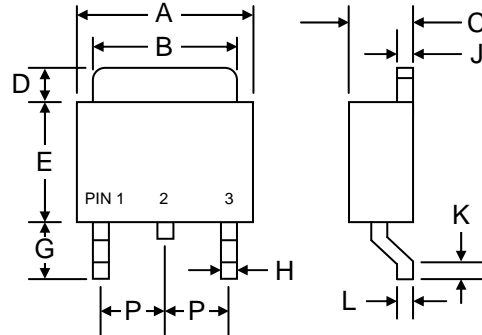


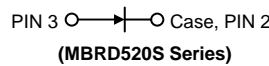
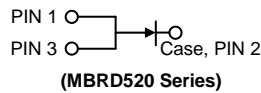
Features

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- High Surge Current Capability
- Low Power Loss, High Efficiency
- Ideally Suited for Automatic Assembly
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications



Mechanical Data

- Case: DPAK/TO-252, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.3 grams (approx.)
- Mounting Position: Any
- Marking: Device Code, See Page 3
- **Lead Free: For RoHS / Lead Free Version, Add “-LF” Suffix to Part Number, See Page 4**



| DPAK/TO-252 | | |
|----------------------|--------------|------|
| Dim | Min | Max |
| A | 6.05 | 6.70 |
| B | 5.05 | 5.55 |
| C | 2.10 | 2.50 |
| D | 1.05 | 1.25 |
| E | 5.48 | 6.20 |
| G | 2.55 | 3.40 |
| H | 0.55 | 0.90 |
| J | 0.40 | 0.60 |
| K | 0.95 | 1.60 |
| L | 0.45 | 0.55 |
| P | 2.30 Typical | |
| All Dimensions in mm | | |

Maximum Ratings and Electrical Characteristics @T_A=25°C unless otherwise specified

Single Phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Characteristic | Symbol | MBRD 520/S | MBRD 530/S | MBRD 540/S | MBRD 550/S | MBRD 560/S | MBRD 580/S | MBRD 5100/S | Unit |
|---|-----------------------------------|-------------|------------|------------|------------|------------|------------|-------------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 20 | 30 | 40 | 50 | 60 | 80 | 100 | V |
| Working Peak Reverse Voltage | V _{RRWM} | | | | | | | | |
| DC Blocking Voltage | V _R | | | | | | | | |
| RMS Reverse Voltage | V _{R(RMS)} | 14 | 21 | 28 | 35 | 42 | 56 | 70 | V |
| Average Rectified Output Current @T _C = 125°C | I _O | 5.0 | | | | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) | I _{FSM} | 85 | | | | | | | A |
| Forward Voltage @I _F = 5.0A | V _{FM} | 0.55 | | 0.75 | | 0.85 | | | V |
| Peak Reverse Current @T _J = 25°C At Rated DC Blocking Voltage @T _J = 100°C | I _{RM} | 0.2 | | | 20 | | | | mA |
| Typical Junction Capacitance (Note 1) | C _J | 500 | | | 380 | | | | pF |
| Thermal Resistance, Junction to Ambient (Note 2) | R _{JA} | | | | 80 | | | | °C/W |
| Thermal Resistance, Junction to Case (Note 2) | R _{JC} | | | | 5.0 | | | | |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | | | | | | | °C |

Note: 1. Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC.
2. Mounted on FR-4 PC board with minimum recommended pad layout.

MBRD520/S – MBRD5100/S

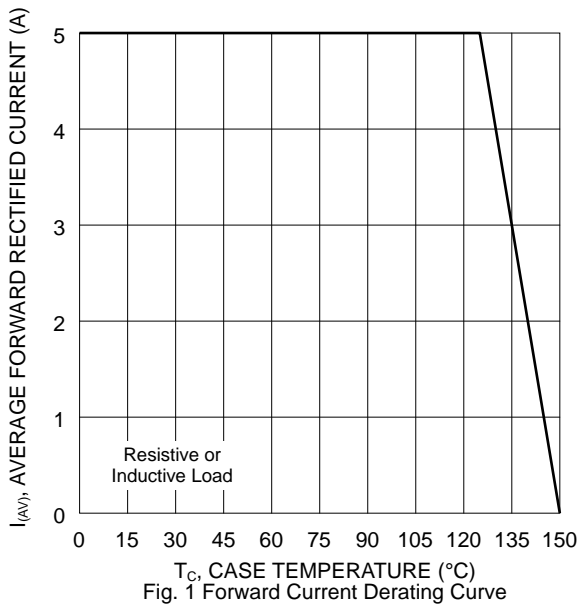


Fig. 1 Forward Current Derating Curve

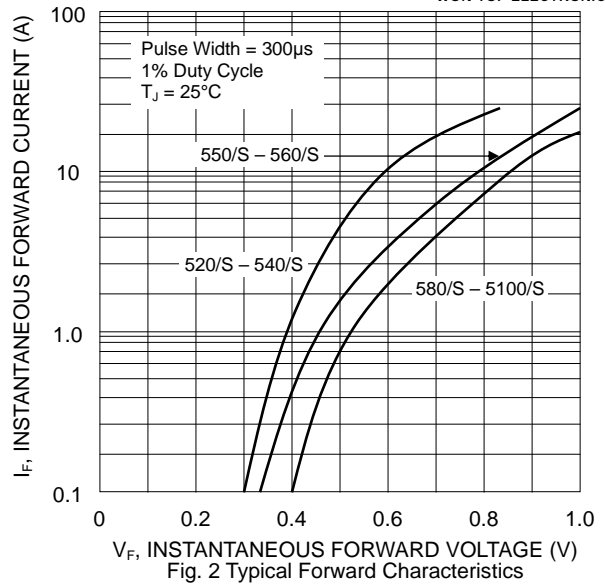


Fig. 2 Typical Forward Characteristics

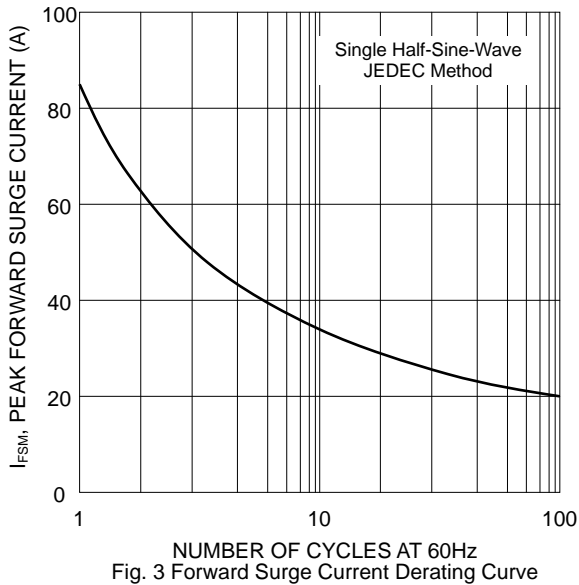


Fig. 3 Forward Surge Current Derating Curve

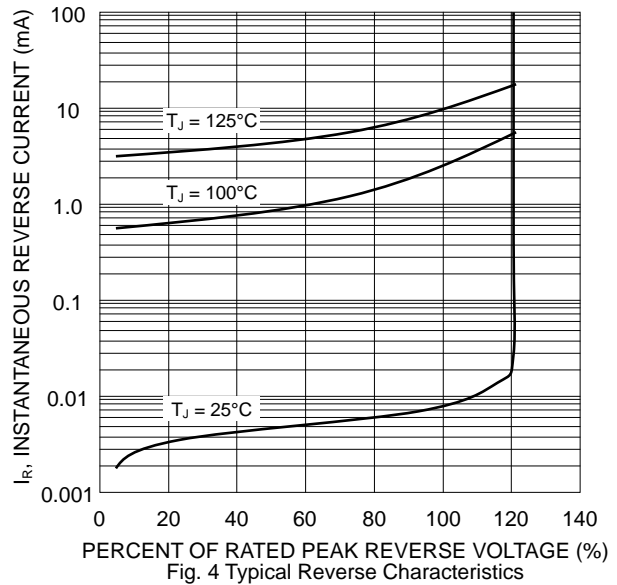


Fig. 4 Typical Reverse Characteristics

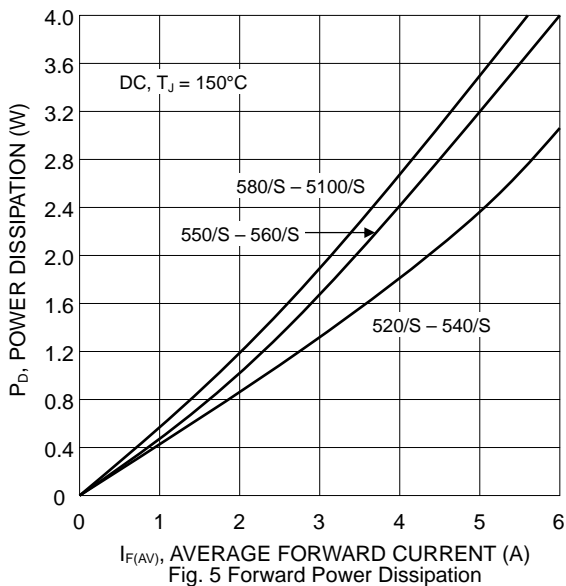


Fig. 5 Forward Power Dissipation

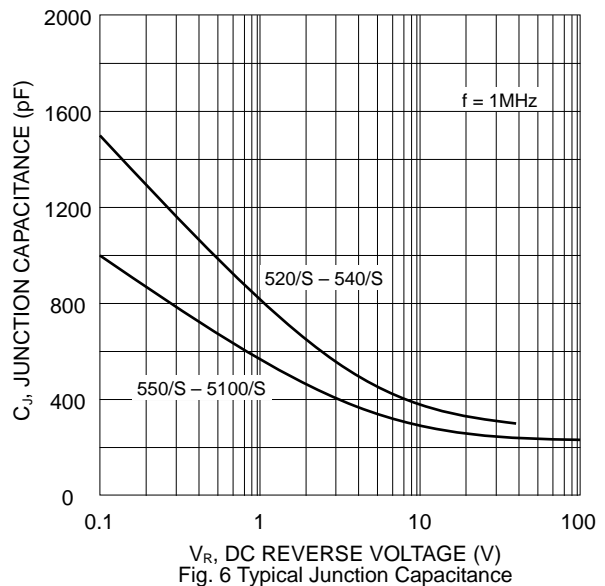
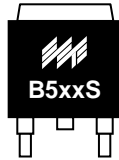


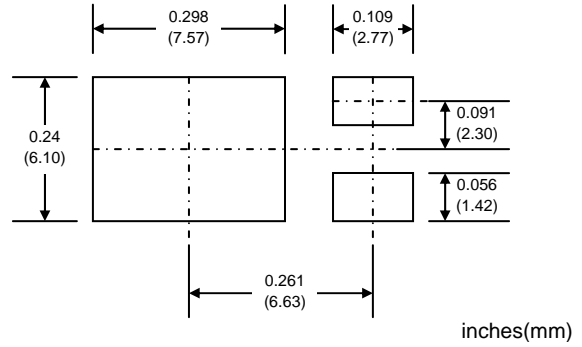
Fig. 6 Typical Junction Capacitance

MARKING INFORMATION



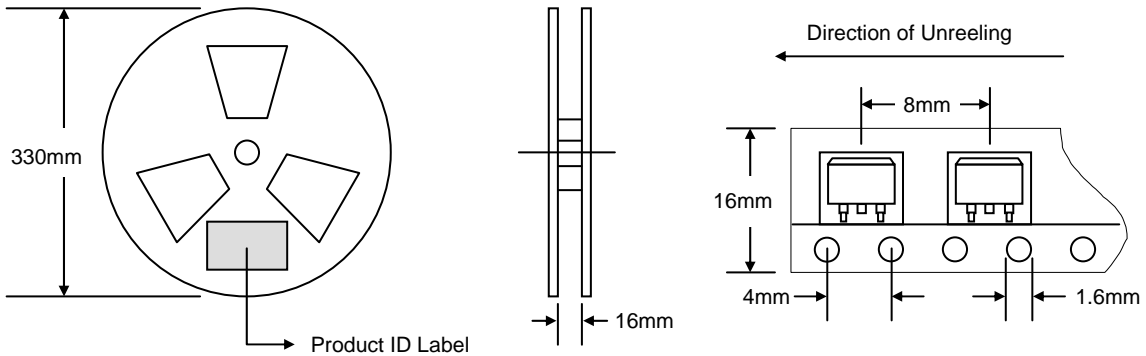
B5xx = Device Number
xx = 20, 30, 40, 50, 60, 80 or 100
S = Suffix for MBRD520S Series (remove when ordering MBRD520 series)

RECOMMENDED FOOTPRINT



PACKAGING INFORMATION

TAPE & REEL



| Reel Diameter (mm) | Quantity (PCS) | Inner Box Size L x W x H (mm) | Quantity (PCS) | Carton Size L x W x H (mm) | Quantity (PCS) | Approx. Gross Weight (KG) |
|--------------------|----------------|-------------------------------|----------------|----------------------------|----------------|---------------------------|
| 330 | 2,500 | 340 x 337 x 45 | 5,000 | 370 x 370 x 420 | 40,000 | 18.0 |

Note: 1. Paper reel, white or gray color.
 2. Components are packed in accordance with EIA standard 481-1 and 481-2.

ORDERING INFORMATION

| Product No. | Package Type | Shipping Quantity |
|---------------|--------------|-------------------|
| MBRD520/S-T3 | DPAK | 2500/Tape & Reel |
| MBRD530/S-T3 | DPAK | 2500/Tape & Reel |
| MBRD540/S-T3 | DPAK | 2500/Tape & Reel |
| MBRD550/S-T3 | DPAK | 2500/Tape & Reel |
| MBRD560/S-T3 | DPAK | 2500/Tape & Reel |
| MBRD580/S-T3 | DPAK | 2500/Tape & Reel |
| MBRD5100/S-T3 | DPAK | 2500/Tape & Reel |

1. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
2. **To order RoHS / Lead Free version (with Lead Free finish), add "-LF" suffix to part number above. For example, MBRD520-T3-LF.**

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WARNING: DO NOT USE IN LIFE SUPPORT EQUIPMENT. WTE power semiconductor products are not authorized for use as critical components in life support devices or systems without the express written approval.

Won-Top Electronics Co., Ltd.
No. 44 Yu Kang North 3rd Road,
Chine Chen Dist., Kaohsiung 806, Taiwan
Phone: 886-7-822-5408 or 886-7-822-5410
Fax: 886-7-822-5417
Email: sales@wontop.com
Internet: <http://www.wontop.com>

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