Surface Mount Glass Passivated Rectifier

SMA (DO-214AC)

Cathode ○—◀—○ Anode

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated pellet 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
HALOGEN FREE Available

ADDITIONAL RESOURCES

3D Models

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: SMA (DO-214AC)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade
Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 and M3 suffix meets JESD 201 class 2 whisker test

Polarity: color band denotes the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
V_{RRM}	100 V, 200 V, 400 V, 600 V, 800 V, 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
Package	SMA (DO-214AC)
Circuit configuration	Single

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	
Max. 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

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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, PCB 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-M3/61T	0.064	61T	1800	7" diameter plastic tape and reel
SA2J-E3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel
SA2J-M3/5AT	0.064	5AT	7500	13" diameter plastic tape and reel

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

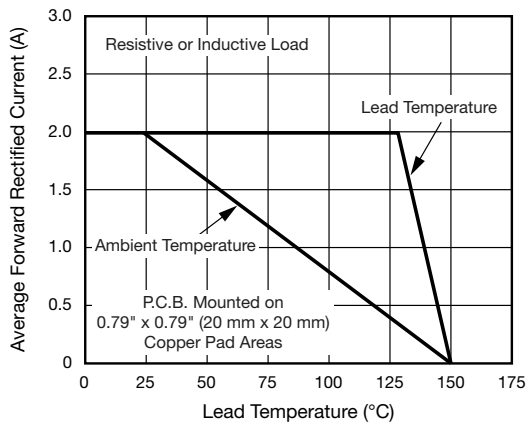

Fig. 1 - Max. Forward Current Derating Curve

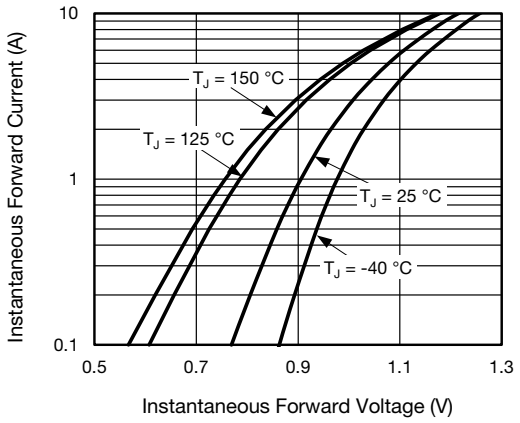

Fig. 3 - Typical Instantaneous Forward Characteristics

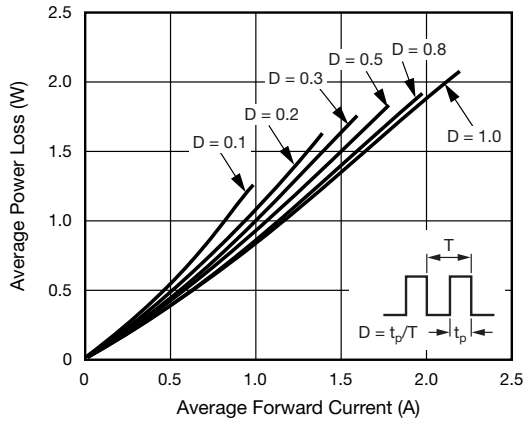

Fig. 2 - Forward Power Loss Characteristics

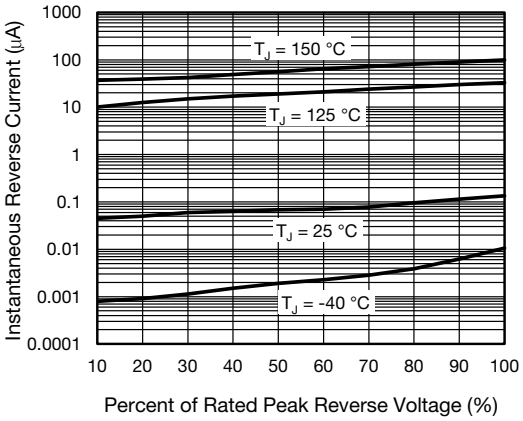

Fig. 4 - Typical Reverse Leakage Characteristics

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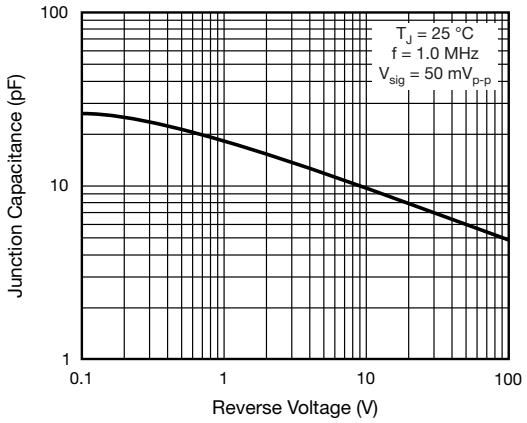


Fig. 5 - Typical Junction Capacitance

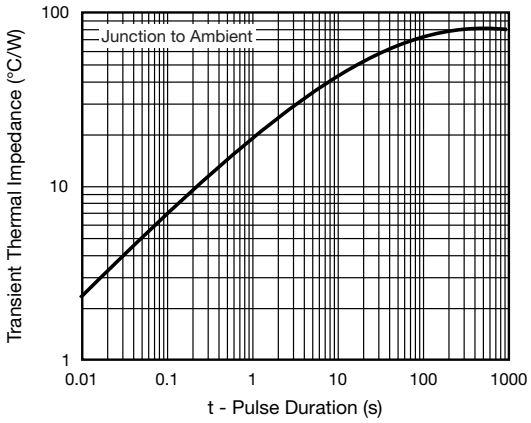
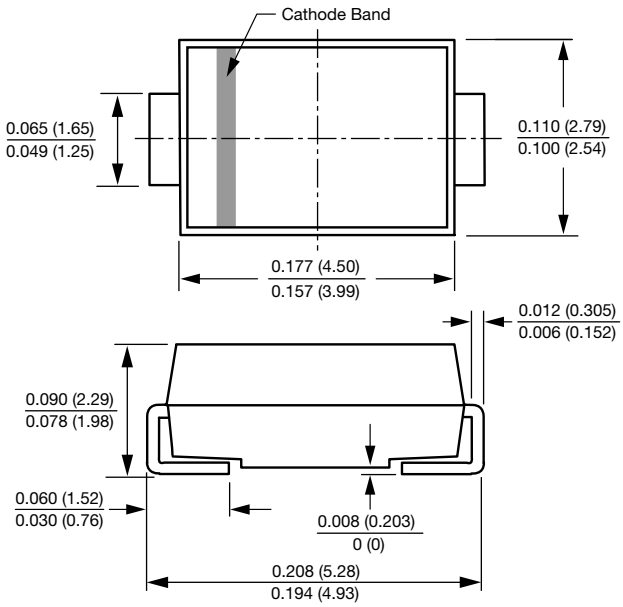


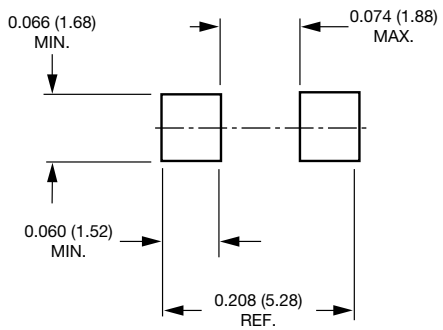
Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMA (DO-214AC)



Mounting Pad Layout



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