

Surface Mount Glass-Passivated Rectifiers



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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and 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.

MECHANICAL DATA

Case: DO-214AC (SMA)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, 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 μ A
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 ⁽¹⁾	$I_F = 1.0$ A	$T_J = 25$ °C	V_F	0.911	-	V
	$I_F = 2.0$ A			0.954	1.1	
Reverse current ⁽²⁾	$I_F = 1.0$ A	$T_J = 125$ °C	I_R	0.805	-	μ A
	$I_F = 2.0$ A			0.854	0.95	
Typical reverse recovery time	$I_F = 0.5$ A, $I_R = 1.0$ A, $t_{rr} = 0.25$ A		t_{rr}	1.5	-	μ s
Typical junction capacitance	4.0 V, 1 MHz		C_J	11	-	pF

Notes:

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

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



THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	SA2B	SA2D	SA2G	SA2J	SA2K	SA2M	UNIT
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$				80			$^\circ\text{C/W}$
	$R_{\theta JL}$				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 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

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

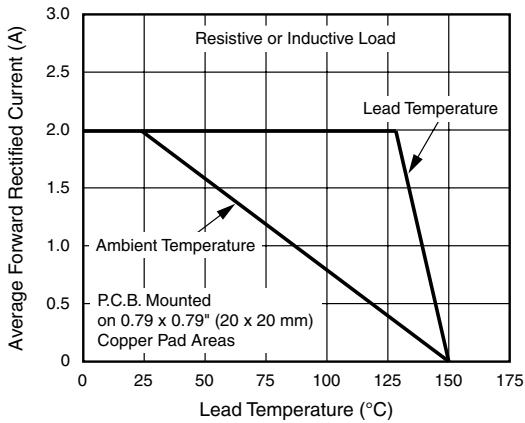


Figure 1. Maximum Forward Current Derating Curve

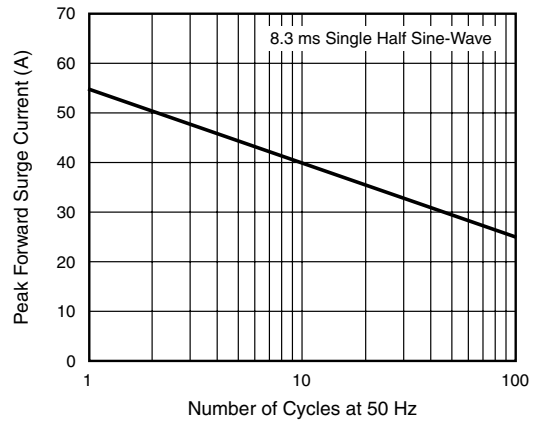


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

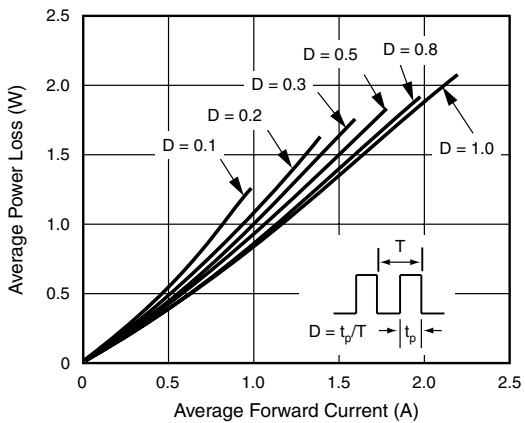


Figure 2. Forward Power Loss Characteristics

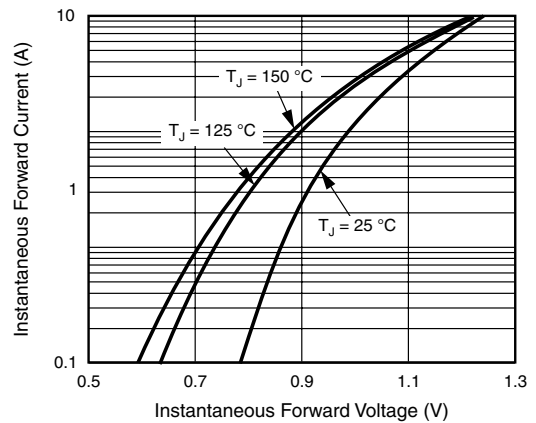


Figure 4. Typical Instantaneous Forward Characteristics

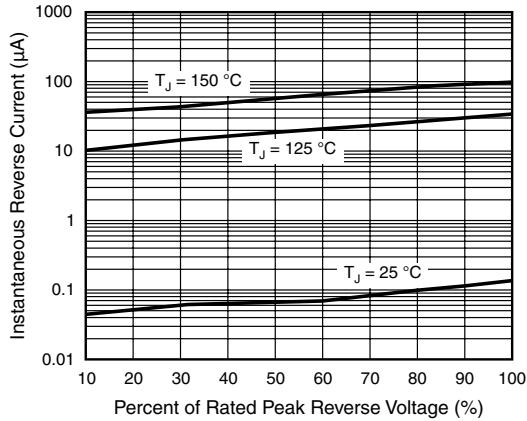


Figure 5. Typical Reverse Leakage Characteristics

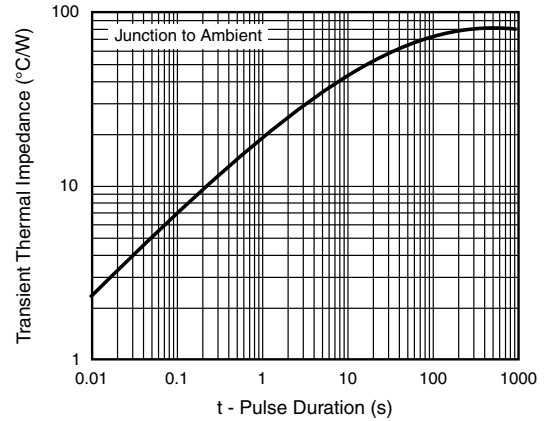


Figure 7. Typical Transient Thermal Impedance

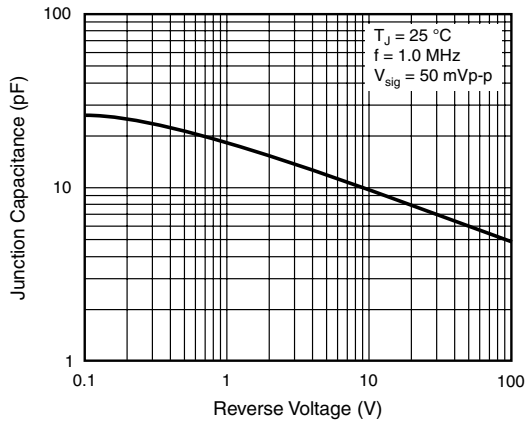
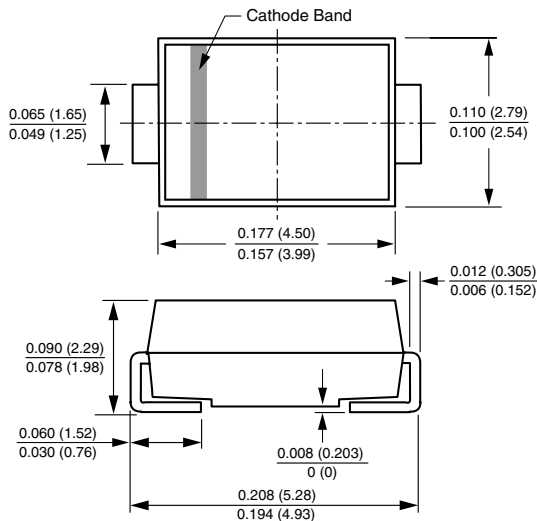


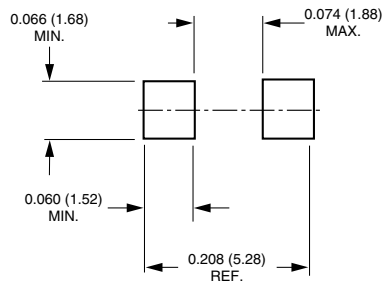
Figure 6. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout





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All product specifications and data are subject to change without notice.

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