

# MBR2070CT - MBR20100CT

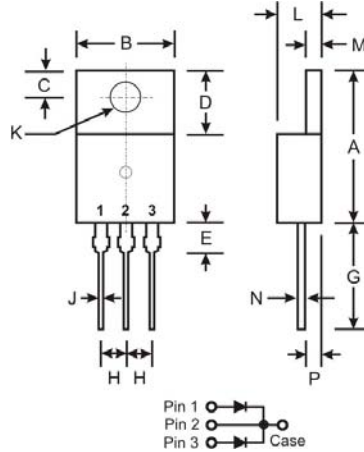
20A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER

## Features

- 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 3)**

## Mechanical Data

- Case: TO-220AB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Polarity: As Marked on Body
- Terminals: Finish – Tin. Solderable per MIL-STD-202, Method 208 (e3)
- Marking: Type Number
- Ordering Information: See Page 2
- Weight: 2.24 grams (approximate)



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<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	MBR 2070CT	MBR 2080CT	MBR 2090CT	MBR 20100CT	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>					
Working Peak Reverse Voltage	V <sub>RWM</sub>	70	80	90	100	V
DC Blocking Voltage	V <sub>R</sub>					
RMS Reverse Voltage	V <sub>R(RMS)</sub>	49	56	63	70	V
Average Rectified Output Current (Note 1) @ T <sub>C</sub> = 120°C	I <sub>O</sub>	20				A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	150				A
Forward Voltage Drop @ I <sub>F</sub> = 10A, T <sub>J</sub> = 125°C @ I <sub>F</sub> = 10A, T <sub>J</sub> = 25°C @ I <sub>F</sub> = 20A, T <sub>J</sub> = 125°C @ I <sub>F</sub> = 20A, T <sub>J</sub> = 25°C	V <sub>FM</sub>		0.75 0.85 0.85 0.95			V
Peak Reverse Current at Rated DC Blocking Voltage (Note 4) @ T <sub>A</sub> = 25°C @ T <sub>A</sub> = 125°C	I <sub>RM</sub>		0.10 100			mA
Typical Total Capacitance (Note 2)	C <sub>T</sub>		1000			pF
Typical Thermal Resistance Junction to Case (Note 1)	R <sub>θJC</sub>		2.0			°C/W
Voltage Rate of Change	dV/dt		10000			V/μs
Operating Temperature Range	T <sub>J</sub>		-55 to +150			°C
Storage Temperature Range	T <sub>STG</sub>		-55 to +175			°C

- Notes:
1. Thermal resistance junction to case mounted on heatsink.
  2. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC and per element.
  3. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see *EU Directive Annex Notes 5 and 7*.
  4. Short duration pulse test to minimize self-heating effect.

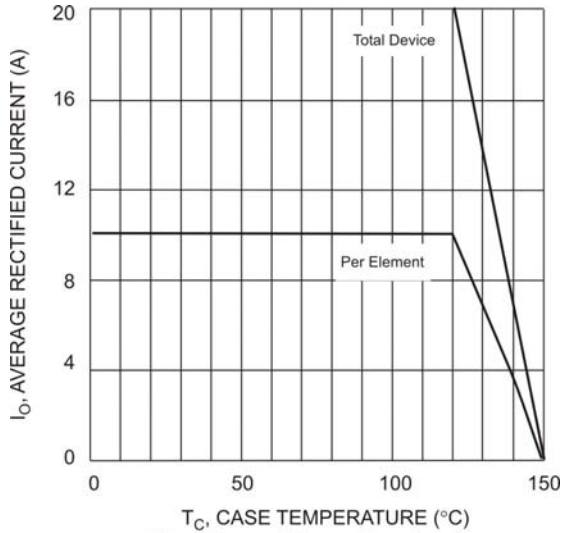


Fig. 1 Forward Current Derating Curve

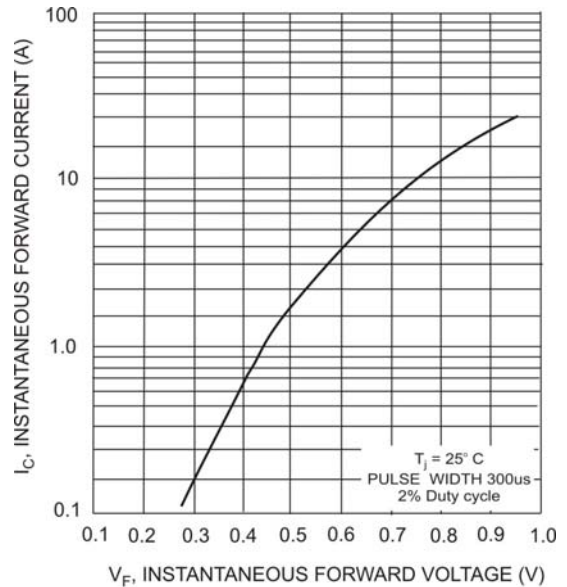


Fig. 2 Typical Forward Characteristics, per element

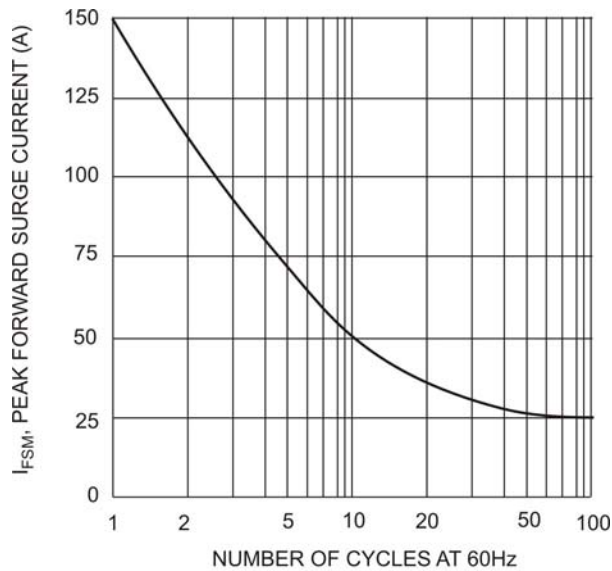


Fig. 3 Max Non-Repetitive Surge Current

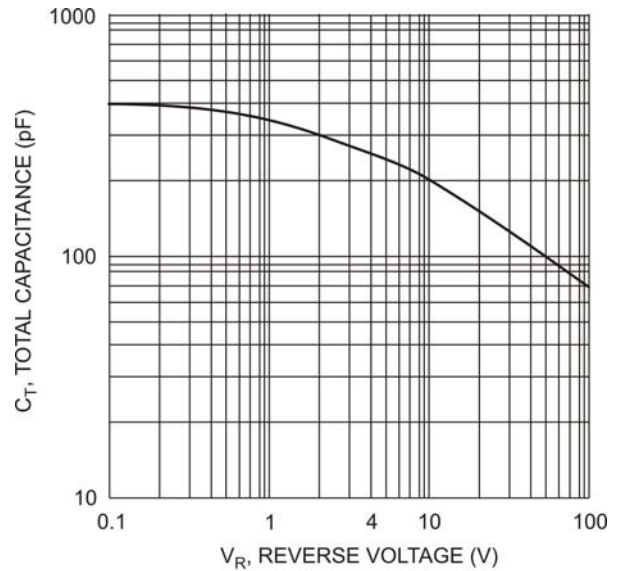


Fig. 4 Typical Total Capacitance, Per Element

## Ordering Information (Note 5)

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

\* xx = Device type, e.g. MBR2080CT

Notes: 5. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>.

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