MBR2030CT - MBR2060CT

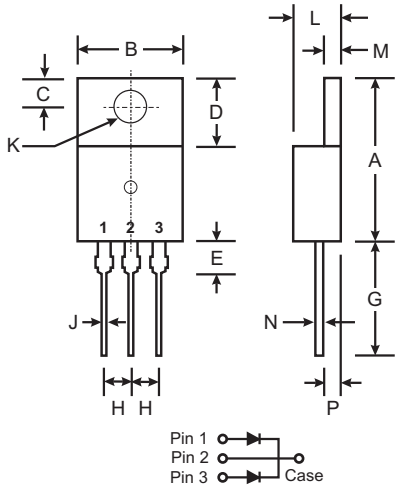
20A SCHOTTKY BARRIER RECTIFIER

Features

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead Free Finish, RoHS Compliant (Note 4)**

Mechanical Data

- Case: TO-220AB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Matte Tin Finish Solderable per MIL-STD-202, Method 208
- Polarity: As Marked on Body
- Marking: Type Number
- Weight: 2.24 grams (approx)



TO-220AB		
Dim	**Min**	**Max**
A	14.48	15.75
B	10.00	10.40
C	2.54	3.43
D	5.90	6.40
E	2.80	3.93
G	12.70	14.27
H	2.40	2.70
J	0.69	0.93
K	3.54	3.78
L	4.07	4.82
M	1.15	1.39
N	0.30	0.50
P	2.04	2.79
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	MBR 2030CT	MBR 2035CT	MBR 2040CT	MBR 2045CT	MBR 2050CT	MBR 2060CT	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	35	40	45	50	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	24.5	28	31.5	35	42	V
Average Rectified Output Current @ T_C = 125°C (Note 1)	I_O	20						A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	150						A
Forward Voltage Drop (Note 3) @ I_F = 20A, T_C = 25°C @ I_F = 20A, T_C = 125°C @ I_F = 10A, T_C = 125°C	V_{FM}	0.84 0.72 0.57				0.95 0.85 0.70		V
Peak Reverse Current @ T_C = 25°C at Rated DC Blocking Voltage @ T_C = 125°C	I_{RM}	0.1 15						mA
Typical Total Capacitance (Note 2)	C_T	650						pF
Typical Thermal Resistance Junction to Case (Note 1)	$R_{\theta Jc}$	2.0						°C/W
Voltage Rate of Change (Rated V_R)	dV/dt	1000				10,000		V/μs
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150						°C

Notes:
1. Thermal resistance junction to case mounted on heatsink.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3. Pulse width ≤300 μs, duty cycle ≤2%.
4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.

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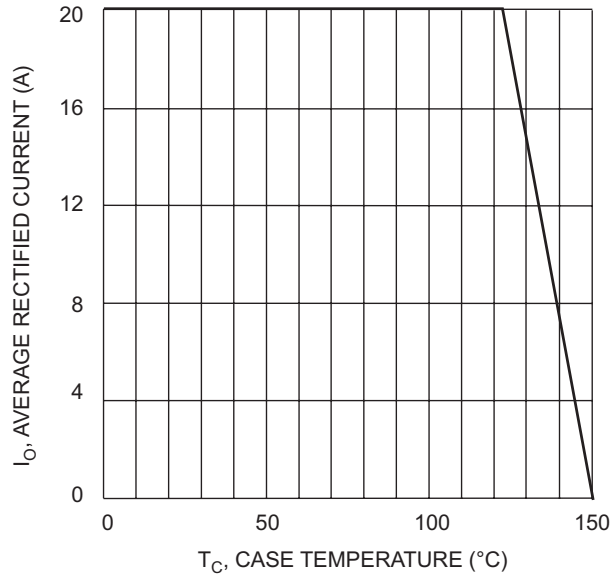

Fig. 1 Forward Current Derating Curve

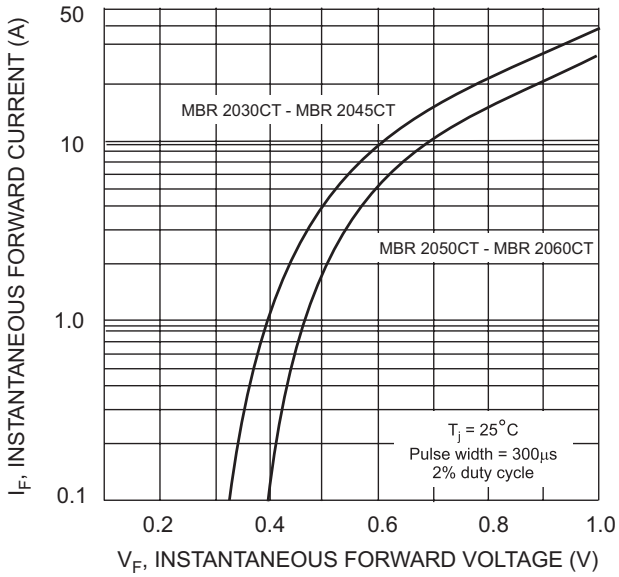

Fig. 2 Typical Forward Characteristics

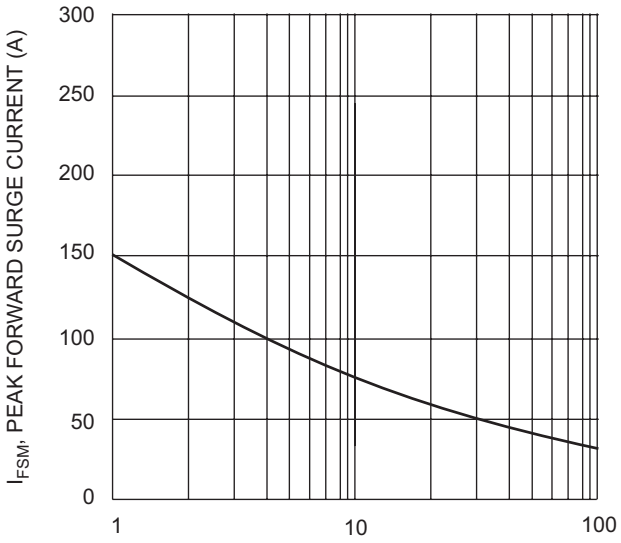

Fig. 3 Max Non-Repetitive Surge Current

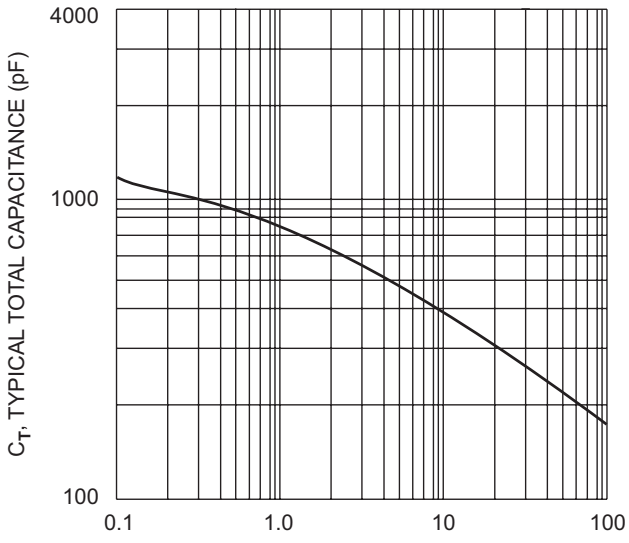

Fig. 4 Typical Total Capacitance (per element)

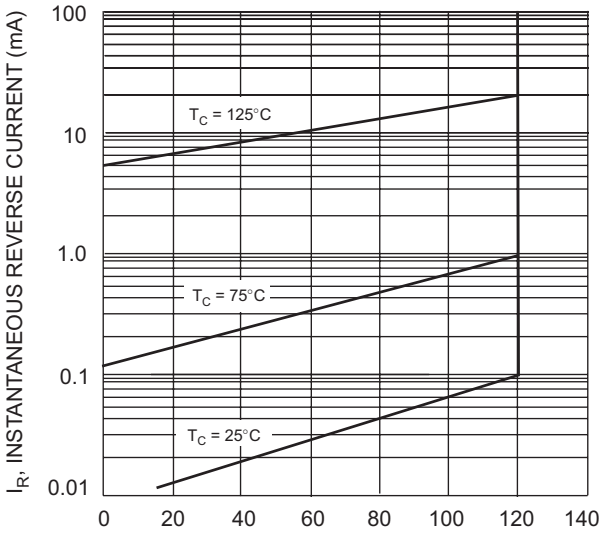

Fig. 5 Typical Reverse Characteristics

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Ordering Information (Note 5)

Device	Packaging	Shipping
MBR20xxCT*	TO-220AB	50/Tube

* xx = Device type, e.g. MBR2045CT

Notes: 5. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

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