

Features

- Halogen Free. "Green" Device (Note 1)
- High Surge Forward Current Capability
- Low Power Loss, High Efficiency
- Lead Free Finish/RoHS Compliant(Note 2)("P" Suffix Designates Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Typical Thermal Resistance: 8.0 °C/W Junction to Case

| MCC Part Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|-----------------|----------------|--|---------------------|-----------------------------|
| MBR5U100 | 5U100 | 100V | 70V | 100V |

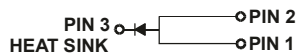
Electrical Characteristics @ 25°C Unless Otherwise Specified

| | | | |
|--|-------------|--|--|
| Average Forward Current | $I_{F(AV)}$ | 5A | $T_c = 125^\circ\text{C}$ |
| Peak Forward Surge Current | I_{FSM} | 120A | 8.3ms, Half Sine |
| Forward Voltage | V_F | 0.45V(Typ.) 0.51V(Max.) 0.54V(Typ.) 0.60V(Max.) | $I_F=3A \quad T_J=25^\circ\text{C}$ $I_F=5A \quad T_J=25^\circ\text{C}$ |
| Maximum Reverse Current At Rated DC Blocking Voltage | I_R | 0.1mA 20mA | $T_J=25^\circ\text{C}$ $T_J=100^\circ\text{C}$ |
| Reverse Breakdown Voltage | V_{BR} | 100V(Min.) | $I_R=0.5mA$ |
| Current Squared Time | I^2T | 60 A ² s | $1ms \leq t < 8.3ms$ $T_J=25^\circ\text{C}$ |

Notes:

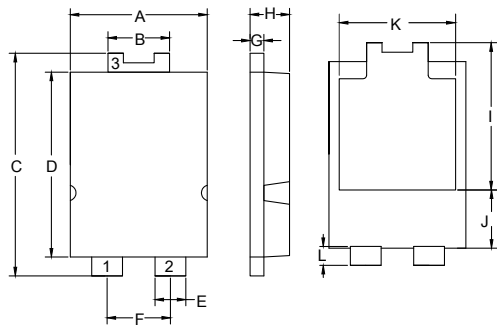
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

Internal Structure



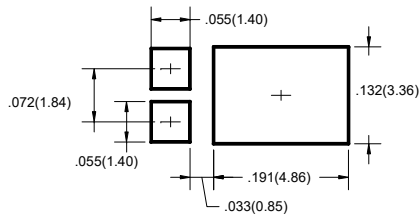
5 Amp Trench Schottky Barrier Rectifier 100 Volts

TO-277



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.154 | 0.161 | 3.90 | 4.10 | |
| B | 0.067 | 0.075 | 1.70 | 1.90 | |
| C | 0.252 | 0.260 | 6.40 | 6.60 | |
| D | 0.209 | 0.217 | 5.30 | 5.50 | |
| E | 0.031 | 0.039 | 0.80 | 1.00 | |
| F | 0.071 | 0.075 | 1.80 | 1.90 | |
| G | 0.014 | 0.018 | 0.35 | 0.45 | |
| H | 0.043 | 0.047 | 1.10 | 1.20 | |
| I | 0.161 | 0.177 | 4.10 | 4.50 | |
| J | 0.059 | 0.075 | 1.50 | 1.90 | |
| K | 0.114 | 0.134 | 2.90 | 3.40 | |
| L | 0.022 | 0.030 | 0.55 | 0.75 | |

Suggested Solder Pad Layout



Curve Characteristics

Fig. 1 - Forward Current Derating Curve

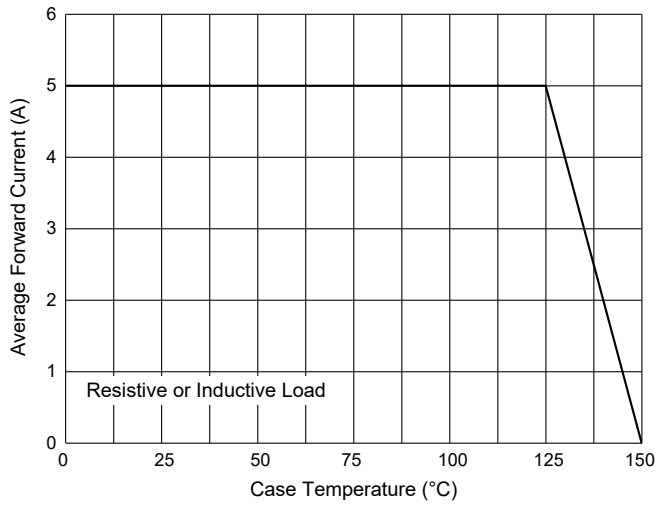


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

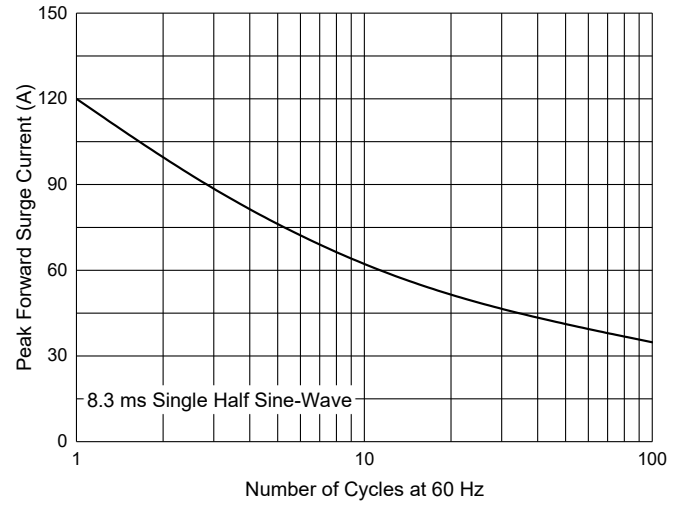


Fig. 3 - Typical Instantaneous Forward Characteristics

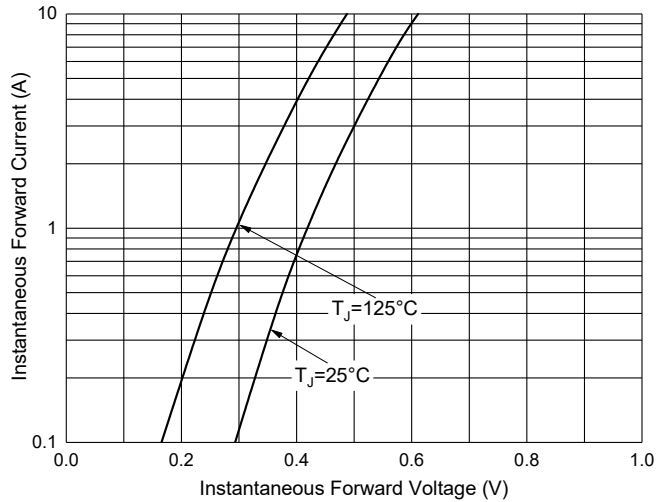
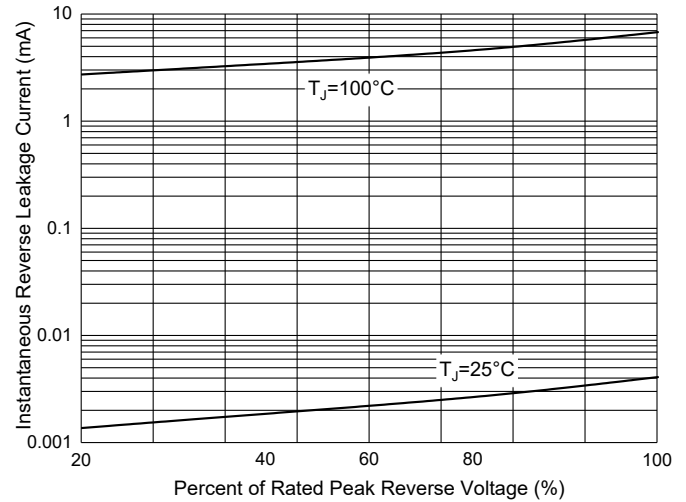


Fig. 4 - Typical Reverse Leakage Characteristics



Ordering Information

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 4Kpcs/Reel |

| |
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