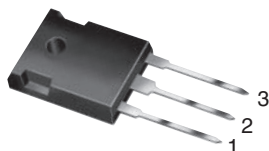


Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.372$ V at $I_F = 5$ A

TO-247AD (TO-3P)



MAJOR RATINGS AND CHARACTERISTICS

$I_{F(AV)}$	2 x 20 A
V_{RRM}	100 V
I_{FSM}	300 A
V_F at $I_F = 20$ A	0.60 V
T_J max.	150 °C

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.

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	V40100P	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	100	V
Maximum average forward rectified current (see Fig. 1) per device per leg	$I_{F(AV)}$	40 20	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per leg	I_{FSM}	300	A
Peak repetitive reverse current per leg at $t_p = 2$ μ s, 1 kHz	I_{RRM}	1.0	A
Voltage rate of change (rated V_R)	dv/dt	10000	V
Operating junction and storage temperature range	T_J, T_{STG}	- 20 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 ⁽¹⁾ per leg	at $I_F = 5$ A $T_J = 25$ °C	V_F	0.461	-	V
	$I_F = 10$ A		0.525	-	
	$I_F = 20$ A		0.652	0.73	
	at $I_F = 5$ A $T_J = 125$ °C		0.372	-	
	$I_F = 10$ A		0.443	-	
	$I_F = 20$ A		0.595	0.67	

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Reverse current at rated V_{RM} ⁽¹⁾ per leg	at $V_R = 70\text{ V}$ $T_J = 25\text{ }^{\circ}\text{C}$ $T_J = 125\text{ }^{\circ}\text{C}$	I_R	11.5 8.0	500 15	μA mA
	at $V_R = 100\text{ V}$ $T_J = 25\text{ }^{\circ}\text{C}$ $T_J = 125\text{ }^{\circ}\text{C}$		60.6 20.2	1000 45	μA mA

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	V40100P	UNIT
Typical thermal resistance per leg	$R_{\theta JC}$	1.5	$^{\circ}\text{C/W}$

ORDERING INFORMATION				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
V40100P-E3/45	6.056	45	30/Tube	Tube

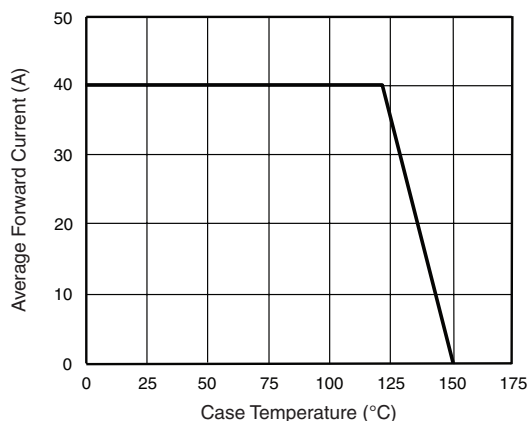
RATINGS AND CHARACTERISTICS CURVES($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Figure 1. Forward Current Derating Curve

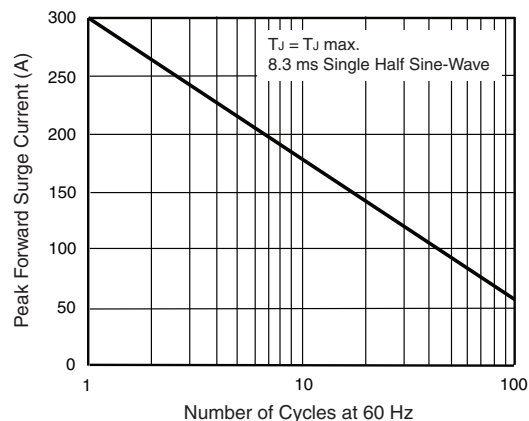


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Leg

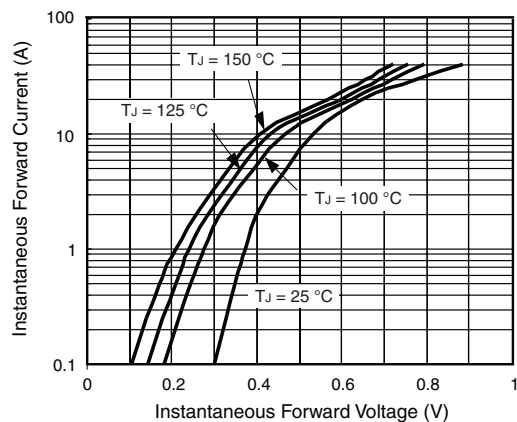


Figure 3. Typical Instantaneous Forward Characteristics Per Leg

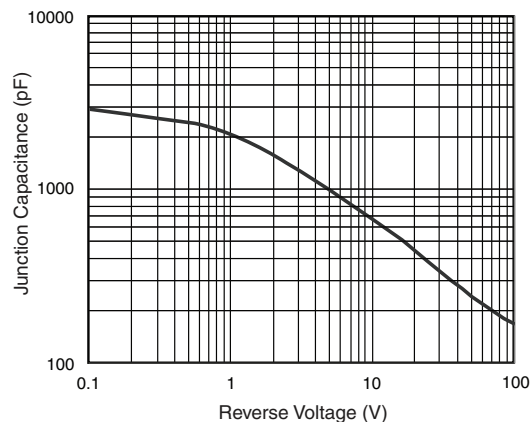


Figure 5. Typical Junction Capacitance Per Leg

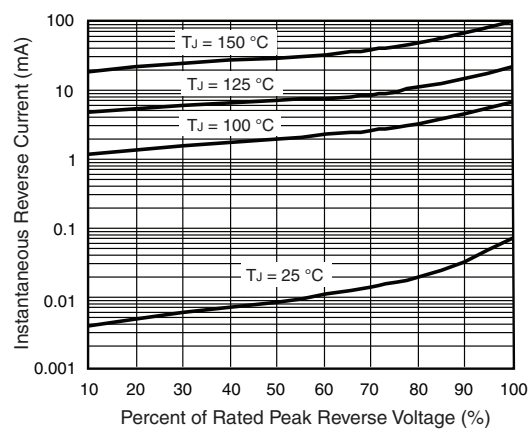


Figure 4. Typical Reverse Characteristics Per Leg

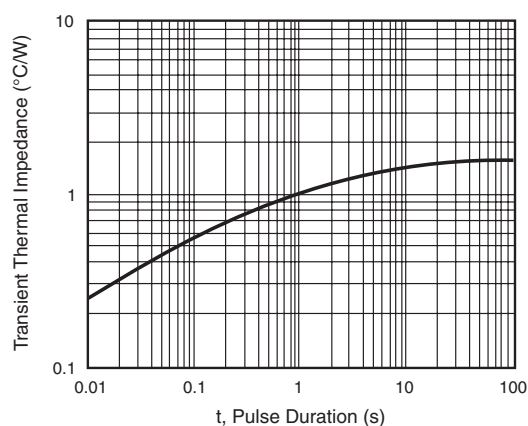
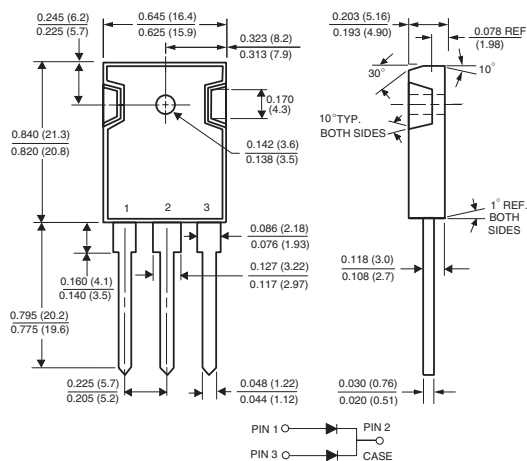


Figure 6. Typical Transient Thermal Impedance Per Leg

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-247AD (TO-3P)





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