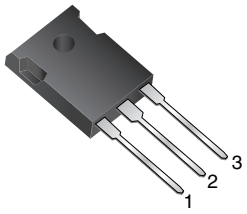
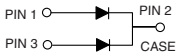
Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low V_F = 0.52 V at I_F = 5 A

TMBS®



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 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency inverters, switching power supplies, freewheeling diodes, OR-ing diode, dc-to-dc converters and reverse battery protection.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2 x 30 A
V_{RRM}	200 V
I_{FSM}	300 A
V_F at I_F = 30 A	0.73 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-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**	**V60200PG**	**UNIT**
Maximum repetitive peak reverse voltage		V_{RRM}	200	V
Maximum average forward rectified current (Fig. 1)	per device per diode	$I_{F(AV)}$	60 30	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode		I_{FSM}	300	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	I_R = 1.0 mA	T_A = 25 °C	V_{BR}	200 (minimum)	-	V
Instantaneous forward voltage per diode (1)	I_F = 5 A I_F = 15 A I_F = 30 A	T_A = 25 °C	V_F	0.69 0.90 1.28	- - 1.48	V
	I_F = 5 A I_F = 15 A I_F = 30 A	T_A = 125 °C		0.52 0.63 0.73	- - 0.81	
Reverse current per diode (2)	V_R = 180 V	T_A = 25 °C T_A = 125 °C	I_R	3.4 4.6	- -	µA mA
	V_R = 200 V	T_A = 25 °C T_A = 125 °C		- 7.5	200 20	µA mA

Notes:

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

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**V60200PG**	**UNIT**
Typical thermal resistance per diode	$R_{\theta JC}$	1.5	°C/W

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
V60200PG-E3/45	6.06	45	30/tube	Tube

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

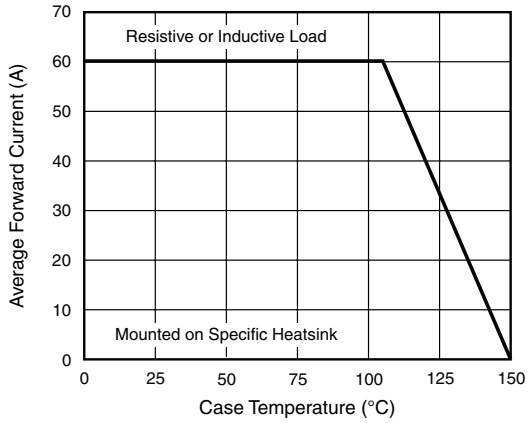


Figure 1. Forward Derating Curve

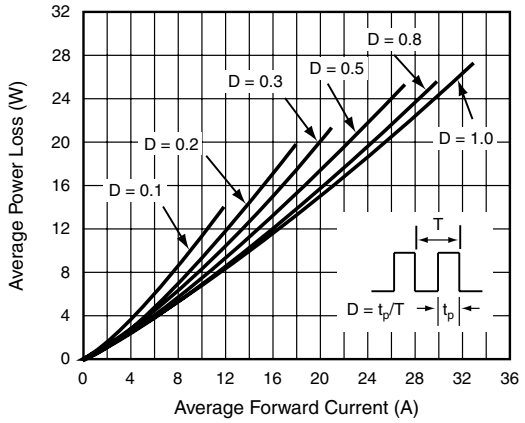


Figure 2. Forward Power Loss Characteristics Per Diode

For technical questions within your region, please contact one of the following:
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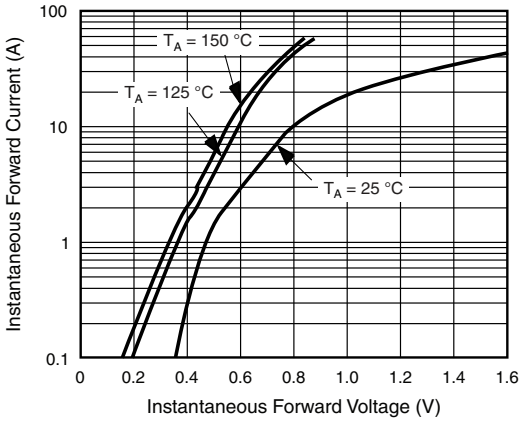


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

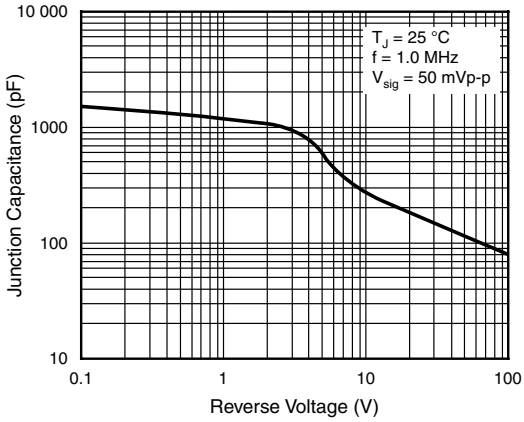


Figure 5. Typical Junction Capacitance Per Diode

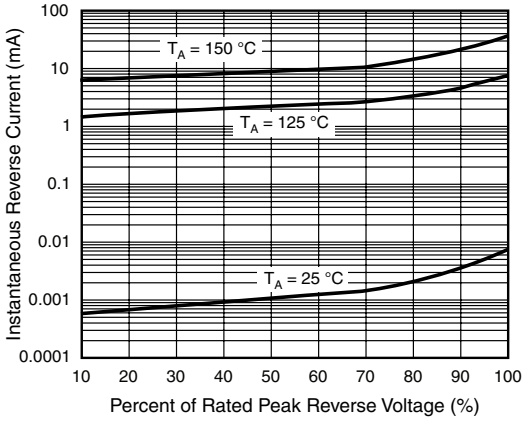


Figure 4. Typical Reverse Characteristics Per Diode

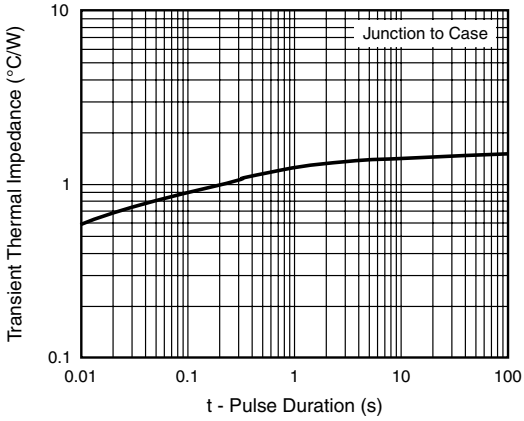
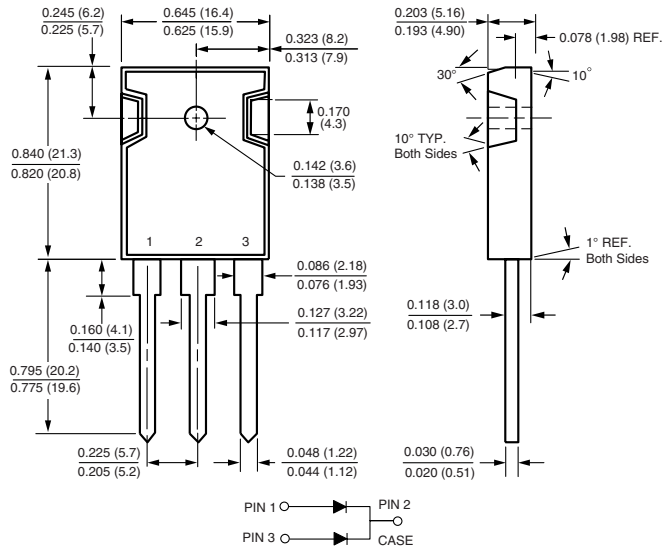


Figure 6. Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-247AD (TO-3P)



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