

# RS2A, RS2B, RS2D, RS2G, RS2J, RS2K

Vishay General Semiconductor

# Surface Mount Fast Switching Rectifier



SMB (DO-214AA)

click logo to get started

**DESIGN SUPPORT TOOLS** 



PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	1.5 A					
V <sub>RRM</sub>	50 V, 100 V, 200 V, 400 V, 600 V, 800 V					
I <sub>FSM</sub>	50 A					
t <sub>rr</sub>	150 ns, 250 ns, 500 ns					
V <sub>F</sub>	1.3 V					
T <sub>J</sub> max.	150 °C					
Package	SMB (DO-214AA)					
Circuit configuration	Single					

#### **FEATURES**

- Low profile package
- · Ideal for automated placement
- Glass passivated pellet chip junction
- · Fast switching for high efficiency
- 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 PN/HM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

#### **TYPICAL APPLICATIONS**

For use in fast switching rectification of power supply, 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 gualified ("\_X" denotes revision code e.g. A, B, ....)

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3, M3, and HE3 suffix meets JESD 201 class 2 whisker test Polarity: color band denotes cathode end

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	RS2A	RS2B	RS2D	RS2G	RS2J	RS2K	UNIT
Device marking code		RA	RB	RD	RG	RJ	RK	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	800	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	280	420	500	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	400	600	800	V
Maximum average forward rectified current at $T_L$ = 100 $^\circ C$	I <sub>F(AV)</sub>	1.5					А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	50					А	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150					°C	

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COMPLIANT HALOGEN

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FREE



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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS		SYMBOL	RS2A	RS2B	RS2D	RS2G	RS2J	RS2K	UNIT
Maximum instantaneous forward voltage	1.5 A		V <sub>F</sub>	1.3					V	
Maximum DC reverse current at		T <sub>A</sub> = 25 °C	5.0					μΑ		
rated DC blocking voltage		T <sub>A</sub> = 125 °C	IR	200						
Maximum reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A}, I_{rr} = 0.25 \text{ A}$		t <sub>rr</sub>	150			250	500	ns	
Typical junction capacitance	4.0 V, 1 MHz		CJ	20			1	pF		

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)									
PARAMETER	SYMBOL	30L RS2A RS2B RS2D RS2G RS2J RS2K				RS2K	UNIT		
Typical thermal resistance	R <sub>0JA</sub> <sup>(1)</sup>	55						°C/W	
rypical thermal resistance	R <sub>0JL</sub> <sup>(1)</sup>	18						0/11	

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on PCB with 0.27" x 0.27" (7.0 mm x 7.0 mm) copper pad

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
RS2J-E3/52T	0.096	52T	750	7" diameter plastic tape and reel					
RS2J-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel					
RS2JHE3_A/H <sup>(1)</sup>	0.096	Н	750	7" diameter plastic tape and reel					
RS2JHE3_A/I <sup>(1)</sup>	0.096	I	3200	13" diameter plastic tape and reel					
RS2J-M3/52T	0.096	52T	750	7" diameter plastic tape and reel					
RS2J-M3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel					

Note

(1) AEC-Q101 qualified

### **RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25 \text{ °C}$ unless otherwise noted)

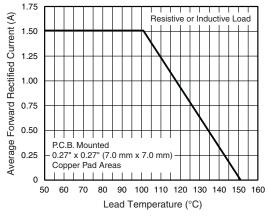


Fig. 1 - Forward Current Derating Curve

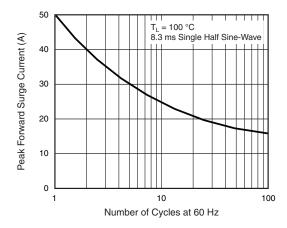


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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### RS2A, RS2B, RS2D, RS2G, RS2J, RS2K

RS2J thru RS2K

++++

10

Reverse Voltage (V)

Fig. 5 - Typical Junction Capacitance

100

10

1

1

Junction Capacitance (pF)

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T<sub>J</sub> = 25 °C

f = 1.0 MHz V<sub>sig</sub> = 50 mV<sub>p</sub>.

RS2A thru RS2G

100

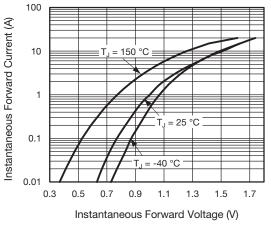
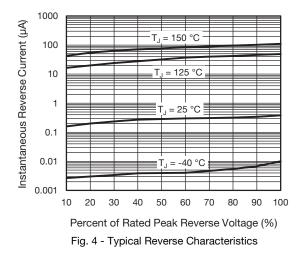
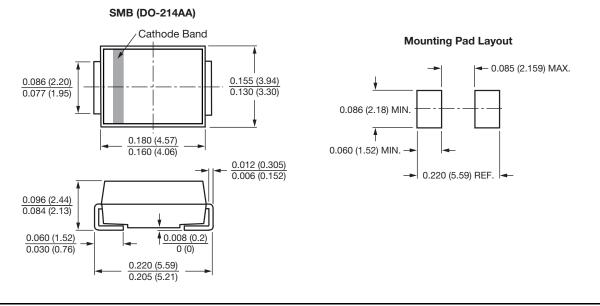


Fig. 3 - Typical Instantaneous Forward Characteristics



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



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