MBR3030PT – MBR3060PT

30A 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 (Notes 1 & 2)**

Mechanical Data

- Case: TO-3P
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish – Tin. Plated Leads Solderable per MIL-STD-202, Method 208 e3
- Polarity: As Marked on Body
- Marking: Type Number
- Weight: 5.6 grams (Approximate)

Ordering Information (Note 3)

Part Number	Case	Packaging
MBR3030PT	TO-3P	30/Tube
MBR3035PT	TO-3P	30/Tube
MBR3040PT	TO-3P	30/Tube
MBR3045PT	TO-3P	30/Tube
MBR3050PT	TO-3P	30/Tube
MBR3060PT	TO-3P	30/Tube

Notes: 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. For packaging details, visit our website at http://www.diodes.com/datasheets/ap02008.pdf.

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 3030PT	MBR 3035PT	MBR 3040PT	MBR 3045PT	MBR 3050PT	MBR 3050PT	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 Total Device (See Fig. 7)	I_O	30						A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	200						A
Forward Voltage Drop @ I_F = 20A, T_C = +25°C per element (Note 6) @ I_F = 20A, T_C =+125°C @ I_F = 30A, T_C = +25°C @ I_F = 30A, T_C =+125°C	V_{FM}	—		0.60 0.76 0.72		0.75 0.65 0.80 0.75		V
Peak Reverse Current @ T_C = +25°C at Rated DC Blocking Voltage, per element @ T_C = +125°C	I_{RM}	1.0 60				5.0 100		mA
Typical Total Capacitance (Note 5)	C_T	500						pF
Typical Thermal Resistance Junction to Case (Note 4)	$R_{\theta Jc}$	1.4						°C/W
Voltage Rate of Change (Rated V_R)	dV/dt	10,000						V/µs
Operating Temperature Range	T_j	-65 to +150						°C
Storage Temperature Range	T_{STG}	-65 to +175						°C

Notes: 4. Thermal resistance junction to case mounted on heatsink.
5. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
6. Pulse width ≤300 µs, duty cycle ≤2%.
7. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied. See *EU Directive Annex Notes 5 and 7.*

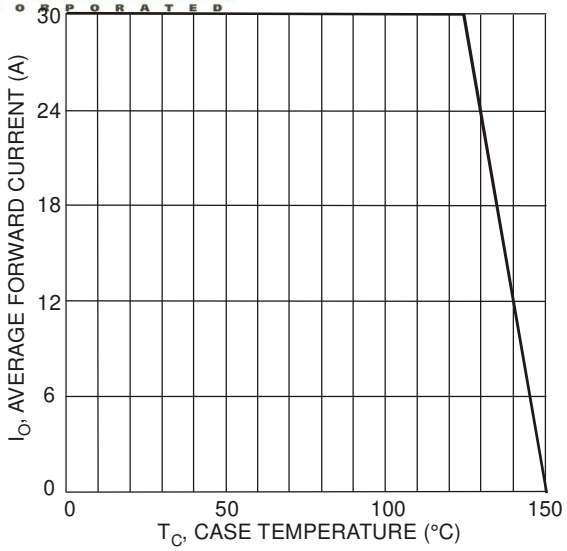


Fig. 1 Forward Current Derating Curve, total device

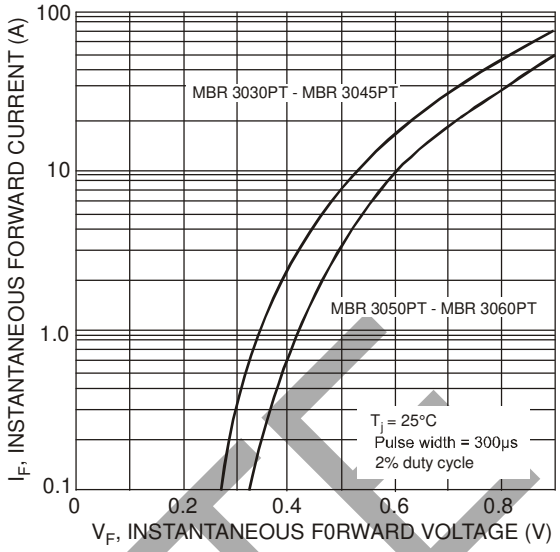


Fig. 2 Typical Forward Characteristics, per element

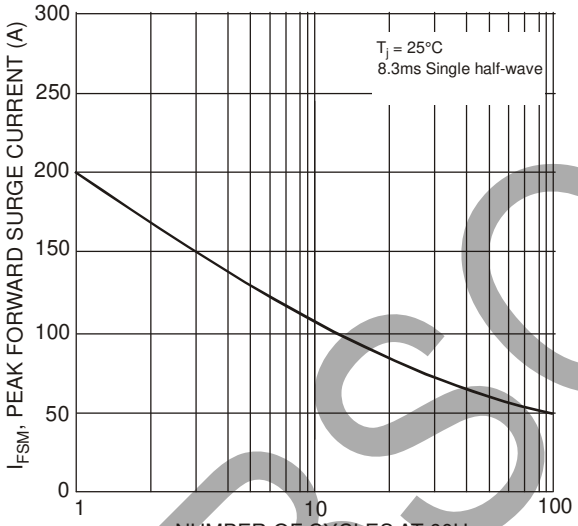


Fig. 3 Max Non-Repetitive Surge Current

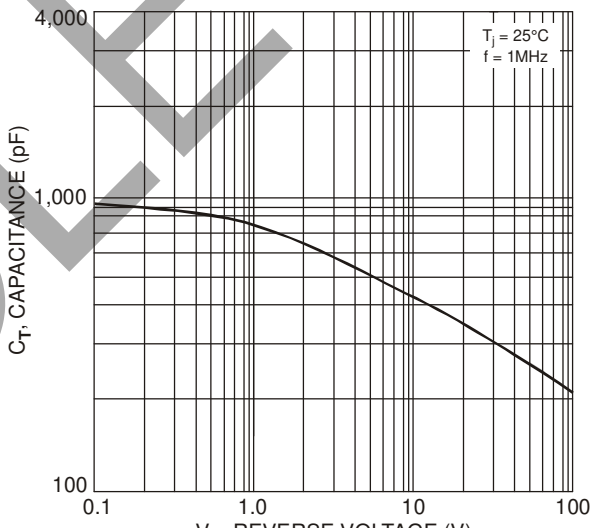


Fig. 4 Typical Total Capacitance

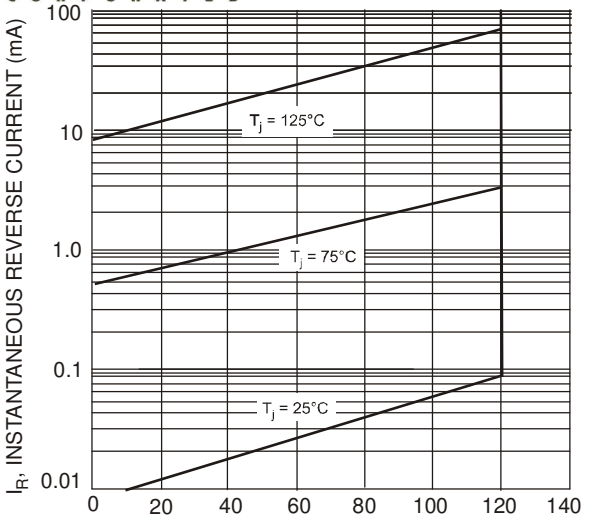
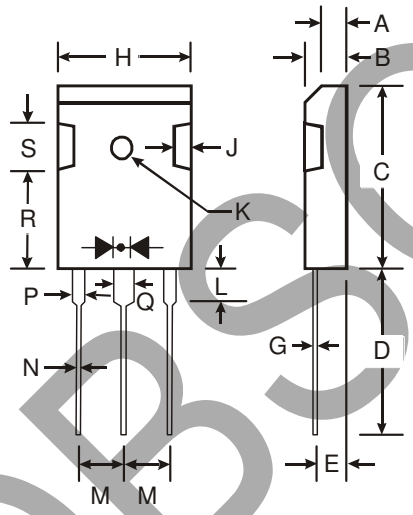


Fig. 5 Typical Reverse Characteristics, per element

Package Outline Dimensions

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



TO-3P		
Dim	**Min**	**Max**
A	1.88	2.08
B	4.68	5.36
C	20.63	22.38
D	18.5	21.5
E	2.10	2.40
G	0.51	0.76
H	15.38	16.25
J	1.90	2.70
K	2.9∅	3.65∅
L	3.78	4.50
M	5.20	5.70
N	0.89	1.53
P	1.82	2.46
Q	2.92	3.23
R	11.70	12.84
S	–	6.10
All Dimensions in mm		

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