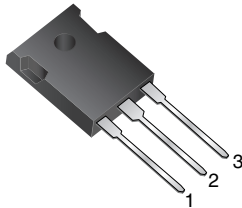
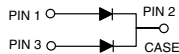


# Dual Common Cathode High Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



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



**RoHS**  
COMPLIANT

## 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](http://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-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

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 $\mu$ A
$T_J$ max.	175 °C
Package	TO-3P (TO-247AD)
Circuit configuration	Common cathode

MAXIMUM RATINGS ( $T_A = 25\text{ }^\circ\text{C}$ 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	$I_{F(AV)}$	total device		A
		per diode		
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 $t_p = 2\text{ }\mu\text{s}$ , 1 kHz per diode	$I_{RRM}$	1.0		A
Non-repetitive avalanche energy ( $I_{AS} = 0.5\text{ A}$ , $L = 60\text{ mH}$ ) per diode	$E_{AS}$	7.5		mJ
Voltage rate of change (rated $V_R$ )	dV/dt	10 000		V/ $\mu$ 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		$\mu\text{A}$
			$T_J = 125\text{ }^\circ\text{C}$	6.0		mA

**Note**

(1) Pulse test: 300  $\mu\text{s}$  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	MBR30H100PT-E3/4W	6.13	45	30/tube	Tube

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

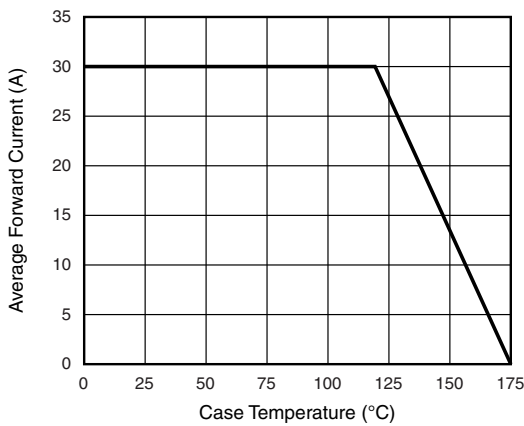


Fig. 1 - Forward Derating Curve

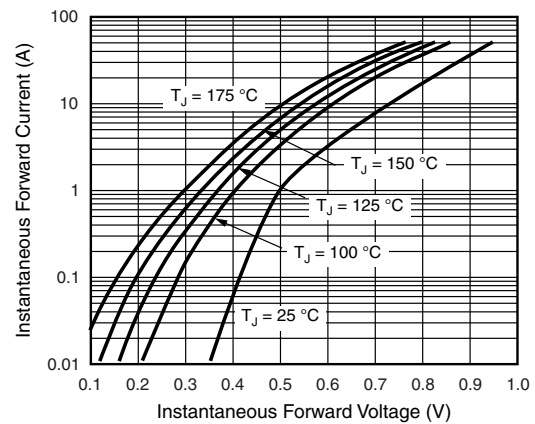


Fig. 2 - Typical Instantaneous Forward Characteristics Per Diode

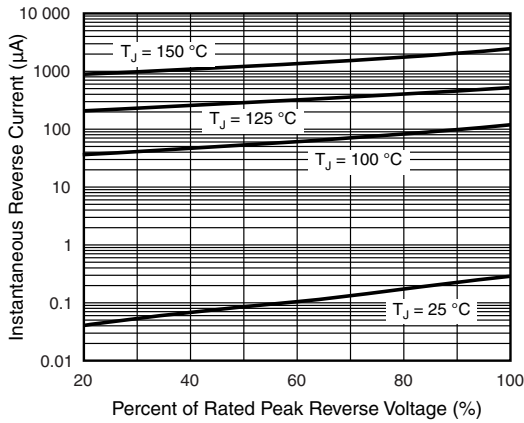


Fig. 3 - Typical Reverse Characteristics Per Diode

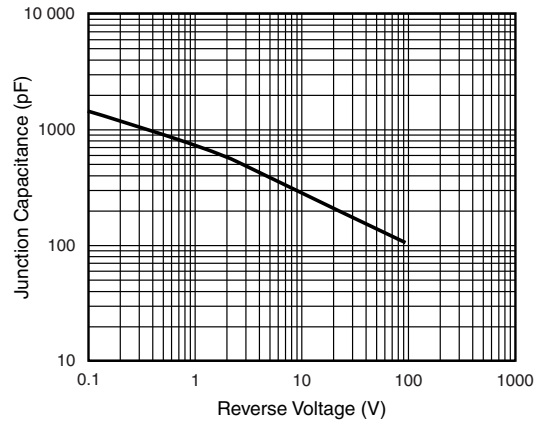
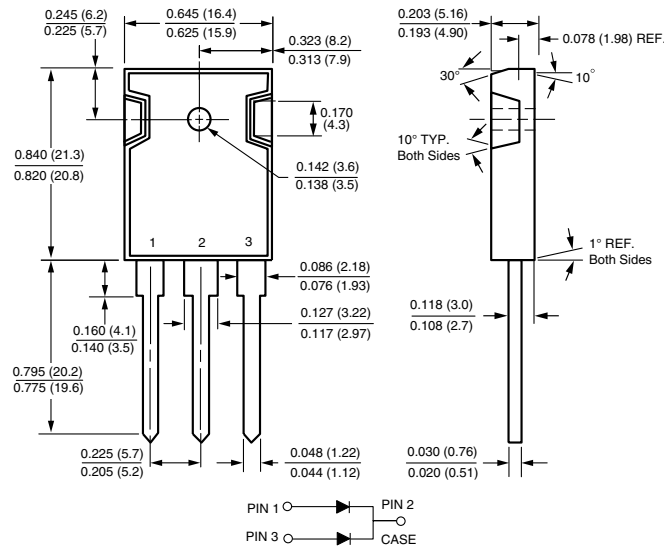


Fig. 4 - Typical Junction Capacitance Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

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





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