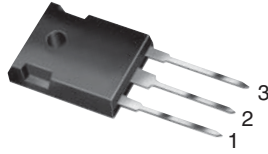
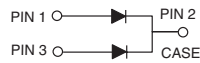


# Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low  $V_F = 0.57\text{ V}$  at  $I_F = 8\text{ A}$



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



## FEATURES



- Trench MOS Schottky Technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Low thermal resistance
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

## TYPICAL APPLICATIONS

For use in high frequency inverters, switching power supplies, free-wheeling diodes, Oring diode, dc-to-dc converters and reverse battery protection.

## MECHANICAL DATA

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

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

**Polarity:** As marked

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

MAJOR RATINGS AND CHARACTERISTICS	
$I_{F(AV)}$	2 x 15 A
$V_{RRM}$	100 V
$I_{FSM}$	120 A
$V_F$ at $I_F = 15\text{ A}$	0.65 V
$T_j$ max.	150 °C

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	V30100P	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	100	V
Maximum average forward rectified (see Fig. 1)	$I_{F(AV)}$	30 15	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	120	A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 40 to + 150	°C

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Breakdown voltage	at $I_R = 1.0\text{ mA}$ $T_j = 25\text{ }^\circ\text{C}$	$V_{(BR)}$	100 (minimum)	-	V
Instantaneous forward voltage <sup>(1)</sup> per diode	at $I_F = 8\text{ A}$ $T_j = 25\text{ }^\circ\text{C}$ $I_F = 15\text{ A}$	$V_F$	0.64 0.78	- 0.85	V
	at $I_F = 8\text{ A}$ $T_j = 125\text{ }^\circ\text{C}$ $I_F = 15\text{ A}$		0.57 0.65	- 0.71	
Reverse current <sup>(1)</sup> per diode	at $V_R = 70\text{ V}$ $T_j = 25\text{ }^\circ\text{C}$ $T_j = 125\text{ }^\circ\text{C}$	$I_R$	3.30 3.25	- -	$\mu\text{A}$ mA
	at $V_R = 100\text{ V}$ $T_j = 25\text{ }^\circ\text{C}$ $T_j = 125\text{ }^\circ\text{C}$		13.7 7.2	300 20	$\mu\text{A}$ mA

**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	V30100P	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	2.0	$^\circ\text{C/W}$

<b>ORDERING INFORMATION</b>				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
V30100P-E3/45	6.12	45	30/Tube	Tube

## RATINGS AND CHARACTERISTICS CURVES

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

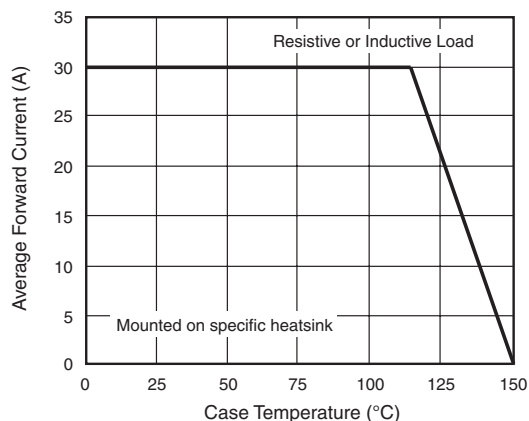


Figure 1. Forward Current Derating Curve

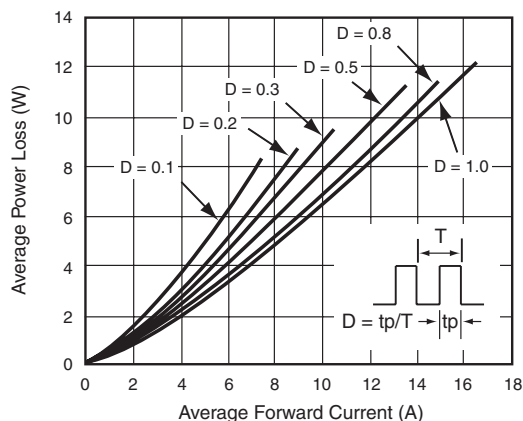


Figure 2. Forward Power Loss Characteristics Per Diode

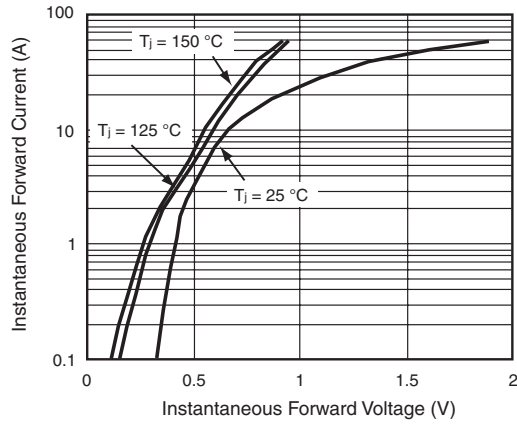


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

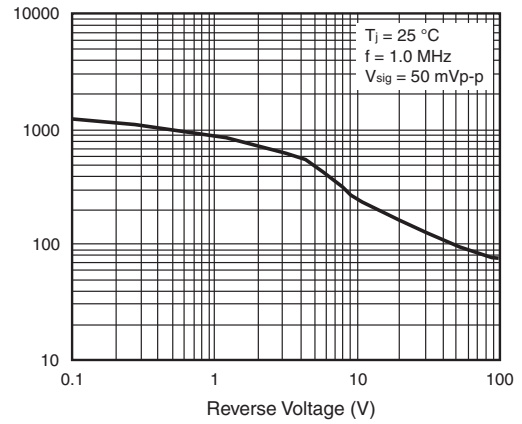


Figure 5. Typical Junction Capacitance Per Diode

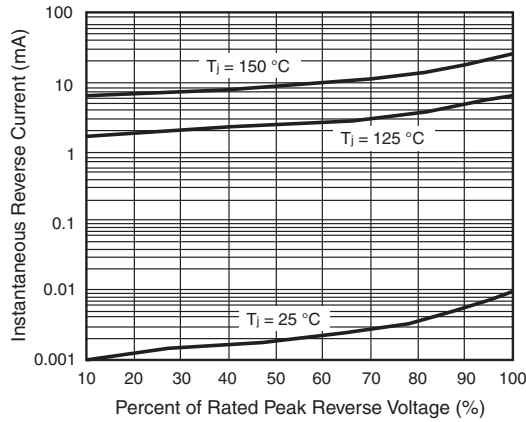


Figure 4. Typical Reverse Characteristics Per Diode

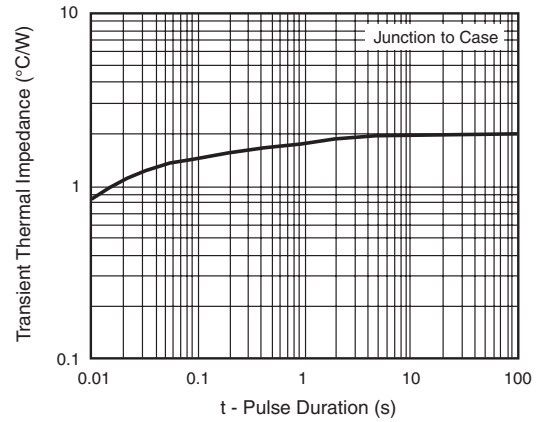
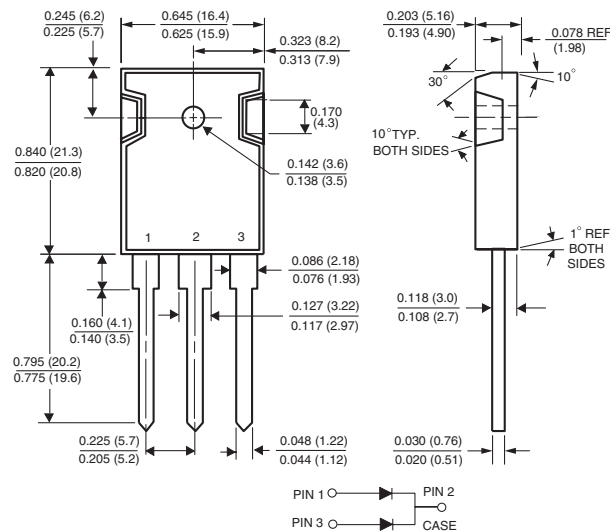


Figure 6. Typical Transient Thermal Impedance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

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




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