

Features

- High Frequency Operation
- Low Forward Voltage Drop
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix Designates Compliant. See Ordering Information)
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- 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
- Thermal Resistance : 2.0°C/W Junction to Case

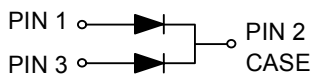
| MCC Part Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|-----------------|----------------|----------------------------------------|---------------------|-----------------------------|
| MBRBL40100CT | MBRBL40100CT | 100V | 70V | 100V |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| | | | |
|---------------------------------------------------------|-------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Average Forward Current | $I_{F(AV)}$ | 40A | $T_C=100^\circ\text{C}$ |
| Peak Forward Surge Current | I_{FSM} | 300A | 8.3ms, Half Sine |
| Current Squared Time | I^2t | 373A ² S | 1ms ≤ t < 8.3ms |
| Instantaneous Forward Voltage | V_F | 0.65V(Typ.) 0.71V(Max.) 0.61V(Typ.) 0.75V(Max.) | $I_{FM}=20A T_J=25^\circ\text{C}$ $I_{FM}=20A T_J=25^\circ\text{C}$ $I_{FM}=20A T_J=125^\circ\text{C}$ $I_{FM}=20A T_J=125^\circ\text{C}$ |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | I_R | 0.08mA 20mA | $T_J=25^\circ\text{C}$ $T_J=100^\circ\text{C}$ |
| Typical Junction Capacitance | C_J | 1nF | Measured at 1.0MHz, $V_R=4.0V$ |

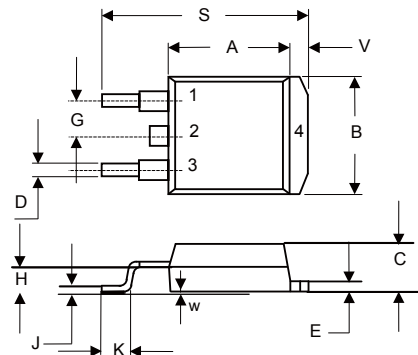
Note :1. High Temperature Solder Exemption Applied, See EU Directive Annex 7a.

Internal Structure:



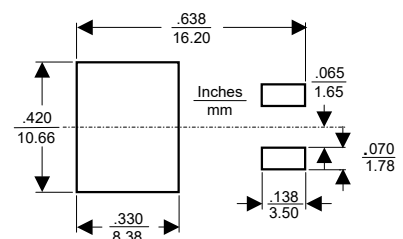
**40 Amp
Low VF
Schottky Barrier
Rectifier
100 Volts**

D²-PAK



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|-------|-------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.331 | 0.370 | 8.40 | 9.40 | |
| B | 0.378 | 0.417 | 9.60 | 10.60 | |
| C | 0.165 | 0.189 | 4.20 | 4.80 | |
| D | 0.027 | 0.037 | 0.68 | 0.94 | |
| E | 0.045 | 0.055 | 1.14 | 1.40 | |
| G | 0.010 | | 2.54 | | TYP. |
| H | 0.096 | 0.134 | 2.43 | 3.40 | |
| J | 0.011 | 0.025 | 0.28 | 0.64 | |
| K | 0.071 | 0.131 | 1.80 | 3.32 | |
| S | 0.575 | 0.625 | 14.60 | 15.87 | |
| V | 0.042 | 0.058 | 1.07 | 1.47 | |
| W | 0.000 | 0.010 | 0.00 | 0.25 | |

Suggested Solder Pad Layout



Curve Characteristics

Fig. 1 - Forward Current Derating Curve

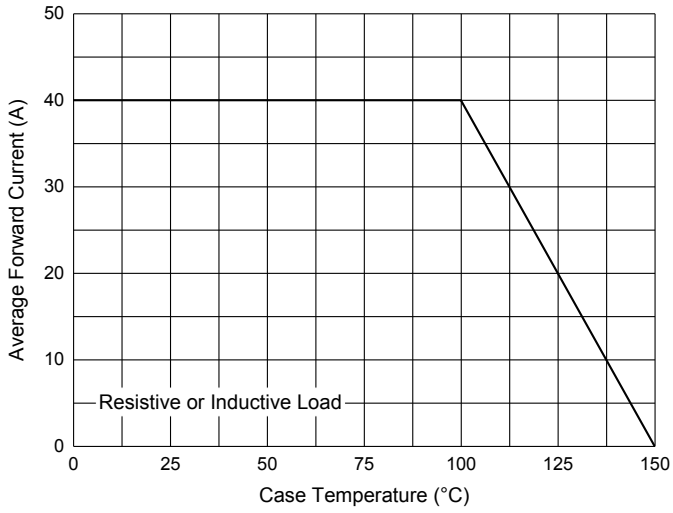


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

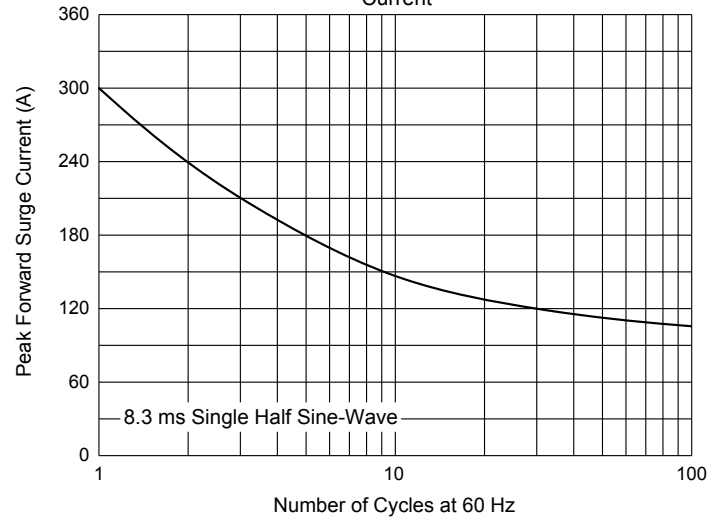


Fig. 3 - Typical Instantaneous Forward Characteristics

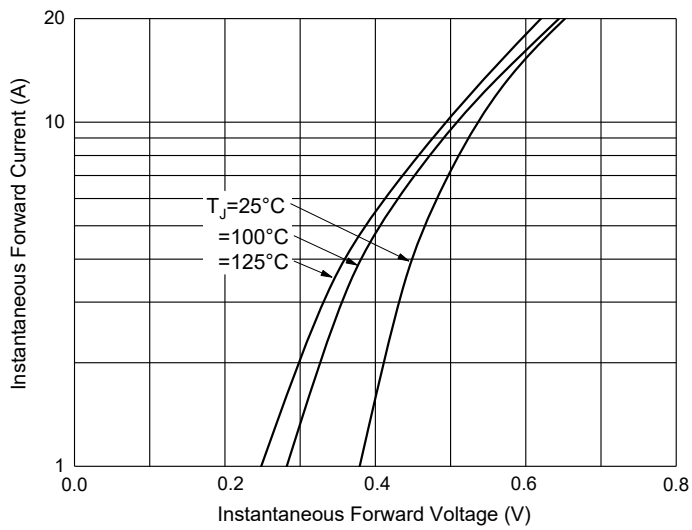
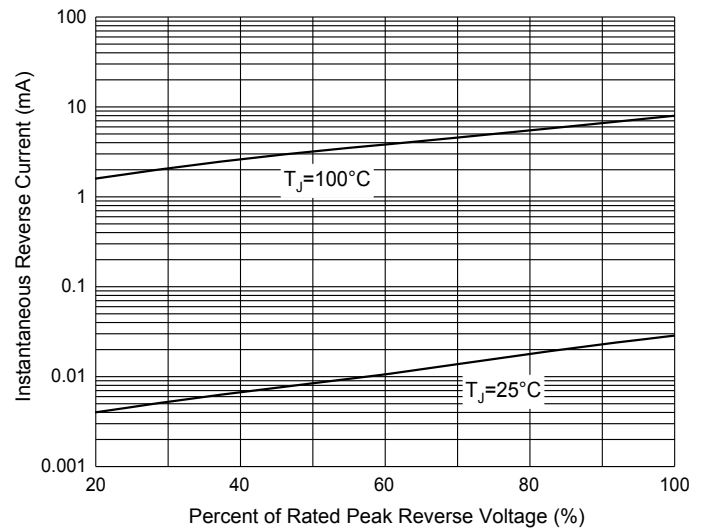


Fig. 4 - Typical Reverse Leakage Characteristics



Ordering Information

| Device | Packing |
|----------------|------------------------|
| Part Number-TP | Tape&Reel: 800pcs/Reel |
| Part Number-BP | Tube: 5Kpcs/Ctn |

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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