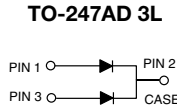
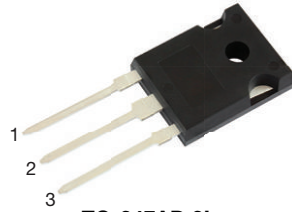


Dual Common Cathode High Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance


RoHS
COMPLIANT
HALOGEN
FREE

FEATURES

- Power pack
- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- Low leakage current
- 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

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 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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 15 A
V_{RRM}	90 V, 100 V
I_{FSM}	265 A
V_F	0.67 V
I_R	5.0 μ A
T_J max.	175 °C
Package	TO-247AD 3L
Circuit configuration	Common cathode

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	MBR30H90PT	MBR30H100PT	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	90	100	V
Working peak reverse voltage	V_{RWM}	90	100	V
Maximum DC blocking voltage	V_{DC}	90	100	V
Maximum average forward rectified current $\frac{\text{total device}}{\text{per diode}}$	$I_{F(AV)}$	30		A
		15		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	265		A
Peak repetitive reverse surge current at $t_p = 2$ μ s, 1 kHz per diode	I_{RRM}	1.0		A
Non-repetitive avalanche energy ($I_{AS} = 0.5$ A, $L = 60$ mH) per diode	E_{AS}	7.5		mJ
Voltage rate of change (rated V_R)	dV/dt	10 000		V/ μ s
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175		°C



ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	TEST CONDITIONS		MBR30H90PT	MBR30H100PT	UNIT
Maximum instantaneous forward voltage per diode	$V_F^{(1)}$	$I_F = 15\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	0.82		V
		$I_F = 15\text{ A}$	$T_J = 125\text{ }^\circ\text{C}$	0.67		
		$I_F = 30\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	0.93		
		$I_F = 30\text{ A}$	$T_J = 125\text{ }^\circ\text{C}$	0.80		
Maximum instantaneous reverse current at rated DC blocking voltage per diode	$I_R^{(1)}$		$T_J = 25\text{ }^\circ\text{C}$	5.0		μA
			$T_J = 125\text{ }^\circ\text{C}$	6.0		mA

Note

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	MBR30H90PT	MBR30H100PT	UNIT
Thermal resistance, junction to case per diode	$R_{\theta JC}$	1.6		$^\circ\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-247AD 3L	MBR30H100PT-M3/P	5.83	P	25/tube	Tube

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

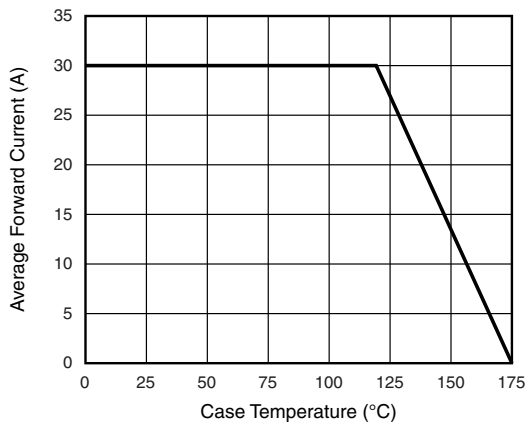


Fig. 1 - Forward Derating Curve

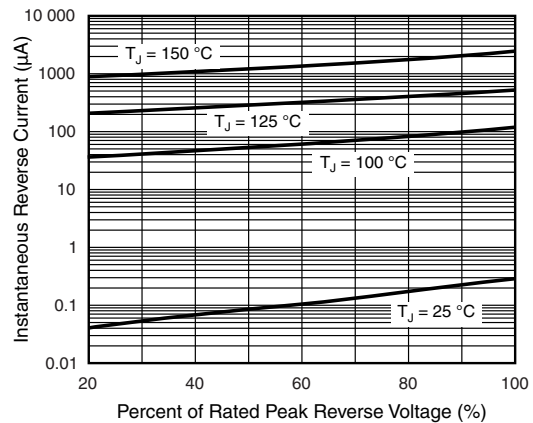


Fig. 3 - Typical Reverse Characteristics Per Diode

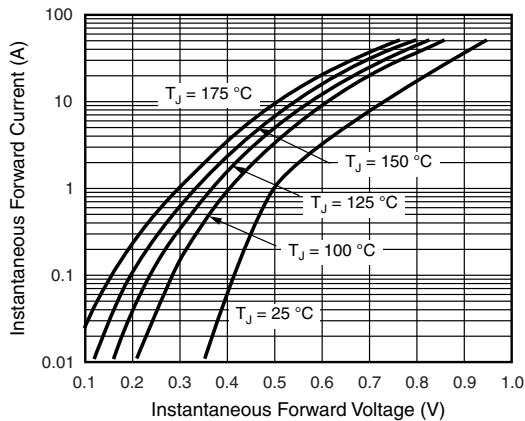


Fig. 2 - Typical Instantaneous Forward Characteristics Per Diode

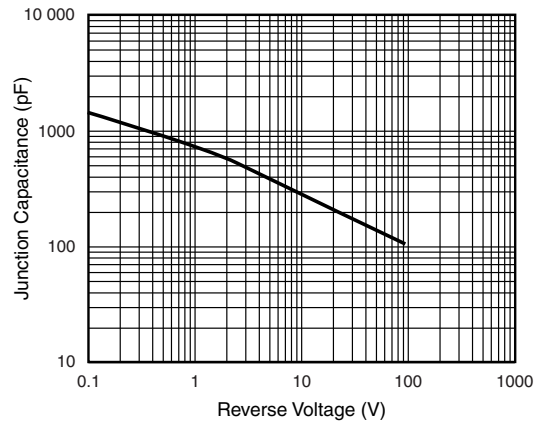
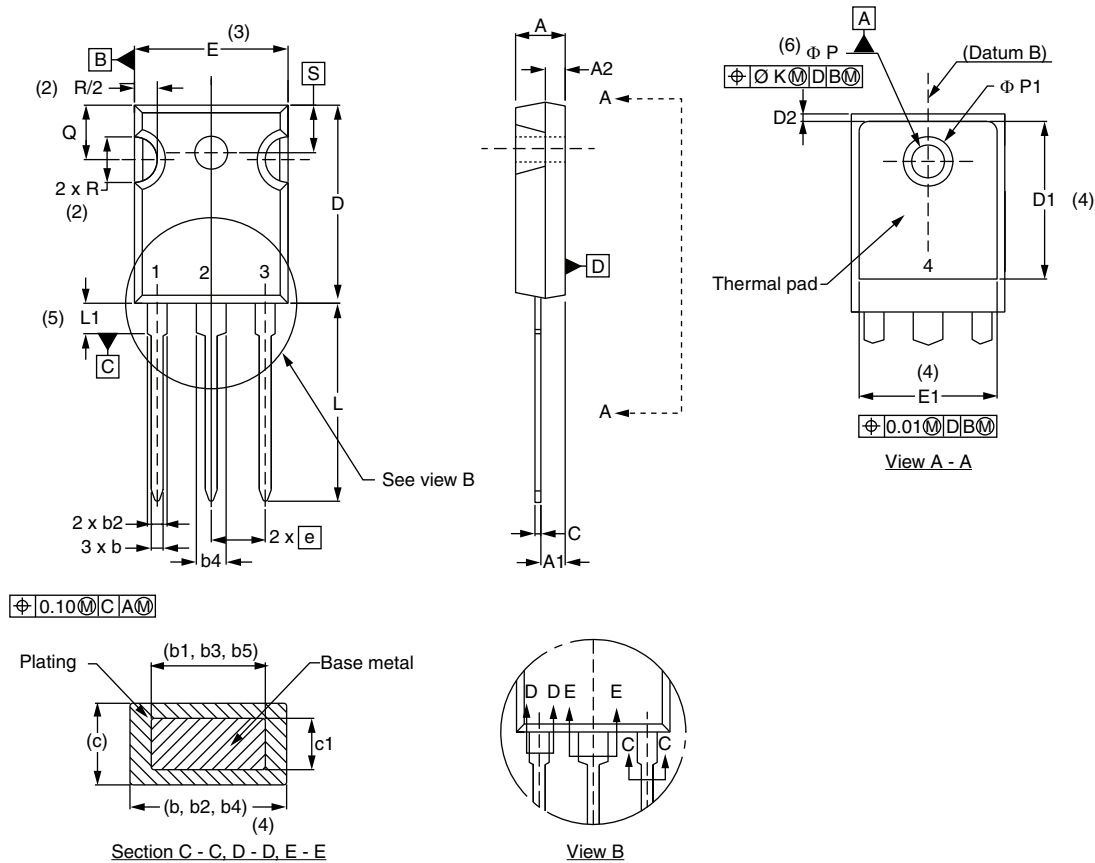


Fig. 4 - Typical Junction Capacitance Per Diode



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		\varnothing 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		\varnothing P	3.56	3.66	0.14	0.144	
b5	2.59	3.38	0.102	0.133		\varnothing 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) \varnothing 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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