

Surface Mount Trench MOS Barrier Schottky Rectifier



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
V_{RRM}	100 V
I_{FSM}	60 A
V_F at $I_F = 2.0$ A	0.56 V
T_J max.	150 °C
Package	DO-214AC (SMA)
Diode variation	Single die

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
- AEC-Q101 qualified available
 - Automotive ordering code; base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

TYPICAL APPLICATIONS

For use in low voltage, high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

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

Base P/NHM3 - halogen-free, RoHS-compliant and AEC-Q101 qualified

Base P/NHM3_X - halogen-free, RoHS-compliant and AEC-Q101 qualified

("_X" denotes revision code e.g. A, B,.....)

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

M3 suffix meets JESD 201 class 2 whisker test, HM3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	VSSA210	UNIT
Device marking code		V2B	
Maximum repetitive peak reverse voltage	V_{RRM}	100	V
Maximum DC forward current	$I_F^{(1)}$	2.0	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

Notes

(1) Mounted on 8 mm x 8 mm pad areas, 1 oz. FR4 PCB

(2) Free air, mounted on recommended copper pad area



ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I _F = 2.0 A	T _A = 25 °C	V _F ⁽¹⁾	0.61	0.70	V
		T _A = 125 °C		0.56	0.65	
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

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	VSSA210	UNIT
Typical thermal resistance	R _{θJA} ⁽¹⁾	135	°C/W
	R _{θJM} ⁽²⁾	25	

Notes

- (1) Free air, mounted on recommended PCB 1 oz. pad area; thermal resistance R_{θJA} - junction to ambient
- (2) Units mounted on PCB with 8 mm x 8 mm copper pad areas; R_{θJM} - junction to mount

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
VSSA210-M3/61T	0.064	61T	1800	7" diameter plastic tape and reel
VSSA210-M3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel
VSSA210HM3/61T ⁽¹⁾	0.064	61T	1800	7" diameter plastic tape and reel
VSSA210HM3/5AT ⁽¹⁾	0.064	5AT	7500	13" diameter plastic tape and reel
VSSA210HM3_A/H ⁽¹⁾	0.064	H	1800	7" diameter plastic tape and reel
VSSA210HM3_A/I ⁽¹⁾	0.064	I	7500	13" diameter plastic tape and reel

Note

- (1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

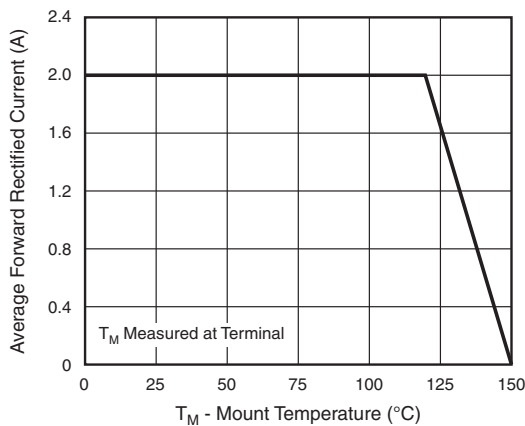


Fig. 1 - Maximum Forward Current Derating Curve

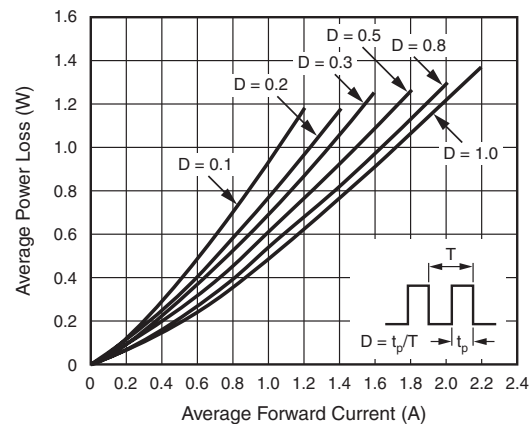


Fig. 2 - Forward Power Loss Characteristics

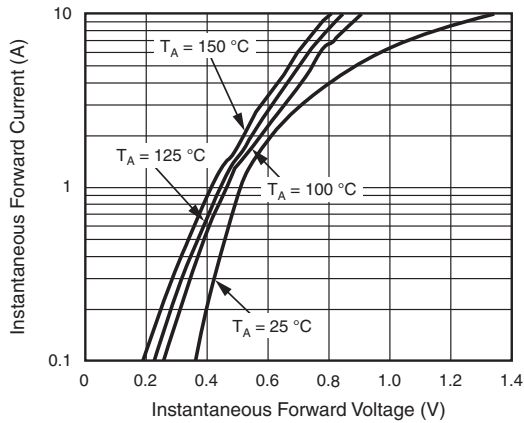


Fig. 3 - Typical Instantaneous Forward Characteristics

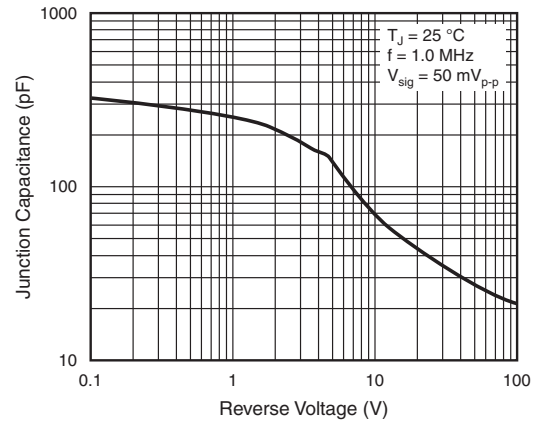


Fig. 5 - Typical Junction Capacitance

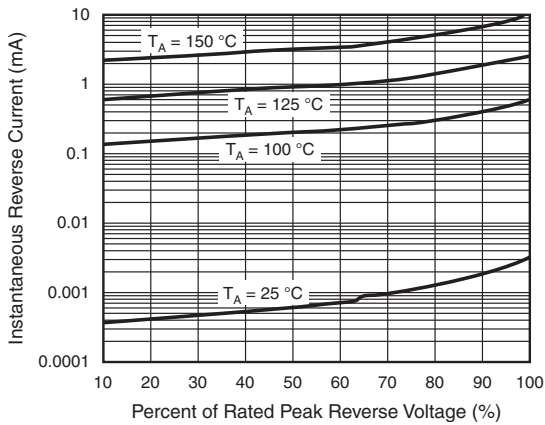


Fig. 4 - Typical Reverse Characteristics

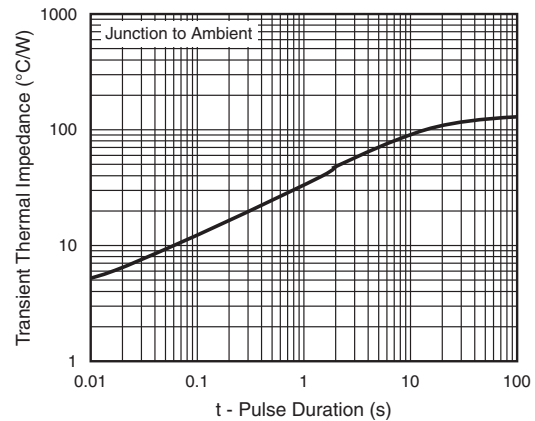
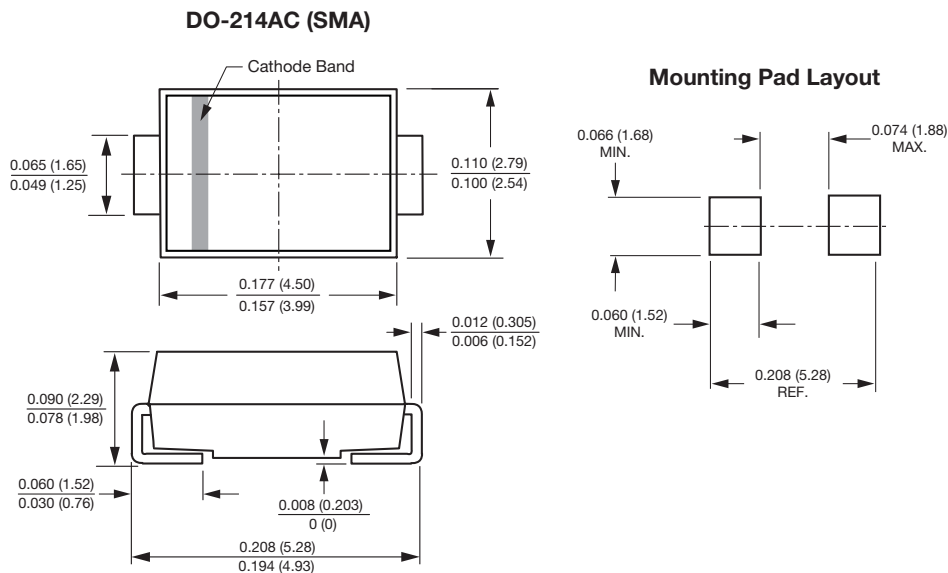


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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