Surface Mount Glass-Passivated Recitifiers

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 µA
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_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**TYP.**	**MAX.**	**UNIT**
Instantaneous forward voltage (1)	I_F = 1.0 A I_F = 1.0 A	T_J = 25 °C T_J = 125 °C	V_F	0.960 0.861	1.1 -	V
Reverse current (2)	rated V_R	T_J = 25 °C T_J = 125 °C	I_R	0.09 20	3 80	µA
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 (1)	$R_{\theta JA}$ $R_{\theta JL}$	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_A = 25 °C unless otherwise noted)

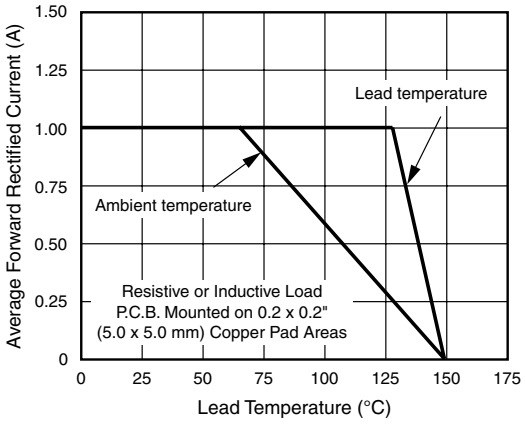


Figure 1. Maximum Forward Current Derating Curve

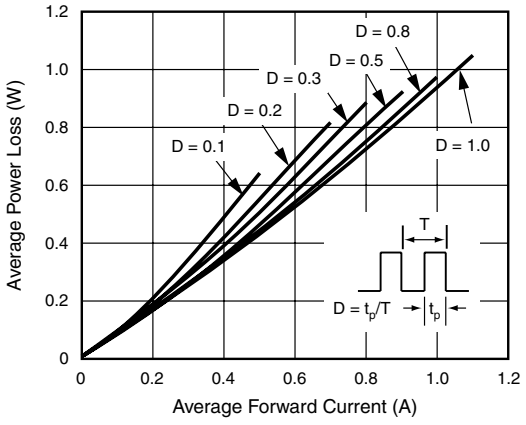


Figure 2. Forward Power Loss Characteristics

For technical questions within your region, please contact one of the following:
PDD-Americas@vishay.com, PDD-Asia@vishay.com, PDD-Europe@vishay.com

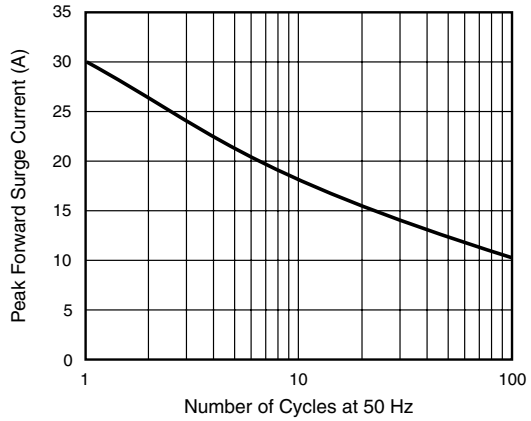


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

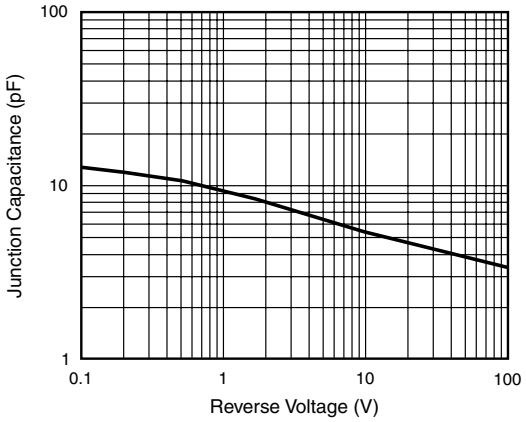


Figure 6. Typical Junction Capacitance

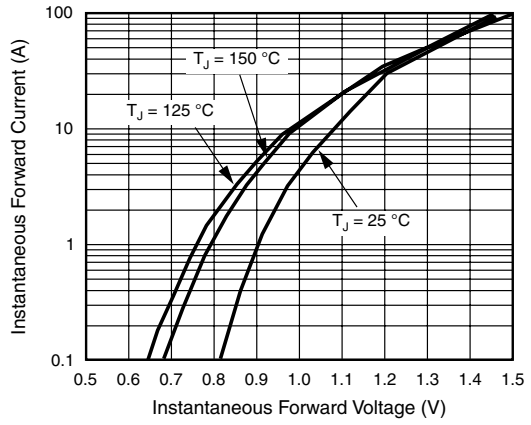


Figure 4. Typical Instantaneous Forward Characteristics

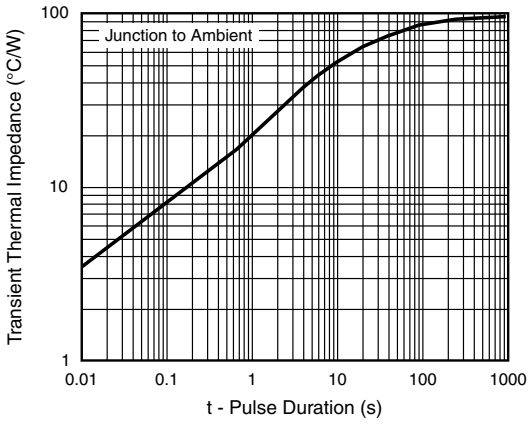


Figure 7. Typical Transient Thermal Impedance

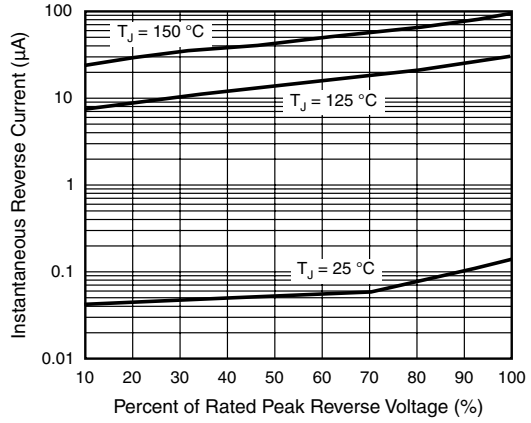
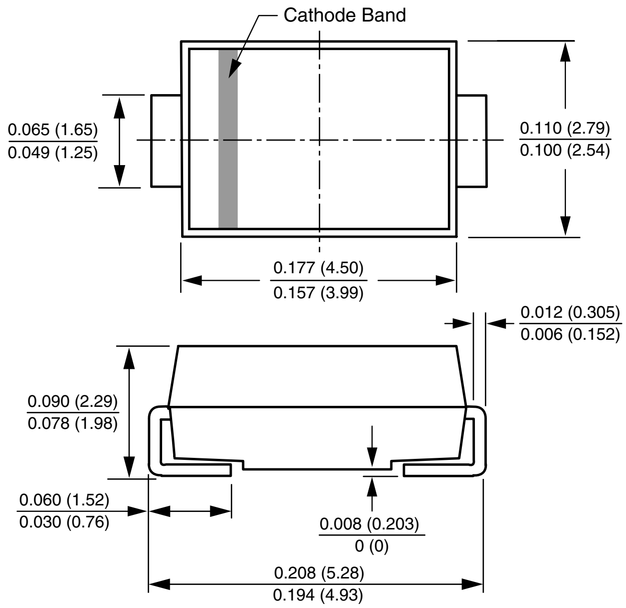


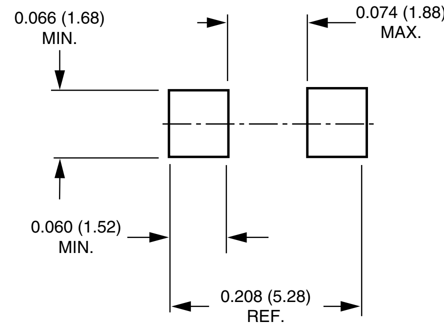
Figure 5. Typical Reverse Leakage Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AC (SMA)



Mounting Pad Layout



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