

### Features

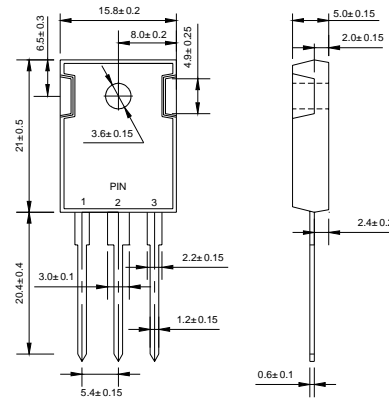
- ◇ High surge capacity.
- ◇ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.
- ◇ Metal silicon junction, majority carrier conduction.
- ◇ High current capacity, low forward voltage drop.
- ◇ Guard ring for over voltage protection.

### Mechanical Data

- ◇ Case: JEDEC TO-3P, molded plastic body
- ◇ Terminals: Solderable per MIL-STD-750, Method 2026
- ◇ Polarity: As marked
- ◇ Position: Any
- ◇ Weight: 0.223 ounce, 6.3 grams

**VOLTAGE RANGE: 30 - 100 V**  
**CURRENT: 30 A**

**TO-3P(TO-247AD)**



Dimensions in millimeters

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

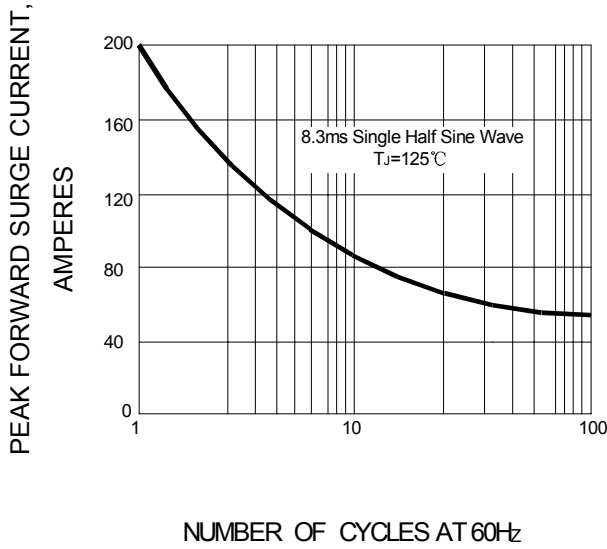
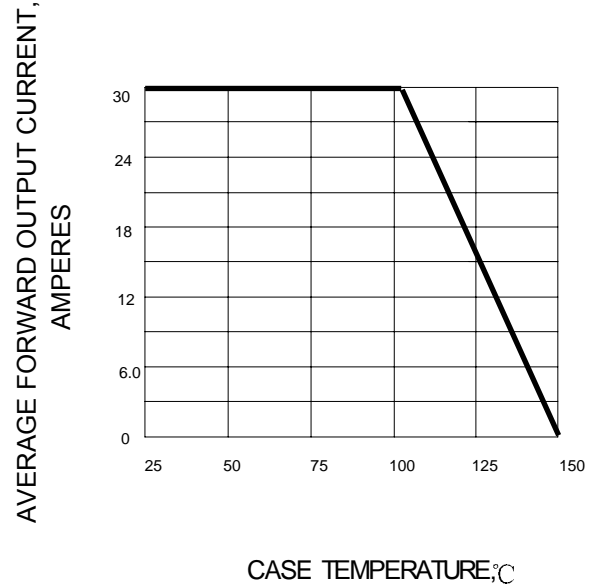
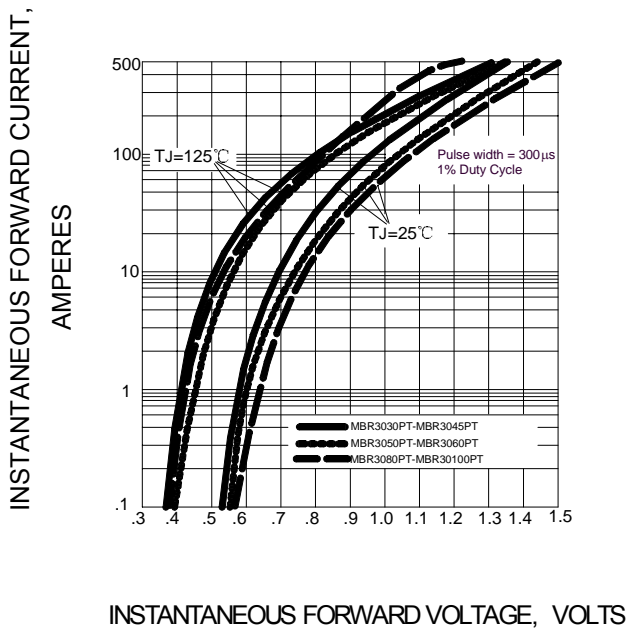
Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

		MBR 3030PT	MBR 3035PT	MBR 3040PT	MBR 3045PT	MBR 3050PT	MBR 3060PT	MBR 3080PT	MBR 30100PT	UNITS	
Maximum recurrent peak reverse voltage	$V_{RRM}$	30	35	40	45	50	60	80	100	V	
Maximum RMS Voltage	$V_{RMS}$	21	25	28	32	35	42	56	70	V	
Maximum DC blocking voltage	$V_{DC}$	30	35	40	45	50	60	80	100	V	
Maximum average forward total device rectified current @ $T_C = 105^\circ\text{C}$	$I_{F(AV)}$	30								A	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	200								A	
Maximum forward voltage ( $I_F=15\text{A}, T_C=25^\circ\text{C}$ ) ( $I_F=15\text{A}, T_C=125^\circ\text{C}$ ) (Note 1) ( $I_F=30\text{A}, T_C=25^\circ\text{C}$ ) ( $I_F=30\text{A}, T_C=125^\circ\text{C}$ )	$V_F$	-				0.80		0.85		V	
		0.57				0.70		0.65			
		0.84				0.95		0.95			
		0.72				0.85		0.75			
Maximum reverse current @ $T_C=25^\circ\text{C}$	$I_R$	1.0							0.2		mA
at rated DC blocking voltage @ $T_C=125^\circ\text{C}$		60							40		
Maximum thermal resistance (Note2)	$R_{\theta JC}$	6.8							4.4		$^\circ\text{C/W}$
Operating junction temperature range	$T_J$	- 55 ---- + 150								$^\circ\text{C}$	
Storage temperature range	$T_{STG}$	- 55 ---- + 150								$^\circ\text{C}$	

NOTE: 1. Pulse test: 300µs pulse width, 1% duty cycle.

2. Thermal resistance from junction to case.

## Ratings AND Characteristic Curves

**FIG.1 – PEAK FORWARD SURGE CURRENT**

**FIG.2 – FORWARD DERATING CURVE**

**FIG.3 – TYPICAL FORWARD CHARACTERISTIC**

**FIG.4 – TYPICAL REVERSE CHARACTERISTIC**
