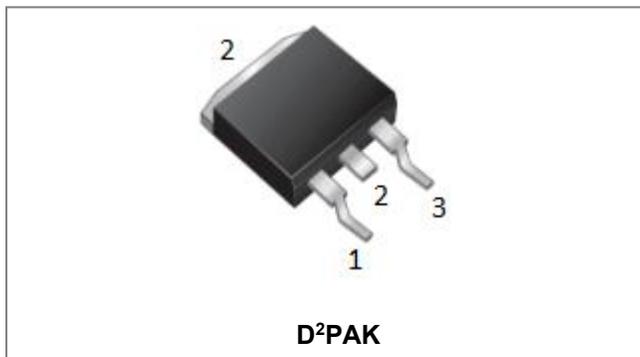


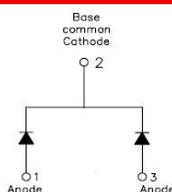
MBRB3045CT SCHOTTKY RECTIFIER



Features

- 200°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 Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | - | 45 | V |
| Average Rectified Forward Current (Per Device) | I _{F(AV)} | 50% duty cycle @T _c =123°C, rectangular wave form | 15(Per Leg) 30(Per Device) | A |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | I _{FSM} | 8.3ms, Half Sine pulse | 240 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|----------------------------------|-----------------|---|------|--------|-------|
| Forward Voltage Drop (Per Leg) * | V _{F1} | @ 15 A, Pulse, T _J = 25 °C | 0.60 | 0.65 | V |
| | V _{F2} | @ 15 A, Pulse, T _J = 125 °C | 0.56 | 0.62 | V |
| Reverse Current (Per Leg) * | I _{R1} | @V _R = rated V _R , T _C = 25 °C | 0.06 | 0.2 | mA |
| | I _{R2} | @V _R = rated V _R , T _C = 125 °C | 20 | 40 | mA |
| Junction Capacitance(Per Leg) | C _T | @V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz | 815 | 900 | 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%

Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|--------------------|--|---|---------------|
| Junction Temperature at reduced reverse voltage at reduced reverse voltage in DC forward mode | T_J | $V_R \leq 80\% V_{RRM}$ $V_R \leq 50\% V_{RRM}$ | -55 to +150 -55 to +180 -55 to +200 | $^{\circ}C$ |
| Storage Temperature | T_{stg} | - | -55 to +150 | $^{\circ}C$ |
| Typical Thermal Resistance Junction to Case(Per Leg) | $R_{\theta JC}$ | DC operation | 1.6 | $^{\circ}C/W$ |
| Approximate Weight | wt | - | 2 | g |
| Case Style | D ² PAK | | | |

Ratings and Characteristics Curves

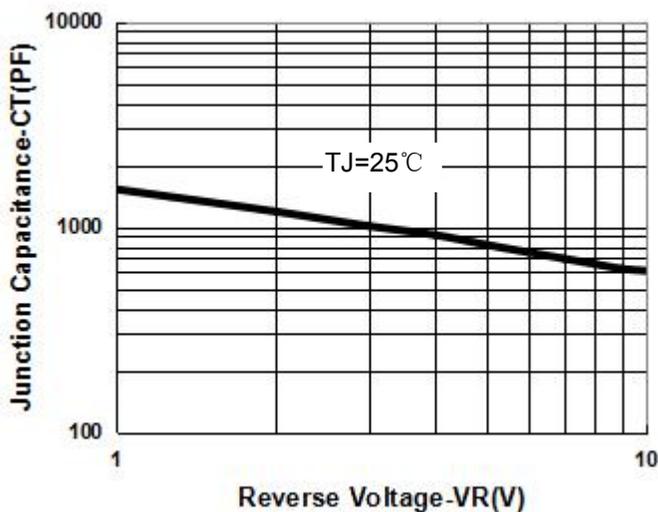


Fig.1-Typical Junction Capacitance

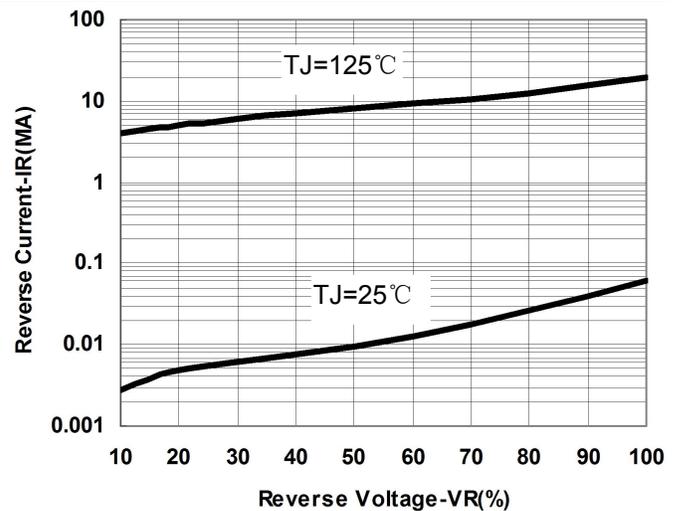


Fig.2-Typical Reverse Characteristics

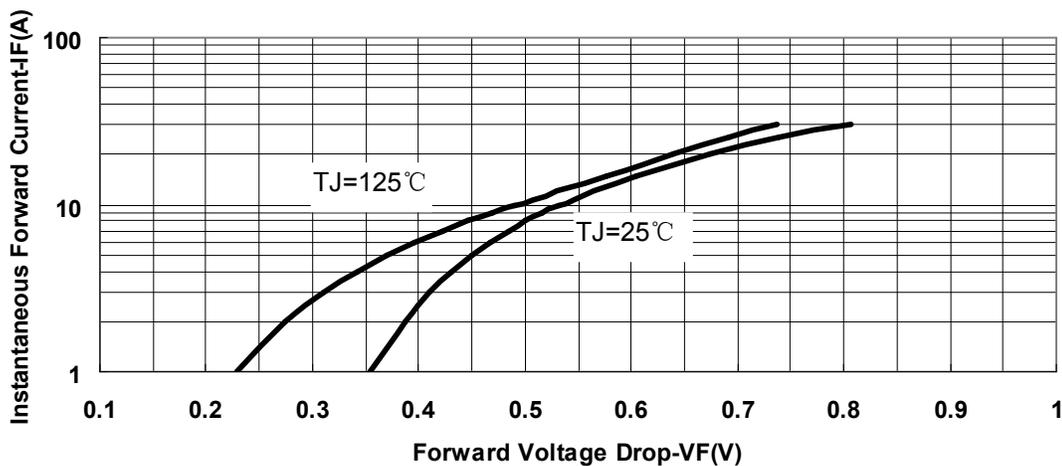
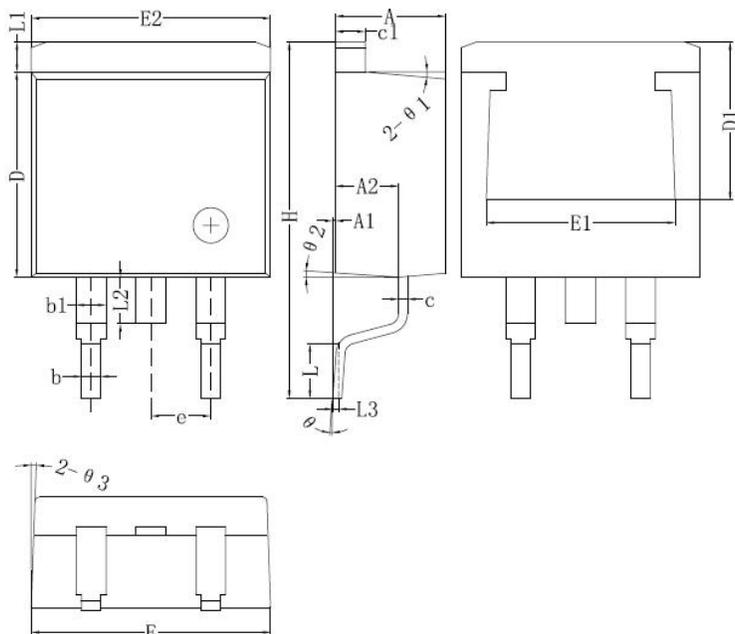


Fig.3-Typical Forward Voltage Drop Characteristics

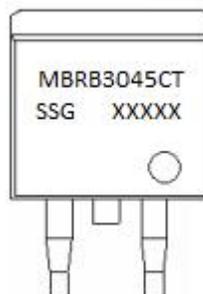
Mechanical Dimensions D²PAK


| Symbol | Dimensions in millimeters | | |
|--------|---------------------------|---------|-------|
| | Min. | Typical | Max. |
| A | 4.47 | 4.70 | 4.85 |
| A1 | 0 | 0.10 | 0.25 |
| A2 | 2.59 | 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 |
| c1 | 1.17 | 1.27 | 1.37 |
| D | 8.50 | 8.70 | 8.90 |
| D1 | 6.40 | | |
| E | 10.01 | 10.16 | 10.31 |
| E1 | 7.6 | | |
| E2 | 9.98 | 10.08 | 10.31 |
| e | | 2.54 | |
| H | 14.6 | 15.1 | 15.6 |
| L | 2.00 | 2.30 | 2.74 |
| L1 | 1.12 | 1.27 | 1.42 |
| L2 | 1.30 | | 2.20 |
| L3 | | 0.25BSC | |
| e | 0 | - | 8° |
| e1 | | 5° | |
| e2 | | 4° | |
| e3 | | 4° | |

Ordering Information

| Device | Package | Shipping |
|------------|--------------------|---------------|
| MBRB3045CT | D ² PAK | 800pcs / reel |

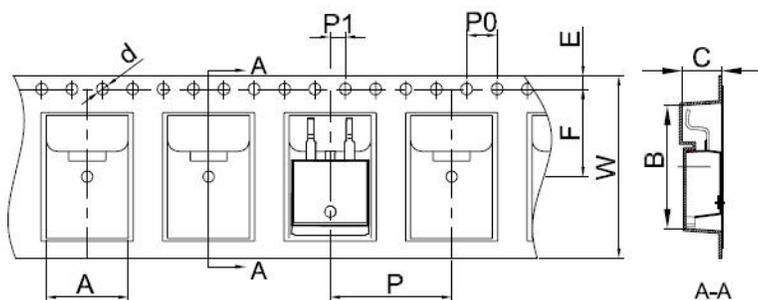
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram


Where XXXXX is YYWWL

- MBR = Device Type
- B = Package type
- 30 = Forward Current (30A)
- 45 = Reverse Voltage(45V)
- CT = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

Carrier Tape Specification D²PAK


| SYMBOL | Millimeters | |
|--------|-------------|-------|
| | Min. | Max. |
| A | 10.70 | 10.90 |
| B | 16.03 | 16.23 |
| C | 5.11 | 5.31 |
| d | 1.45 | 1.65 |
| E | 1.65 | 1.85 |
| F | 11.40 | 11.60 |
| P0 | 3.90 | 4.10 |
| P | 15.90 | 16.10 |
| P1 | 1.90 | 2.10 |
| W | 23.90 | 24.30 |

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