Surface-Mount Glass Passivated Rectifier

SMC (DO-214AB)

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

LINKS TO ADDITIONAL RESOURCES

3D Models

TYPICAL APPLICATIONS

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	8.0 A
V_{RRM}	400 V, 600 V, 800 V, 1000 V
I_{FSM}	200 A
I_R	10 µA
V_F at I_F = 8 A (T_J = 125 °C)	0.87 V
T_J max.	150 °C
Package	SMC (DO-214AB)
Circuit configuration	Single

MECHANICAL DATA

Case: SMC (DO-214AB)
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 cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	S8GS	S8JS	S8KS	S8MS	UNIT
Device marking code		S8GS	S8JS	S8KS	S8MS	
Maximum repetitive peak reverse voltage	V_{RRM}	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	400	600	800	1000	V
Maximum average forward rectified current	$I_{F(AV)}$ (1)	8.0				A
	$I_{F(AV)}$ (2)	1.6				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	200				A
Peak forward surge current single half sine-wave at 1.0 ms	I_{FSM}	450				A
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150				°C

Notes

(1) Mounted on aluminum PCB 30 mm x 30 mm with aluminum heatsink
(2) Free air, mounted on recommended copper pad area

ELECTRICAL CHARACTERISTICS (T_J = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**TYP.**	**MAX.**	**UNIT**
Instantaneous forward voltage	I_F = 4.0 A	T_J = 25 °C	V_F (1)	0.90	-	V
	I_F = 8.0 A			0.97	0.985	
	I_F = 4.0 A	T_J = 125 °C		0.80	-	
	I_F = 8.0 A			0.87	0.971	
Reverse current	Rated V_R	T_J = 25 °C	I_R (2)	-	10	µA
		T_J = 125 °C		-	180	
Typical reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	3.4	-	µs
Typical junction capacitance	4.0 V, 1 MHz		C_J	63	-	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**	**S8GS**	**S8JS**	**S8KS**	**S8MS**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ (1)(2)	88				°C/W
	$R_{\theta JM}$ (3)	4.5				

Notes

(1) The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_D/R_{\theta JA}$

(2) Thermal resistance junction-to-ambient to follow JEDEC® 51-2A, device mounted on FR4 PCB, 2 oz., standard footprint

(3) Thermal resistance junction-to-mount to follow JEDEC® 51-14 transient dual interface test method (TDIM)

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
S8JS-E3/I	0.243	I	3500	13" diameter plastic tape and reel
S8JS-M3/I	0.243	I	3500	13" diameter plastic tape and reel

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

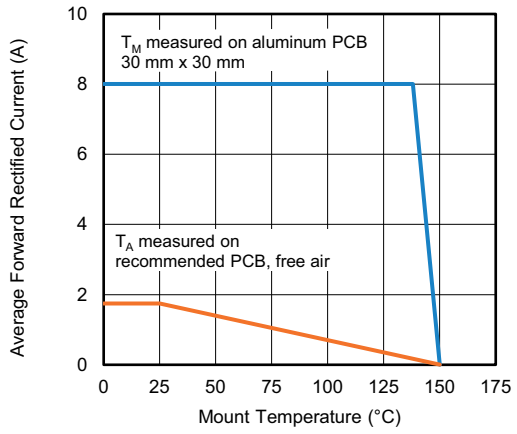


Fig. 1 - Forward Current Derating Curve

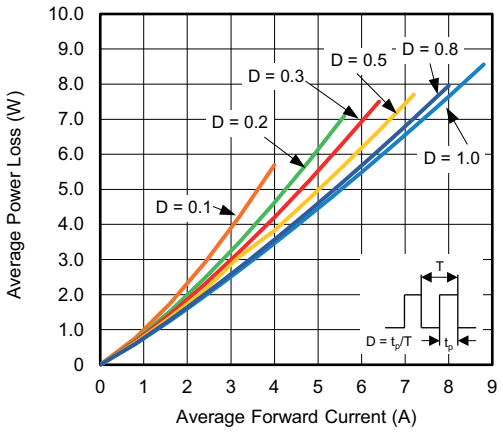


Fig. 2 - Average Power Loss Characteristics

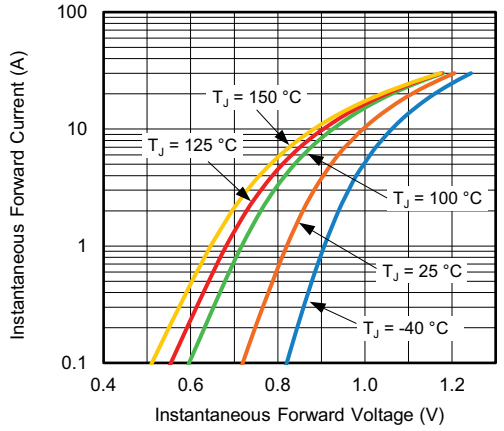


Fig. 3 - Typical Instantaneous Forward Characteristics

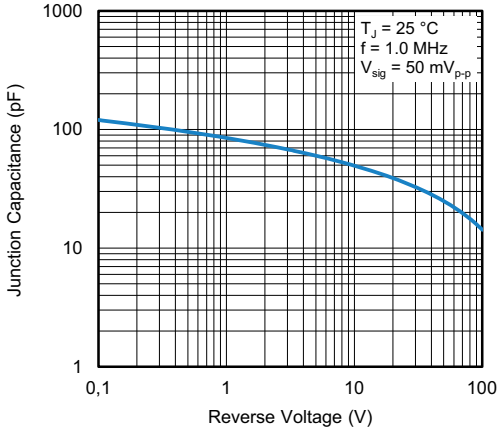


Fig. 5 - Typical Junction Capacitance

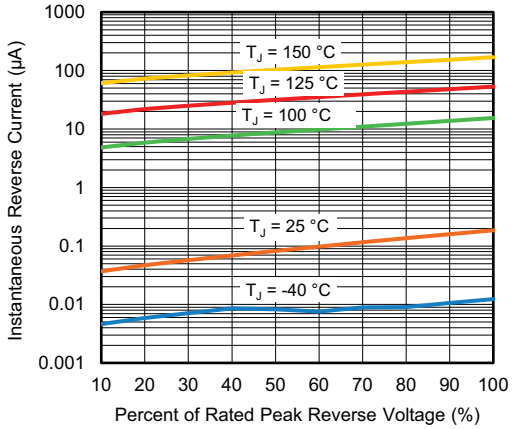


Fig. 4 - Typical Reverse Characteristics

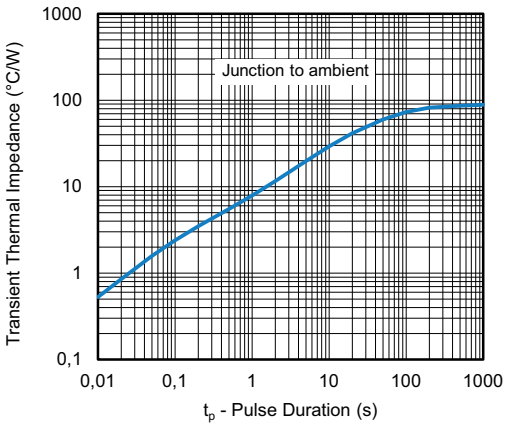
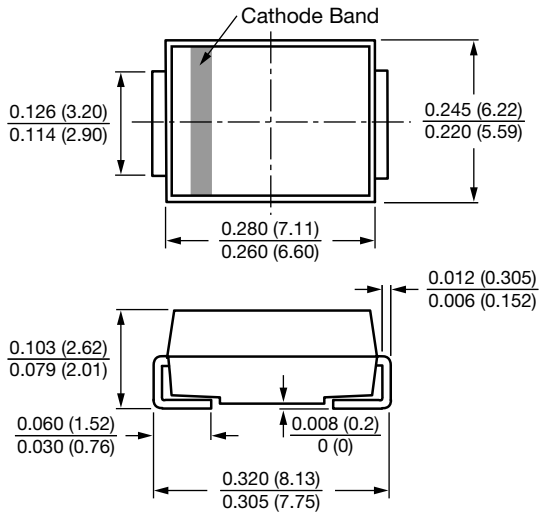


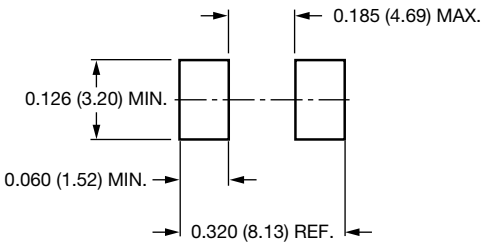
Fig. 6 - Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMC (DO-214AB)



Mounting Pad Layout



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