TAYCHIPST **Surface Mount Trench MOS Barrier Schottky Rectifier**

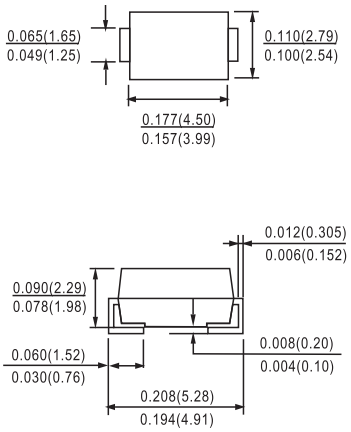
VSSA310

100V 3.0A

FEATURES

- Low profile package
- Ideal for automated placement
- Trench MOS Schottky technology
- Low power losses, high efficiency
- Low forward voltage drop
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Not recommended for PCB bottom side wave mounting
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- **Halogen-free according to IEC 61249-2-21 definition**

DO-214AC(SMA)



Dimensions in inches and (millimeters)

Mechanical Data

Case: DO-214AC (SMA)
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 AND ELECTRICAL CHARACTERISTICS

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

PARAMETER	SYMBOL	VSSA310S	UNIT
Device marking code		V3B	
Maximum repetitive peak reverse voltage	V_{RRM}	100	V
Maximum DC forward current	I_F (1)	3.0	A
	I_F (2)	1.7	
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	60	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}	100 (minimum)	-	V
Instantaneous forward voltage	I_F = 3.0 A	T_A = 25 °C	V_F (1)	0.71	0.80	V
		T_A = 125 °C		0.62	0.70	
Reverse current	V_R = 70 V	T_A = 25 °C	I_R (2)	1.0	-	μA
		T_A = 125 °C		0.95	-	mA
	V_R = 100 V	T_A = 25 °C		3.5	150	μA
		T_A = 125 °C		2.2	15	mA
Typical junction capacitance	4.0 V, 1 MHz		C_J	175	-	pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	VSSA310S	UNIT
Typical thermal resistance	$R_{\theta JA}$ (1)	135	°C/W
	$R_{\theta JM}$ (2)	25	

Notes
(1) Free air, mounted on recommended PCB 1 oz. pad area; thermal resistance $R_{\theta JA}$ - junction to ambient
(2) Units mounted on P.C.B. with 10 mm x 10 mm copper pad areas; $R_{\theta JM}$ - junction to mount

RATINGS AND CHARACTERISTIC CURVES VSSA310

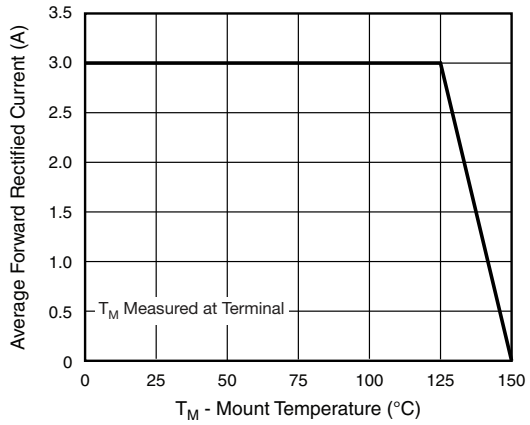


Fig. 1 - Maximum Forward Current Derating Curve

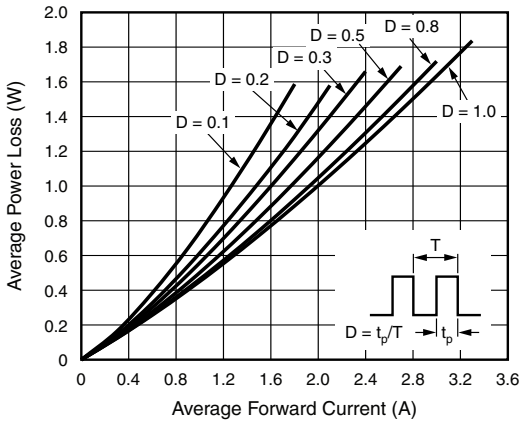


Fig. 2 - Forward Power Loss Characteristics

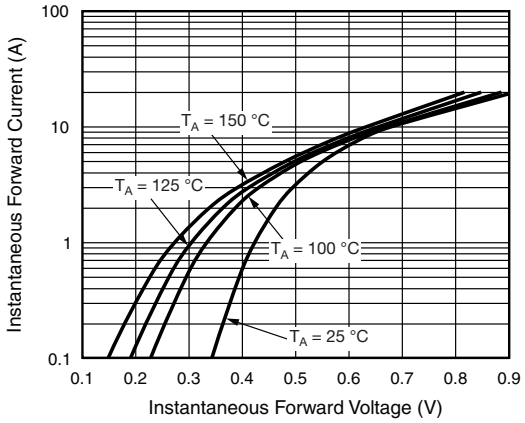


Fig. 3 - Typical Instantaneous Forward Characteristics

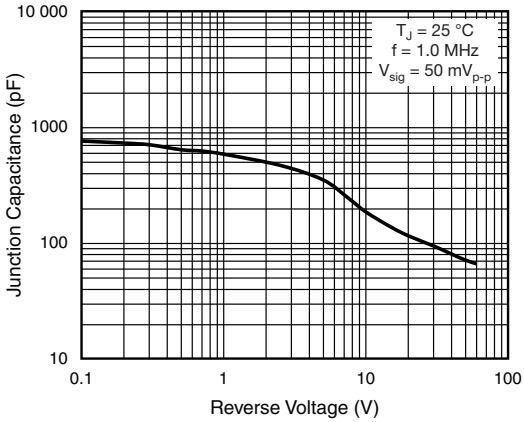


Fig. 5 - Typical Junction Capacitance

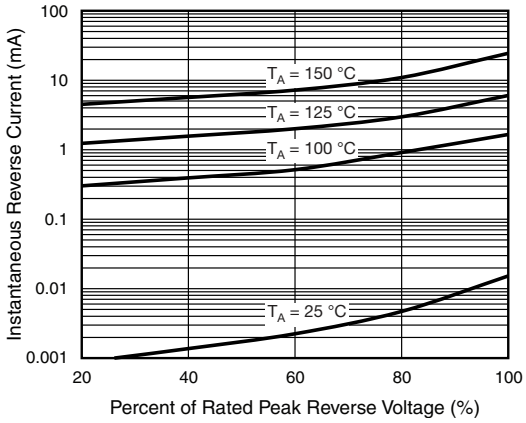


Fig. 4 - Typical Reverse Characteristics

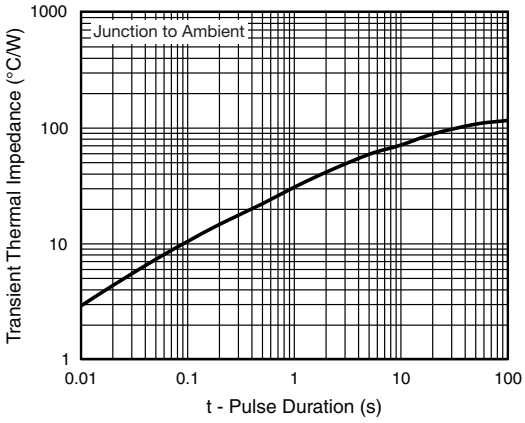


Fig. 6 - Typical Transient Thermal Impedance