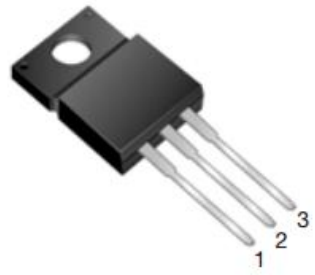
Technical Data
Data Sheet N0861, Rev. C

RoHS

# MBRF60100CT SCHOTTKY RECTIFIER

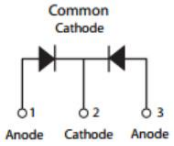



ITO-220AB

## 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

## 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 | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | - | 100 | V |
| Average Rectified Forward Current | $I_{F\ (AV)}$ | 50% duty cycle @Tc=133°C, rectangular wave form | 30(Per Leg)<br>60(Per Device) | A |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | $I_{FSM}$ | 8.3ms, Half Sine pulse | 280 | A |

## Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|---|---|---|---|---|---|
| Forward Voltage Drop(Per Leg)* | $V_{F1}$ | @ 30A, Pulse, $T_J$ = 25 °C | 0.85 | 0.90 | V |
| | $V_{F2}$ | @ 30A, Pulse, $T_J$ = 125 °C | 0.76 | 0.81 | V |
| Reverse Current(Per Leg)* | $I_{R1}$ | @$V_R$ = rated $V_R$, $T_J$ = 25 °C | 00.01 | 1.00 | mA |
| | $I_{R2}$ | @$V_R$ = rated $V_R$, $T_J$ = 125 °C | 8 | 20 | mA |
| Junction Capacitance(Per Leg) | $C_T$ | @$V_R$ = 5V, $T_C$ = 25 °C, $f_{SIG}$ = 1MHz | 400 | 800 | 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 |
| RSM Isolation Voltage (t = 1.0 second, R. H. < =30%, $T_A$ = 25 °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%

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## Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|---|---|---|---|
| Junction Temperature | $T_J$ | - | -55 to +150 | °C |
| Storage Temperature | $T_{stg}$ | - | -55 to +150 | °C |
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$ | DC operation | 2.0 | °C/W |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | DC operation | 50 | °C/W |
| TypicalThermal Resistance, Case to Heat Sink | $R_{\theta CS}$ | Mounting surface, smooth and greased | 0.50 | °C/W |
| Approximate Weight | wt | - | 2 | g |
| Case Style | ITO-220AB | | | |

## Ratings and Characteristics Curves

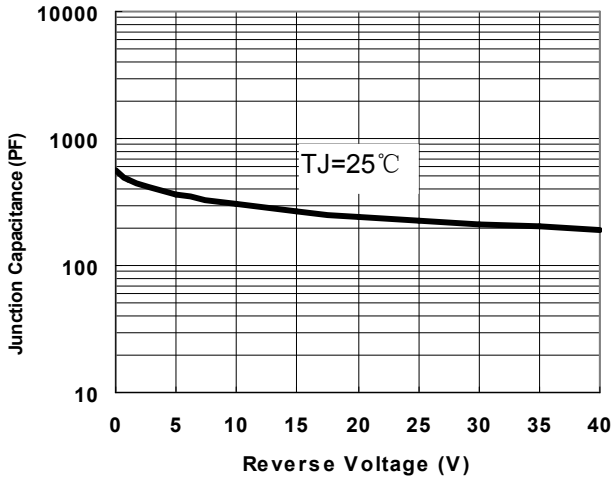


Fig.1-Typical Junction Capacitance

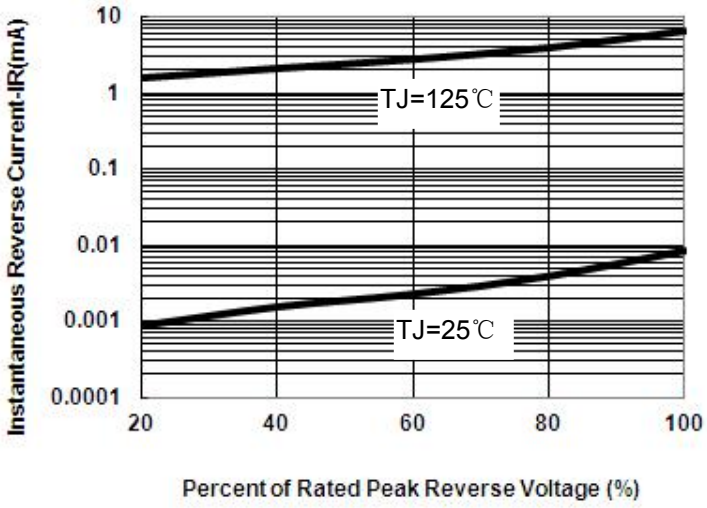


Fig.2-Typical Reverse Characteristics

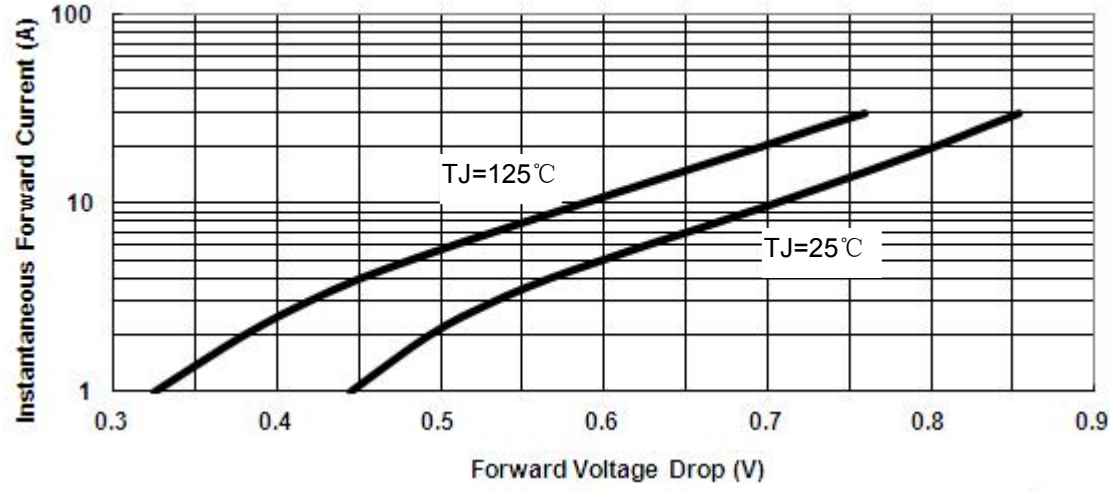


Fig.3-Typical Instantaneous Forward Voltage Characteristics

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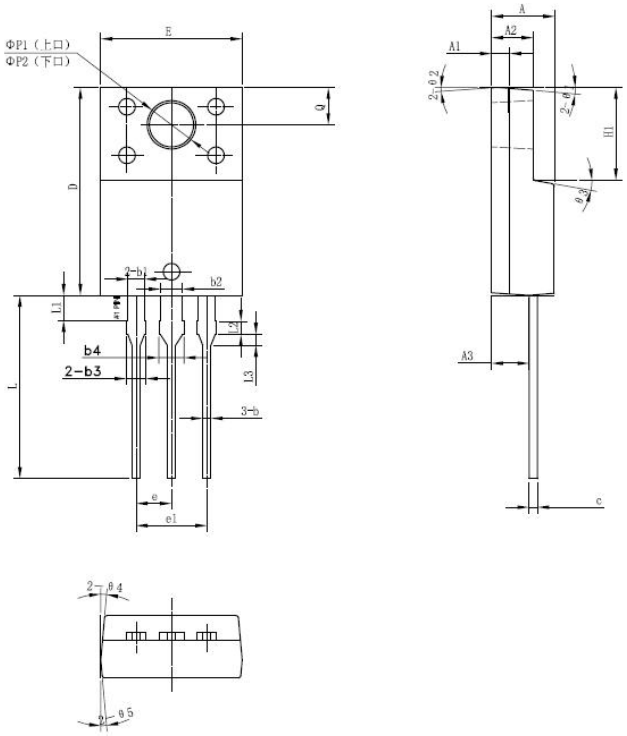
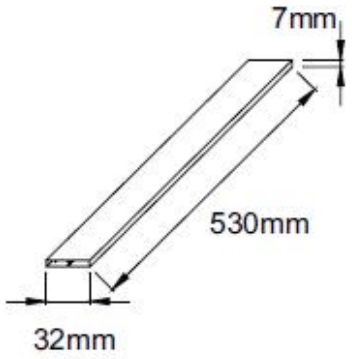
## Mechanical Dimensions ITO-220AB

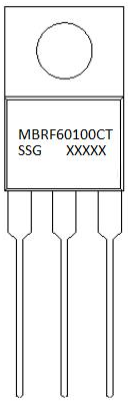


| SYMBOL | Millimeters | | |
|---|---|---|---|
| | MIN. | TYP. | MAX. |
| A | 4.30 | 4.50 | 4.70 |
| A1 | 1.10 | 1.30 | 1.50 |
| A2 | 2.80 | 3.00 | 3.20 |
| A3 | 2.50 | 2.70 | 2.90 |
| b | 0.50 | 0.60 | 0.75 |
| b1 | 1.10 | 1.20 | 1.35 |
| b2 | 1.50 | 1.60 | 1.75 |
| b3 | 1.20 | 1.30 | 1.45 |
| b4 | 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 |
| 60 | = Forward Current (60A) |
| 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 |
|---|---|---|
| MBRF60100CT | ITO-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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