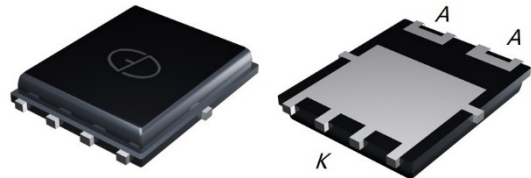


5A,100V Schottky Barrier Rectifier

Features

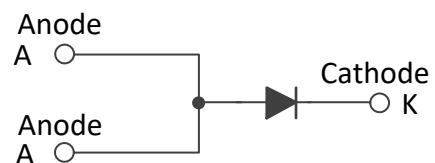
- Low forward voltage, low power loss
- Low leakage current
- High surge current
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



PDFN56

Applications

- SMPS
- Adapter
- Server Power



Mechanical Data

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 3000 units per reel

| Maximum Ratings & Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted) | | | |
|--|--------|-------------|------|
| Parameter | Symbol | MBRP5100 | Unit |
| Maximum repetitive peak reverse voltage | VRRM | 100 | V |
| Maximum RMS voltage | VRMS | 70 | V |
| Maximum DC blocking voltage | VDC | 100 | V |
| Maximum average forward | IF(AV) | 5 | A |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode | IFSM | 120 | A |
| Operating junction temperature range | TJ | -55 to +150 | °C |
| Storage temperature range | TSTG | -55 to +150 | °C |

| Electrical Specifications (T _A =25°C unless otherwise noted) | | | | | |
|--|----------------|---|------|------|------|
| Parameter | Symbol | Test Conditions | Typ | Max | Unit |
| Forward drop voltage ^(Note1) | V _F | I _F =5A, T _J =25°C | 0.70 | 0.76 | V |
| | | I _F =5A, T _J =125°C | - | 0.68 | |
| Reverse leakage current @V _R ^(Note2) | I _R | T _J =25°C | - | 20 | uA |
| | | T _J =100°C | - | 5 | mA |

| Thermal-Mechanical Specifications (T _A =25°C unless otherwise noted) | | | |
|--|------------------|-----|-------|
| Parameter | Symbol | Typ | Unit |
| Thermal Resistance, Junction to Case | R _{θJC} | 3 | °C /W |
| Thermal Resistance, Junction to Ambient | R _{θJA} | 50 | °C /W |

Note:

1. Pulse test with PW=0.3ms, duty cycle=2%
2. Pulse test with PW=30ms

Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

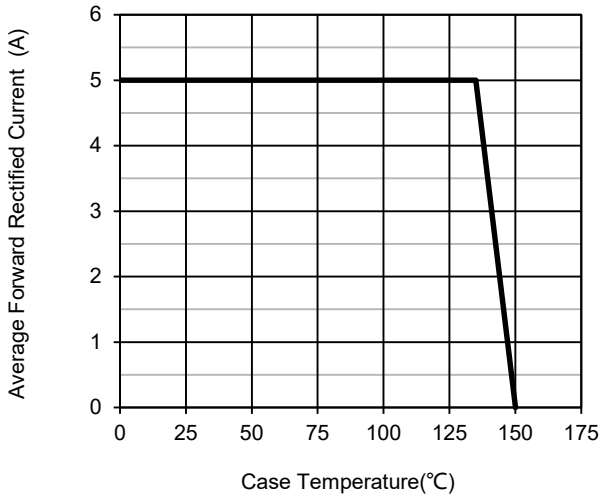


Fig.1 – Forward Current Derating Curve

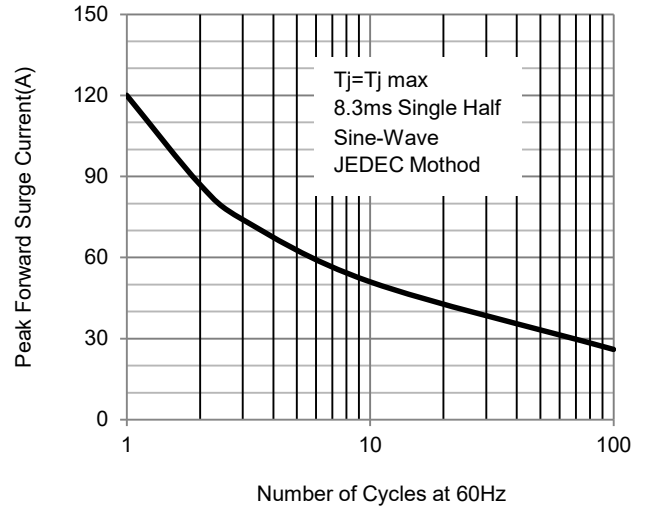


Fig.2 – Maximum Non-Repetitive Surge Current

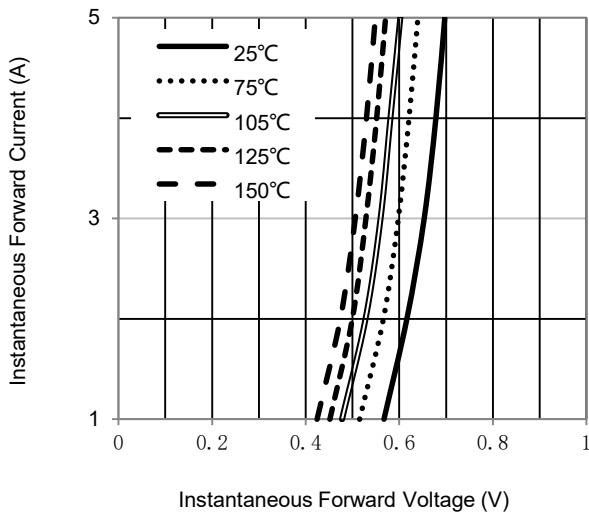


Fig.3 – Typical Forward Voltage Characteristics

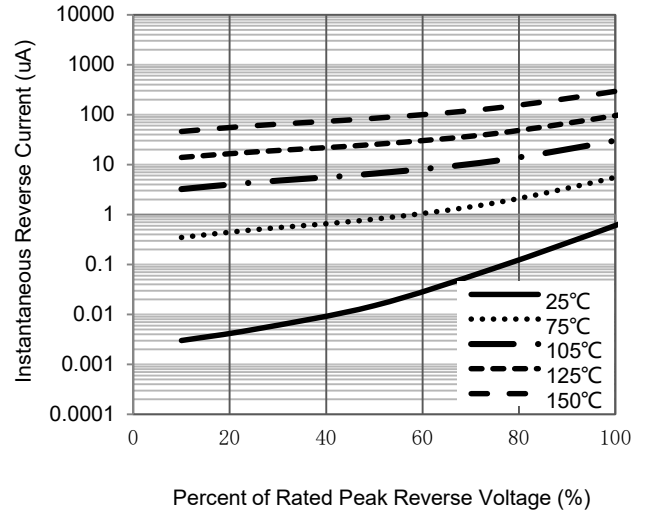


Fig.4 – Typical Reverse Current Characteristics

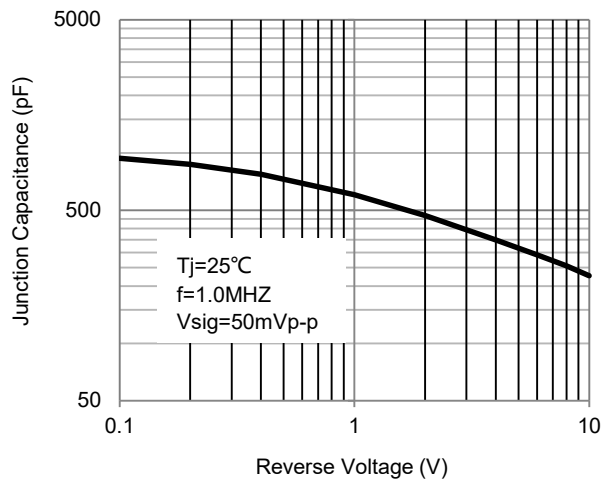
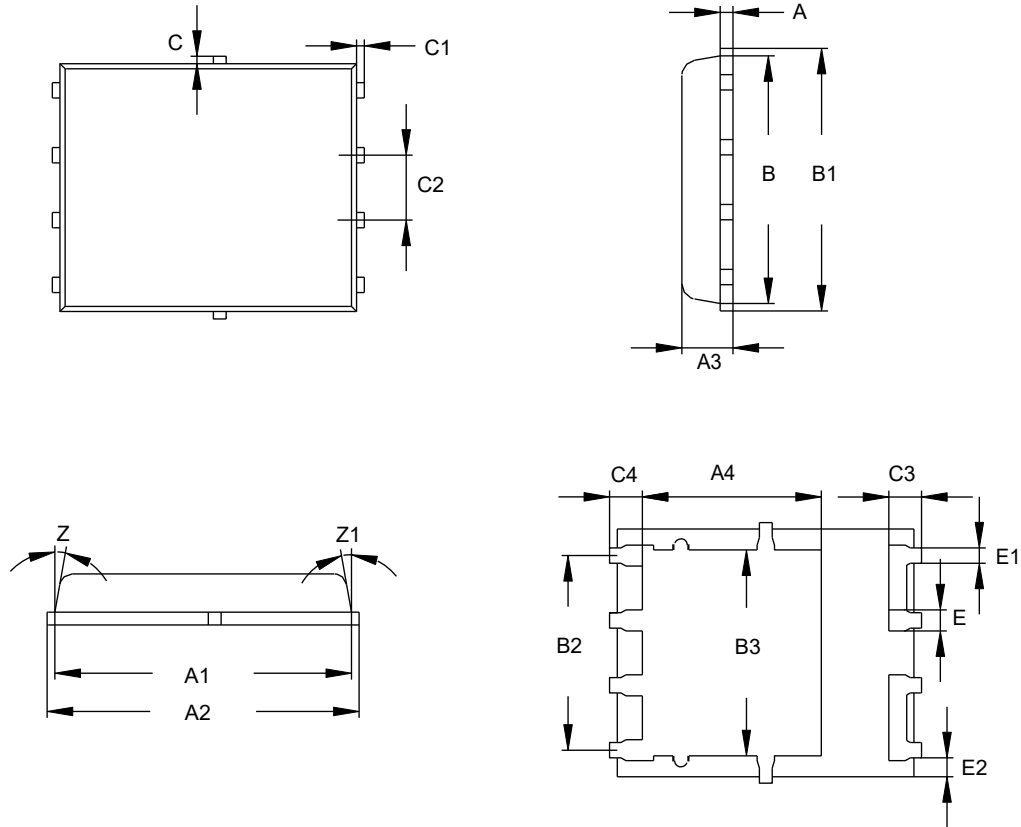


Fig.5 – Typical Junction Capacitance

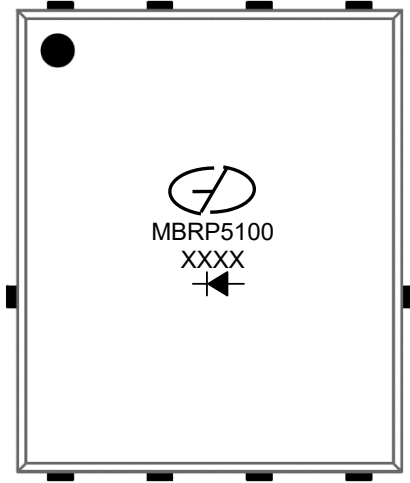
Package Outline Dimensions (Unit: millimeters)



PDFN56



| PDFN56 | | | | | | | |
|--------|------|------|------|----|------|------|------|
| | Min. | Nom. | Max. | | Min. | Nom. | Max. |
| A | 0.15 | 0.25 | 0.35 | C1 | 0.05 | 0.15 | 0.25 |
| A1 | 5.6 | 5.8 | 6.0 | C2 | 1.17 | 1.27 | 1.37 |
| A2 | 5.9 | 6.1 | 6.3 | C3 | 0.53 | 0.63 | 0.73 |
| A3 | 0.9 | 1 | 1.1 | C4 | | 0.63 | |
| A4 | | 3.5 | | E | 0.31 | 0.41 | 0.51 |
| B | 4.7 | 4.9 | 5.1 | E1 | 0.2 | 0.3 | 0.4 |
| B1 | 5 | 5.2 | 5.4 | E2 | 0.25 | 0.35 | 0.45 |
| B2 | 3.71 | 3.81 | 3.91 | Z | 8° | 10° | 12° |
| B3 | | 4 | | Z1 | 8° | 10° | 12° |
| C | 0.05 | 0.15 | 0.25 | | | | |

Marking Outline



1. Logo Mark: 
2. Part Name: MBRP5100
3. Date Code: XXXX
4. Polarity : 

Revision History

| Document Version | Date of release | Description of changes |
|------------------|-----------------|---|
| Rev.A | 2013.12.10 | Released Datasheet |
| Rev.B | 2021.01.12 | Modify document format |
| Rev.C | 2022.04.29 | Modify ratings and characteristics curves |

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