



Standard Surface Mount Glass Passivated Rectifier



DO-214AC (SMA)

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes for consumer and telecommunication.

Note

- These devices are not AEC-Q101 qualified.

MECHANICAL DATA

Case: DO-214AC (SMA)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS compliant, commercial grade

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

E3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	100 V to 1000 V
I_{FSM}	30 A
I_R	3.0 μ A
V_F at $I_F = 1.0$ A	0.861 V
T_J max.	150 °C

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)								
PARAMETER	SYMBOL	S1BA	S1DA	S1GA	S1JA	S1KA	S1MA	UNIT
Device marking code		BA	DA	GA	JA	KA	MA	
Maximum repetitive peak reverse voltage	V_{RRM}	100	200	400	600	800	1000	V
Average forward current	$I_{F(AV)}$	1.0						A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	30						A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150						°C

ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage	$I_F = 1.0$ A	V_F (1)	$T_J = 25$ °C	0.960	1.1	V
			$T_J = 125$ °C	0.861	-	
Reverse current	Rated V_R	I_R (2)	$T_J = 25$ °C	0.09	3	μ A
			$T_J = 125$ °C	20	80	
Typical reverse recovery time	$I_F = 0.5$ A, $I_R = 1.0$ A, $I_{rr} = 0.25$ A	t_{rr}	1.0	-	μ s	
Typical junction capacitance	4.0 V, 1 MHz	C_J	8	-	pF	

Notes

(1) Pulse test: 300 μ s pulse width, 1 % duty cycle

(2) Pulse test: Pulse width \leq 40 ms

S1BA thru S1MA

Vishay General Semiconductor



THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	S1BA	S1DA	S1GA	S1JA	S1KA	S1MA	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	95						$^\circ\text{C/W}$
	$R_{\theta JL}^{(1)}$	22						

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
S1JA-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel
S1JA-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

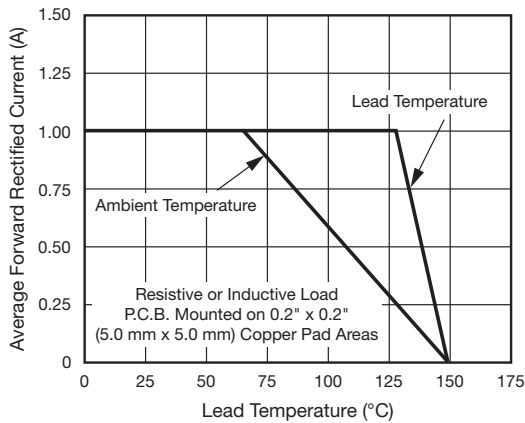


Fig. 1 - Maximum Forward Current Derating Curve

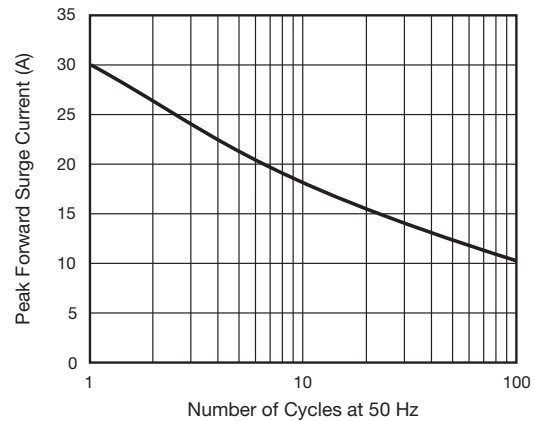


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

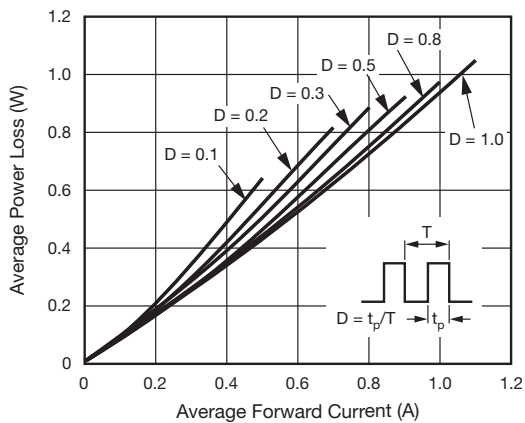


Fig. 2 - Forward Power Loss Characteristics

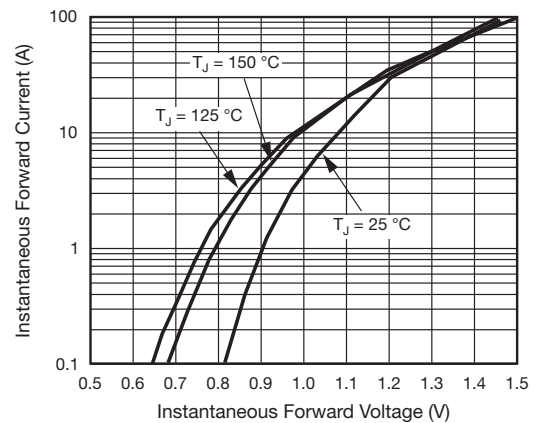


Fig. 4 - Typical Instantaneous Forward Characteristics



S1BA thru S1MA

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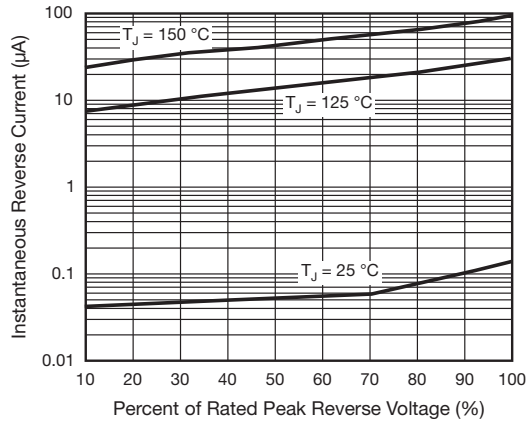


Fig. 5 - Typical Reverse Leakage Characteristics

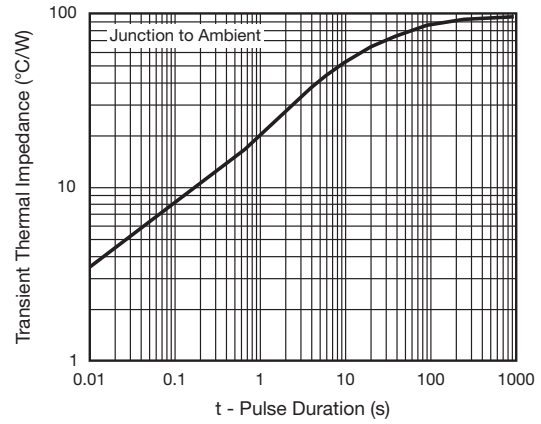


Fig. 7 - Typical Transient Thermal Impedance

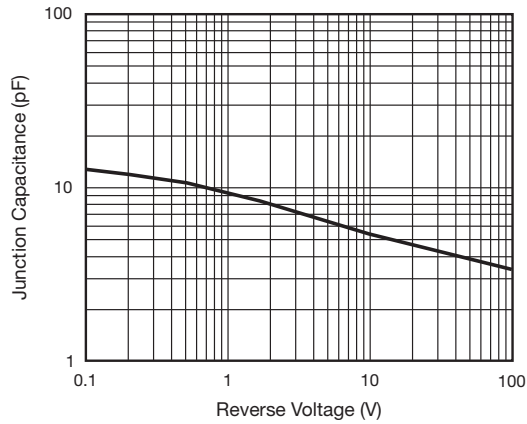
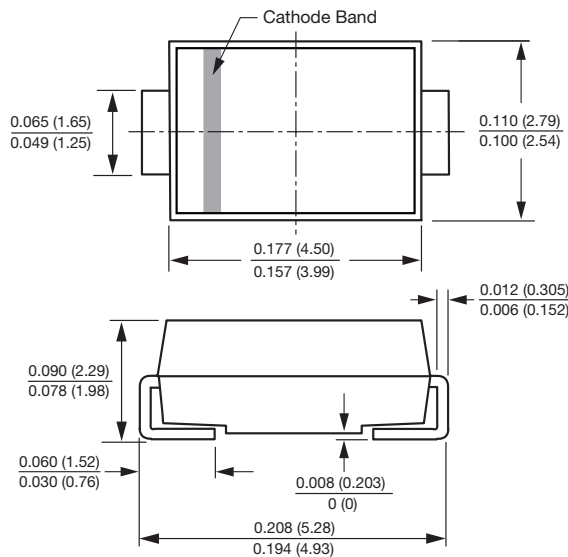


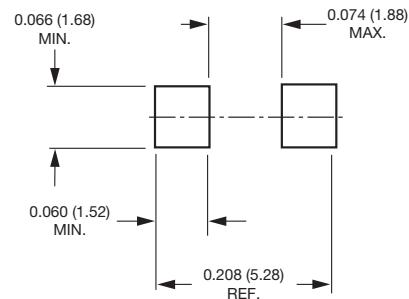
Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout





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