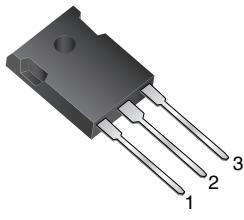
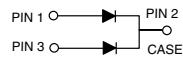


## Dual Common Cathode Schottky Rectifier


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


### FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max., 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	30 A
$V_{RRM}$	35 V, 45 V, 50 V, 60 V
$I_{FSM}$	200 A
$V_F$	0.60 V, 0.65 V
$T_J$ max.	150 °C
Package	TO-3P (TO-247AD)
Circuit configuration	Common cathode

### TYPICAL APPLICATIONS

For use in low voltage, high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters, or polarity protection application.

### MECHANICAL DATA

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

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

**Polarity:** as marked

**Mounting Torque:** 10 in-lbs maximum

MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	MBR3035PT	MBR3045PT	MBR3050PT	MBR3060PT	UNIT		
Maximum repetitive peak reverse voltage	$V_{RRM}$	35	45	50	60	V		
Maximum working peak reverse voltage	$V_{RWM}$	35	45	50	60	V		
Maximum DC blocking voltage	$V_{DC}$	35	45	50	60	V		
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	30				A		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	200				A		
Peak repetitive reverse surge current at $t_p = 2 \mu\text{s}$ , 1 kHz per diode	$I_{RRM}^{(1)}$	2.0		1.0		A		
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000				V/ $\mu\text{s}$		
Operating junction temperature range	$T_J$	-65 to +150				°C		
Storage temperature range	$T_{STG}$	-65 to +175				°C		

**Note**
<sup>(1)</sup> 2.0  $\mu\text{s}$  pulse width,  $f = 1.0 \text{ kHz}$

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MBR3035PT	MBR3045PT	MBR3050PT	MBR3060PT	UNIT
Maximum instantaneous forward voltage per diode	$V_F^{(1)}$	$I_F = 20\text{ A}$ $T_C = 25^\circ\text{C}$	-	0.75	0.65	mA	
		$I_F = 20\text{ A}$ $T_C = 125^\circ\text{C}$	0.60				
		$I_F = 30\text{ A}$ $T_C = 25^\circ\text{C}$	0.76	-			
		$I_F = 30\text{ A}$ $T_C = 125^\circ\text{C}$	0.72	-			
Maximum instantaneous reverse current at rated DC blocking voltage per diode	$I_R^{(1)}$	$T_J = 25^\circ\text{C}$	1.0	5.0	100		
		$T_J = 125^\circ\text{C}$	60				

**Note**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

 **THERMAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

PARAMETER	SYMBOL	MBR3035PT	MBR3045PT	MBR3050PT	MBR3060PT	UNIT
Typical thermal resistance, junction to case per diode	$R_{\theta JC}$	-	-	1.4	-	°C/W

**ORDERING INFORMATION** (Example)

PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-247AD	MBR3045PT-E3/45	6.13	45	30/tube	Tube

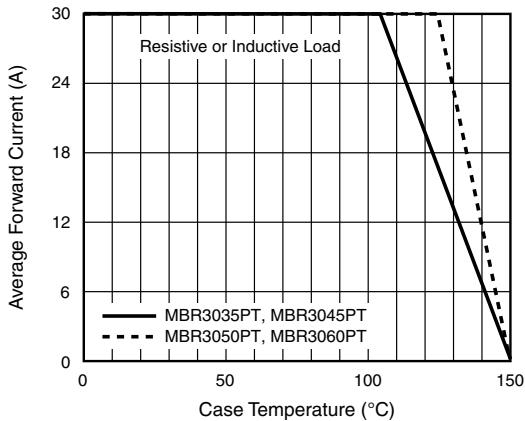
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

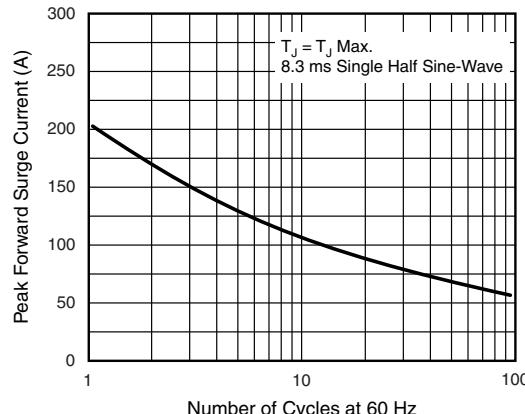


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

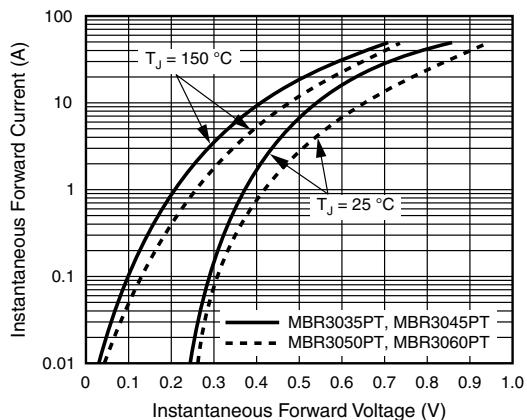


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

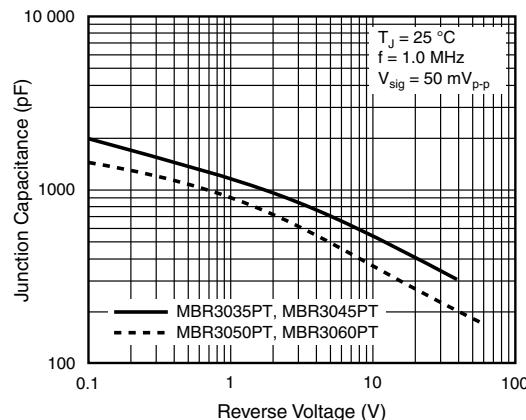


Fig. 5 - Typical Junction Capacitance Per Diode

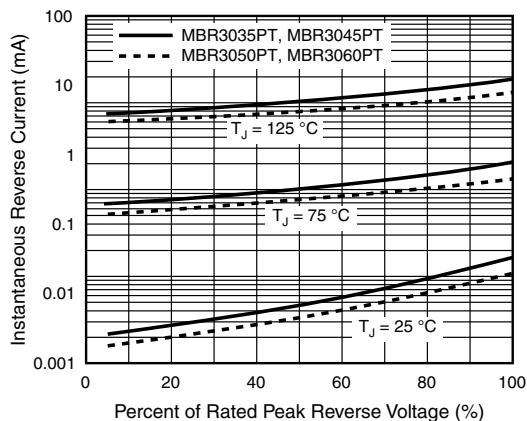


Fig. 4 - Typical Reverse Characteristics Per Diode

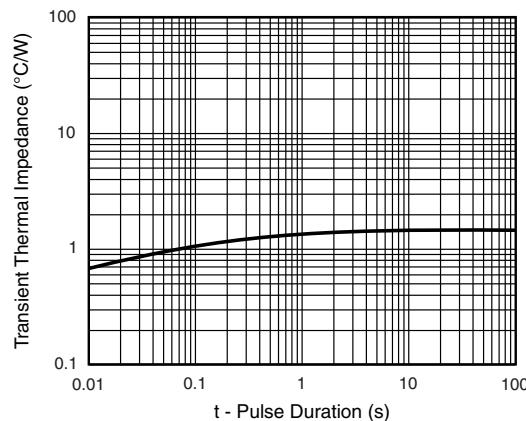
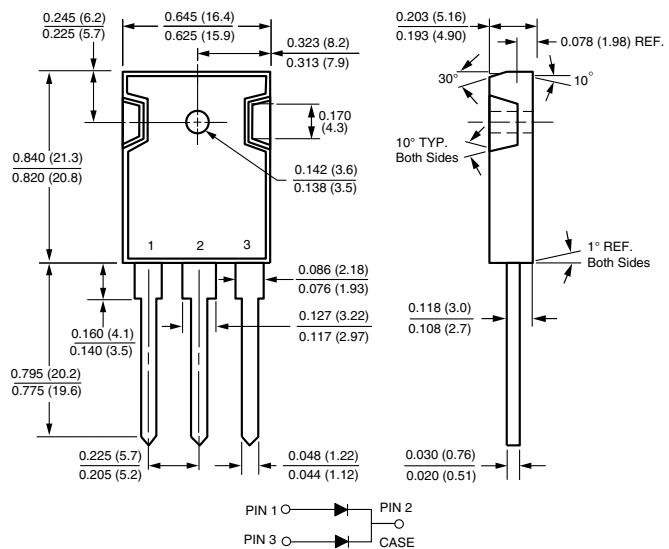


Fig. 6 - Typical Transient Thermal Impedance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

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



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