

MBR3035PT, MBR3045PT, MBR3050PT, MBR3060PT

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Vishay General Semiconductor

Dual Common Cathode Schottky Rectifier



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-247AD (TO-3P)					
Diode variations	Common cathode					

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.vishav.com/doc?99912

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-247AD (TO-3P)

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 °C unless otherwise noted)							
PARAMETER	SYMBOL	MBR3035PT	MBR3045PT	MBR3050PT	MBR3060PT	UNIT	
Maximum repetitive peak reverse voltage		35	45	50	60	V	
Maximum working peak reverse voltage		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					
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I _{FSM}	200					
Peak repetitive reverse surge current at t_p = 2 μ s, 1 kHz per diode	I _{RRM} ⁽¹⁾	2.0 1.0		.0	А		
Voltage rate of change (rated V _R)	dV/dt	10 000				V/µs	
Operating junction temperature range	TJ	-65 to +150			°C		
Storage temperature range	T _{STG}	-65 to +175				°C	

Note

(1) 2.0 μ s pulse width, f = 1.0 kHz



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ELECTRICAL CHARACTERISTICS (T _A = 25 °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 A	T _C = 25 °C	=		0.75		
		I _F = 20 A	T _C = 125 °C	0.60		0.65		V
		$I_F = 30 \text{ A}$	T _C = 25 °C	0.76		-		
		$I_F = 30 \text{ A}$	T _C = 125 °C	0.72		-		
Maximum instantaneous reverse current at rated DC blocking voltage per diode	I _R ⁽¹⁾		$T_J = 25 ^{\circ}C$	1	.0	5	.0	mA
			T _J = 125 °C	6	0	10	00	111/

Note

⁽¹⁾ Pulse test: 300 µs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	MBR3035PT	MBR3045PT	MBR3050PT	MBR3060PT	UNIT
Typical thermal resistance, junction to case per diode	$R_{ heta JC}$	1.4 °C				°C/W

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

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

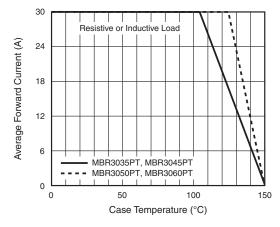


Fig. 1 - Forward Current Derating Curve

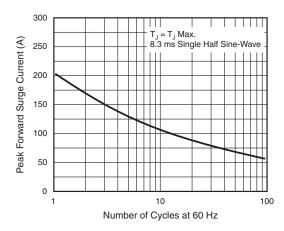


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode





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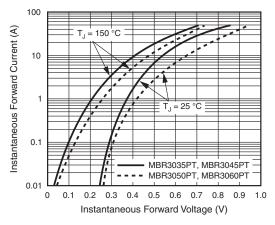


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

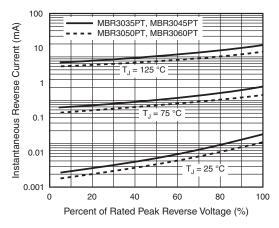


Fig. 4 - Typical Reverse Characteristics Per Diode

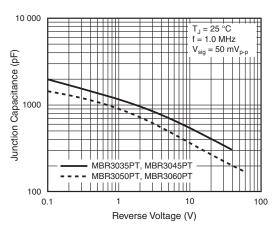


Fig. 5 - Typical Junction Capacitance Per Diode

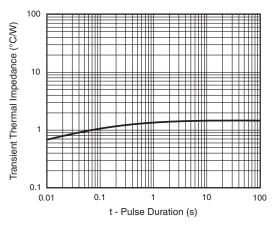
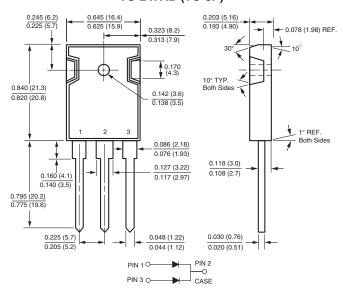


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-247AD (TO-3P)





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