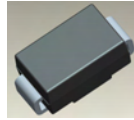


**3.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER**
**Features**

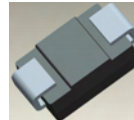
- Glass Passivated Die Construction
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 100A Peak
- Ideally Suited for Automated Assembly
- **Lead Free Finish/RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 2)**

**Mechanical Data**

- Case: SMB/SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 <sup>(e3)</sup>
- Polarity: Cathode Band or Cathode Notch
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: SMB 0.093 grams (approximate)  
SMC 0.21 grams (approximate)



Top View



Bottom View

**Maximum Ratings** @ $T_A = 25^\circ\text{C}$  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	$V_{RRM}$ $V_{RWM}$ $V_R$	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	30	70	140	280	420	560	700	V
Average Rectified Output Current @ $T_T = 75^\circ\text{C}$	$I_O$	3.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	100							A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Terminal (Note 4)	$R_{\theta JT}$	10	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage @ $I_F = 3.0\text{A}$	$V_{FM}$	1.15	V
Peak Reverse Current @ $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A = 125^\circ\text{C}$	$I_{RM}$	10 250	$\mu\text{A}$
Typical Total Capacitance (Note 3)	$C_T$	40	pF

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html).
  2. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
  3. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
  4. Thermal resistance: Junction to Terminal, unit mounted on PC board with 5.0 mm<sup>2</sup> (0.013 mm thick) copper pad as heat sink.

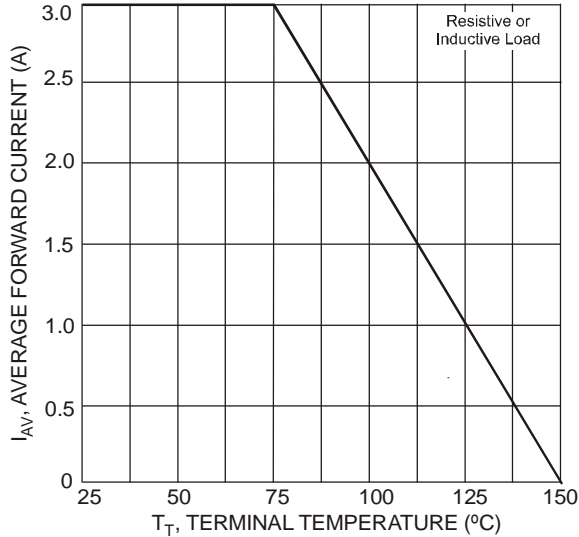


Fig. 1 Forward Current Derating Curve

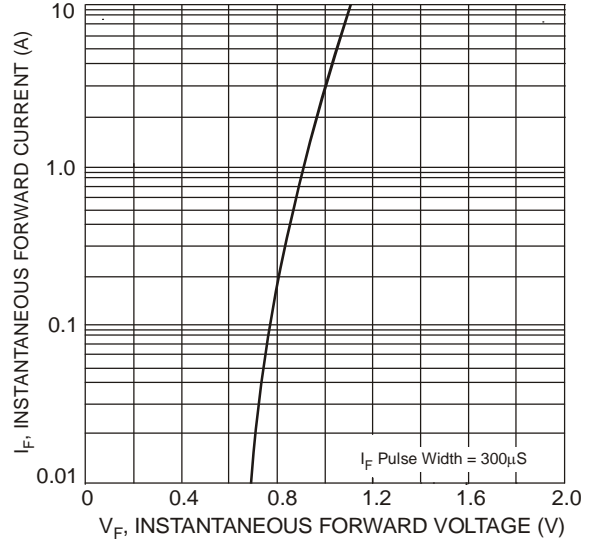


Fig. 2 Typical Forward Characteristics

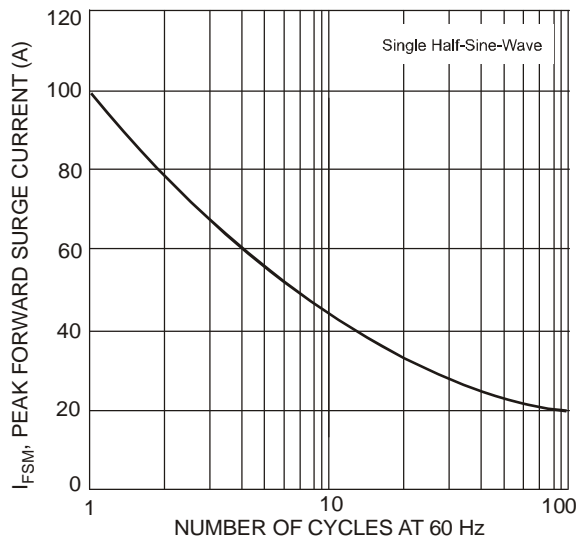


Fig. 3 Forward Surge Current Derating Curve

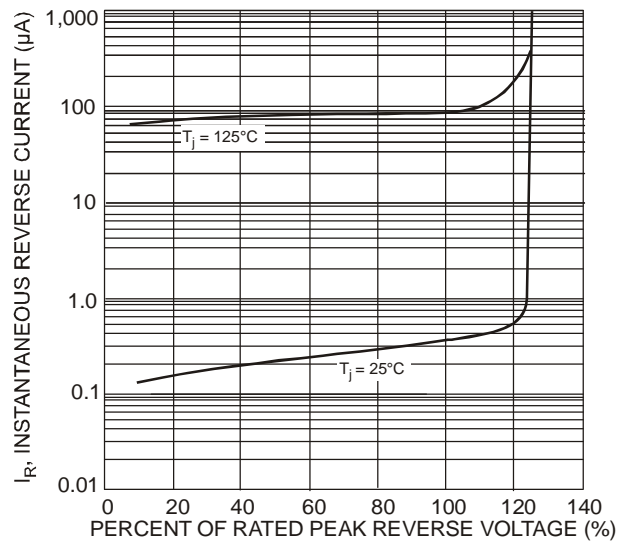


Fig. 4 Typical Reverse Characteristics

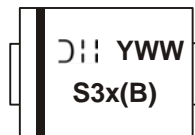
**Ordering Information\*** (Note 5)

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

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

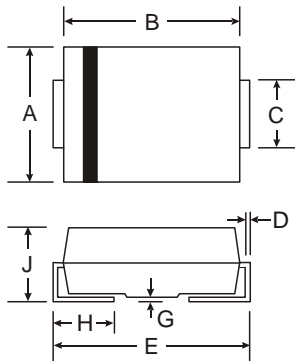
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



S3x = Product Type Marking Code, ex. S3K (SMC)  
 S3xB = Product Type Marking Code, ex. S3KB (SMB)  
 YWW = Date code marking  
 Y = Last digit of year (ex: 2 for 2002)  
 WW = Week code 01 to 52

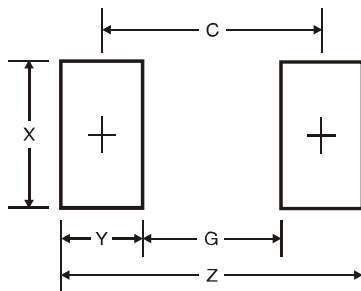
**Package Outline Dimensions**



SMB		
Dim	Min	Max
A	3.30	3.94
B	4.06	4.57
C	1.96	2.21
D	0.15	0.31
E	5.00	5.59
G	0.05	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

**Suggested Pad Layout**



SMB Dimensions	Value (in mm)
Z	6.7
G	1.8
X	2.3
Y	2.5
C	4.3

SMC Dimensions	Value (in mm)
Z	9.3
G	4.4
X	3.3
Y	2.5
C	6.8

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