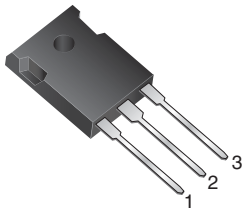
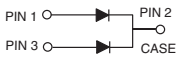
MBR4035PT, MBR4045PT, MBR4050PT, MBR4060PT

Dual Common Cathode Schottky Rectifier



TO-247AD (TO-3P)



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

RoHS COMPLIANT

TYPICAL APPLICATIONS

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	40 A
V_{RRM}	35 V, 45 V, 50 V, 60 V
I_{FSM}	400 A
V_F	0.60 V, 0.62 V
T_J max.	150 °C
Package	TO-247AD (TO-3P)
Diode variations	Common cathode

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	MBR4035PT	MBR4045PT	MBR4050PT	MBR4060PT	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 T_C = 125 °C	$I_{F(AV)}$	40				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	400				A
Peak repetitive reverse surge current per diode	I_{RRM} (1)	2.0		1.0		A
Voltage rate of change (rated V_R)	dV/dt	10 000				V/µs
Operating junction temperature range	T_J	-65 to +150				°C
Storage temperature range	T_{STG}	-65 to +175				°C

Note

(1) 2.0 µs pulse width, f = 1.0 kHz

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
PARAMETER	**SYMBOL**	**TEST CONDITIONS**		**MBR4035PT**	**MBR4045PT**	**MBR4050PT**	**MBR4060PT**	**UNIT**
Maximum instantaneous forward voltage per diode	V_F (1)	I_F = 20 A	T_J = 25 °C	0.70		0.72		V
		I_F = 20 A	T_J = 125 °C	0.60		0.62		
		I_F = 40 A	T_J = 25 °C	0.80		-		
		I_F = 40 A	T_J = 125 °C	0.75		-		
Maximum instantaneous reverse current at rated DC blocking voltage per diode	I_R (1)		T_J = 25 °C	1.0				mA
			T_J = 125 °C	100				

Note

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

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**SYMBOL**	**MBR4035PT**	**MBR4045PT**	**MBR4050PT**	**MBR4060PT**	**UNIT**
Thermal resistance, junction to case per diode	$R_{\theta JC}$	1.2				°C/W

ORDERING INFORMATION (Example)					
PACKAGE	**PREFERRED P/N**	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
TO-247AD	MBR4045PT-E3/45	6.13	45	30/tube	Tube

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

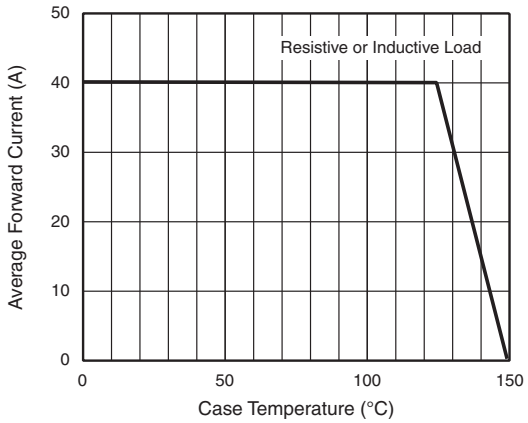


Fig. 1 - Forward Current Derating Curve

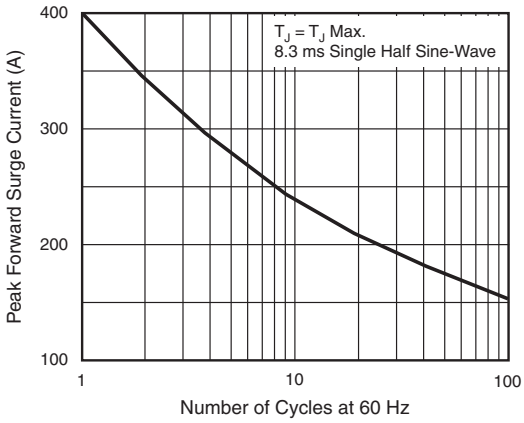


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

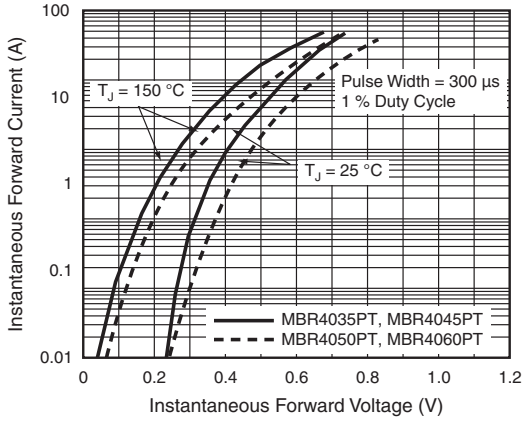


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

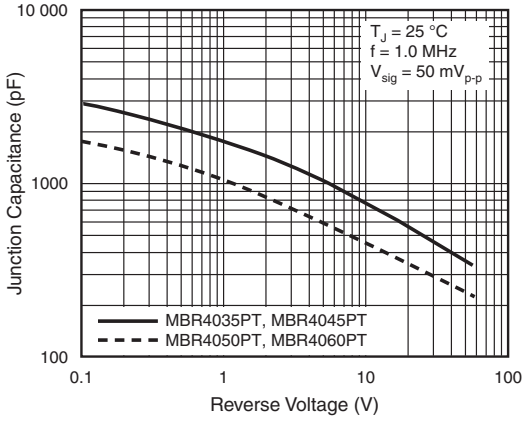


Fig. 5 - Typical Junction Capacitance Per Diode

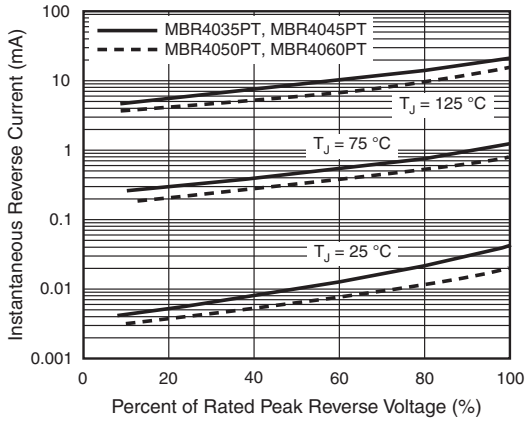


Fig. 4 - Typical Reverse Characteristics Per Diode

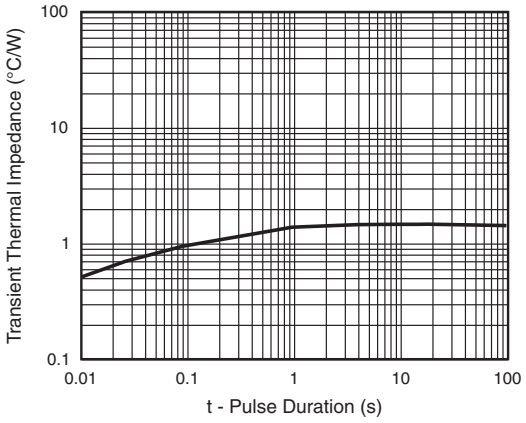
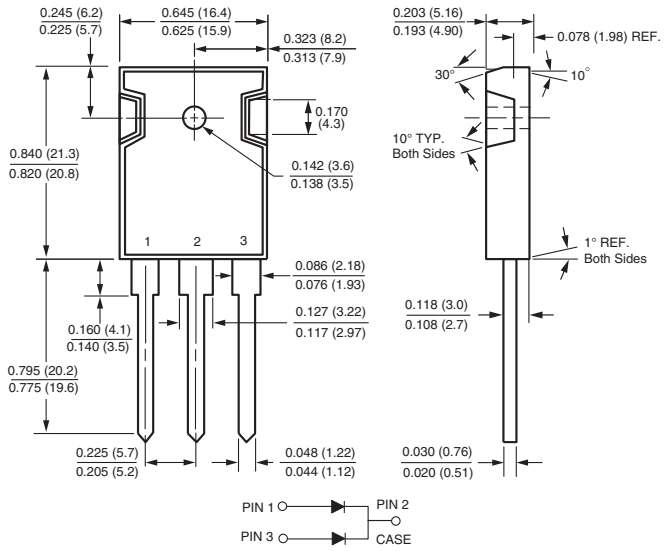


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-247AD (TO-3P)



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