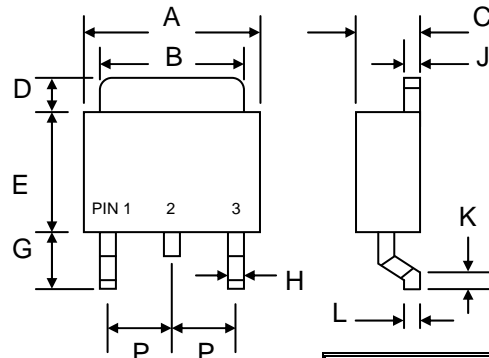


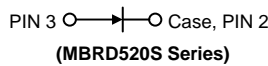
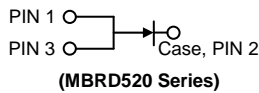
### Features

- 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	6.65
B	5.05	5.55
C	2.25	2.40
D	1.05	1.25
E	5.48	6.08
G	2.55	3.00
H	0.55	0.90
J	0.49	0.55
K	0.95	1.25
L	0.49	0.55
P	2.30 Typical	
All Dimensions in mm		

### Maximum Ratings and Electrical Characteristics @T<sub>A</sub>=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 <sub>RRM</sub>	20	30	40	50	60	80	100	V
Working Peak Reverse Voltage	V <sub>RRWM</sub>								
DC Blocking Voltage	V <sub>R</sub>								
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	35	42	56	70	V
Average Rectified Output Current @T <sub>C</sub> = 125°C	I <sub>O</sub>	5.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	I <sub>FSM</sub>	85							A
Forward Voltage @I <sub>F</sub> = 5.0A	V <sub>FM</sub>	0.55		0.75		0.85			V
Peak Reverse Current @T <sub>J</sub> = 25°C At Rated DC Blocking Voltage @T <sub>J</sub> = 100°C	I <sub>RM</sub>	0.2			20				mA
Typical Junction Capacitance (Note 1)	C <sub>J</sub>	500			380				pF
Thermal Resistance, Junction to Ambient (Note 2)	R <sub>JA</sub>				80				°C/W
Thermal Resistance, Junction to Case (Note 2)	R <sub>JC</sub>				5.0				
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-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.

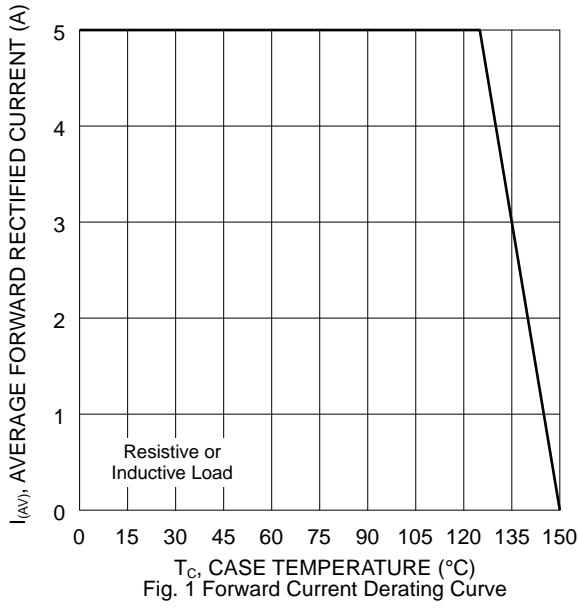


Fig. 1 Forward Current Derating Curve

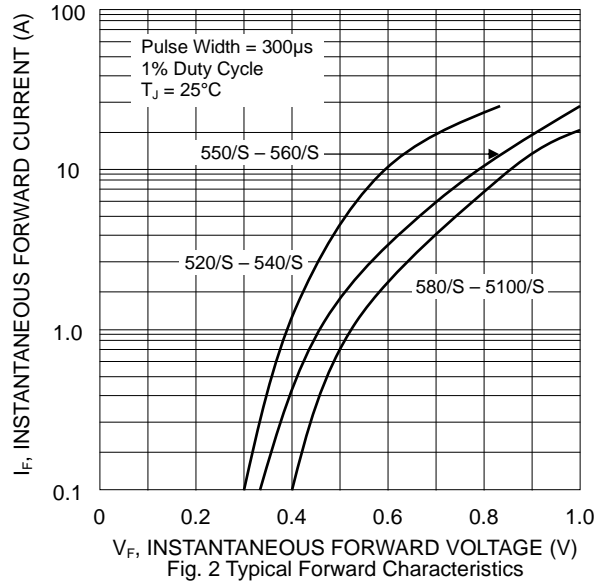


Fig. 2 Typical Forward Characteristics

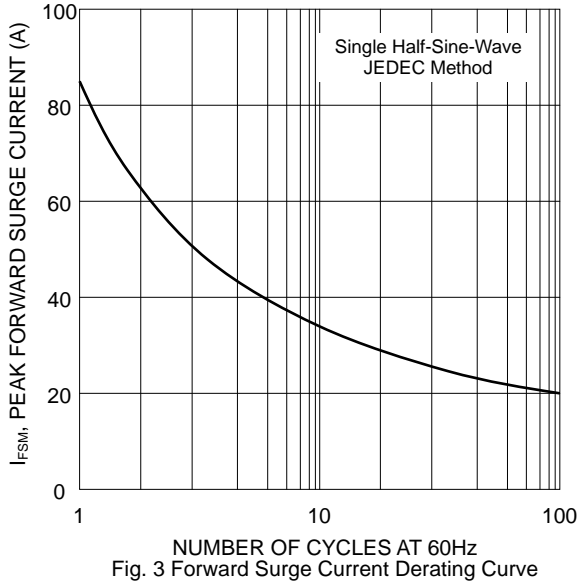


Fig. 3 Forward Surge Current Derating Curve

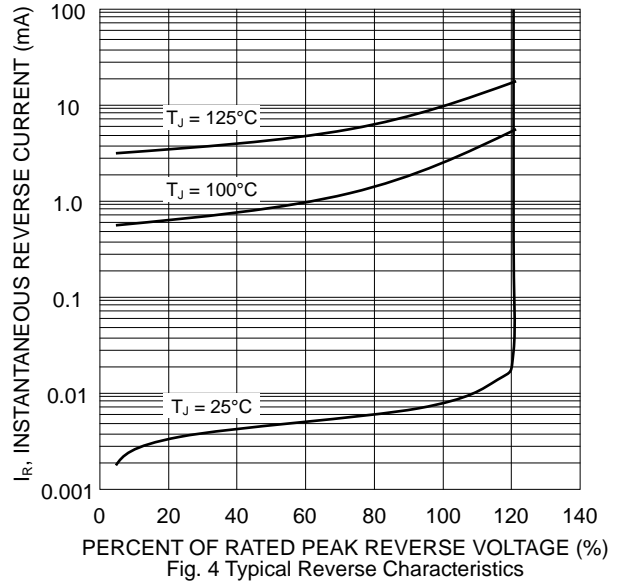


Fig. 4 Typical Reverse Characteristics

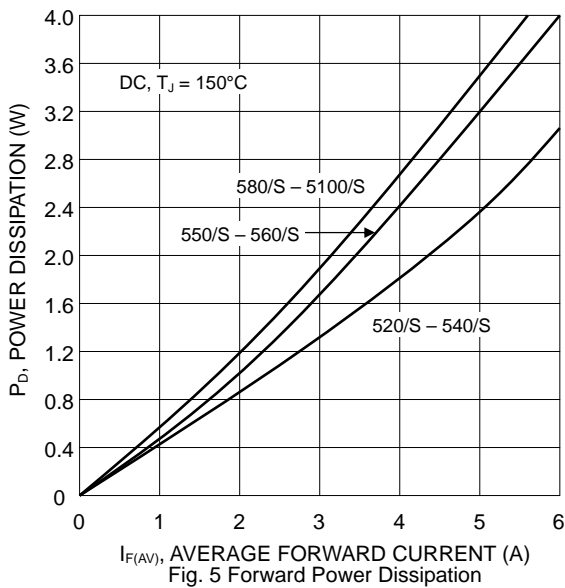


Fig. 5 Forward Power Dissipation

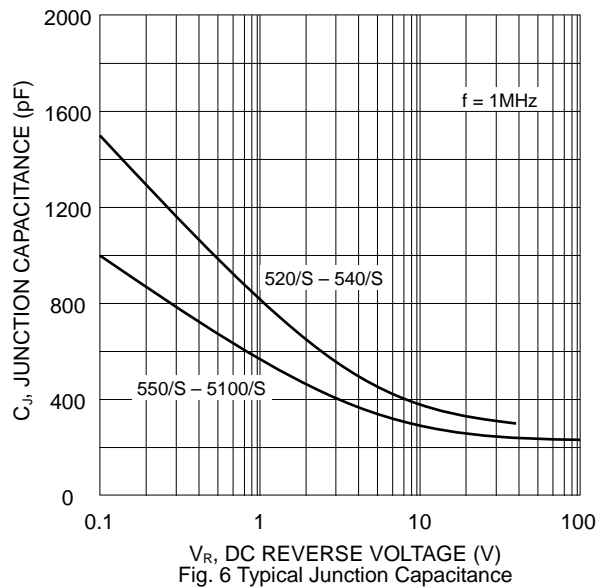
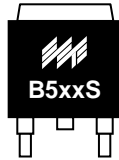


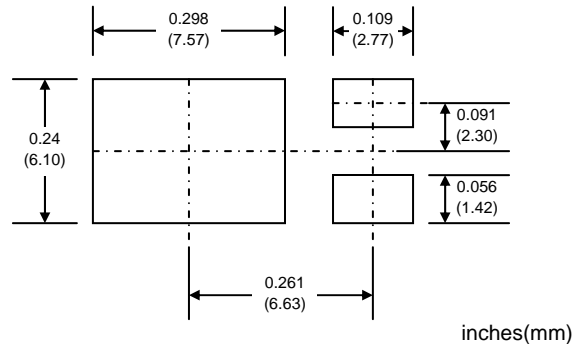
Fig. 6 Typical Junction Capacitance

## MARKING INFORMATION



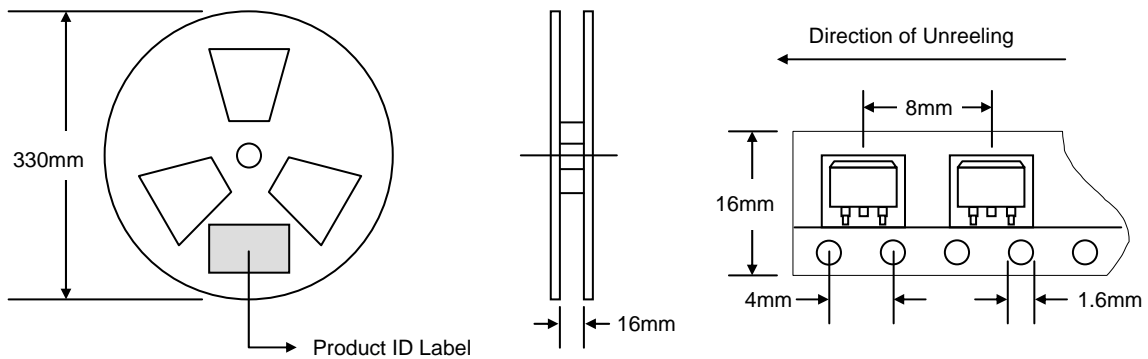
**B5xx** = Device Number  
**xx** = 20, 30, 40, 50, 60, 80 or 100  
**S** = Suffix for MBRD520S Series (remove when ordering MBRD520 series)

## 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.

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**Email:** sales@wontop.com  
**Internet:** <http://www.wontop.com>

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