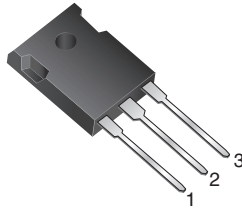
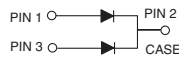


## Dual Common-Cathode High-Voltage Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



TO-247AD (TO-3P)



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	15 A x 2
$V_{RRM}$	90 V, 100 V
$I_{FSM}$	265 A
$V_F$	0.67 V
$I_R$	5.0 $\mu$ A
$T_J$ max.	175 °C

### FEATURES

- 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 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS  
COMPLIANT

### TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, freewheeling diodes, dc-to-dc converters or polarity protection application.

### MECHANICAL DATA

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

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, 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	MBR30H90PT	MBR30H100PT	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	90	100	V
Maximum working peak reverse voltage	$V_{RWM}$	90	100	V
Maximum DC blocking voltage	$V_{DC}$	90	100	V
Maximum average forward rectified current total device per diode	$I_{F(AV)}$	30 15		A
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 $t_p = 2$ $\mu$ s, $f = 1$ 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 at (rated $V_R$ )	dV/dt	10 000		V/ $\mu$ s
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175		°C

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	MBR30H90PT	MBR30H100PT	UNIT
Maximum instantaneous forward voltage per diode <sup>(1)</sup>	$I_F = 15\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	$V_F$			V
	$I_F = 15\text{ A}$	$T_J = 125\text{ }^\circ\text{C}$				
	$I_F = 30\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$				
	$I_F = 30\text{ A}$	$T_J = 125\text{ }^\circ\text{C}$				
Maximum instantaneous reverse current at rated DC blocking voltage per diode <sup>(1)</sup>			$I_R$			$\mu\text{A}$ mA
	$T_J = 25\text{ }^\circ\text{C}$					
		$T_J = 125\text{ }^\circ\text{C}$				

**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	MBR30H90PT	MBR30H100PT	UNIT
Thermal resistance from junction to case per diode	$R_{\theta JC}$	1.6		$^\circ\text{C/W}$

<b>ORDERING INFORMATION</b> (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-247AD	MBR30H100PT-E3/45	6.13	45	30/tube	Tube

## RATINGS AND CHARACTERISTICS CURVES

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

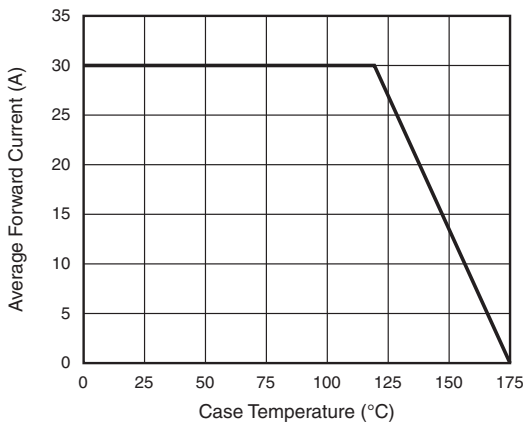


Figure 1. Forward Derating Curve

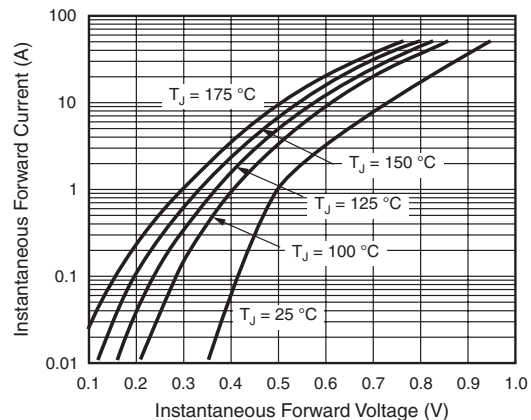


Figure 2. Typical Instantaneous Forward Characteristics Per Diode

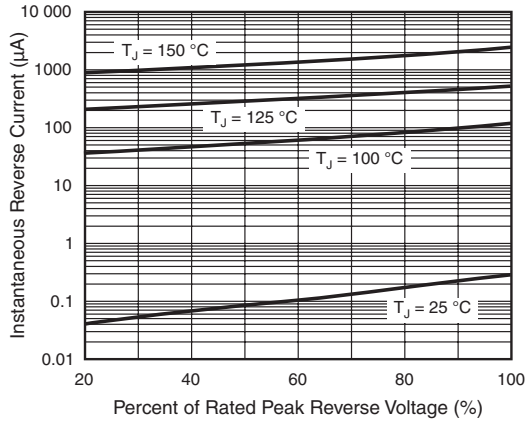


Figure 3. Typical Reverse Characteristics Per Diode

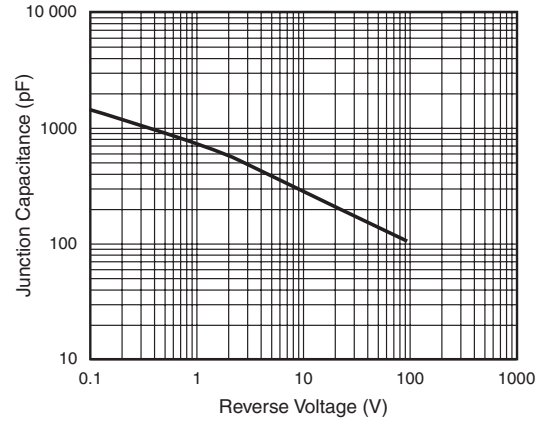
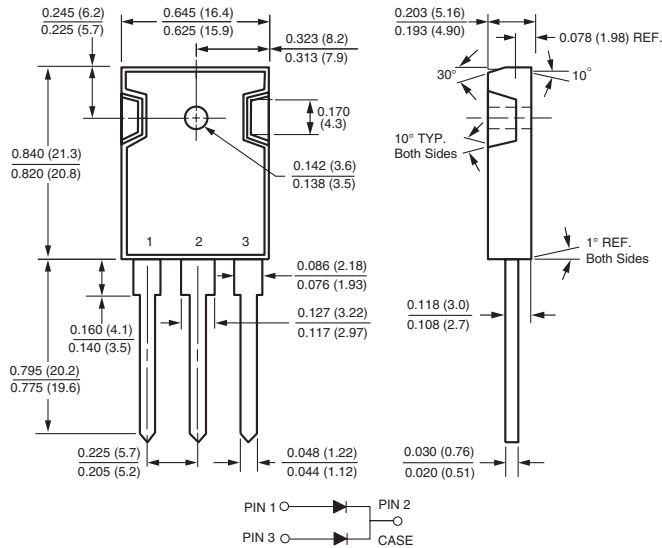


Figure 4. Typical Junction Capacitance Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

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





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