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
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

TYPICAL APPLICATIONS

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

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	
$I_{F(AV)}$	2.0 A
V_{RRM}	100 V to 1000 V
I_{FSM}	55 A
I_R	3.0 µA
V_F at I_F = 2.0 A	0.854 V
T_J max.	150 °C

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

PARAMETER	SYMBOL	SA2B	SA2D	SA2G	SA2J	SA2K	SA2M	UNIT
Device marking code		2B	2D	2G	2J	2K	2M	
Maximum repetitive peak reverse voltage	V_{RRM}	100	200	400	600	800	1000	V
Average forward current	$I_{F(AV)}$	2.0						A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	55						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	T_J = 25 °C	V_F (1)	0.911	-	V
	I_F = 2.0 A			0.954	1.1	
	I_F = 1.0 A	T_J = 125 °C		0.805	-	
	I_F = 2.0 A			0.854	0.95	
Reverse current	Rated V_R	T_J = 25 °C	I_R (2)	0.19	3	µA
		T_J = 125 °C		28	90	
Typical reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	1.5	-	µs
Typical junction capacitance	4.0 V, 1 MHz		C_J	11	-	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	SA2B	SA2D	SA2G	SA2J	SA2K	SA2M	UNIT
Typical thermal resistance	$R_{\theta JA}$ (1)	80						°C/W
	$R_{\theta JL}$ (1)	12						

Note

(1) Thermal resistance from junction to ambient and from junction to lead, P.C.B. mounted on 0.79" x 0.79" (20 mm x 20 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SA2J-E3/61T	0.064	61T	1800	7" diameter plastic tape and reel
SA2J-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

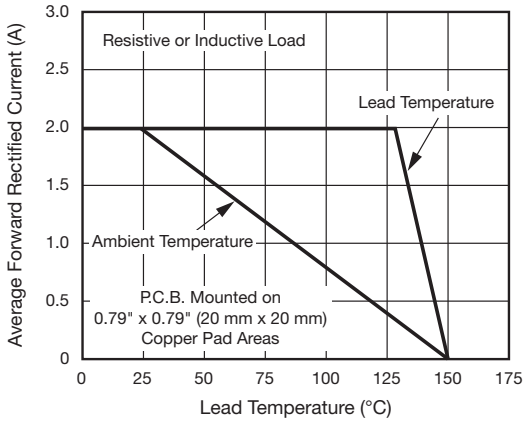


Fig. 1 - Maximum Forward Current Derating Curve

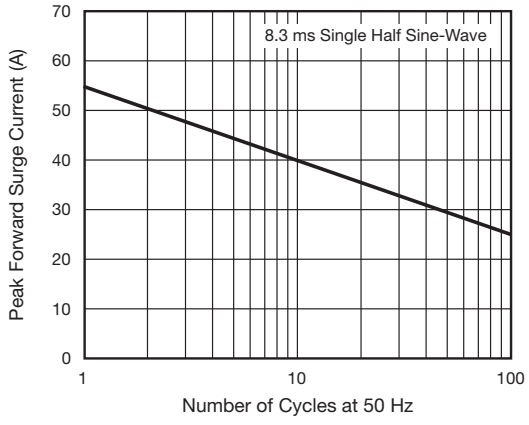


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

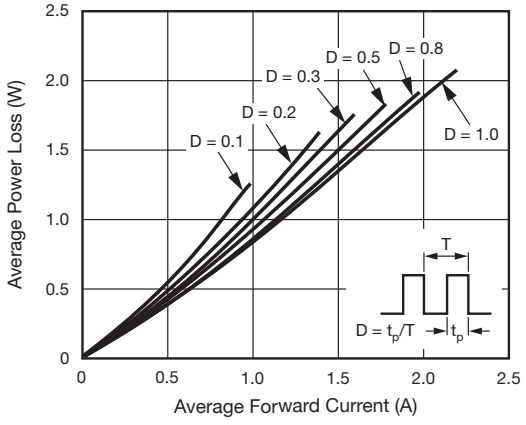


Fig. 2 - Forward Power Loss Characteristics

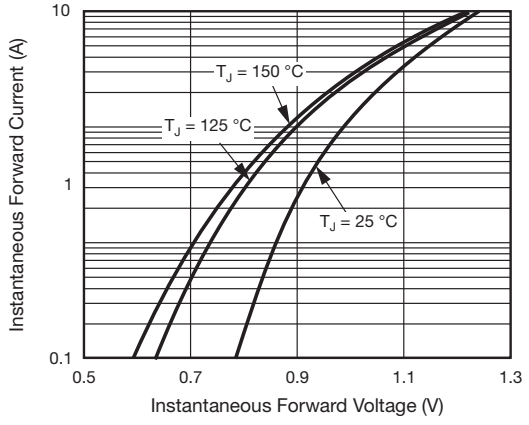


Fig. 4 - Typical Instantaneous Forward Characteristics

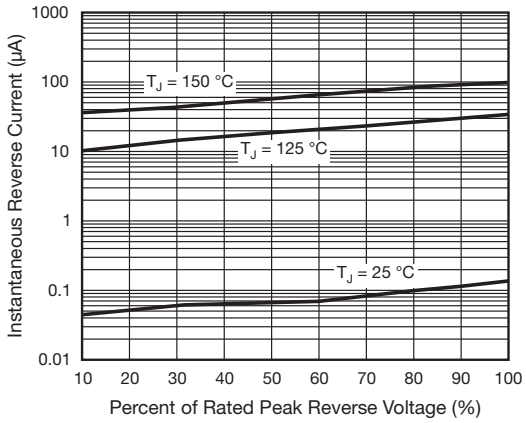


Fig. 5 - Typical Reverse Leakage Characteristics

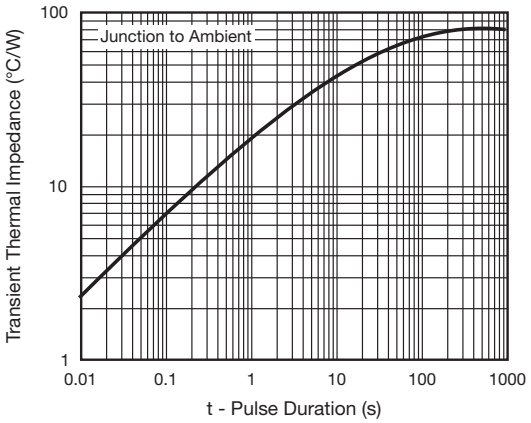


Fig. 7 - Typical Transient Thermal Impedance

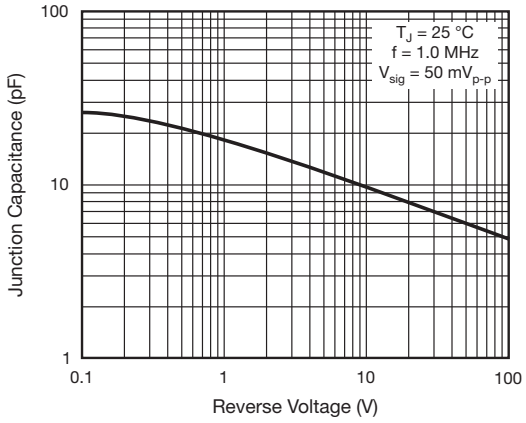
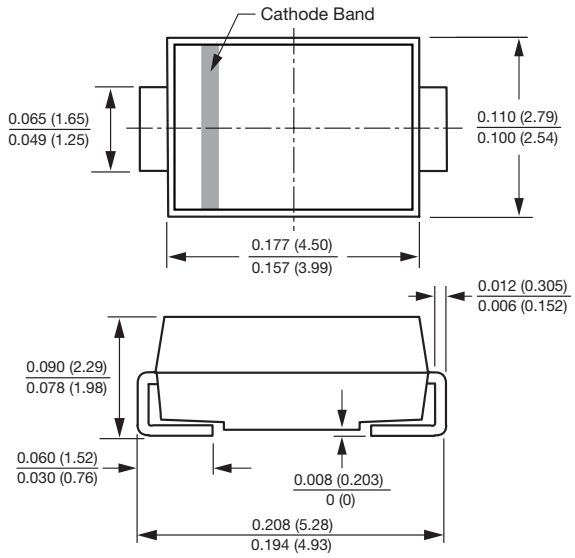


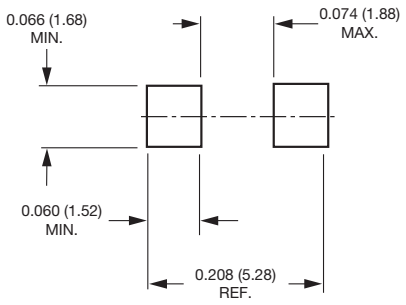
Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout



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