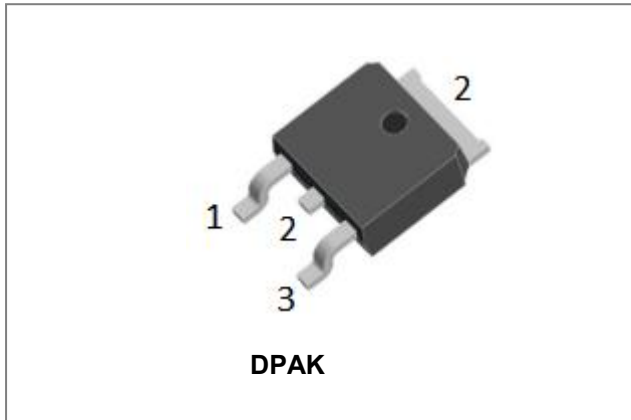


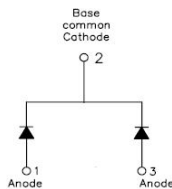
MBRD20100CT SCHOTTKY RECTIFIER



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
- “-A” is an AEC-Q101 qualified device
- 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
- Battery charging

Maximum Ratings:

| Characteristics | Symbol | Condition | Max. | Units |
|----------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------|-------------------------------|-------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | - | 100 | V |
| Average Rectified Forward Current | I _{F(AV)} | 50% duty cycle @T _C = 105°C, rectangular wave form | 10(peg leg) 20(peg device) | A |
| Peak One Cycle Non-Repetitive Surge Current(peg leg) | I _{FSM} | 8.3 ms, half Sine pulse | 120 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|----------------------------------|-----------------|-----------------------------------------------------------------------|-------|------|-------|
| Forward Voltage Drop (per leg) * | V _{F1} | @ 10A, Pulse, T _J = 25 °C | 0.75 | 0.90 | V |
| | V _{F2} | @ 10A, Pulse, T _J = 125 °C | 0.64 | 0.84 | V |
| Reverse Current (per leg) * | I _{R1} | @V _R = rated V _R , T _J = 25 °C | 0.006 | 1.0 | mA |
| | I _{R2} | @V _R = rated V _R , T _J = 125 °C | 1 | 6.0 | mA |
| Junction Capacitance(per leg) | C _T | @V _R = 5V, T _C = 25 °C, f _{sig} = 1MHz | 230 | 250 | pF |

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

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(per leg) | $R_{\theta JC}$ | - | 3.5 | °C/W |
| Approximate Weight | wt | - | 0.39 | g |
| Case Style | DPAK | | | |

Ratings and Characteristics Curves

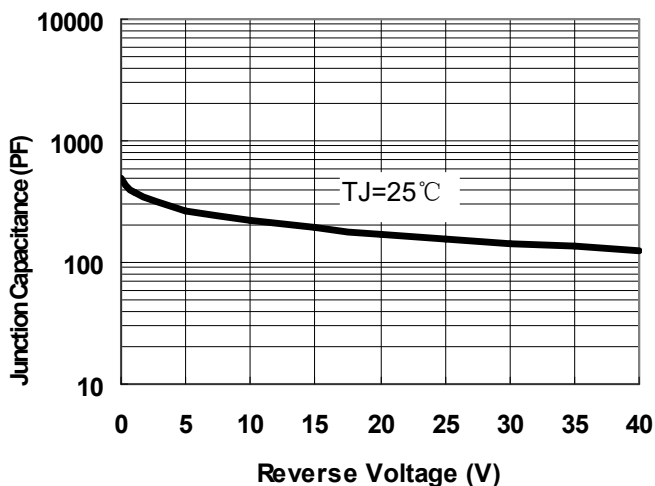


Fig.1-Typical Junction Capacitance

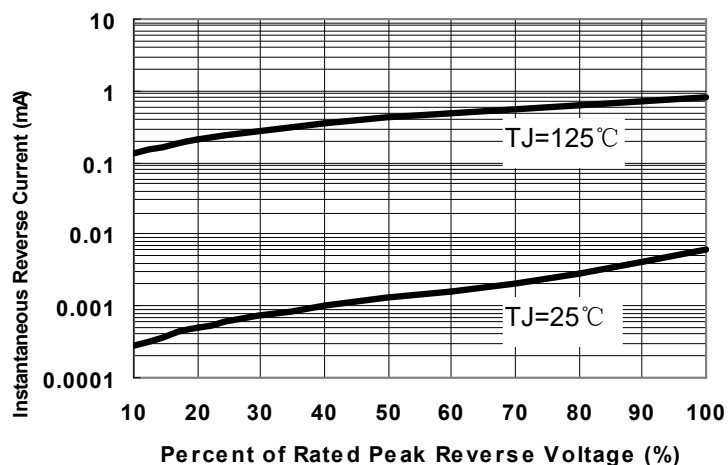


Fig.2-Typical Reverse Characteristics

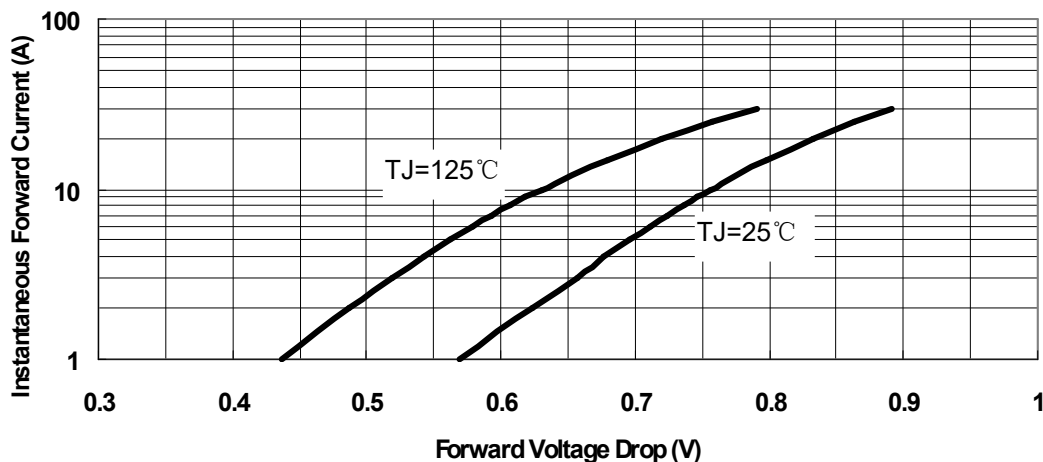
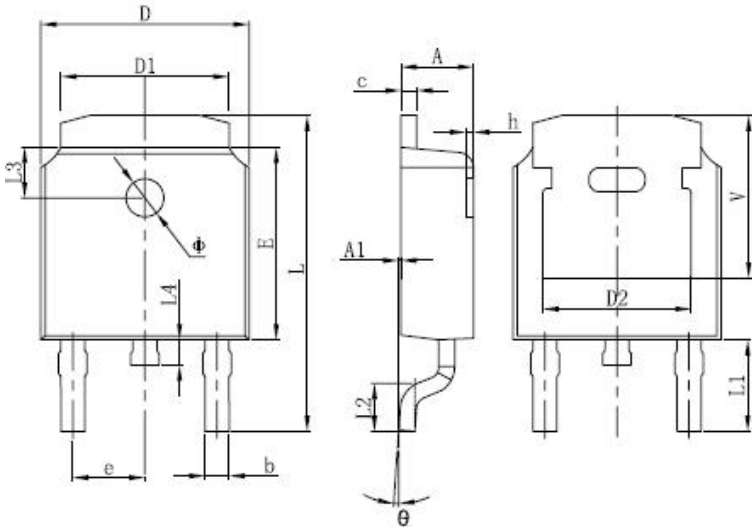


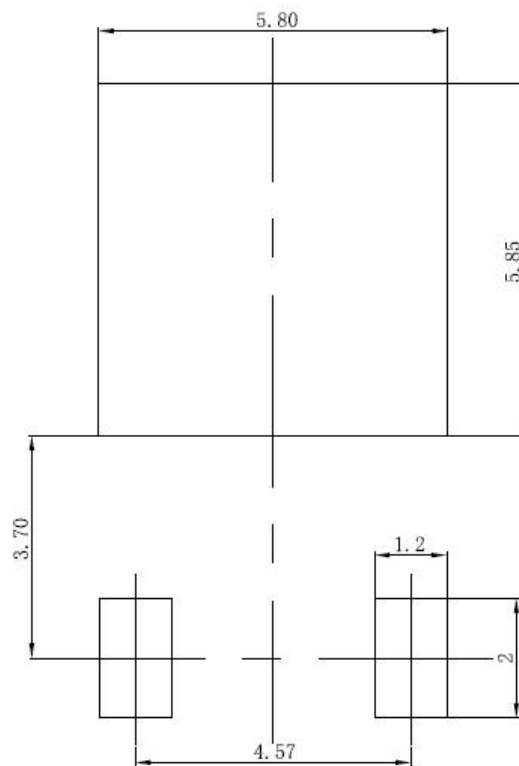
Fig.3-Typical Instantaneous Forward Voltage Characteristics

Mechanical Dimensions DPAK



| SYMBOL | Dimensions in Millimeters | | Dimensions in Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 2.20 | 2.40 | 0.086 | 0.094 |
| A1 | 0 | 0.13 | 0 | 0.005 |
| b | 0.635 | 0.889 | 0.025 | 0.035 |
| c | 0.460 | 0.889 | 0.018 | 0.035 |
| D | 6.50 | 6.70 | 0.250 | 0.265 |
| D1 | 4.95 | 5.46 | 0.195 | 0.215 |
| D2 | 4.32 REF. | | 0.170 REF. | |
| E | 6.00 | 6.20 | 0.235 | 0.245 |
| e | 2.286 BSC | | 0.090 BSC | |
| L | 9.398 | 10.414 | 0.370 | 0.410 |
| L1 | 1.778 REF. | | 0.108 REF. | |
| L2 | 1.40 | 1.78 | 0.055 | 0.07 |
| L3 | 1.60 REF. | | 0.063 REF. | |
| L4 | 0.60 | 1.02 | 0.024 | 0.040 |
| Φ | 1.10 | 1.30 | 0.043 | 0.051 |
| Θ | 0° | 10° | 0° | 10° |
| h | 0 | 0.30 | 0 | 0.012 |
| V | 5.21 REF. | | 0.205 REF. | |

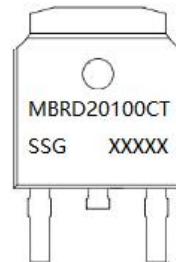
Suggested PCB Pinfoot Layout DPAK(mm)



Ordering Information

| Device | Package | Shipping |
|---------------|--------------------|----------------|
| MBRD20100CT | DDPAK (Pb-Free) | 2500pcs / reel |
| MBRD20100CTTR | DDPAK (Pb-Free) | 2500pcs / reel |

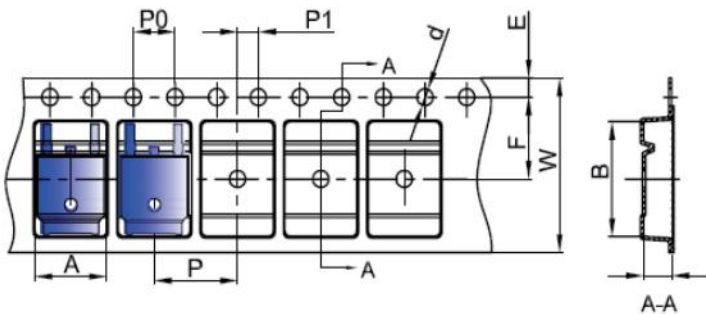
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel Packaging specification.

Marking Diagram


Where XXXXX is YYWWL

MBR = Device Type
 D = Package type
 20 = Forward Current (20A)
 100 = Reverse Voltage (100V)
 CT = Configuration
 SSG = SSG
 YY = Year
 WW = Week
 L = Lot Number

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

Carrier Tape Specification DPAK


| SYMBOL | Millimeters | |
|--------|-------------|-------|
| | Min. | Max. |
| A | 6.80 | 7.00 |
| B | 10.40 | 10.60 |
| C | 2.60 | 2.80 |
| d | Φ1.45 | Φ1.65 |
| E | 1.65 | 1.85 |
| F | 7.40 | 7.60 |
| P0 | 3.90 | 4.10 |
| P | 7.90 | 8.10 |
| P1 | 1.90 | 2.10 |
| W | 15.90 | 16.30 |

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