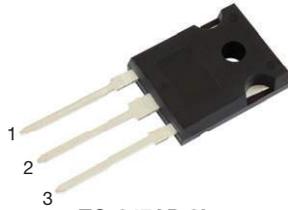
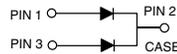


## Dual Common Cathode Schottky Rectifier


**TO-247AD 3L**


### 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  
 HALOGEN  
**FREE**

### LINKS TO ADDITIONAL RESOURCES



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

### MECHANICAL DATA

**Case:** TO-247AD 3L

Molding compound meets UL 94 V-0 flammability rating  
 Base P/N-M3 - RoHS-compliant, halogen-free, commercial grade

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

M3 suffix meets JESD 201 class 1A whisker test

**Polarity:** as marked

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

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ 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,  $f = 1.0\ \text{kHz}$



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

**Note**

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

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	MBR3035PT	MBR3045PT	MBR3050PT	MBR3060PT	UNIT
Typical thermal resistance, junction to case per diode	$R_{\theta JC}$			1.4		$^\circ\text{C/W}$

<b>ORDERING INFORMATION</b> (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-247AD 3L	MBR3045PT-M3/P	5.83	P	25/tube	Tube



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

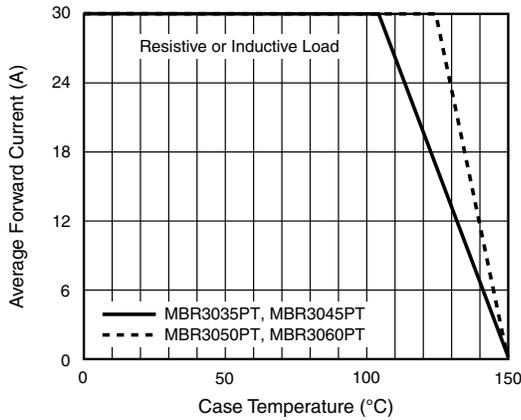


Fig. 1 - Forward Current Derating Curve

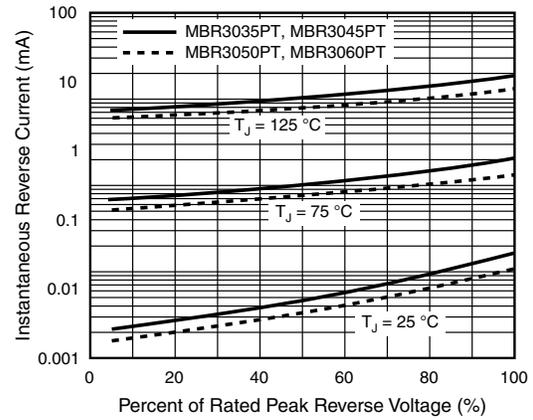


Fig. 4 - Typical Reverse Characteristics Per Diode

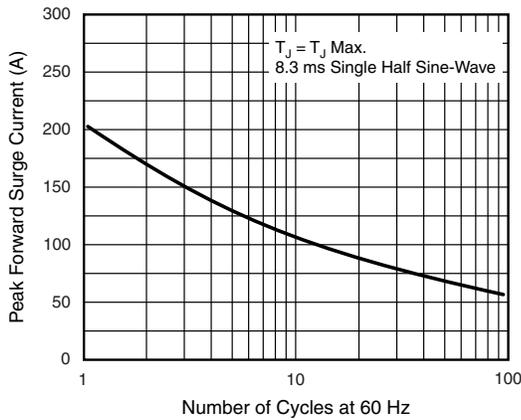


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

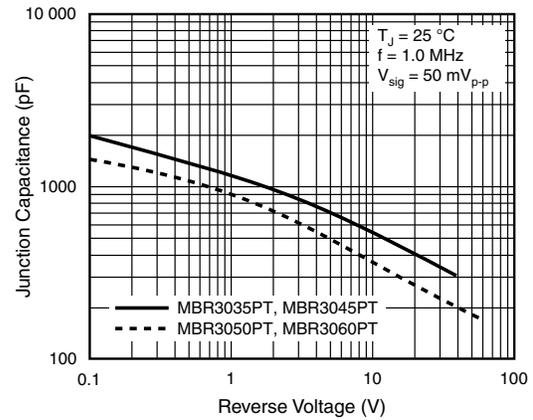


Fig. 5 - Typical Junction Capacitance Per Diode

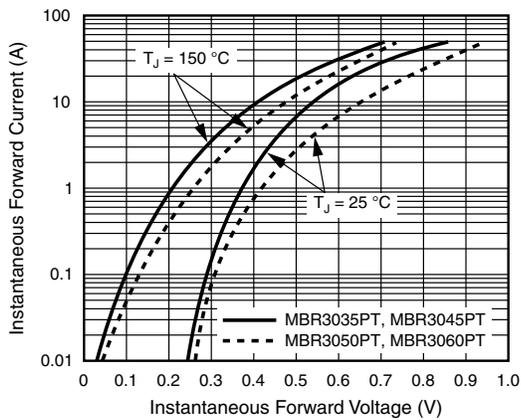


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

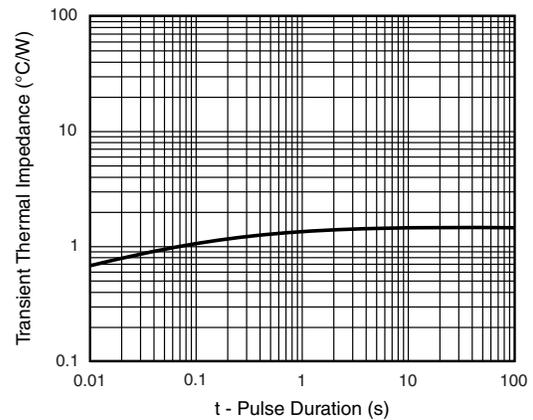
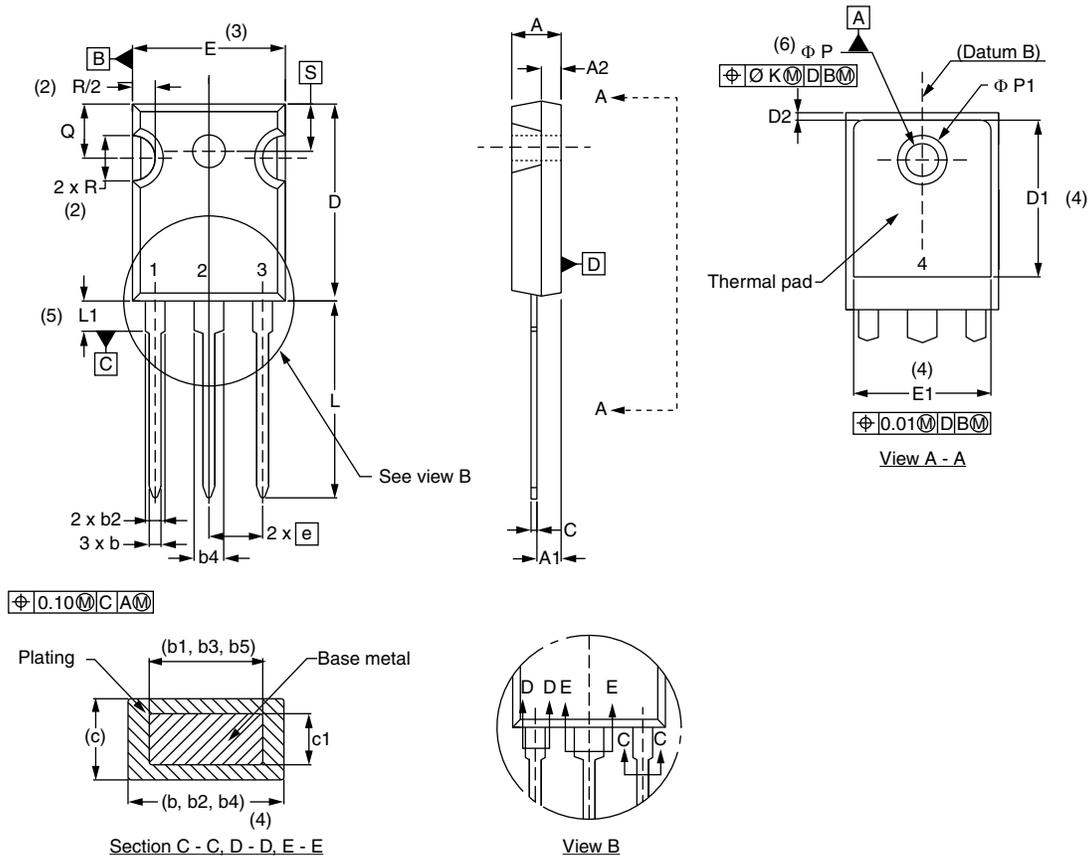


Fig. 6 - Typical Transient Thermal Impedance Per Diode



PACKAGE OUTLINE DIMENSIONS in millimeters (inches) TO-247AD 3L



SYMBOL	MILLIMETERS		INCHES		NOTES	SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.			MIN.	MAX.	MIN.	MAX.	
A	4.65	5.31	0.183	0.209		D2	0.51	1.30	0.020	0.051	
A1	2.21	2.59	0.087	0.102		E	15.29	15.87	0.602	0.625	3
A2	1.50	2.49	0.059	0.098		E1	13.46	-	0.53	-	
b	0.99	1.40	0.039	0.055		e	5.46 BSC		0.215 BSC		
b1	0.99	1.35	0.039	0.053		Ø K	0.254		0.010		
b2	1.65	2.39	0.065	0.094		L	19.81	20.32	0.780	0.800	
b3	1.65	2.34	0.065	0.092		L1	3.71	4.29	0.146	0.169	
b4	2.59	3.43	0.102	0.135		Ø P	3.56	3.66	0.14	0.144	
b5	2.59	3.38	0.102	0.133		Ø P1	-	6.98	-	0.275	
c	0.38	0.89	0.015	0.035		Q	5.31	5.69	0.209	0.224	
c1	0.38	0.84	0.015	0.033		R	4.52	5.49	0.178	0.216	
D	19.71	20.70	0.776	0.815	3	S	5.51 BSC		0.217 BSC		
D1	13.08	-	0.515	-	4						

Notes

- (1) Dimensioning and tolerancing per ASME Y14.5M-1994
- (2) Contour of slot optional
- (3) Dimension D and E do not include mold flash. These dimensions are measured at the outermost extremes of the plastic body
- (4) Thermal pad contour optional with dimensions D1 and E1
- (5) Lead finish uncontrolled in L1
- (6) Ø P to have a maximum draft angle of 1.5 to the top of the part with a maximum hole diameter of 3.91 mm (0.154")
- (7) Outline conforms to JEDEC® outline TO-247 with exception of dimension A min., D, E min., Q min., S, and note 4



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