VSB2200S

Vishay General Semiconductor

High-Voltage Trench MOS Barrier Schottky Rectifier

TMBS®

DO-204AL (DO-41)

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
V_{RRM}	200 V
I_{FSM}	40 A
V_F at I_F = 2.0 A	0.65 V
T_J max.	150 °C

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters or polarity protection application.

FEATURES

- Trench MOS Schottky technology
- Low forward voltage drop, low power losses
- High efficiency operation
- 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

MECHANICAL DATA

Case: DO-204AL (DO-41)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS compliant, and 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: Color band denotes the cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VSB2200S**	**UNIT**
Maximum repetitive peak reverse voltage	V_{RRM}	200	V
Maximum average forward rectified current (fig. 1) (1)	$I_{F(AV)}$	2.0	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	40	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

Note

(1) Units mounted on PCB with 2 mm x 2 mm copper pad areas 0.375" (9.5 mm) lead length, free air

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

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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 (1)	I_F = 2.0 A	T_A = 25 °C T_A = 125 °C	V_F	0.97 0.65	1.23 0.73	
Reverse current per diode (2)	V_R = 200 V	T_A = 25 °C T_A = 125 °C	I_R	0.8 0.6	40 4	µA mA
Typical junction capacitance	4.0 V, 1 MHz		C_J	110	-	pF

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	VSB2200S	UNIT
Typical thermal resistance (1)	$R_{\theta JA}$ $R_{\theta JL}$	88 20	°C/W

Note

(1) Units mounted on PCB with 2 mm x 2 mm copper pad areas 0.375" (9.5 mm) lead length, free air

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
VSB2200S-M3/54	0.34	54	5500	13" diameter paper tape and reel
VSB2200S-M3/73	0.34	73	3000	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

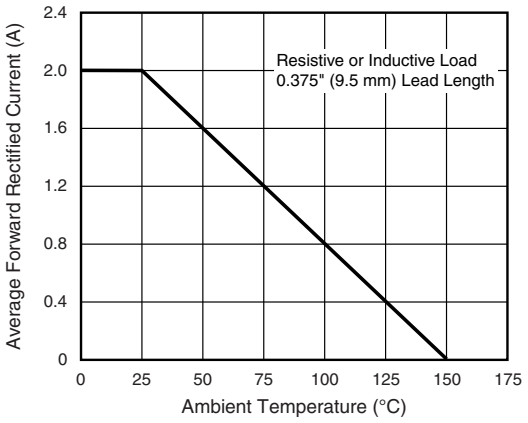

Figure 1. Maximum Forward Current Derating Curve

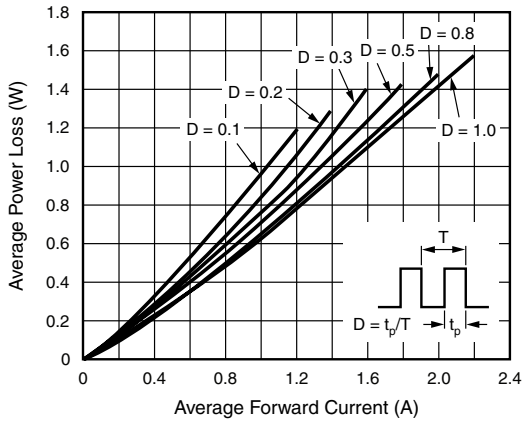

Figure 2. Forward Power Loss Characteristics

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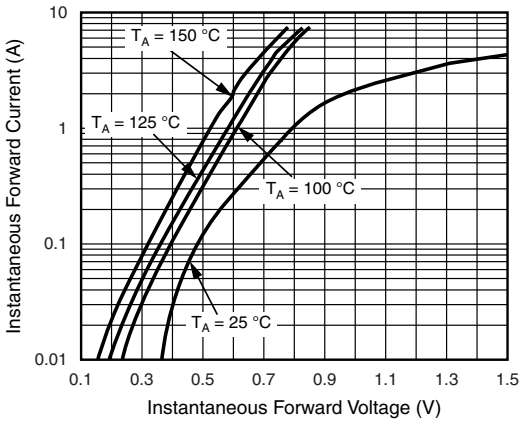


Figure 3. Typical Instantaneous Forward Characteristics

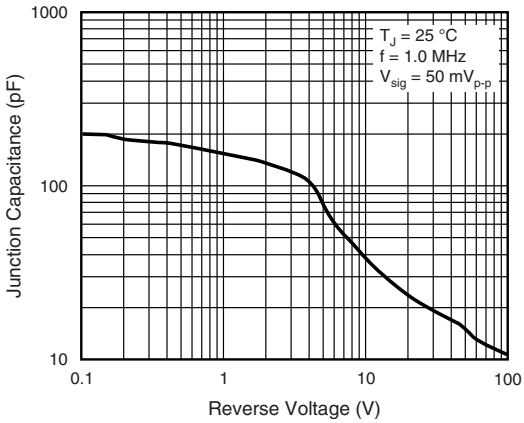


Figure 5. Typical Junction Capacitance

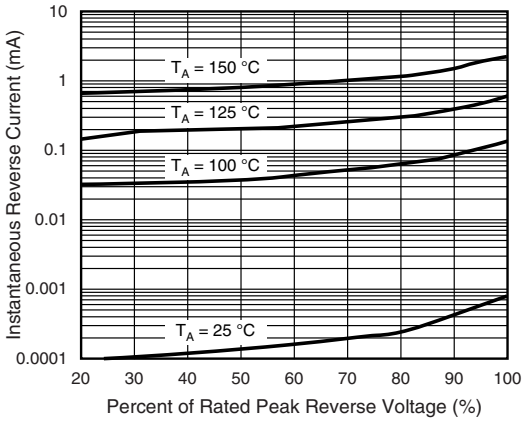


Figure 4. Typical Reverse Characteristics

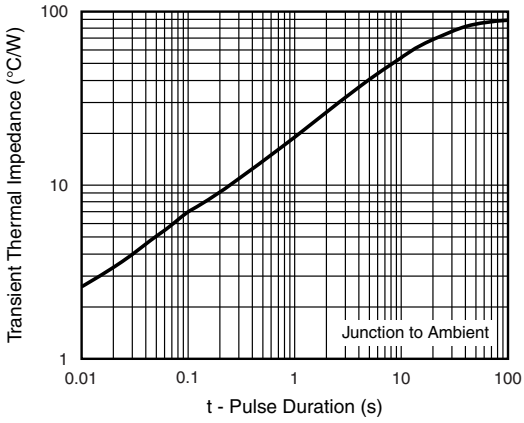
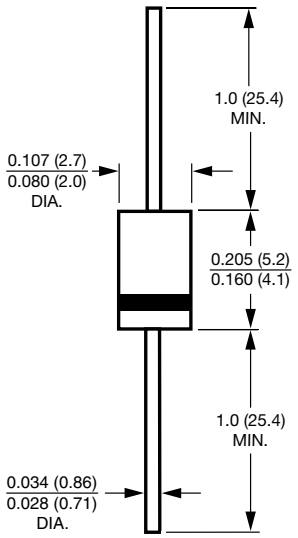


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)



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