Excellent Integrated System Limited

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Diodes Incorporated
S1BB-13

For any questions, you can email us directly:
sales@integrated-circuit.com

S1A/B - S1M/B

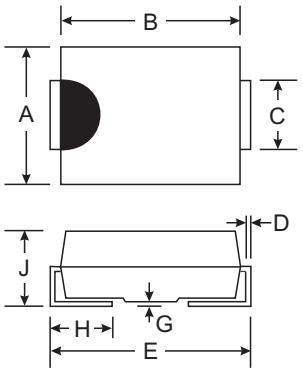
1.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER

Features

- Glass Passivated Die Construction
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 30A Peak
- Ideally Suited for Automated Assembly
- **Available in Lead Free Finish/RoHS Compliant Version (Note 3)**

Mechanical Data

- Case: SMA/SMB
- 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, See Page 2
- Ordering Information: See Page 2
- SMA Weight: 0.064 grams (approximate)
- SMB Weight: 0.093 grams (approximate)



Dim	SMA		SMB	
	Min	Max	Min	Max
A	2.29	2.92	3.30	3.94
B	4.00	4.60	4.06	4.57
C	1.27	1.63	1.96	2.21
D	0.15	0.31	0.15	0.31
E	4.80	5.59	5.00	5.59
G	0.10	0.20	0.10	0.20
H	0.76	1.52	0.76	1.52
J	2.01	2.30	2.00	2.40
All Dimensions in mm				

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

Maximum Ratings and Electrical Characteristics T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	S1 A/AB	S1 B/BB	S1 D/DB	S1 G/GB	S1 J/JB	S1 K/KB	S1 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	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Average Rectified Output Current @ T_T = 100°C	I_O	1.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load	I_{FSM}	30							A
Forward Voltage @ I_F = 1.0A	V_{FM}	1.1							V
Peak Reverse Leakage Current @ T_A = 25°C at Rated DC Blocking Voltage @ T_A = 125°C	I_{RM}	5.0 100							μA
Maximum Reverse Recovery Time (Note 4)	t_{rr}	2.0							μs
Typical Total Capacitance (Note 1)	C_T	10							ρF
Typical Thermal Resistance, Junction to Terminal (Note 2)	$R_{\theta JT}$	30							°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150							°C

Notes:
1. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
2. Thermal Resistance Junction to Terminal, unit mounted on PC board with 5.0 mm^2 (0.013 mm thick) copper pads as heat sink.
3. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.
4. Measured with I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A.

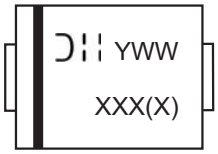
Ordering Information (Note 5 & 6)

Device*	Packaging	Shipping
S1x-13 S1xB-13	SMA SMB	5000/Tape & Reel 3000/Tape & Reel

* x = Device type, e.g. S1A-13 (SMA package); S1AB-13 (SMB package).

Notes: 5. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.
6. For Lead Free Finish/RoHS Compliant version part numbers, please add "-F" suffix to part numbers above. Example: S1A-13-F.

Marking Information



XXX = Product type marking code, ex: S1A (SMA package)
XXXX = Product type marking code, ex: S1AB (SMB package)
= Manufacturers' code marking
YWW = Date code marking
Y = Last digit of year ex: 2 for 2002
WW = Week code 01 to 52

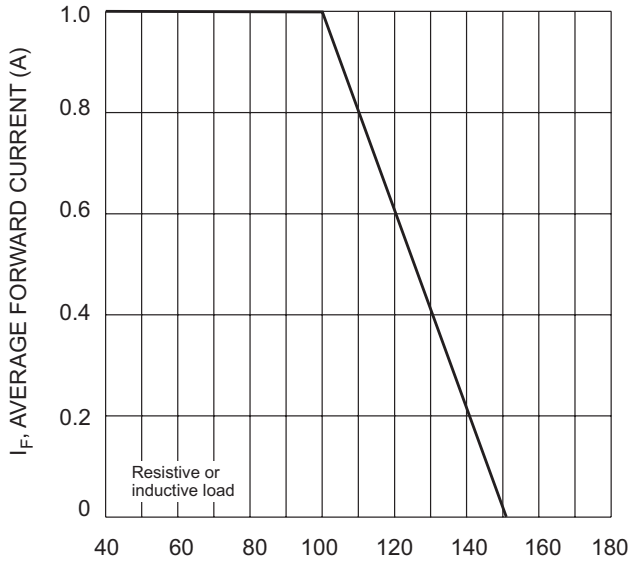


Fig. 1 Forward Current Derating Curve

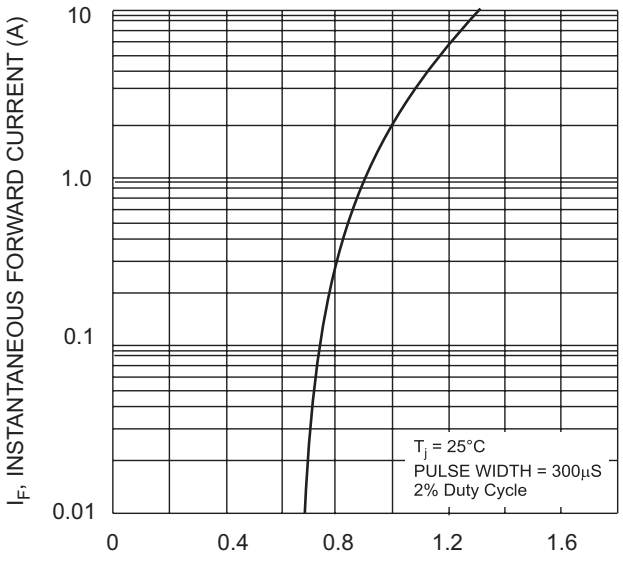


Fig. 2 Typical Forward Characteristics

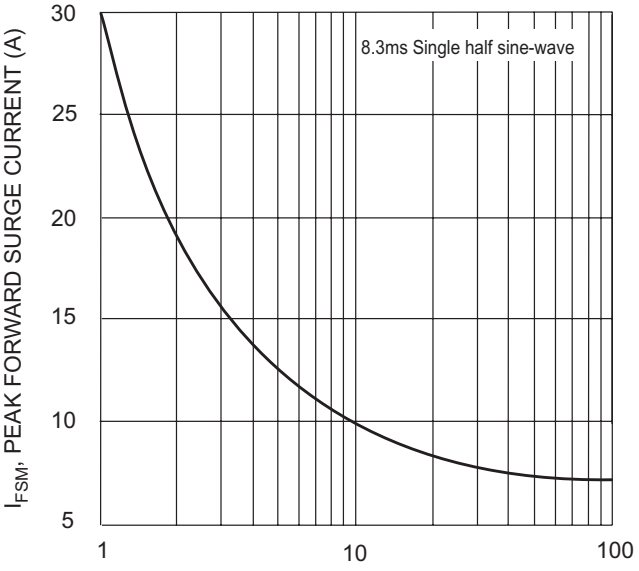


Fig. 3 Typical Forward Characteristics

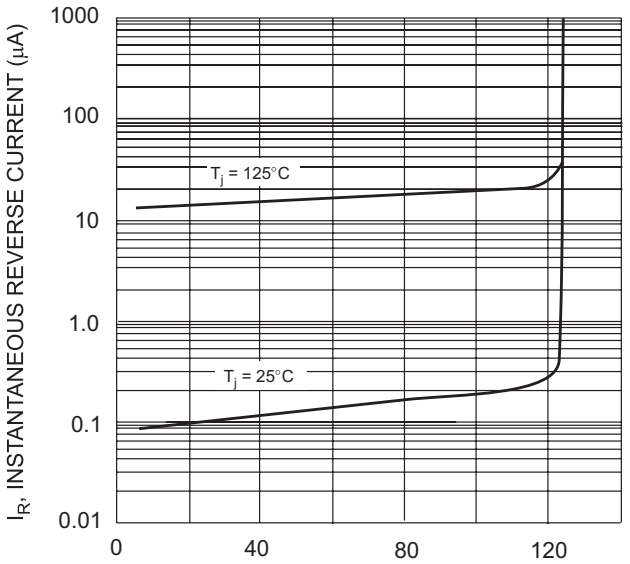


Fig. 4 Typical Reverse Characteristics