

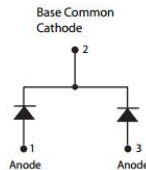
MBR6040WT/MBR6045WT SCHOTTKY RECTIFIER



Features

- 150 °C T_J operation
- 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
- Center tap configuration

Maximum Ratings:

| Characteristics | Symbol | Condition | Max. | | Units |
|--|---------------------------------|--|-------------------------------|----|-------|
| | | | 40 | 45 | |
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | - | 40 | 45 | V |
| Average Rectified Forward Current | $I_{F(AV)}$ | 50% duty cycle @T _c =135°C, rectangular wave form | 30(Per Leg) 60(Per Device) | | A |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | I_{FSM} | 8.3ms, Half Sine pulse | 432 | | A |
| Repetitive Avalanche Current(Per Leg) | I_{AR} | Current decaying linearly to zero in 1 µsec Frequency limited by T _J max.V _A =1.5 × V _R typical | 6 | | A |
| Non-Repetitive Avalanche Energy(Per Leg) | E_{AS} | T _J =25°C, I _{AS} =4A, L=3.4mH | 27 | | mJ |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|------------------------------------|----------|---|------|--------|-------|
| Forward Voltage Drop (Per Leg)* | V_{F1} | @ 30A, Pulse, T _J = 25°C | 0.54 | 0.65 | V |
| | V_{F2} | @ 30A, Pulse, T _J = 125°C | 0.50 | 0.55 | V |
| Reverse Current (Per Leg)* | I_{R1} | @V _R = rated V _R , T _J = 25°C | 0.2 | 1.0 | mA |
| | I_{R2} | @V _R = rated V _R , T _J = 125°C | 70 | 150 | mA |
| Junction Capacitance(Per Leg) | C_T | @V _R = 5V, T _C = 25°C, f _{SIG} = 1MHz | 1595 | 1650 | pF |
| Voltage Rate of Change | dv/dt | - | - | 10,000 | V/µs |

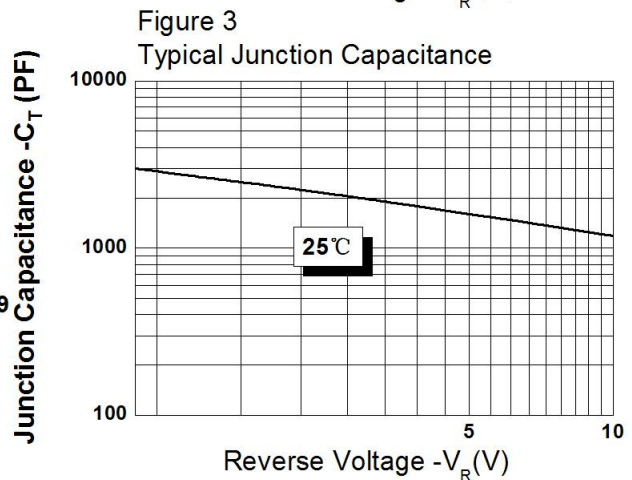
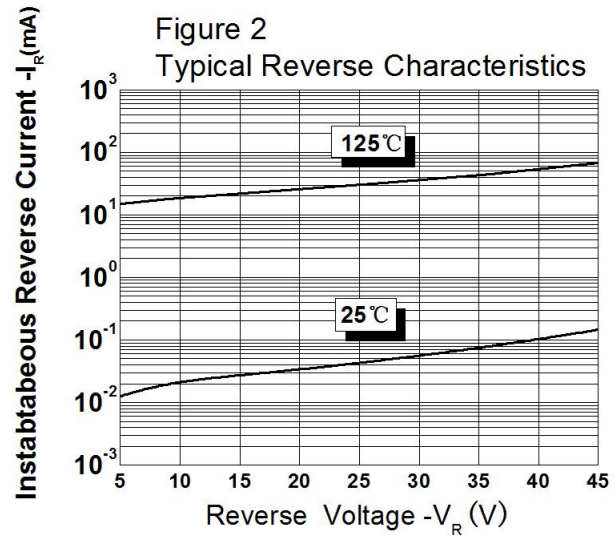
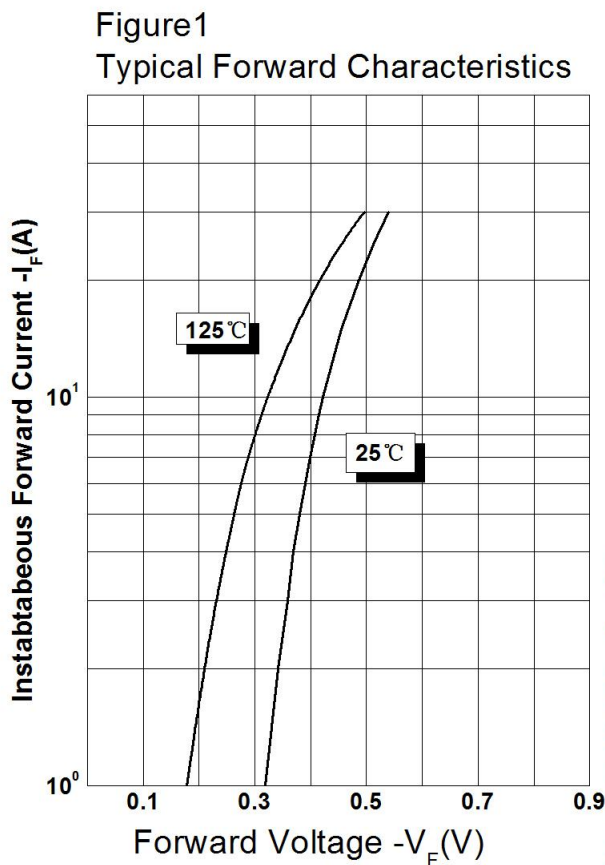
* Pulse width < 300 µs, duty cycle < 2%

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - sales@smc-diodes.com •

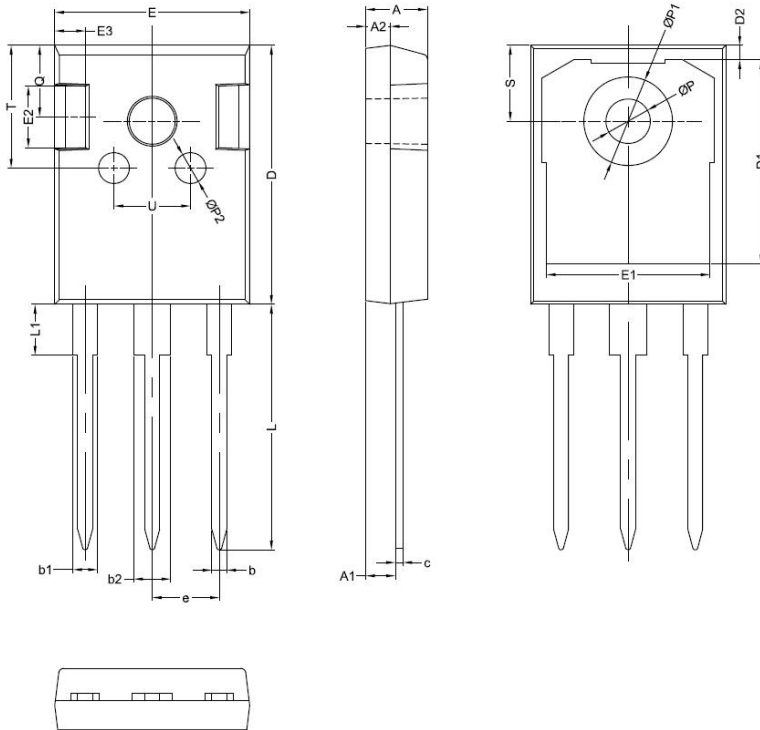
Thermal-Mechanical Specifications:

| 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 | 1.0(per leg) | °C/W |
| | | | 0.5(per package) | |
| Typical Thermal Resistance, Case to Heat Sink | $R_{\theta CS}$ | Mounting surface, smooth and greased | 0.24 | °C/W |
| Approximate Weight | wt | - | 6.28 | g |
| Case Style | TO-247AD | | | |

Ratings and Characteristics Curves



Mechanical Dimensions TO-247AD



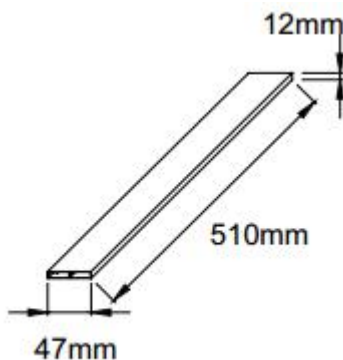
| SYMBOL | Millimeters | | |
|--------|-------------|-------|-------|
| | MIN. | TYP. | MAX. |
| A | 4.80 | 5.00 | 5.20 |
| A1 | 2.20 | 2.41 | 2.61 |
| A2 | 1.90 | 2.00 | 2.10 |
| b | 1.10 | 1.20 | 1.40 |
| b1 | 1.80 | 2.00 | 2.20 |
| b2 | 2.80 | 3.00 | 3.20 |
| c | 0.50 | 0.60 | 0.75 |
| D | 20.30 | 21.00 | 21.20 |
| D1 | | 16.55 | |
| D2 | | 1.20 | |
| E | 15.45 | 15.80 | 16.00 |
| E1 | | 13.30 | |
| E2 | | 5.00 | |
| E3 | | 2.50 | |
| e | | 5.44 | |
| L | 19.42 | 19.92 | 20.70 |
| L1 | | 4.13 | |
| P | 3.50 | 3.60 | 3.70 |
| P1 | 7.1 | | 7.40 |
| P2 | | 2.50 | |
| Q | | 5.80 | |
| S | 6.05 | 6.15 | 6.25 |
| T | | 10.00 | |
| U | | 6.20 | |

Ordering Information:

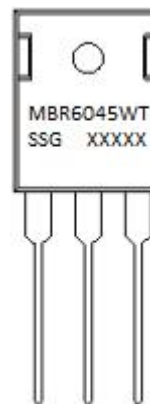
| Device | Package | Shipping |
|-----------------------|-------------------|--------------|
| SDUR6040WT/SDUR6045WT | TO-247AD(Pb-Free) | 25pcs / tube |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

Tube Specification



Marking Diagram



Where XXXXX is YYWWL

- MBR = Device Type
- 60 = Forward Current (60A)
- 40/45 = Reverse Voltage (40V/45V)
- WT = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

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