



# THE DATASHEET OF S3MB-13

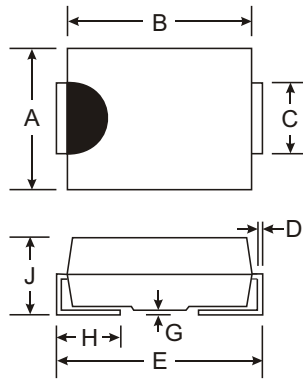


### Features

- Glass Passivated Die Construction
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 100A Peak
- Ideally Suited for Automatic Assembly
- Available in Lead Free Finish/RoHS Compliant Version (Note 3)

### Mechanical Data

- Case: SMB/SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020C
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish). Please see Ordering Information, Note 5, on Page 2
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number & Date Code, See Page 2
- Ordering Information: See Page 2
- Weight: SMB 0.093 grams (approximate)  
SMC 0.21 grams (approximate)



Dim	SMB		SMC	
	Min	Max	Min	Max
A	3.30	3.94	5.59	6.22
B	4.06	4.57	6.60	7.11
C	1.96	2.21	2.75	3.18
D	0.15	0.31	0.15	0.31
E	5.00	5.59	7.75	8.13
G	0.10	0.20	0.10	0.20
H	0.76	1.52	0.76	1.52
J	2.00	2.62	2.00	2.62
All Dimensions in mm				

AB, BB, DB, GB, JB, KB, MB Suffix Designates SMB Package  
A, B, D, G, J, K, M Designates SMC Package

### Maximum Ratings and Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive 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 <sub>RRM</sub> V <sub>VRWM</sub> V <sub>R</sub>	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	30	70	140	280	420	560	700	V
Average Rectified Output Current @ T <sub>T</sub> = 75°C	I <sub>O</sub>	3.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	100							A
Forward Voltage @ I <sub>F</sub> = 3.0A	V <sub>FM</sub>	1.15							V
Peak Reverse Current @ T <sub>A</sub> = 25°C at Rated DC Blocking Voltage @ T <sub>A</sub> = 125 °C	I <sub>RM</sub>	10 250							μA
Typical Total Capacitance (Note 1)	C <sub>T</sub>	40							pF
Typical Thermal Resistance Junction to Terminal (Note 2)	R <sub>θJT</sub>	10							°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to +150							°C

- Notes:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
  2. 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.
  3. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes 5 and 7.

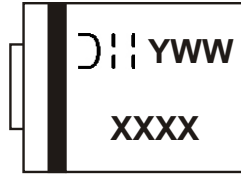
**Ordering Information** (Note 4)

Device*	Packaging	Shipping
S3xB-13 S3x-13	SMB SMC	3000/Tape & Reel

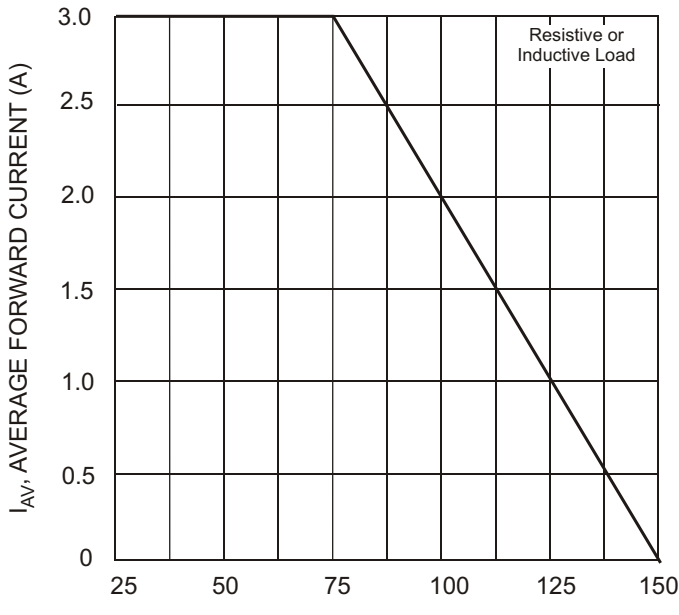
\*x = Device type, e.g. S3AB-13 (SMB package); S3A-13 (SMC Package).

- Notes:
- For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
  - For Lead Free Finish; RoHS Compliant version part numbers, please add "-F" suffix to the part numbers above. Example: S3AB-13-F.

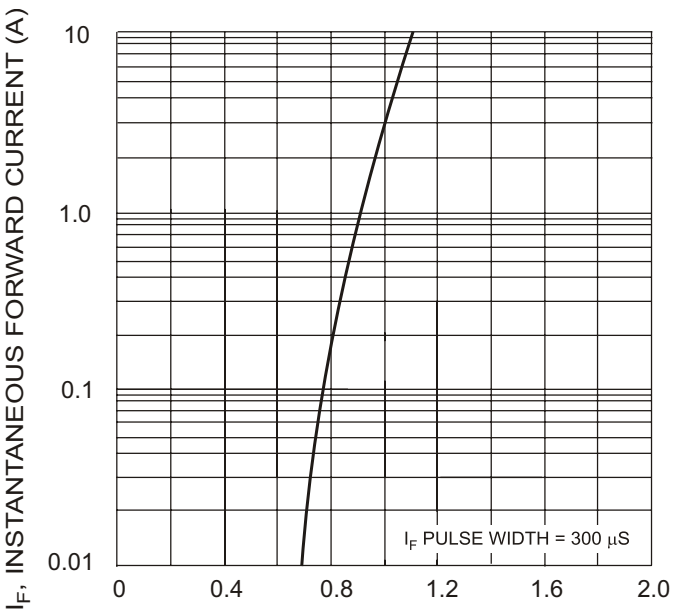
**Marking Information**



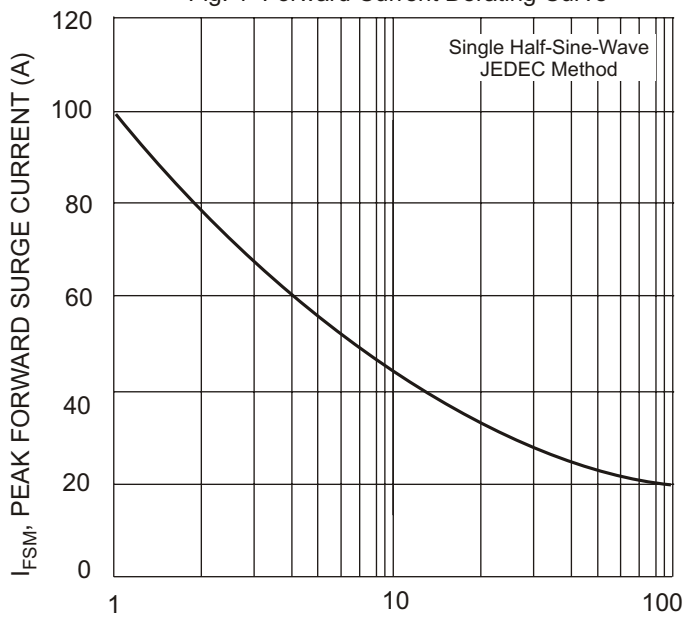
XXXX = Product type marking code, ex. S5KC  
 D;: = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year ex: 2 for 2002  
 WW = Week code 01 to 52



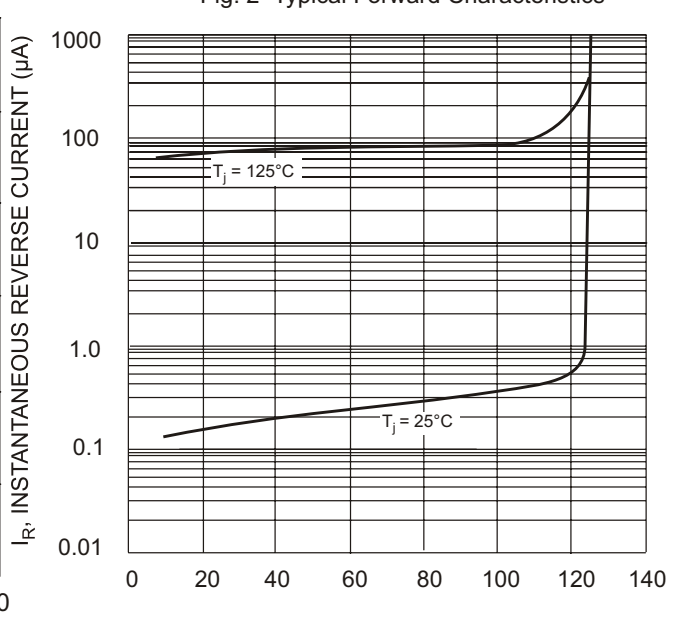
$T_T$ , TERMINAL TEMPERATURE (°C)  
 Fig. 1 Forward Current Derating Curve



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
 Fig. 2 Typical Forward Characteristics





NUMBER OF CYCLES AT 60 Hz  
 Fig. 3 Forward Surge Current Derating Curve



PERCENT OF RATED PEAK REVERSE VOLTAGE (%)  
 Fig. 4 Typical Reverse Characteristics

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