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 µA
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	T_J = 25 °C	V_F (1)	0.960	1.1	V
		T_J = 125 °C		0.861	-	
Reverse current	Rated V_R	T_J = 25 °C	I_R (2)	0.09	3	µA
		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	-	µs
Typical junction capacitance	4.0 V, 1 MHz		C_J	8	-	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**	**S1BA**	**S1DA**	**S1GA**	**S1JA**	**S1KA**	**S1MA**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ (1)	95						°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 °C unless otherwise noted)

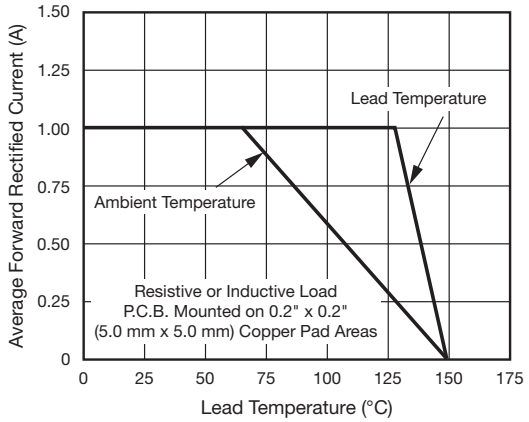


Fig. 1 - Maximum Forward Current Derating Curve

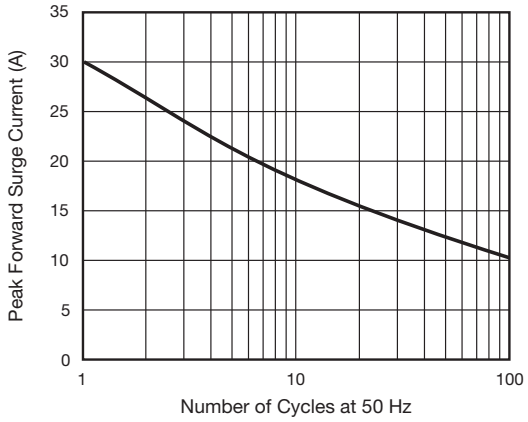


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

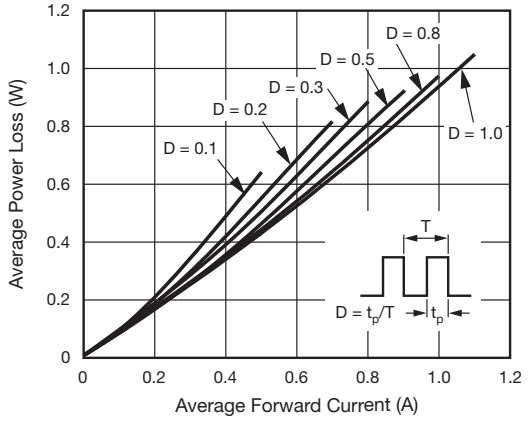


Fig. 2 - Forward Power Loss Characteristics

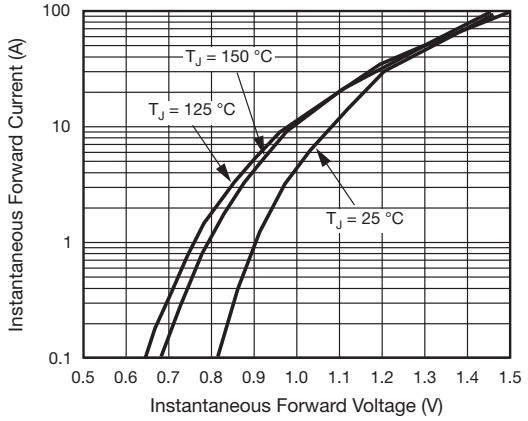


Fig. 4 - Typical Instantaneous Forward Characteristics

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

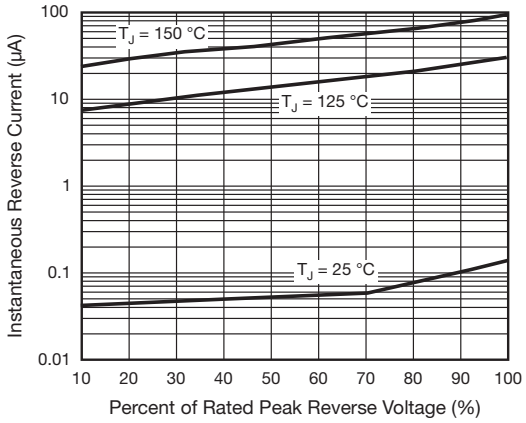


Fig. 5 - Typical Reverse Leakage Characteristics

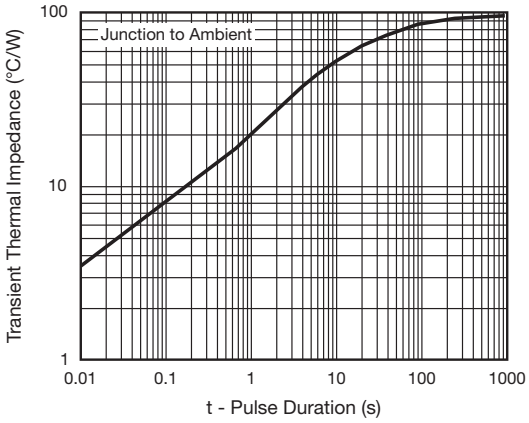


Fig. 7 - Typical Transient Thermal Impedance

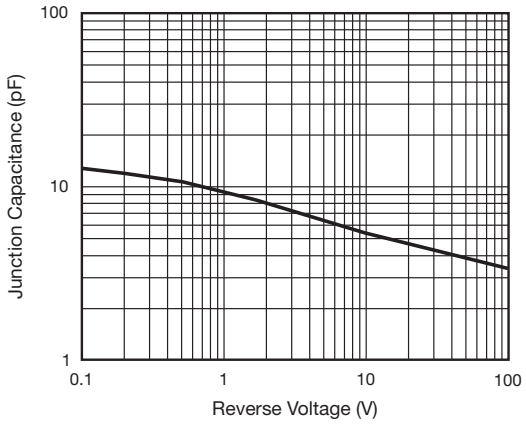
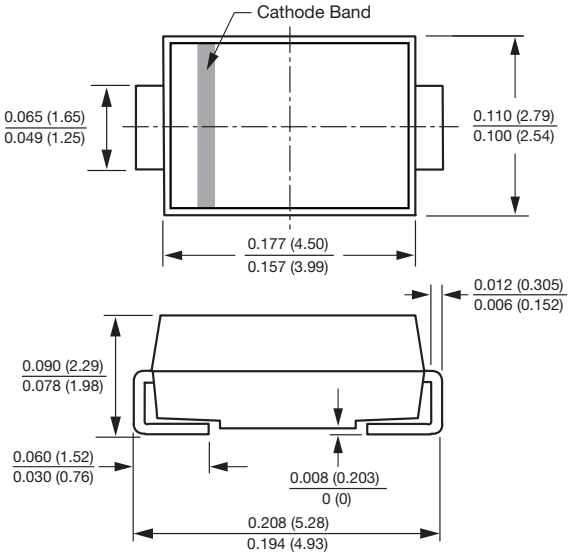
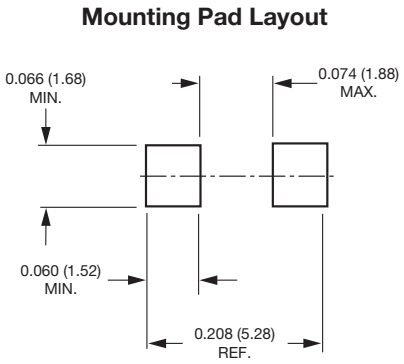


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)





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