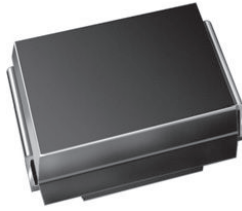


## Surface Mount Glass Passivated Rectifier


**SMB (DO-214AA)**

### 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
Available

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 $\mu$ A
$V_F$	1.15 V
$T_J$ max.	150 °C
Package	SMB (DO-214AA)
Diode variations	Single

### TYPICAL APPLICATIONS

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

### 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 ( $T_A = 25\text{ °C}$ 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 $T_L = 100\text{ °C}$	$I_{F(AV)}$	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 <sub>A</sub> = 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 <sub>F</sub>					1.15			V
Max. DC reverse current at rated DC blocking voltage	T <sub>A</sub> = 25 °C	I <sub>R</sub>					1.0			μA
	T <sub>A</sub> = 125 °C						125			
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>					2.0			μs
Typical junction capacitance	4.0 V, 1 MHz	C <sub>J</sub>					16			pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER	SYMBOL	S2A	S2B	S2D	S2G	S2J	S2K	S2M	UNIT	
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>					53			°C/W	
	R <sub>θJL</sub>					16				

**Note**

<sup>(1)</sup> 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 <sup>(1)</sup>	0.096	H	750	7" diameter plastic tape and reel
S2JHE3_A/I <sup>(1)</sup>	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 <sup>(1)</sup>	0.096	H	750	7" diameter plastic tape and reel
S2JHM3_A/I <sup>(1)</sup>	0.096	I	3200	13" diameter plastic tape and reel

**Note**

<sup>(1)</sup> AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)**

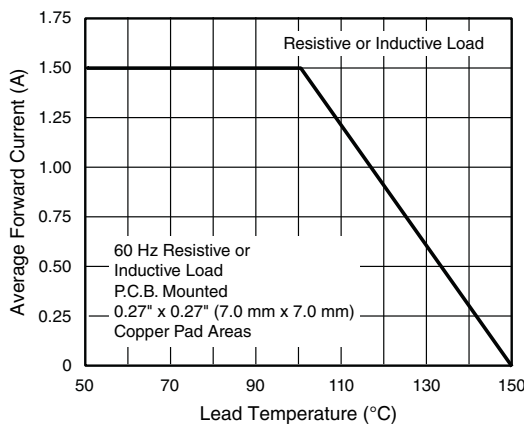


Fig. 1 - Forward Current Derating Curve

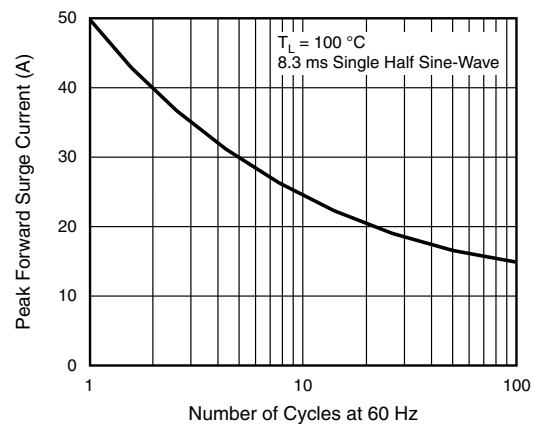


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

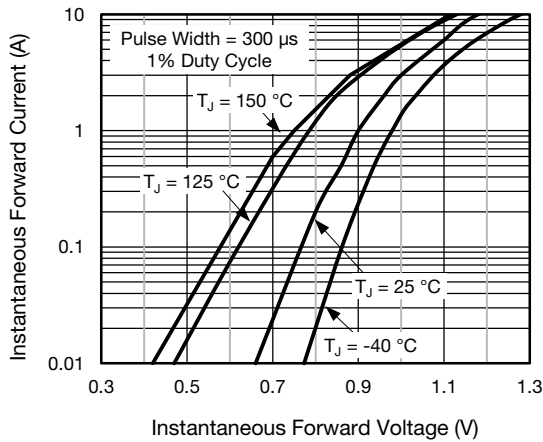


Fig. 3 - Typical Instantaneous Forward Characteristics

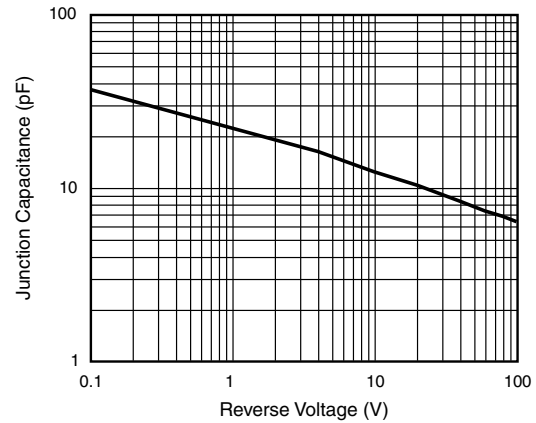


Fig. 5 - Typical Junction Capacitance

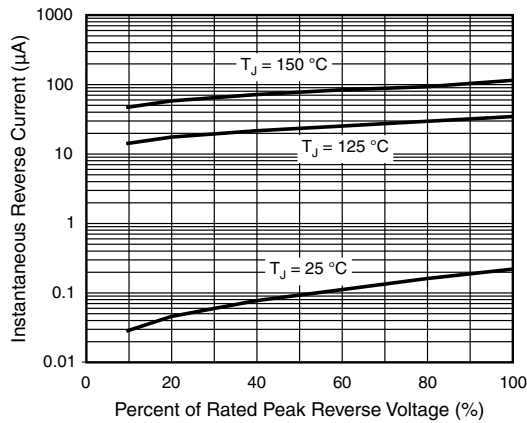


Fig. 4 - Typical Reverse Characteristics

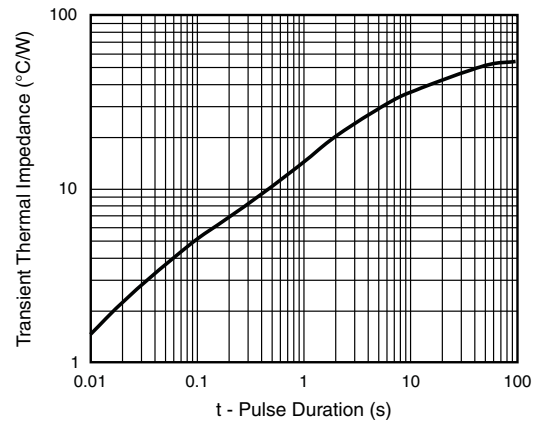
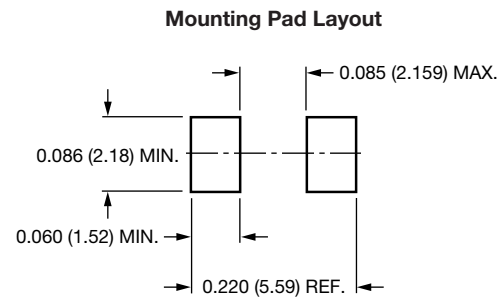
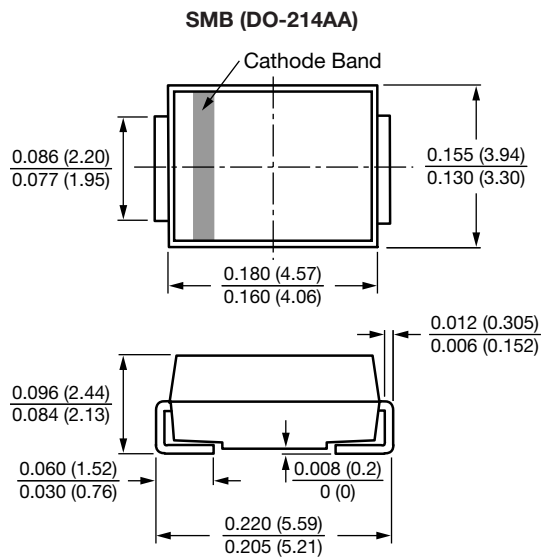


Fig. 6 - Typical Transient Thermal Impedance

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





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