



S3A/B - S3M/B

March 2014

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3.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER

Features

- Glass Passivated Die Construction
- · Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 100A Peak
- Ideally Suited for Automated Assembly
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

Mechanical Data

- Case: SMB/SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 63
- Polarity: Cathode Band or Cathode Notch
- Weight: SMB 0.093 grams (approximate)

SMC 0.21 grams (approximate)





Top View

Bottom View

Ordering Information* (Note 4)

Part Number	Compliance	Case	Packaging
S3xB-13-F	Standard	SMB	3000/Tape & Reel
S3x-13-F	Standard	SMC	3000/Tape & Reel

^{*}x = Device type, e.g. S3AB-13-F (SMB package); S3A-13-F (SMC Package).

Notes:

- $1. \; EU \; Directive \; 2002/95/EC \; (RoHS) \; \& \; 2011/65/EU \; (RoHS \; 2) \; compliant. \; All \; applicable \; RoHS \; exemptions \; applied.$
- 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free
- 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
- 4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



S3x = Product Type Marking Code, ex. S3K (SMC)
S3xB = Product Type Marking Code, ex. S3KB (SMB)

Oli = Manufacturers' code marking
YWW = Date code marking
Y = Last digit of year (ex: 14 for 2014)

WW = Week code (01 to 53)



Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitance load, derate current by 20%.

Characteristic		Symbol	S3 A/AB	S3 B/BB	S3 D/DB	S3 G/GB	S3 J/JB	S3 K/KB	S3 M/MB	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		$egin{array}{c} V_{RRM} \ V_{RWM} \ V_{R} \end{array}$	50	100	200	400	600	800	1000	٧
RMS Reverse Voltage		V _{R(RMS)}	30	70	140	280	420	560	700	V
Average Rectified Output Current	@ T _T = +75°C	lo				3.0				Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load		I _{FSM}	100						Α	

Thermal Characteristics

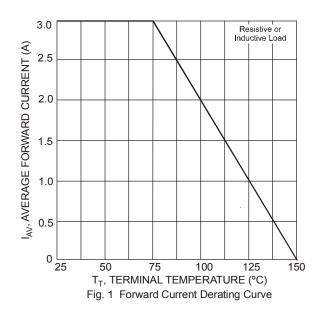
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Terminal (Note 5)	$R_{\theta JT}$	10	°C/W
Operating and Storage Temperature Range	T _{J,} T _{STG}	-65 to +150	°C

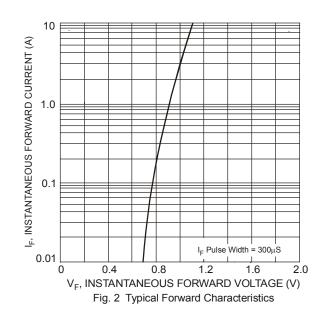
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Forward Voltage	$@I_F = 3.0A$	V _{FM}	1.15	٧
Peak Reverse Current at Rated DC Blocking Voltage	@ T _A = +25°C @ T _A = +125 °C	I _{RM}	10 250	μA
Typical Total Capacitance (Note 6)		C _T	40	pF

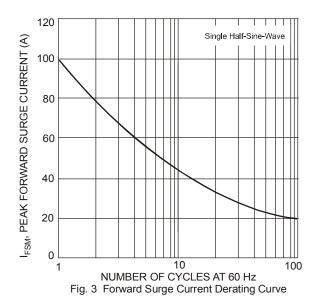
Notes:

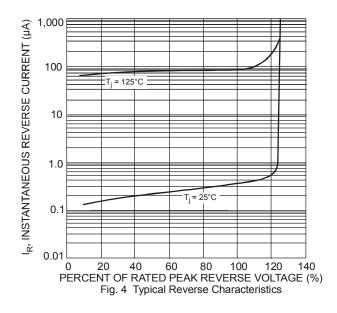
5. Thermal resistance: Junction to Terminal, unit mounted on PC board with 5.0 mm² (0.013 mm thick) copper pad as heat sink. 6. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.





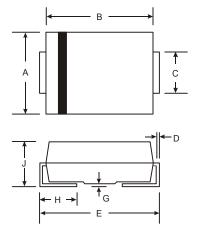






Package Outline Dimensions

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.

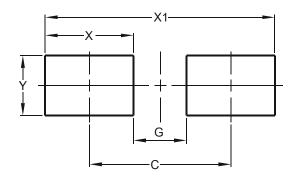


SMB				
Dim	Min	Max		
Α	3.30	3.94		
В	4.06	4.57		
С	1.96	2.21		
D	0.15	0.31		
Е	5.00	5.59		
G 0.05 0.20				
Н	0.76	1.52		
J	2.00	2.50		
All Dimensions in mm				

SMC					
Dim	Min	Max			
Α	5.59	6.22			
В	6.60	7.11			
С	2.75	3.18			
D	0.15	0.31			
Е	7.75	8.13			
G	0.10	0.20			
Н	0.76	1.52			
J	2.00	2.50			
All Dimensions in mm					

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



SMB			
Dimensions	Value (in mm)		
С	4.30		
G	1.80		
Х	2.50		
X1	6.80		
Υ	2.30		

SMC		
Dimensions	Value (in mm)	
С	6.80	
G	4.40	
Х	2.50	
X1	9.40	
Υ	3.30	



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