

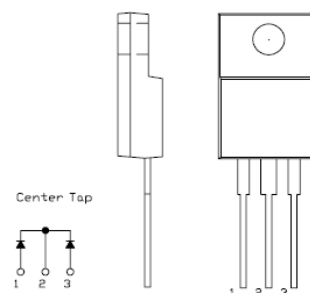
MBRF10100CT SCHOTTKY RECTIFIER

Applications:

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

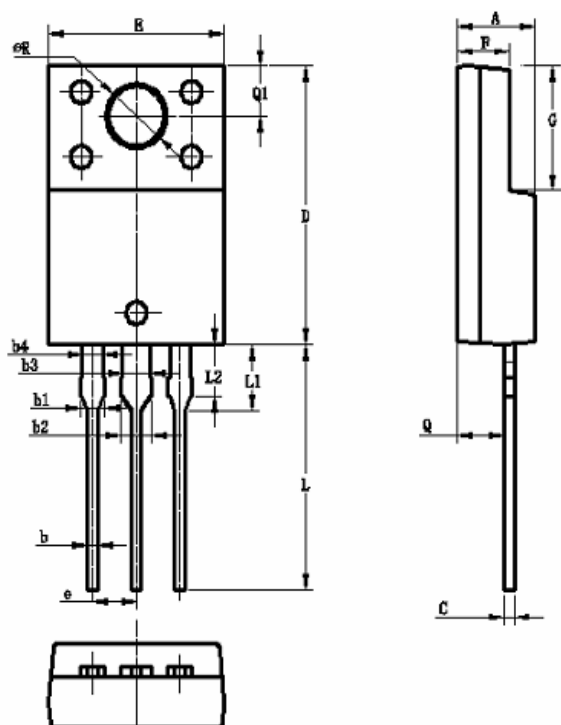
Features:

- 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

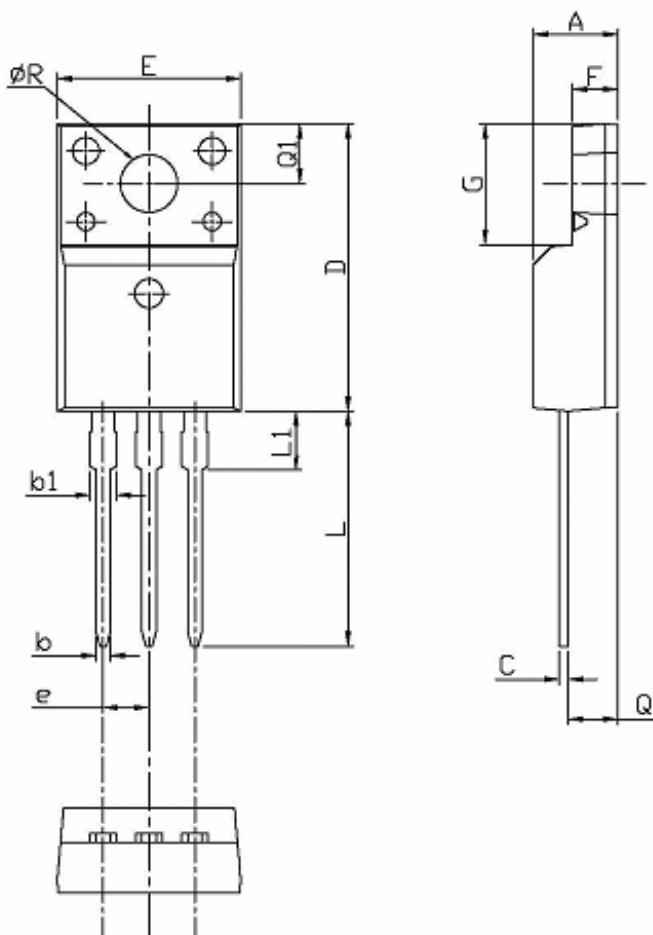


OUTLINE DRAWING

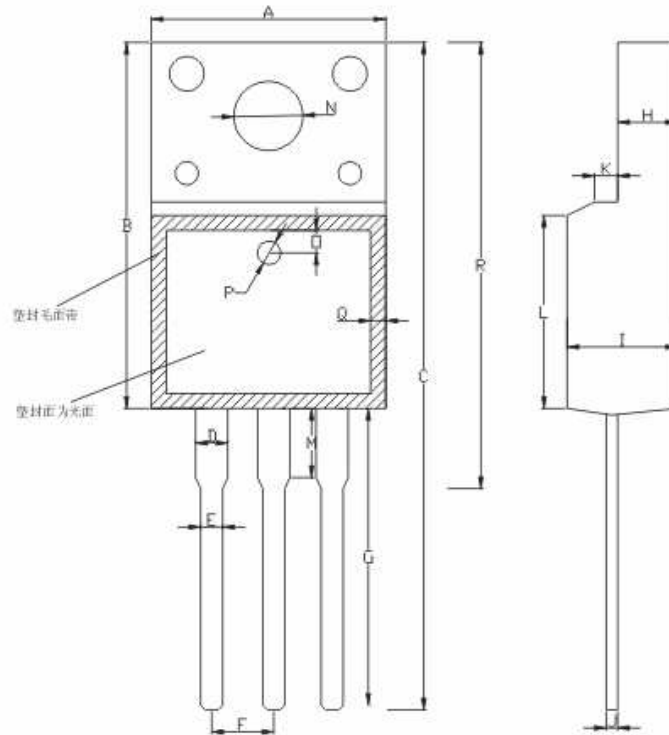
Mechanical Dimensions: In mm



| Dim | OPTION 1(CJ) | | OPTION 2(HD) | |
|-----|--------------|-------|--------------|-------|
| | Min | Max | Min | Max |
| A | 4.35 | 4.65 | 4.30 | 4.70 |
| b | 0.50 | 0.75 | 0.50 | 0.75 |
| b1 | 1.15 | 1.402 | 1.20 | 1.45 |
| b2 | 1.55 | 1.802 | 1.60 | 1.85 |
| b3 | 1.55 | 1.65 | 1.50 | 1.75 |
| b4 | 1.10 | 1.35 | 1.10 | 1.35 |
| C | 0.50 | 0.75 | 0.55 | 0.75 |
| D | 14.8 | 15.2 | 14.80 | 15.20 |
| E | 10.06 | 10.26 | 9.96 | 10.36 |
| e | 2.46 | 2.62 | 2.55TYP | |
| F | 2.85 | 3.15 | 2.80 | 3.20 |
| G | 6.50 | 6.90 | 6.50 | 6.90 |
| L | 12.70 | 13.70 | 12.70 | 13.70 |
| L1 | 3.40 | 3.80 | 3.40 | 4.00 |
| L2 | 2.60 | 3.00 | - | - |
| Q | 2.60 | 2.80 | 2.50 | 2.90 |
| Q1 | 2.50 | 2.90 | 2.50 | 2.90 |
| ØR | 3.40 | 3.60 | 3.30 | 3.70 |



| Dim | OPTION 3 | | OPTION 4 | |
|-----------------|----------|-------|----------|-------|
| | Min | Max | Min | Max |
| A | 4.53 | 4.93 | 4.50 | 4.90 |
| b | 0.71 | 0.91 | 0.70 | 0.90 |
| b1 | 1.15 | 1.39 | 1.33 | 1.47 |
| C | 0.36 | 0.53 | 0.45 | 0.60 |
| D | 15.67 | 16.07 | 15.67 | 16.07 |
| E | 9.96 | 10.36 | 9.96 | 10.36 |
| e | 2.54TYP | | 2.54 BSC | |
| F | 2.34 | 2.76 | 2.34 | 2.74 |
| G | 6.50 | 6.90 | 6.48 | 6.88 |
| L | 12.37 | 12.77 | 12.78 | 13.18 |
| L1 | 2.23 | 2.63 | 3.03 | 3.43 |
| Q | 2.56 | 2.96 | 2.56 | 2.96 |
| Q1 | 3.10 | 3.50 | 3.10 | 3.50 |
| $\varnothing R$ | 2.98 | 3.38 | 3.08 | 3.28 |

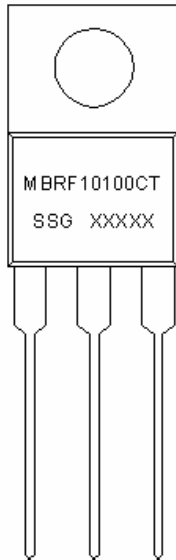


| | | | |
|----------------|----------------|----------------|---------------|
| A:10.20 ± 0.50 | B:15.90 ± 0.50 | C:29.00 ± 1.00 | D:1.24 ± 0.10 |
| E:0.80 ± 0.10 | F:2.54 ± 0.10 | G:13.10 ± 1,0 | H:2.55 ± 0.05 |
| I:4.70 ± 0.05 | J:0.50 ± 0.05 | K:1.20 ± 0.20 | L:8.00 ± 0.50 |
| M:3.00 ± 0.50 | N:3.20 ± 0.20 | O:1,25 ± 0.05 | P:1.5 ± 0.05 |
| Q:1.0 ± 0.20 | R:19.2 ± 1.0 | | |

OPTION 5 (SR)

ITO-220AB

Marking Diagram:



Where XXXXX is YYWWL

- MBR = Device Type
- F = Package type
- 10 = Forward Current (10A)
- 100 = Reverse Voltage (100V)
- CT = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

Ordering Information:

| Device | Package | Shipping |
|-------------|------------------------|--------------|
| MBRF10100CT | ITO-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 @ $T_C=105\text{ }^\circ\text{C}$ rectangular wave form | 10 | A |
| Max. Peak One Cycle Non-Repetitive Surge Current (per leg) | I_{FSM} | 8.3 ms, half Sine pulse | 120 | A |



Electrical Characteristics:

| Characteristics | Symbol | Condition | Max. | Units |
|--|-----------|---|--------|------------------|
| Max. Forward Voltage Drop (per leg) * | V_{F1} | @ 5A, Pulse, $T_J = 25\text{ }^\circ\text{C}$ | 0.85 | V |
| | V_{F2} | @ 5A, Pulse, $T_J = 125\text{ }^\circ\text{C}$ | 0.75 | V |
| Max. Reverse Current at DC condition (per leg) | I_{R1} | @ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$ | 1.0 | mA |
| Max. Reverse Current (per leg) * | I_{R2} | @ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^\circ\text{C}$ | 15 | mA |
| Max. Junction Capacitance (per leg) | C_T | @ $V_R = 5\text{V}$, $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$ | 300 | 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 |
| RSM Isolation Voltage (t = 1.0 second, R. H. <=30%, $T_A = 25\text{ }^\circ\text{C}$) | V_{ISO} | 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 |
|---|-----------------|--------------|---------------|--------------------|
| Max. Junction Temperature | T_J | - | -55 to +150 | $^\circ\text{C}$ |
| Max. Storage Temperature | T_{stg} | - | -55 to +150 | $^\circ\text{C}$ |
| Maximum Thermal Resistance Junction to Case (per leg) | $R_{\theta JC}$ | DC operation | 4.5 | $^\circ\text{C/W}$ |
| Approximate Weight | wt | - | 2 | g |
| Case Style | ITO-220AB | | | |

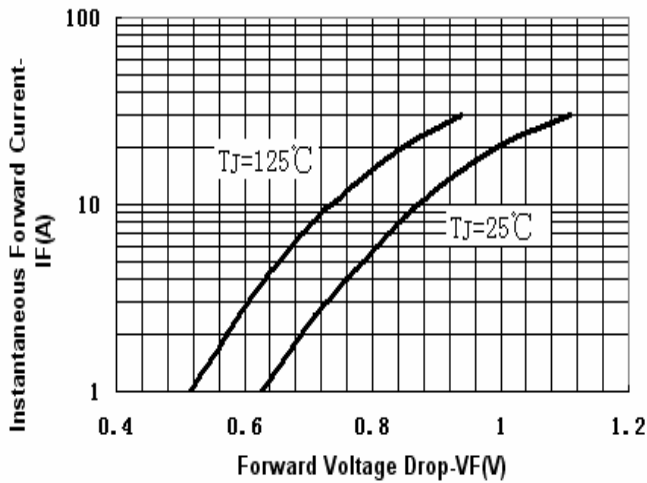


Fig.1-Typical Forward Voltage Drop Characteristics

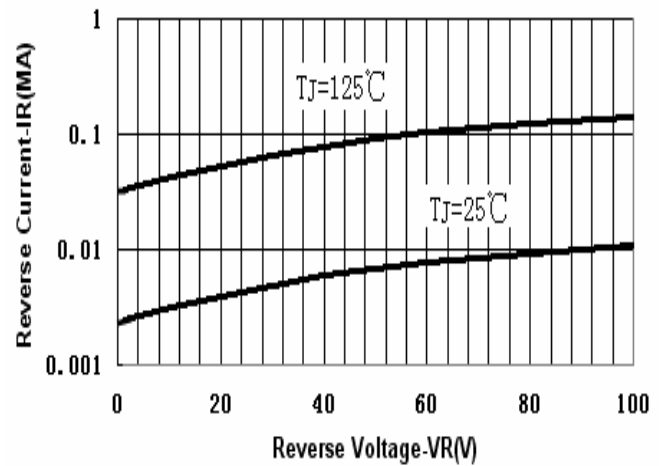


Fig.2-Typical Values Of Reverse Current Vs.Reverse Voltage

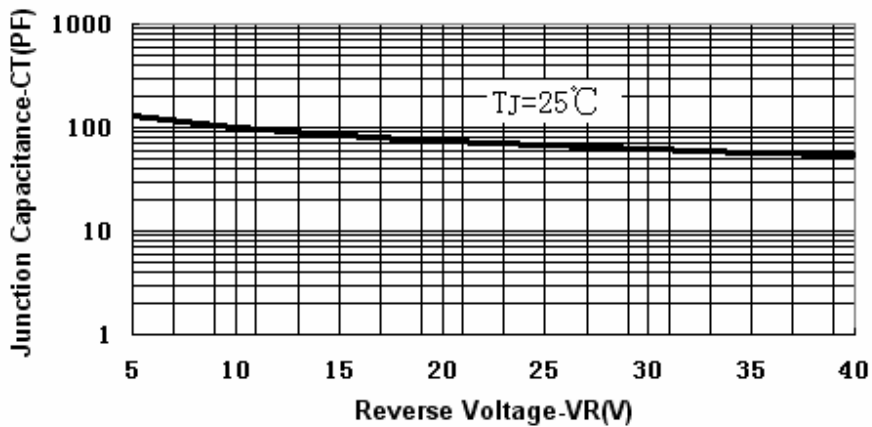


Fig.3-Typical Junction Capacitance Vs.Reverse Voltage



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