WON-TOP ELECTRONICS

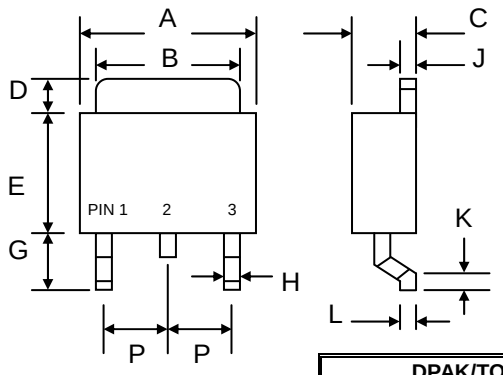
MBRD1020/S – MBRD10100/S

10A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

RoHS Pb

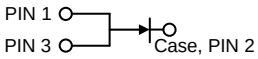
Features

- 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

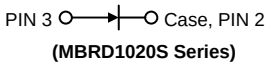


Mechanical Data

- 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**



(MBRD1020 Series)



(MBRD1020S Series)

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_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 1020/S	MBRD 1030/S	MBRD 1040/S	MBRD 1045/S	MBRD 1050/S	MBRD 1060/S	MBRD 1080/S	MBRD 10100/S	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	30	40	45	50	60	80	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	21	28	32	35	42	56	70	V
Average Rectified Output Current @T_C = 125°C	I_O	10								A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	100								A
Forward Voltage @I_F = 10A	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 15								mA
Typical Junction Capacitance (Note 1)	C_J	450				350				pF
Thermal Resistance, Junction to Ambient (Note 2) Thermal Resistance, Junction to Case (Note 2)	$R_{\theta JA}$ $R_{\theta JC}$	70 2.5								°C/W
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.

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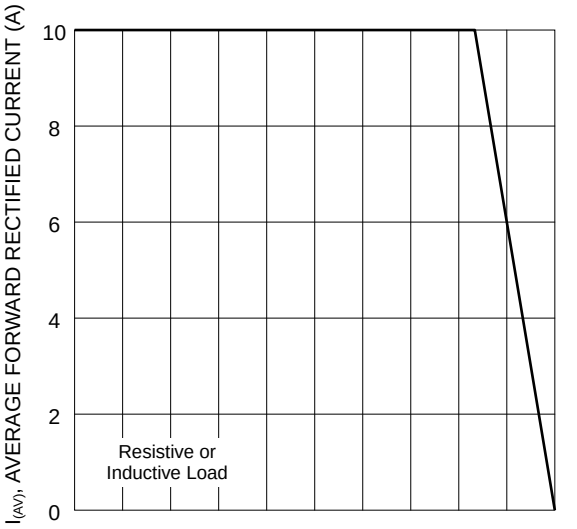


Fig. 1 Forward Current Derating Curve

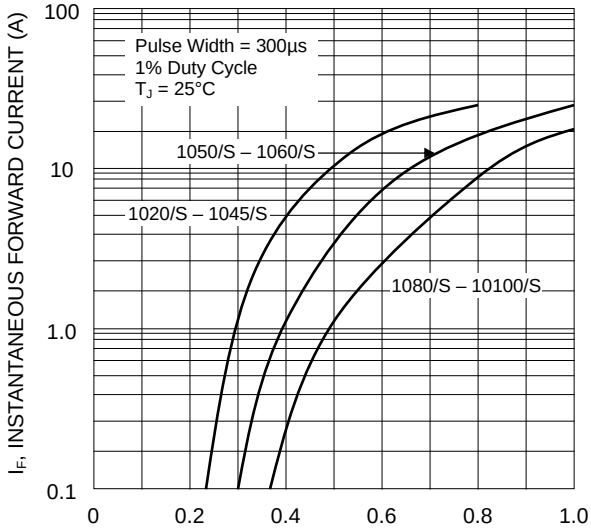


Fig. 2 Typical Forward Characteristics

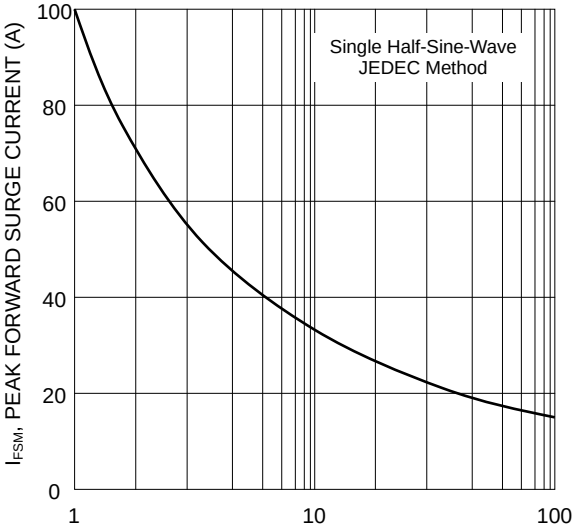


Fig. 3 Forward Surge Current Derating Curve

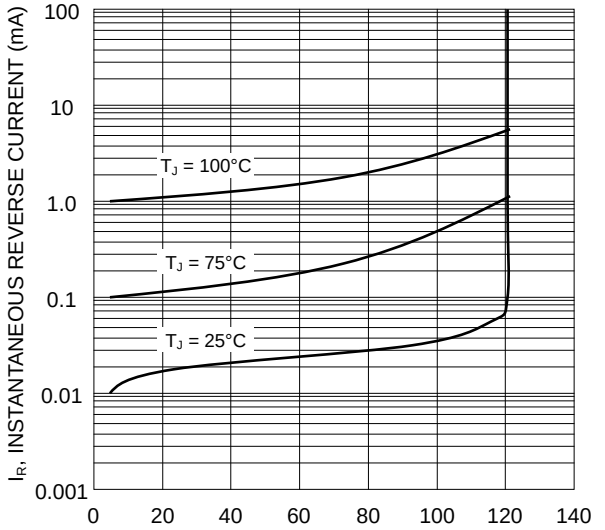


Fig. 4 Typical Reverse Characteristics

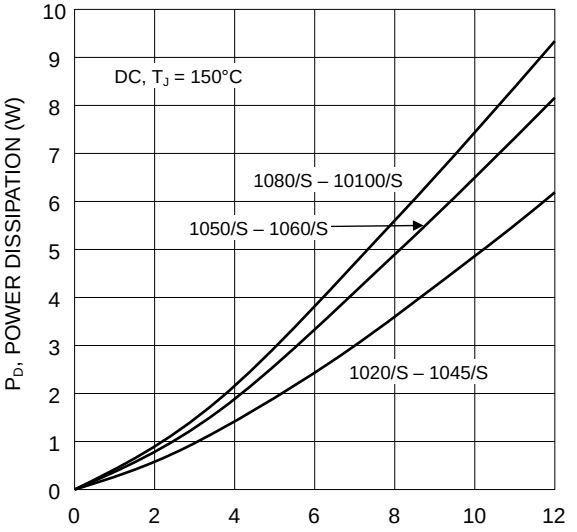


Fig. 5 Forward Power Dissipation

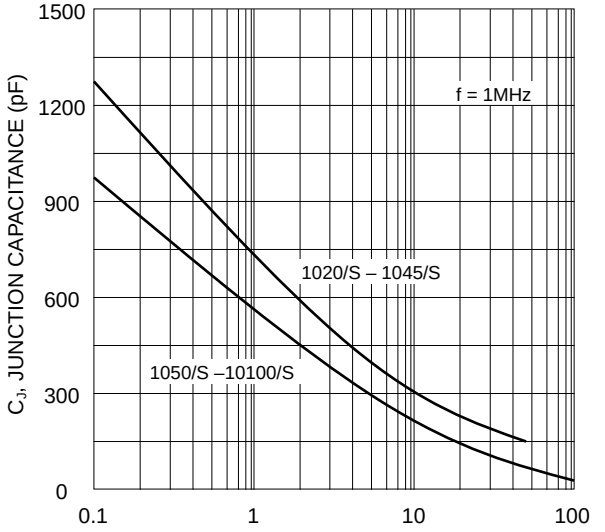
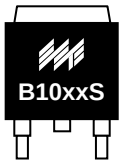


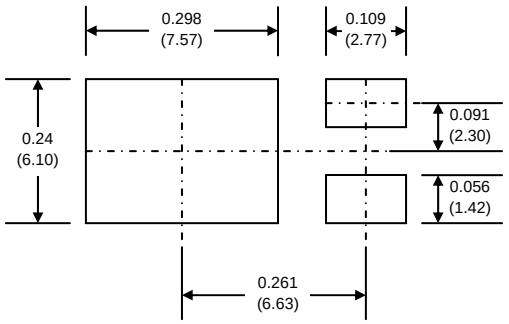
Fig. 6 Typical Junction Capacitance

MARKING INFORMATION



B10xx = Device Number
xx = 20, 30, 40, 45, 50, 60, 80 or 100
S = Suffix for MBRD1020S Series (remove when ordering MBRD1020 series)

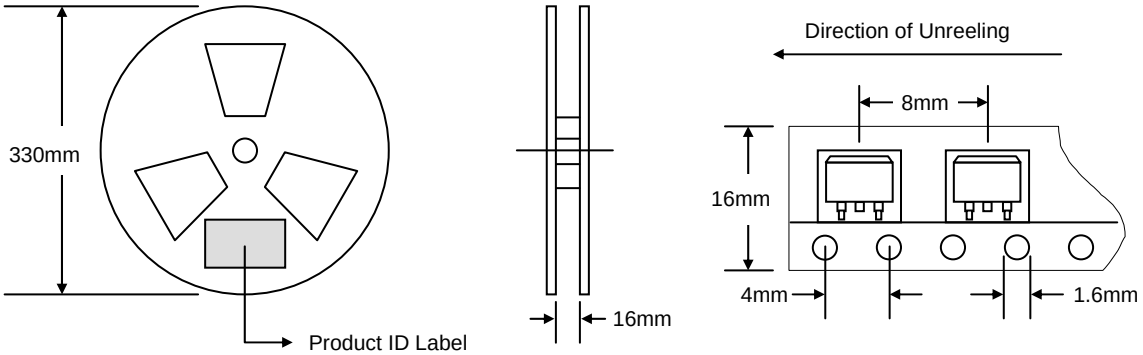
RECOMMENDED FOOTPRINT



inches(mm)

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.

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ORDERING INFORMATION

Product No.	Package Type	Shipping Quantity
MBRD1020/S-T3	DPAK	2500/Tape & Reel
MBRD1030/S-T3	DPAK	2500/Tape & Reel
MBRD1040/S-T3	DPAK	2500/Tape & Reel
MBRD1045/S-T3	DPAK	2500/Tape & Reel
MBRD1050/S-T3	DPAK	2500/Tape & Reel
MBRD1060/S-T3	DPAK	2500/Tape & Reel
MBRD1080/S-T3	DPAK	2500/Tape & Reel
MBRD10100/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, MBRD1020-T3-LF**.

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

We power your everyday.