HALOGEN

FREE



Vishay General Semiconductor

Surface Mount Trench MOS Barrier Schottky Rectifier



DO-214AC (SMA)

PRIMARY CHARACTERISTICS			
I _{F(AV)}	3.0 A		
V _{RRM}	60 V		
I _{FSM}	80 A		
V _F at I _F = 3.0 A	0.41 V		
T _J max.	150 °C		

TYPICAL APPLICATIONS

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

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

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 (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	VSSA3L6S	UNIT	
Device marking code		3L6		
Maximum repetitive peak reverse voltage	V_{RRM}	60	V	
Maximum DC forward current	I _F ⁽¹⁾	3.0	A	
	I _F ⁽²⁾	2.5		
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I _{FSM}	80	А	
Voltage rate of change (rated V _R)	dV/dt	10 000	V/µs	
Operating junction and storage temperature range	T _J , T _{STG}	- 55 to + 150	°C	

Notes

- (1) Mounted on 10 mm x 10 mm pad areas, 1 oz. FR4 PCB
- (2) Free air, mounted on recommended copper pad area

VSSA3L6S

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I _F = 3.0 A	T _A = 25 °C	V _F ⁽¹⁾	0.49	0.58	V
		T _A = 125 °C		0.41	0.50	
Reverse current	V _R = 60 V	T _A = 25 °C	I _R ⁽²⁾	-	1500	μΑ
		T _A = 125 °C		6.0	30	mA
Typical junction capacitance	4.0 V, 1 MHz		CJ	395	-	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 specified)				
PARAMETER	SYMBOL VSSA3L6S		UNIT	
Typical thermal resistance	R _{0JA} (1)	115	°C/W	
	R _{0JM} (2)	15	C/VV	

Notes

 $^{(1)}$ Free air, mounted on recommended PCB, 1 oz. pad area; thermal resistance $R_{\theta JA}$ - junction to ambient

 $^{(2)}$ Mounted on 10 mm x 10 mm pad areas, 1 oz. FR4 PCB; $R_{\theta JM}$ - junction to mount

ORDERING INFORMATION (Example)					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
VSSA3L6S-M3/61T	0.064	61T	1800	7" diameter plastic tape and reel	
VSSA3L6S-M3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel	

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

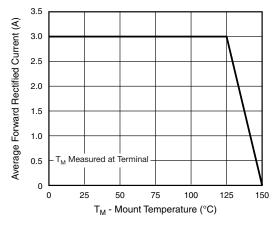


Fig. 1 - Maximum Forward Current Derating Curve

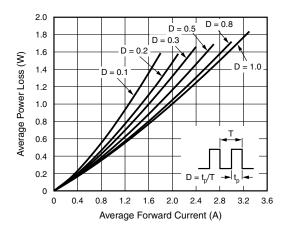


Fig. 2 - Forward Power Loss Characteristics



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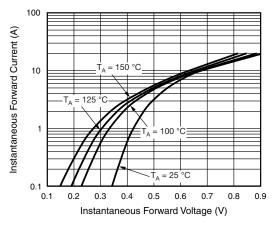


Fig. 3 - Typical Instantaneous Forward Characteristics

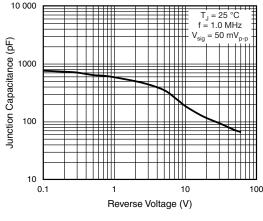


Fig. 5 - Typical Junction Capacitance

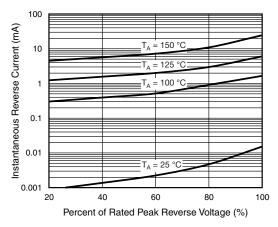


Fig. 4 - Typical Reverse Characteristics

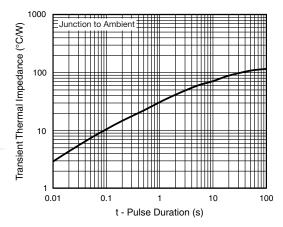
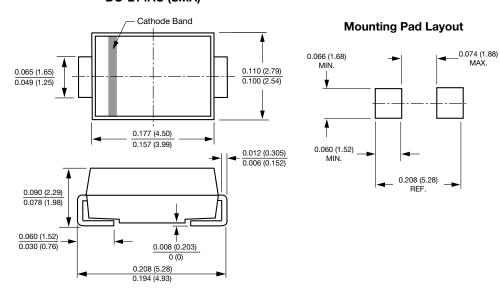


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-214AC (SMA)







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