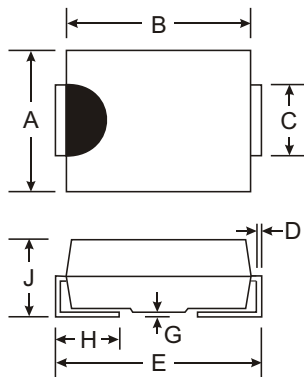


### Features

- 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 Version

### Mechanical Data

- Case: Molded Plastic
- Case Material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- 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 4, on Page 2
- Polarity: Cathode Band or Cathode Notch
- SMA Weight: 0.064 grams (approx.)
- SMB Weight: 0.093 grams (approx.)
- Marking: Type Number, See Page 2
- Ordering Information: See Page 2



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	2.62	2.00	2.62
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<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	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 @ $T_T = 100^\circ\text{C}$	$I_O$	1.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30							A
Forward Voltage @ $I_F = 1.0\text{A}$	$V_{FM}$	1.1							V
Peak Reverse Leakage Current @ $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A = 125^\circ\text{C}$	$I_{RM}$	5.0 100							$\mu\text{A}$
Typical Total Capacitance (Note 1)	$C_T$	10							pF
Typical Thermal Resistance, Junction to Terminal (Note 2)	$R_{\theta JT}$	30							$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150							$^\circ\text{C}$

- 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<sup>2</sup> (0.013 mm thick) copper pads as heat sink.

## Ordering Information (Note 3 &4)

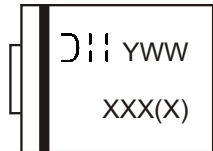
Device*	Packaging	Shipping
S1x-13 S1xB-13	SMA SMB	5000/Tape & Reel 3000/Tape & Reel

Notes: 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

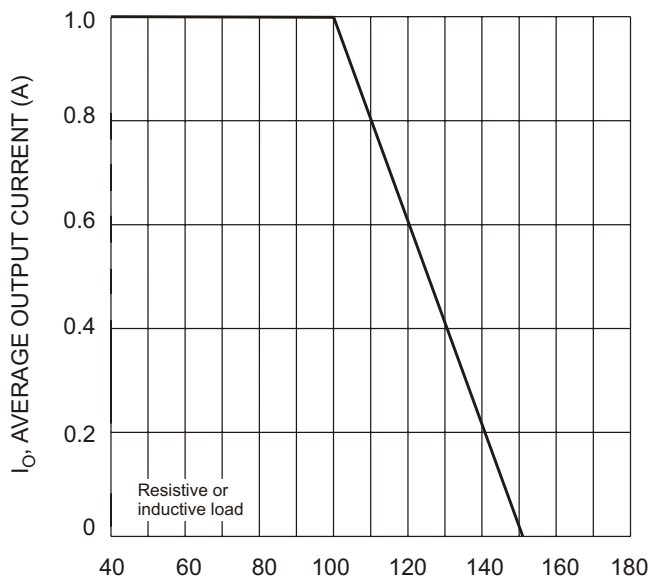
\* x = Device type, e.g. S1A-13 (SMA package); S1AB-13 (SMB package).

4. For lead free terminal plating part number, please add "-F" suffix to part number above. Example: S1A-13-F.

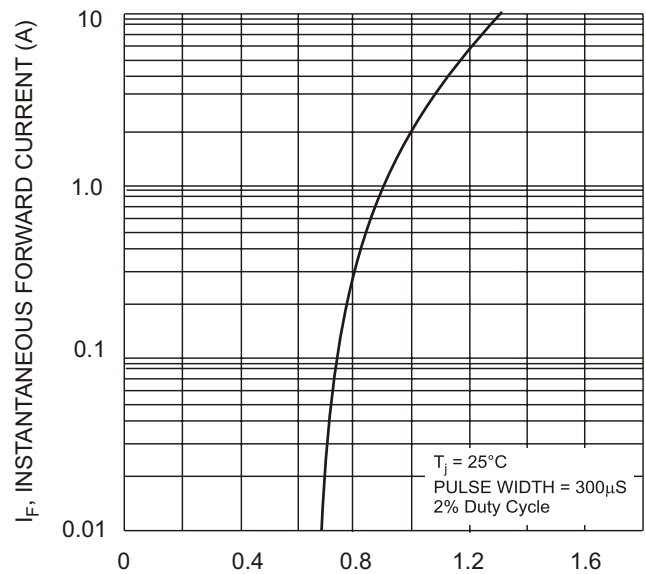
## Marking Information



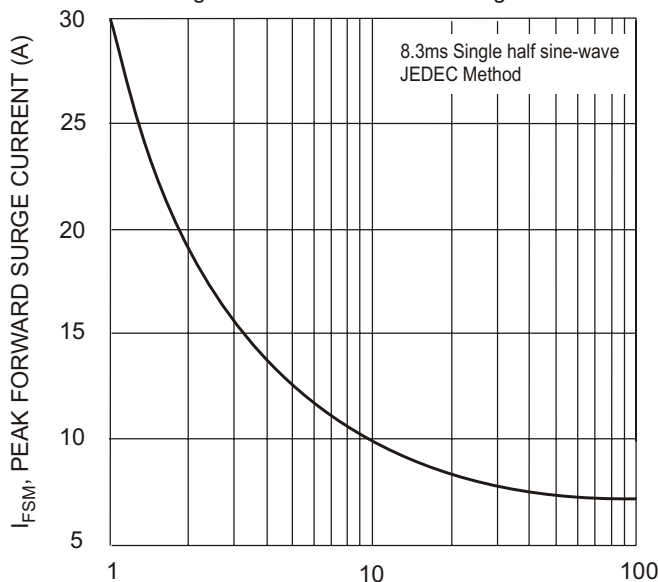
XXX = Product type marking code, ex: S1A (SMA package)  
 XXXX = Product type marking code, ex: S1AB (SMB package)  
 D11 = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year ex: 2 for 2002  
 WW = Week code 01 to 52



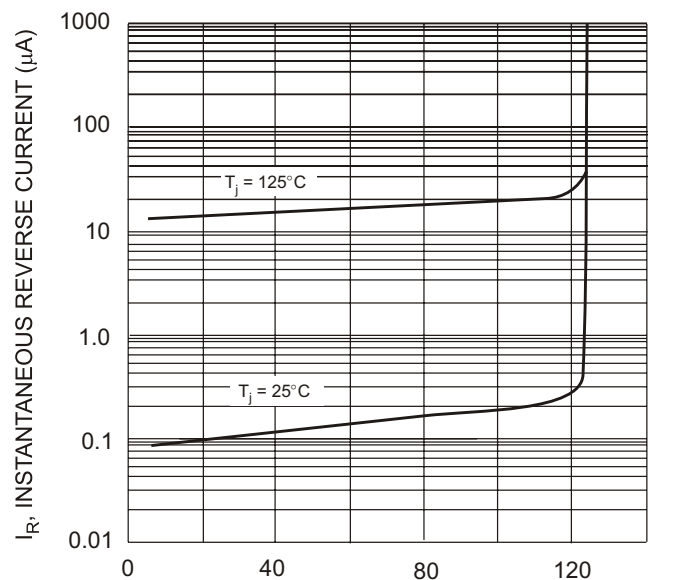
$T_T$ , TERMINAL TEMPERATURE (°C)  
 Fig. 1 Forward Current Derating Curve



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



NUMBER OF CYCLES @ 60Hz  
 Fig. 3 Typical Forward Characteristics



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