MBRD1020CT – MBRD10100CT

10A SURFACE MOUNT DUAL SCHOTTKY BARRIER RECTIFIER
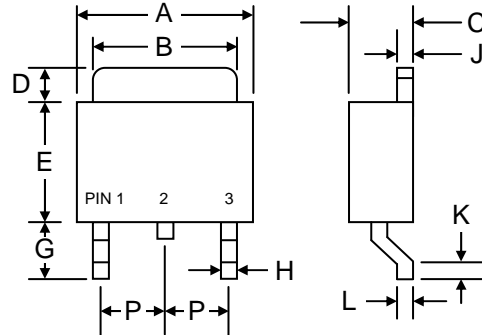
RoHS Pb

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**

PIN 1 ○→
PIN 3 ○→
○ Case, PIN 2
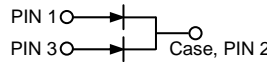
DPAK/TO-252		
Dim	Min	Max
A	6.05	6.70
B	5.05	5.55
C	2.10	2.50
D	1.05	1.25
E	5.48	6.20
G	2.55	3.40
H	0.55	0.90
J	0.40	0.60
K	0.95	1.60
L	0.45	0.55
P	2.30 Typical	
All Dimensions in mm		

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 1020CT	MBRD 1030CT	MBRD 1040CT	MBRD 1045CT	MBRD 1050CT	MBRD 1060CT	MBRD 1080CT	MBRD 10100CT	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	28	35	42	56	70	V
Average Rectified Output Current Total Device @T_C = 115°C Per Diode	I_O	10 5.0								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 per diode @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 15								mA
Typical Junction Capacitance (Note 1)	C_J	500				380				pF
Thermal Resistance, Junction to Ambient (Note 2) Thermal Resistance, Junction to Case (Note 2)	R_{JA} R_{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 per diode.

WON-TOP ELECTRONICS

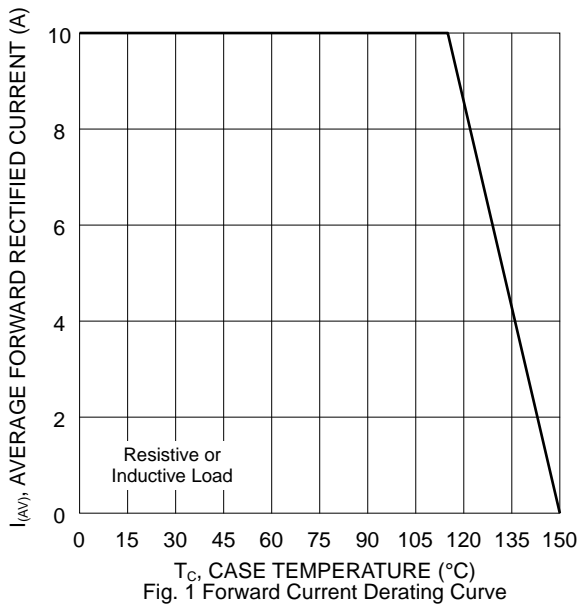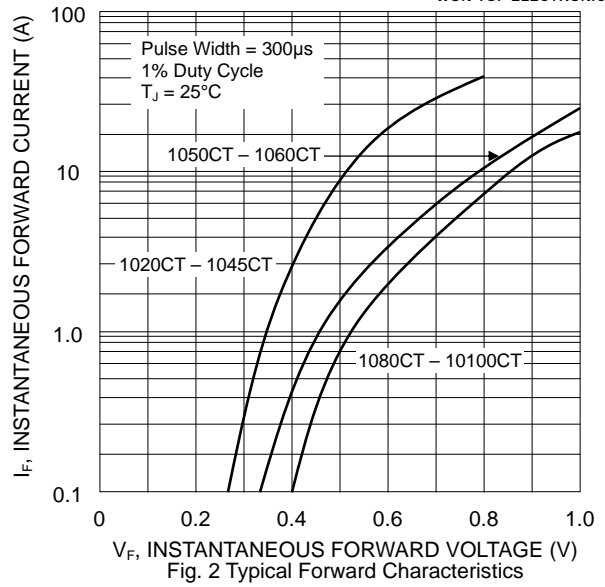Fig. 1 Forward Current Derating Curve

I$_{(AV)}$, AVERAGE FORWARD RECTIFIED CURRENT (A)

T$_C$, CASE TEMPERATURE (°C)

Resistive or Inductive Load

Fig. 2 Typical Forward Characteristics

I$_F$, INSTANTANEOUS FORWARD CURRENT (A)

V$_F$, INSTANTANEOUS FORWARD VOLTAGE (V)

Pulse Width = 300µs
1% Duty Cycle
T$_J$ = 25°C

1050CT – 1060CT

1020CT – 1045CT

1080CT – 10100CT
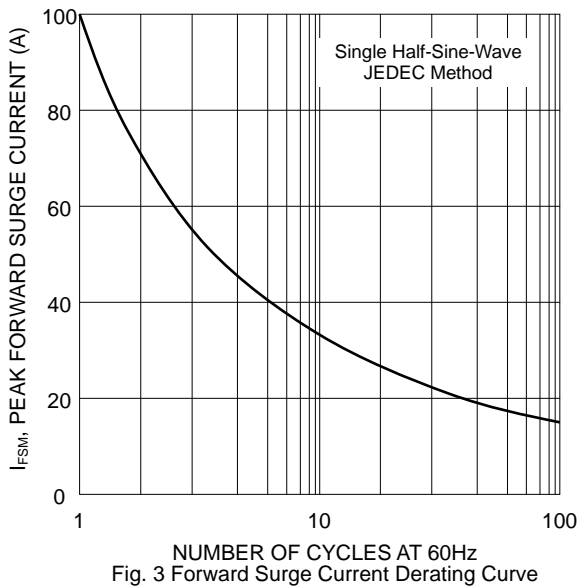
Fig. 3 Forward Surge Current Derating Curve

I$_{FSM}$, PEAK FORWARD SURGE CURRENT (A)

NUMBER OF CYCLES AT 60Hz

Single Half-Sine-Wave
JEDEC Method
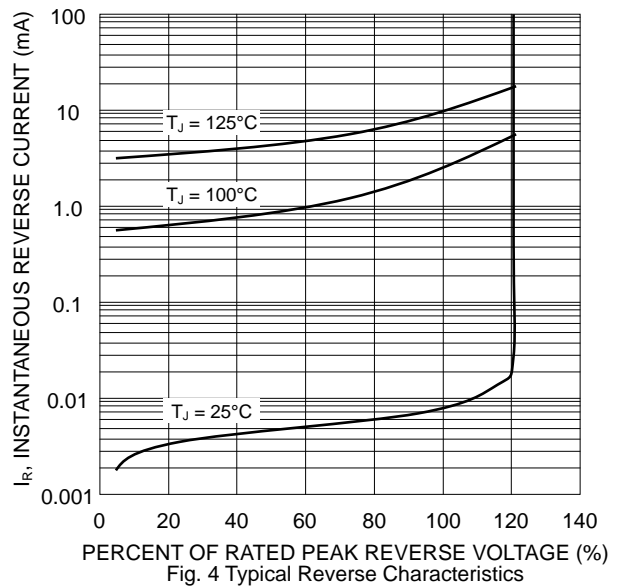
Fig. 4 Typical Reverse Characteristics

I$_R$, INSTANTANEOUS REVERSE CURRENT (mA)

PERCENT OF RATED PEAK REVERSE VOLTAGE (%)

T$_J$ = 125°C

T$_J$ = 100°C

T$_J$ = 25°C
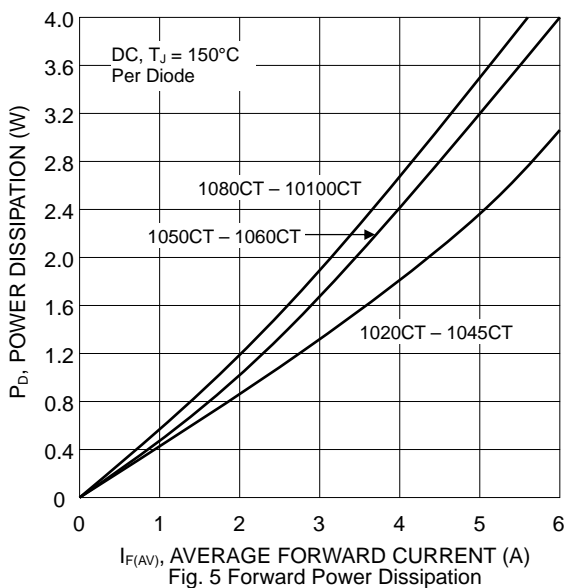
Fig. 5 Forward Power Dissipation

P$_D$, POWER DISSIPATION (W)

I$_{F(AV)}$, AVERAGE FORWARD CURRENT (A)

DC, T$_J$ = 150°C
Per Diode

1080CT – 10100CT

1050CT – 1060CT

1020CT – 1045CT

Fig. 6 Typical Junction Capacitance

C$_J$, JUNCTION CAPACITANCE (pF)

V$_R$, DC REVERSE VOLTAGE (V)

f = 1MHz

1020CT – 1045CT

1050CT – 10100CT

WON-TOP ELECTRONICS
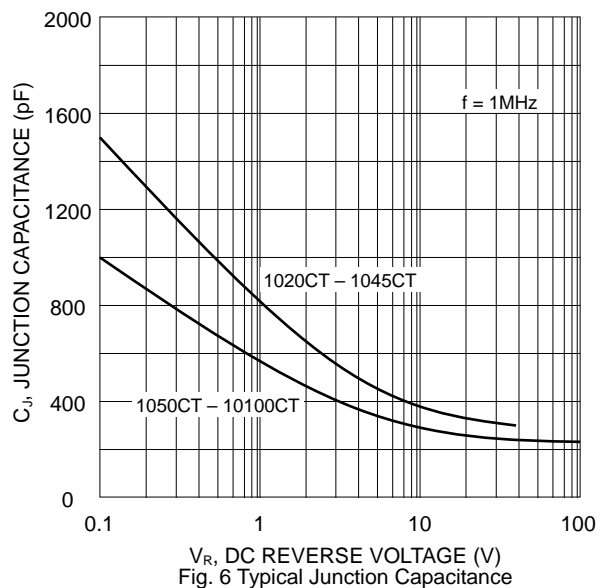
MARKING INFORMATION
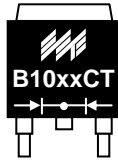
B10xxCT	= Device Number
xx	= 20, 30, 40, 45, 50, 60, 80 or 100
Polarity	= As Marked on Body

RECOMMENDED FOOTPRINT

0.298 (7.57)
0.109 (2.77)
0.24 (6.10)
0.091 (2.30)
0.056 (1.42)
0.261 (6.63)

inches(mm)
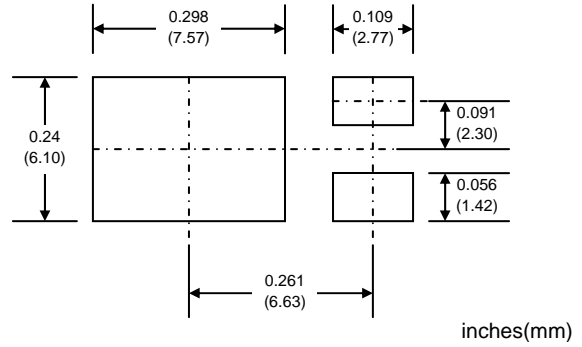
PACKAGING INFORMATION

TAPE & REEL

330mm

Product ID Label

16mm

Direction of Unreeling

8mm

16mm

4mm

1.6mm
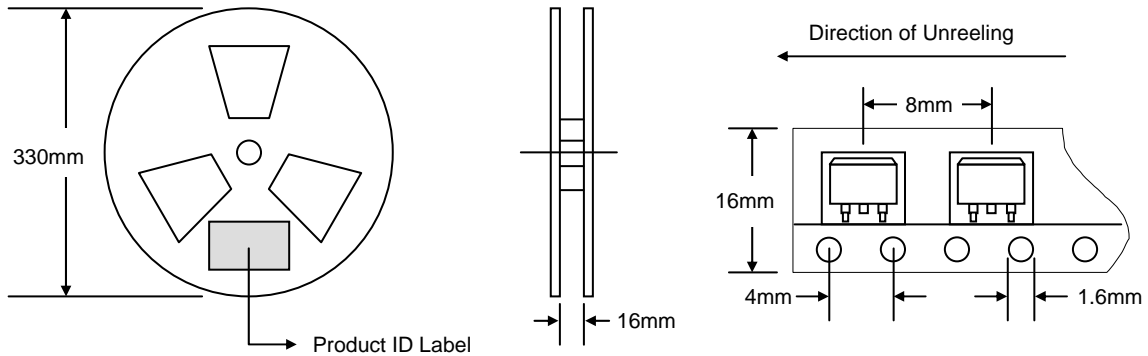
Reel Diameter (mm)	Quantity (PCS)	Inner Box Size L x W x H (mm)	Quantity (PCS)	Carton Size L x W x H (mm)	Quantity (PCS)	Approx. Gross Weight (KG)
330	2,500	340 x 337 x 45	5,000	370 x 370 x 420	40,000	18.0

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

MBRD1020CT – MBRD10100CT

ORDERING INFORMATION

Product No.	Package Type	Shipping Quantity
MBRD1020CT-T3	DPAK	2500/Tape & Reel
MBRD1030CT-T3	DPAK	2500/Tape & Reel
MBRD1040CT-T3	DPAK	2500/Tape & Reel
MBRD1045CT-T3	DPAK	2500/Tape & Reel
MBRD1050CT-T3	DPAK	2500/Tape & Reel
MBRD1060CT-T3	DPAK	2500/Tape & Reel
MBRD1080CT-T3	DPAK	2500/Tape & Reel
MBRD10100CT-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, MBRD1020CT-T3-LF.**

We power your everyday.