

## 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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1 A
$V_{RRM}$	100 V to 1000 V
$I_{FSM}$	30 A
$I_R$	3.0 $\mu$ A
$V_F$ at $I_F = 1.0$ A	0.861 V
$T_J$ max.	150 °C

### 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 Q101 qualified.)

### 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

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 <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage <sup>(1)</sup>	I <sub>F</sub> = 1.0 A I <sub>F</sub> = 1.0 A	T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	V <sub>F</sub>	0.960 0.861	1.1 -	V
Reverse current <sup>(2)</sup>	rated V <sub>R</sub>	T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	I <sub>R</sub>	0.09 20	3 80	μA
Typical reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		t <sub>rr</sub>	1.0	-	μs
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	8	-	pF

**Notes:**

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	S1BA	S1DA	S1GA	S1JA	S1KA	S1MA	UNIT
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub> R <sub>θJL</sub>			95 22				°C/W

**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 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<sub>A</sub> = 25 °C unless otherwise noted)

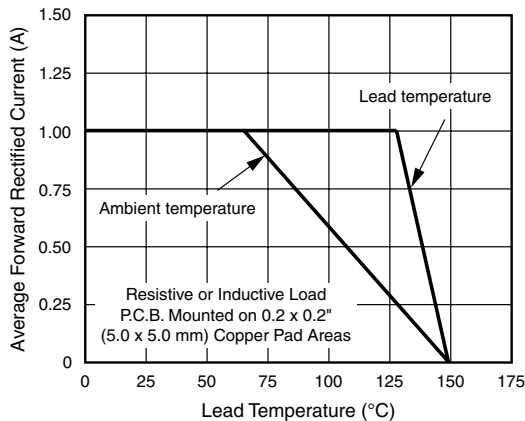


Figure 1. Maximum Forward Current Derating Curve

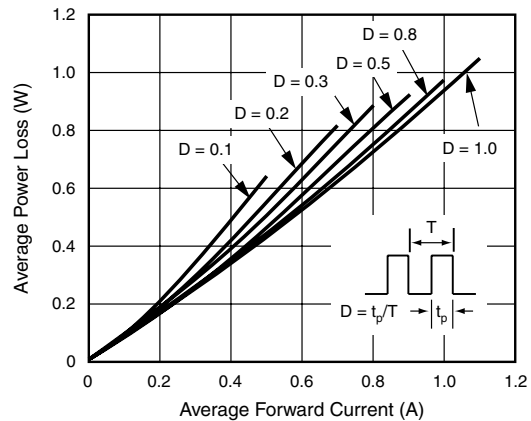


Figure 2. Forward Power Loss Characteristics

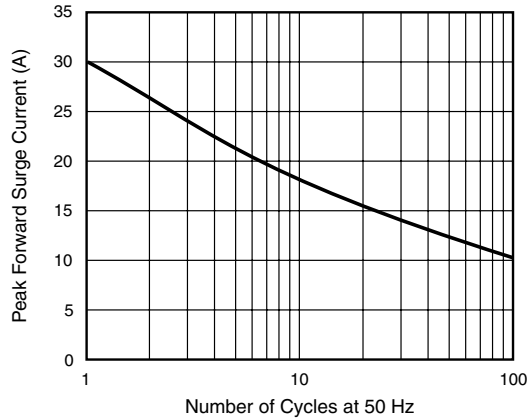


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

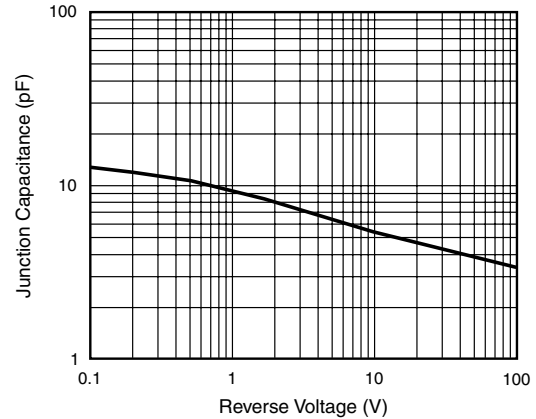


Figure 6. Typical Junction Capacitance

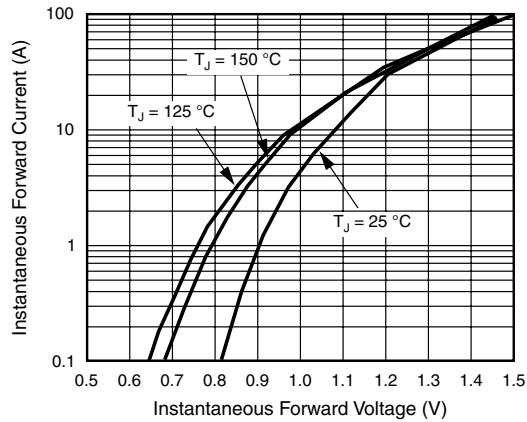


Figure 4. Typical Instantaneous Forward Characteristics

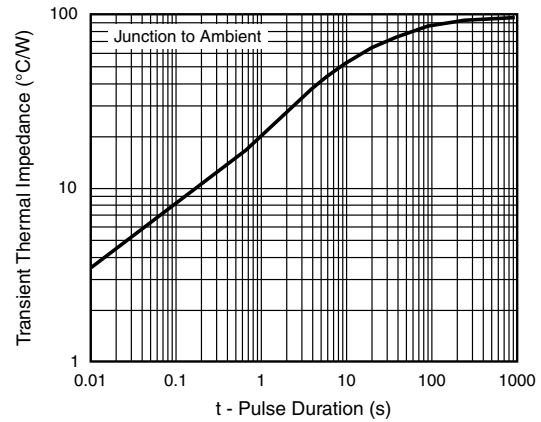


Figure 7. Typical Transient Thermal Impedance

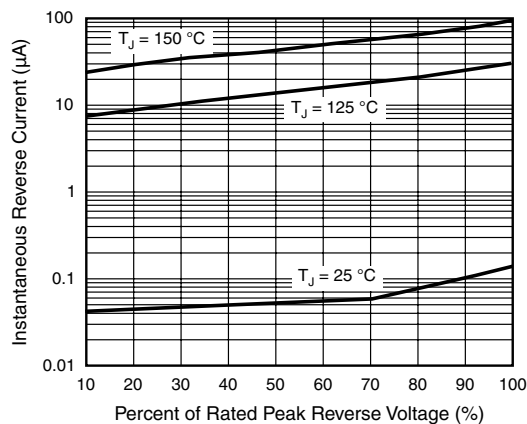
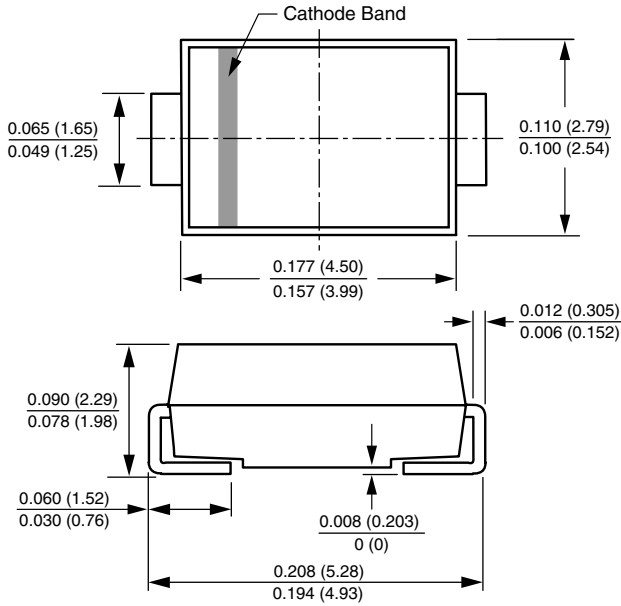


Figure 5. Typical Reverse Leakage Characteristics

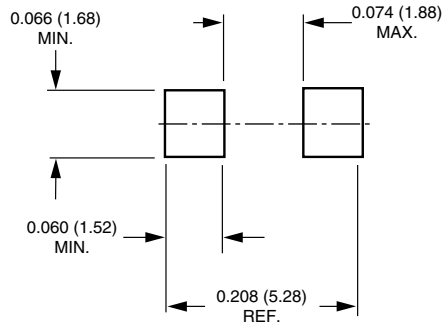


**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-214AC (SMA)**



**Mounting Pad Layout**





## Disclaimer

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

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