

# MBR3030PTL thru 3060PTL

### **SCHOTTKY BARRIER RECTIFIERS**

REVERSE VOLTAGE - 30 to 60 Volts FORWARD CURRENT - 30 Amperes

#### **FEATURES**

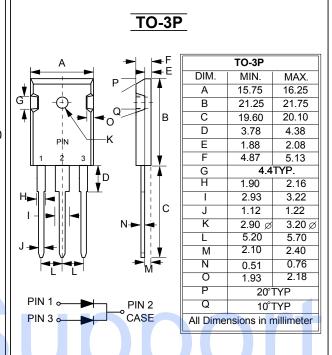
- Metal of silicon rectifier, majority carrier conducton
- Guard ring for transient protection
- Low power loss, high efficiency
- High current capability, low VF
- High surge capacity
- Plastic package has UL flammability classification 94V-0
- For use in low voltage, high frequency inverters, free whelling, and polarity protection applications

## **MECHANICAL DATA**

Case: TO-3P molded plastic
Polarity: As marked on the body
Weight: 0.2 ounces, 5.6 grams

• Mounting position : Any

• Max. mounting torque = 0.5 N.m (5.1 Kgf.cm)



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

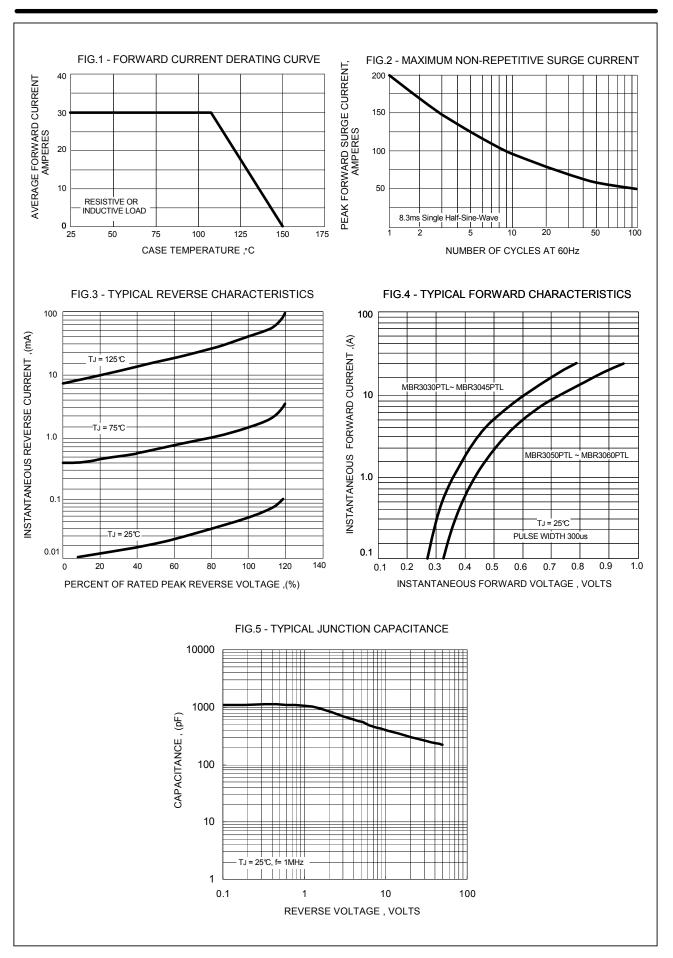
Maximum Recurrent Peak Reverse Voltage         VRRM         30         35         40         45         50         60         V           Maximum RMS Voltage         VRMS         21         24.5         28         31.5         35         42         V           Maximum DC Blocking Voltage         VDC         30         35         40         45         50         60         V           Maximum Average Forward Rectified Current (See Fig.1)         Image: Rectified Current (See Fig.1)         Image: Rectified Current (See Fig.1)         Image: Rectified Current (See Fig.1)         A         A           Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load         IFSM         200         A         A           Voltage Rate of Change (Rated VR)         dv/dt         10000         V/us         V/us           Maximum Forward IF=15A @ TJ=25°C Voltage (Note 1)         VF         0.57         0.57         0.75         V           Voltage (Note 1)         IF=30A @ TJ=25°C IF=30A @ TJ=25°C Rt Red Current at Rated DC Blocking Voltage @TJ=125°C         IR         1         5         0.90           Maximum DC Reverse Current at Rated DC Blocking Voltage @TJ=125°C         Red Current Resistance (Note 2)         Red Current Resistance (Note 2)         5         *C           Typical Junction Capaci	CHARACTERISTICS	SYMBOL	MBR 3030PTL	MBR 3035PTL	MBR 3040PTL	MBR 3045PTL	MBR 3050PTL	MBR 3060PTL	UNIT
Maximum DC Blocking Voltage         VDC         30         35         40         45         50         60         V           Maximum Average Forward Rectified Current (See Fig.1)         @TC=110°C         I(AV)         30         35         40         45         50         60         V           Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load         IFSM         200         A         A           Voltage Rate of Change (Rated VR)         dv/dt         10000         V/us         V/us           Maximum Forward IF=15A @ TJ=25°C Voltage (Note 1)         IF=30A @ TJ=25°C         VF         0.57         0.75         0.75         V           Voltage (Note 1)         IF=30A @ TJ=25°C         IR         1         5         0.90         Maximum DC Reverse Current at Rated DC Blocking Voltage @TJ=125°C         IR         1         5         0.90         mA         MA           Typical Thermal Resistance (Note 2)         ReJC         5         °C/W         °C/W         PF         600         PF         °C/W         PF         °C/W	Maximum Recurrent Peak Reverse Voltage	VRRM	30	35	40	45	50	60	V
Maximum Average Forward Rectified Current (See Fig. 1)         @TC=110°C         I(AV)         30         A           Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load         IFSM         200         A           Voltage Rate of Change (Rated VR)         dv/dt         10000         V/us           Maximum Forward Voltage (Note 1)         IF=15A @ TJ=25°C IF=30A @ TJ=125°C IF=30A @ TJ=125°C IF=30A @ TJ=125°C         VF         0.57	Maximum RMS Voltage	VRMS	21	24.5	28	31.5	35	42	V
Rectified Current (See Fig.1)	Maximum DC Blocking Voltage	VDC	30	35	40	45	50	60	V
Sams single half sine-wave superimposed on rated load   Sams superimposed on rated load	OT- 440°0	I(AV)	30						А
F = 15A @ TJ = 25 °C   VF   0.57   0.85   V   Voltage (Note 1)   F = 30A @ TJ = 125 °C   IF   IF   IF   IF   IF   IF   IF   I	8.3ms single half sine-wave	IFSM	200						А
Maximum Forward Voltage (Note 1)         IF = 15A @ TJ = 125 °C IF = 30A @ TJ = 25 °C IF = 30A @ TJ = 125 °C         VF         0.57	Voltage Rate of Change (Rated VR)	dv/dt	10000					V/us	
at Rated DC Blocking Voltage @TJ = 125°C   R   60   100   mA    Typical Thermal Resistance (Note 2)   ReJC   5   °C/W    Typical Junction Capacitance per element (Note 3)   CJ   600   pF    Operating Temperature Range   TJ   -55 to +150   °C	Maximum Forward Voltage (Note 1) IF =15A @ TJ =125 $^{\circ}$ C IF =30A @ TJ =25 $^{\circ}$ C	VF	0.57     0.75       0.80     1.05					.75 .05	V
Typical Junction Capacitance per element (Note 3)  Operating Temperature Range  TJ  -55 to +150  °C	[ · · · · · · · · · · · · · · · · · · ·	lR	1 60				_		mA
element (Note 3)  Operating Temperature Range  TJ  -55 to +150  °C	Typical Thermal Resistance (Note 2)	Rejc	5						°C/W
		Сл	600						pF
Storage Temperature Range Terro -55 to +175 °C	Operating Temperature Range	TJ	-55 to +150						°C
1310	Storage Temperature Range	Tstg	-55 to +175						°C

NOTES: 1. 300us Pulse Width, 2% Duty Cycle.

- 2. Thermal Resistance Junction to Case.
- 3. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

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