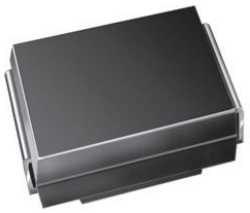
Surface Mount Glass Passivated Rectifier



SMB (DO-214AA)

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
- AEC-Q101 qualified available
  - Automotive ordering code: base P/NHE3 or P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE GRADE Available

RoHS COMPLIANT

HALOGEN FREE

ADDITIONAL RESOURCES

3D Models

TYPICAL APPLICATIONS

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.5 A
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
I_{FSM}	50 A
I_R	1.0 µA
V_F	1.15 V
T_J max.	150 °C
Package	SMB (DO-214AA)
Circuit configuration	Single

MECHANICAL DATA

Case: SMB (DO-214AA)
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
Base P/NHE3_X - RoHS-compliant and AEC-Q101 qualified
Base P/NHM3_X - halogen-free, RoHS-compliant and AEC-Q101 qualified
("_X" denotes revision code e.g. A, B,.....)

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3, M3, HE3, and HM3 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	S2A	S2B	S2D	S2G	S2J	S2K	S2M	UNIT
Device marking code		SA	SB	SD	SG	SJ	SK	SM	
Max. repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Max. RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Max. DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Max. average forward rectified current at T_L= 100 °C	$I_{F(AV)}$	1.5							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50							A
Operating 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	S2A	S2B	S2D	S2G	S2J	S2K	S2M	UNIT
Max. instantaneous forward voltage	1.5 A		V_F	1.15							V
Max. DC reverse current at rated DC blocking voltage		T_A = 25 °C	I_R	1.0							μA
		T_A = 125 °C		125							
Typical reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	2.0							μs
Typical junction capacitance	4.0 V, 1 MHz		C_J	16							pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	S2A	S2B	S2D	S2G	S2J	S2K	S2M	UNIT
Typical thermal resistance (1)	$R_{\theta JA}$	53							°C/W
	$R_{\theta JL}$	16							

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on PCB with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
S2J-E3/52T	0.096	52T	750	7" diameter plastic tape and reel
S2J-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel
S2JHE3_A/H (1)	0.096	H	750	7" diameter plastic tape and reel
S2JHE3_A/I (1)	0.096	I	3200	13" diameter plastic tape and reel
S2J-M3/52T	0.096	52T	750	7" diameter plastic tape and reel
S2J-M3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel
S2JHM3_A/H (1)	0.096	H	750	7" diameter plastic tape and reel
S2JHM3_A/I (1)	0.096	I	3200	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

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

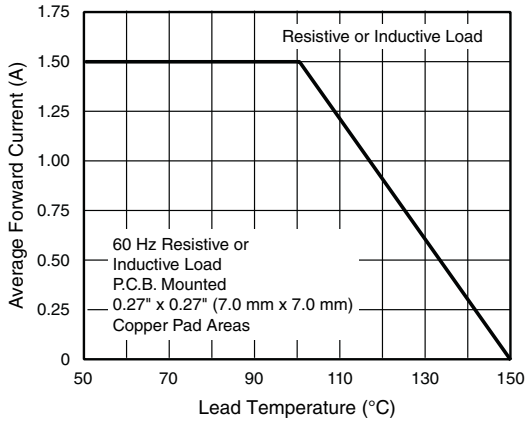


Fig. 1 - Forward Current Derating Curve

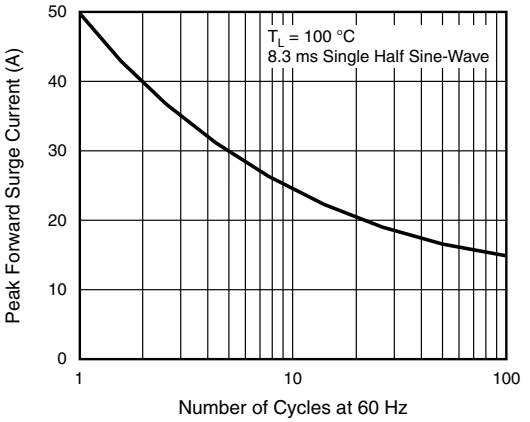


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

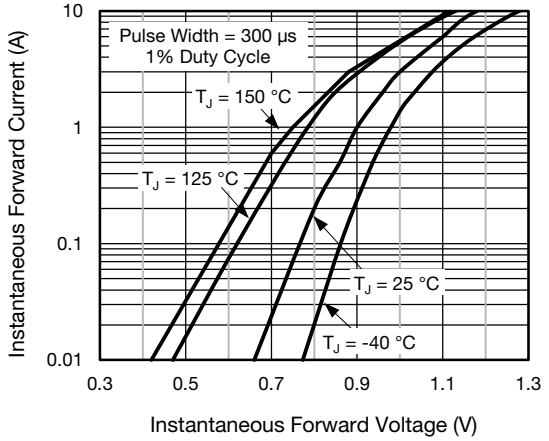


Fig. 3 - Typical Instantaneous Forward Characteristics

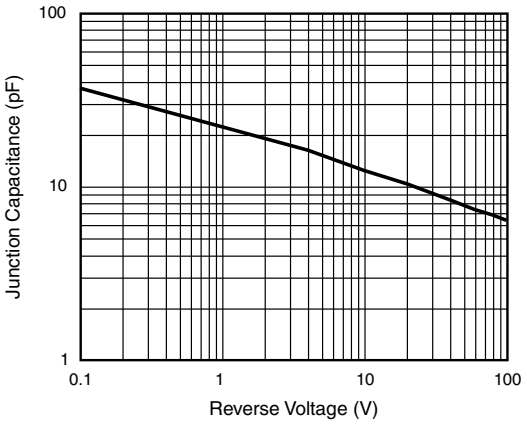


Fig. 5 - Typical Junction Capacitance

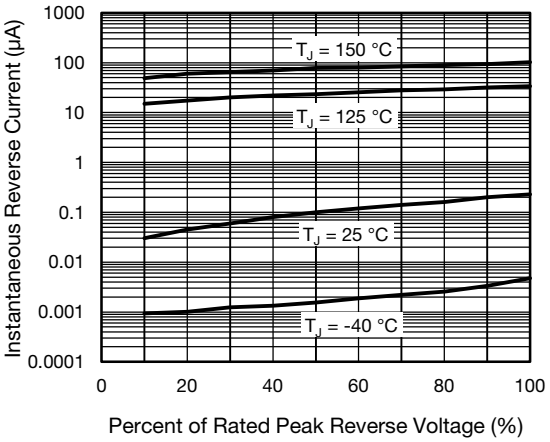


Fig. 4 - Typical Reverse Characteristics

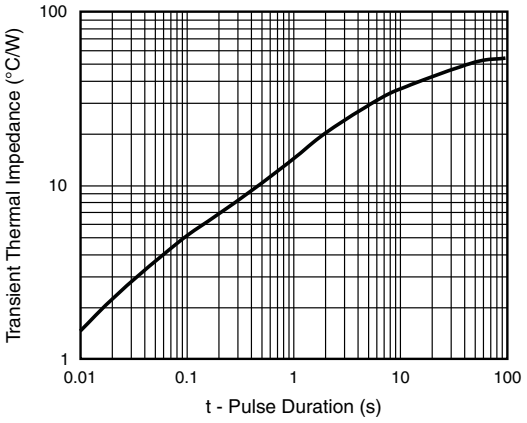
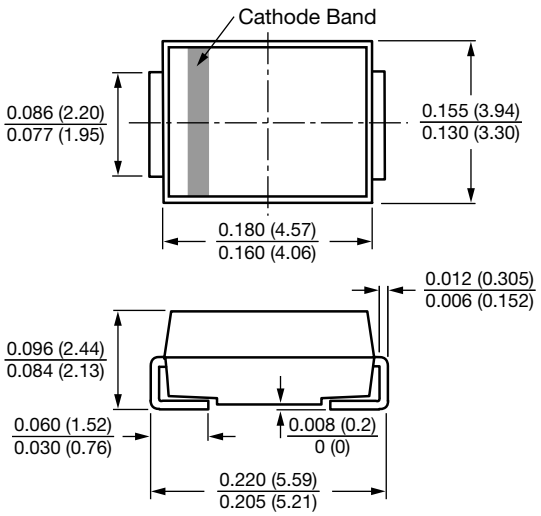


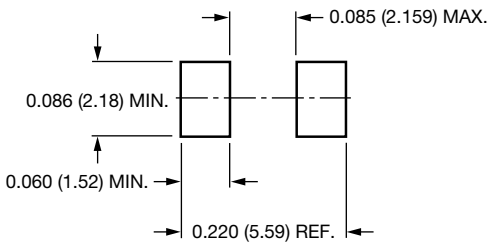
Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMB (DO-214AA)



Mounting Pad Layout



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