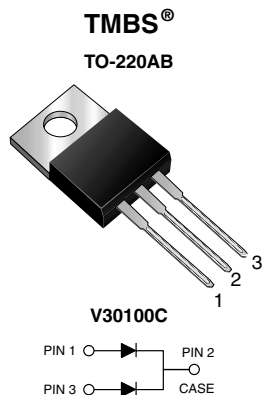


Dual High-Voltage Trench MOS Barrier Schottky Rectifier

Ultra Low $V_F = 0.455$ V at $I_F = 5$ A



FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- Low thermal resistance
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- **Halogen-free according to IEC 61249-2-21 definition**



RoHS
COMPLIANT
HALOGEN
FREE

TYPICAL APPLICATIONS

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

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 15 A
V_{RRM}	100 V
I_{FSM}	160 A
V_F at $I_F = 15$ A	0.63 V
T_J max.	150 °C

MECHANICAL DATA

Case: TO-220AB

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free and RoHS compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix 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	V30100C	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	100	V
Maximum average forward rectified current (fig. 1)	per device	30	A
	per diode	15	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	160	A
Non-repetitive avalanche energy at $T_J = 25$ °C, $L = 60$ mH per diode	E_{AS}	210	mJ
Peak repetitive reverse current at $t_p = 2$ μs, 1 kHz, $T_J = 38$ °C ± 2 °C per diode	I_{RRM}	1.0	A
Voltage rate of change (rated V_R)	dV/dt	10 000	V/μs
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}	100 (minimum)	-	V
Instantaneous forward voltage per diode	I _F = 5 A	T _A = 25 °C	V _F ⁽¹⁾	0.516	-	V
	I _F = 7.5 A			0.576	-	
	I _F = 15 A			0.734	0.80	
	I _F = 5 A	T _A = 125 °C		0.455	-	
	I _F = 7.5 A			0.522	-	
	I _F = 15 A			0.627	0.68	
Reverse current per diode	V _R = 70 V	T _A = 25 °C	I _R ⁽²⁾	7.2	-	μA
		T _A = 125 °C		8.0	-	mA
	V _R = 100 V	T _A = 25 °C		65	500	μA
		T _A = 125 °C		20	35	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	V30100C	UNIT
Typical thermal resistance per diode	R _{θJC}	2.5	°C/W

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	V30100C-M3/4W	1.88	4W	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

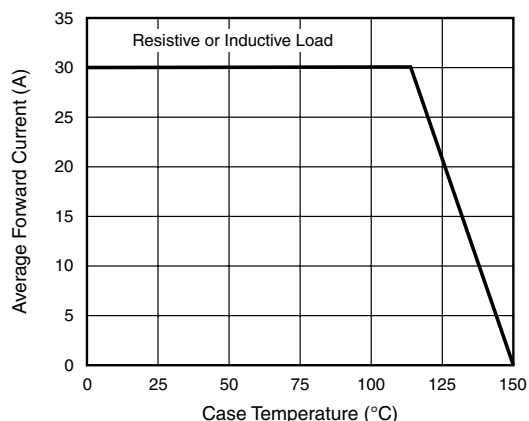


Fig. 1 - Forward Current Derating Curve

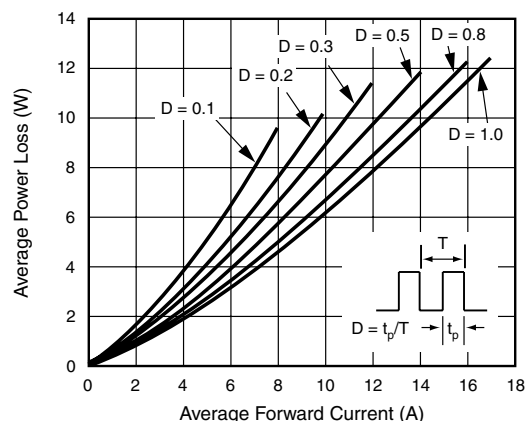


Fig. 2 - Forward Power Loss Characteristics Per Diode

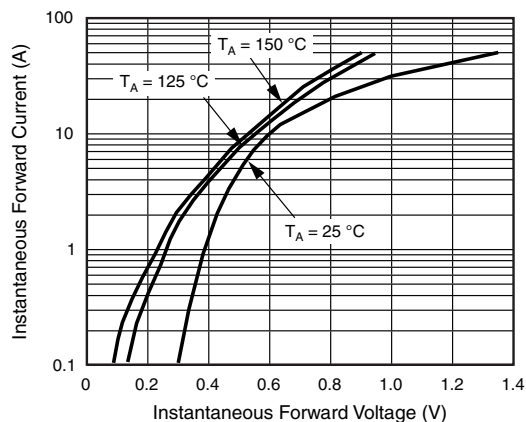


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

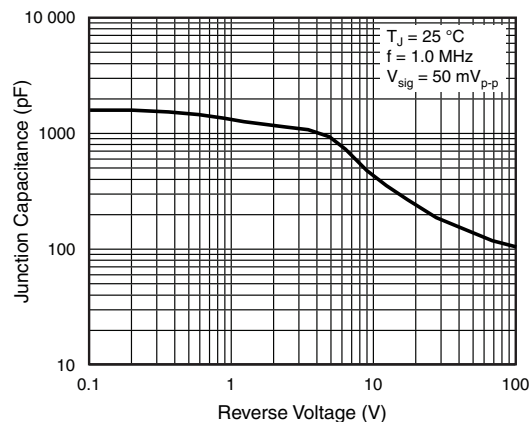


Fig. 5 - Typical Junction Capacitance

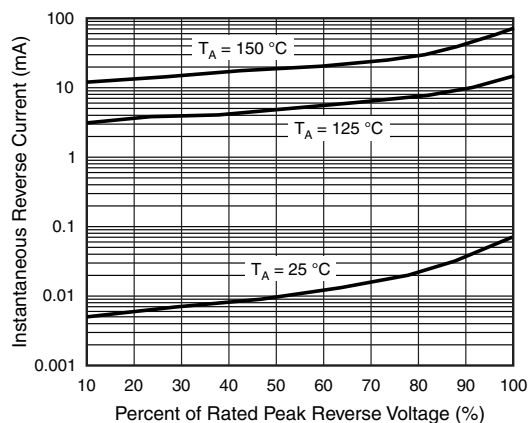


Fig. 4 - Typical Reverse Characteristics Per Diode

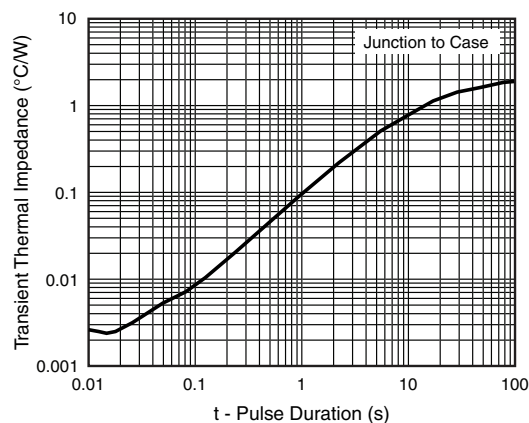
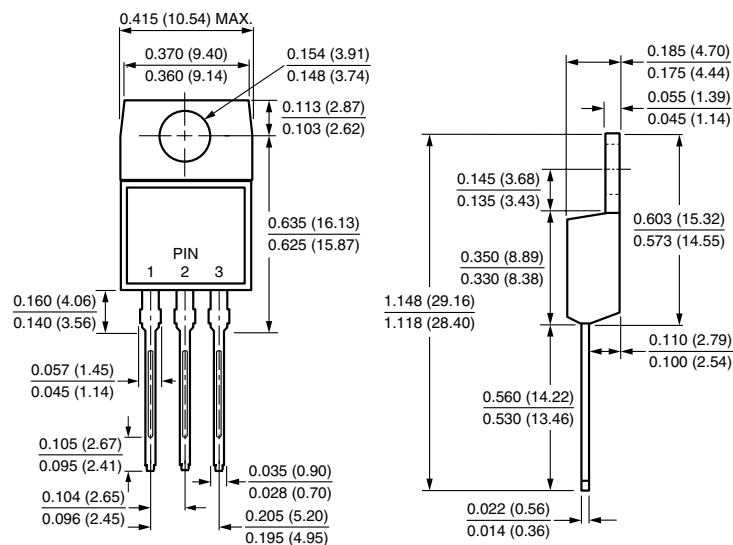


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AB





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All product specifications and data are subject to change without notice.

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