thermal Resistance, Case to Heat Sink | R _{θCS} | Mounting surface, smooth and greased | 0.50 | °C/W |
| Approximate Weight | wt | - | 2 | g |
| Case Style | TO-220AB | | | |

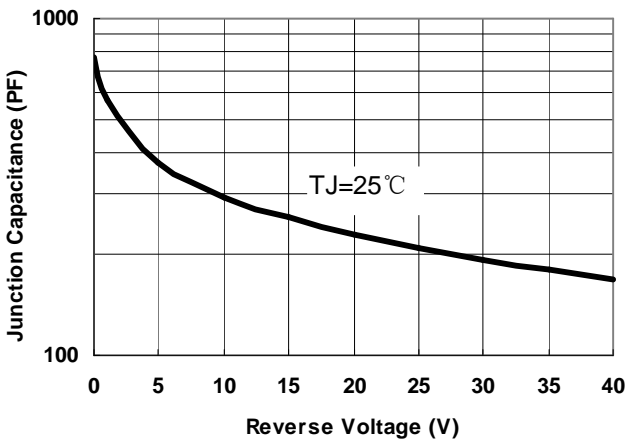


Fig.1-Typical Junction Capacitance

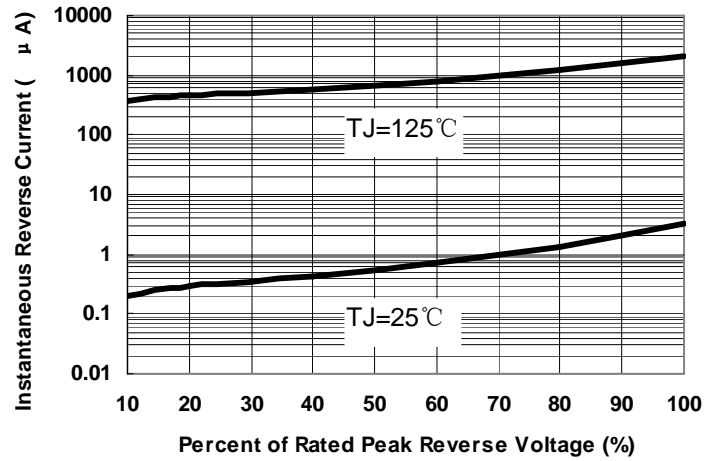


Fig.2-Typical Reverse Characteristics

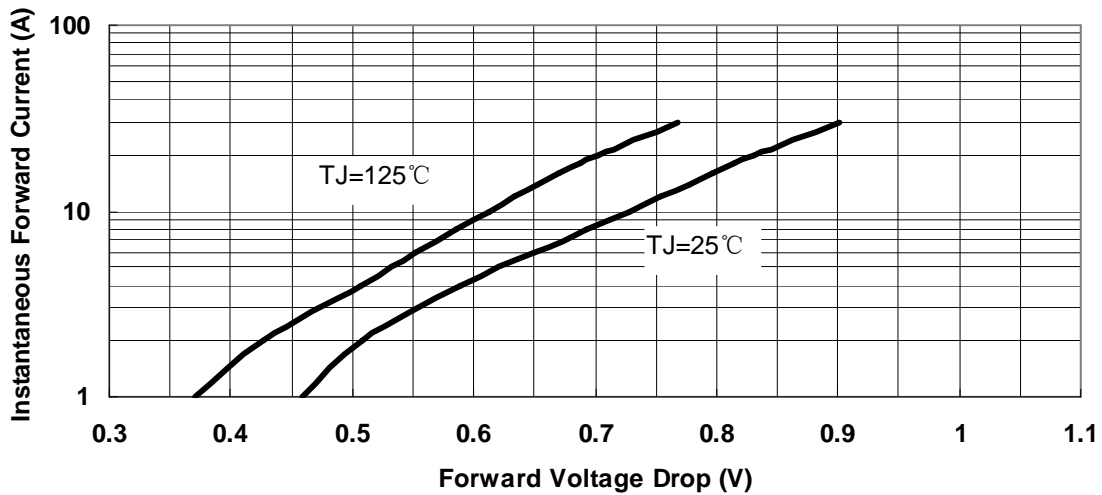


Fig.3-Typical Instantaneous Forward Voltage Characteristics



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