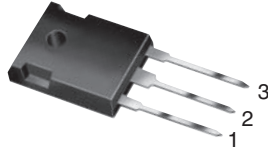
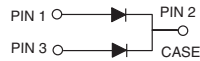


# Dual High-Voltage Trench MOS Barrier Schottky Rectifier

 Ultra Low  $V_F = 0.372$  V at  $I_F = 5$  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, freewheeling diodes, Oring diode, dc-to-dc converters and reverse battery protection.

**MAJOR RATINGS AND CHARACTERISTICS**

$I_{F(AV)}$	2 x 25 A
$V_{RRM}$	100 V
$I_{FSM}$	350 A
$V_F$ at $I_F = 20$ A	0.64 V
$T_J$ max.	150 °C

**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

**MAXIMUM RATINGS** ( $T_A = 25$  °C unless otherwise noted)

PARAMETER	SYMBOL	V50100P	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	100	V
Maximum average forward rectified current (see Fig. 1) per device per diode	$I_{F(AV)}$	50 25	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	350	A
Peak repetitive reverse current per diode at $t_p = 2$ $\mu$ s, 1 kHz	$I_{RRM}$	1.0	A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 40 to + 150	°C

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25$  °C unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Breakdown voltage	at $I_R = 1.0$ mA	$T_J = 25$ °C	$V_{(BR)}$	100 (minimum)	-	V
Instantaneous forward voltage <sup>(1)</sup> per diode	at $I_F = 5$ A $I_F = 10$ A $I_F = 20$ A $I_F = 25$ A	$T_J = 25$ °C	$V_F$	0.463 0.535 0.664 0.700	- - - 0.78	V
	$I_F = 5$ A $I_F = 10$ A $I_F = 20$ A $I_F = 25$ A	$T_J = 125$ °C		0.375 0.445 0.605 0.635	- - - 0.70	

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Reverse current at rated $V_{RM}$ <sup>(1)</sup> per diode	at $V_R = 70\text{ V}$	$T_J = 25\text{ }^\circ\text{C}$	$I_R$	13.7	500	$\mu\text{A}$
		$T_J = 125\text{ }^\circ\text{C}$		8.4	15	mA
	at $V_R = 100\text{ V}$	$T_J = 25\text{ }^\circ\text{C}$		69.6	1000	$\mu\text{A}$
		$T_J = 125\text{ }^\circ\text{C}$		22.5	45	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	V50100P	UNIT
Typical thermal resistance per diode	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$

<b>ORDERING INFORMATION</b>				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
V50100P-E3/45	6.056	45	30/Tube	Tube

## RATINGS AND CHARACTERISTICS CURVES

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

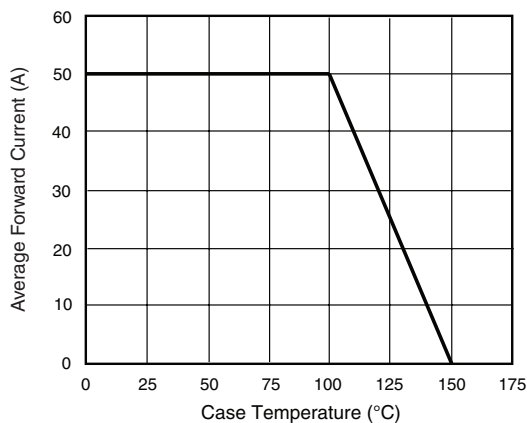


Figure 1. Forward Current Derating Curve

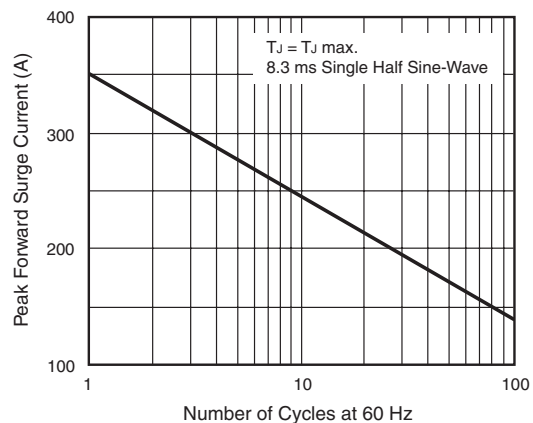


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

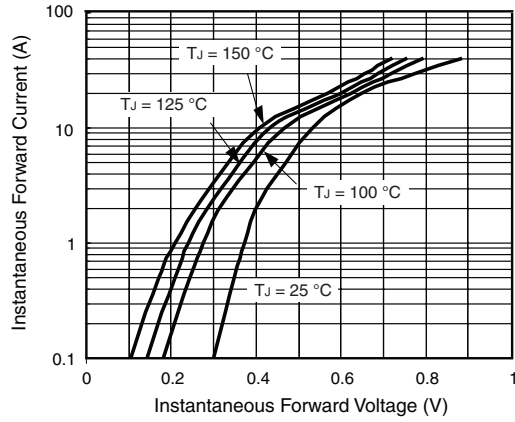


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

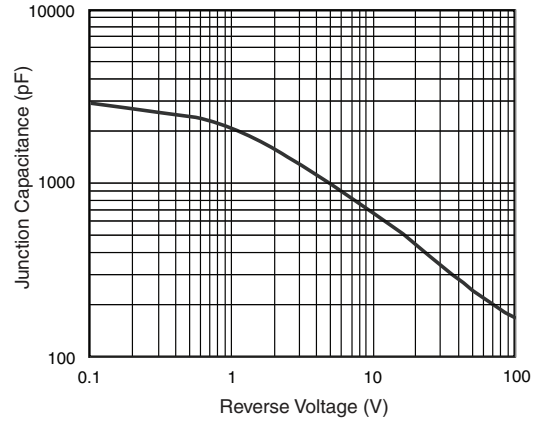


Figure 5. Typical Junction Capacitance Per Diode

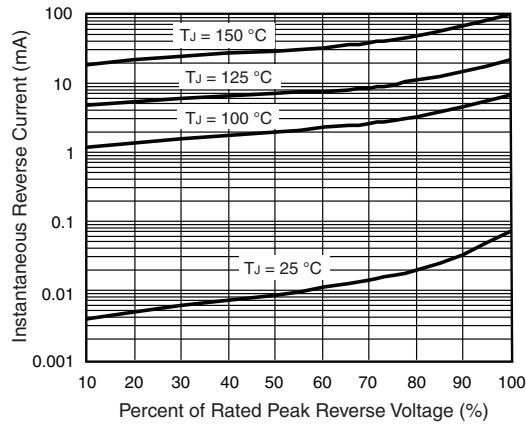


Figure 4. Typical Reverse Characteristics Per Diode

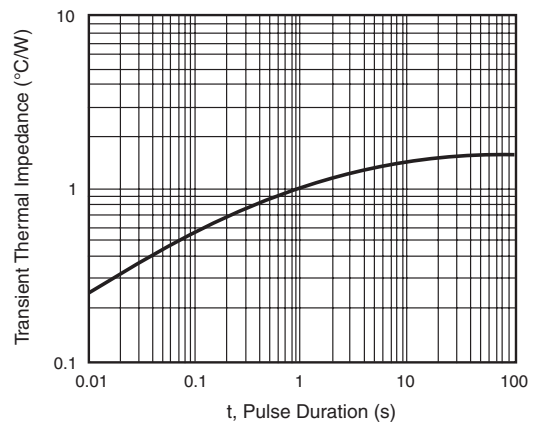
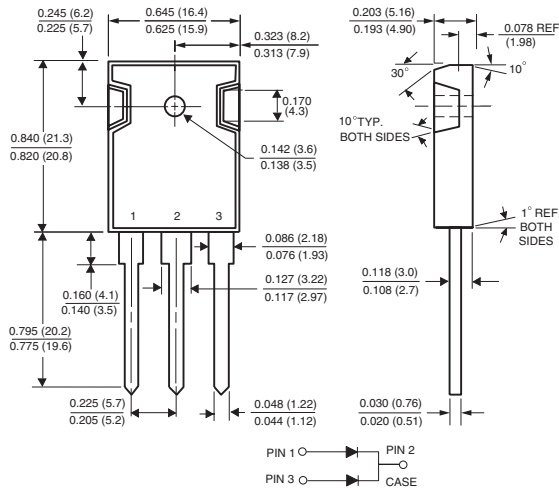


Figure 6. Typical Transient Thermal Impedance Per Diode

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

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





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