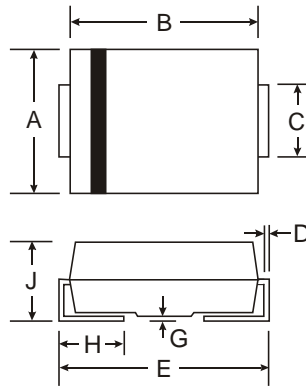


Features

- Glass Passivated Die Construction for High Reliability
- Surge Overload Rating to 30A Peak
- Ideally Suited for Automated Assembly
- **Lead Free Finish/RoHS Compliant (Note 3)**

Mechanical Data

- Case: SMA/SMB
- 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 (E3)
- Polarity: Cathode Band or Cathode Notch
- Marking Information: See Page 3
- Ordering Information: See Page 3
- 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	0.05	0.20	0.05	0.20
H	0.76	1.52	0.76	1.52
J	2.01	2.30	2.00	2.62
All Dimensions in mm				

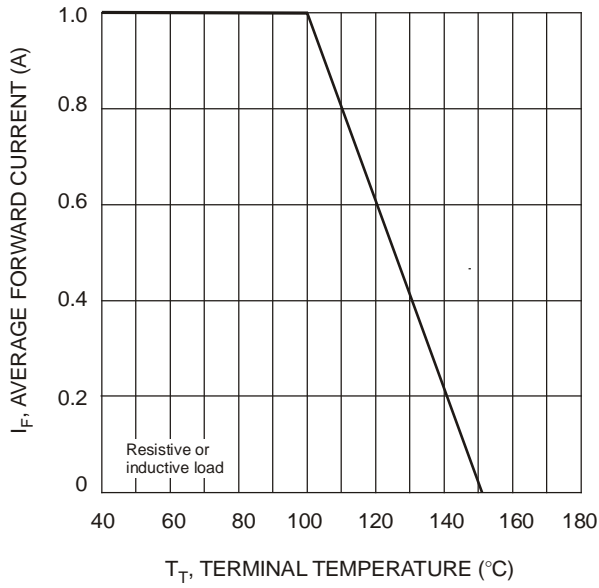
A, B, D, G, J, K, M Suffix Designates SMA Package
 AB, BB, DB, GB, JB, KB, MB Suffix Designates SMB Package

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

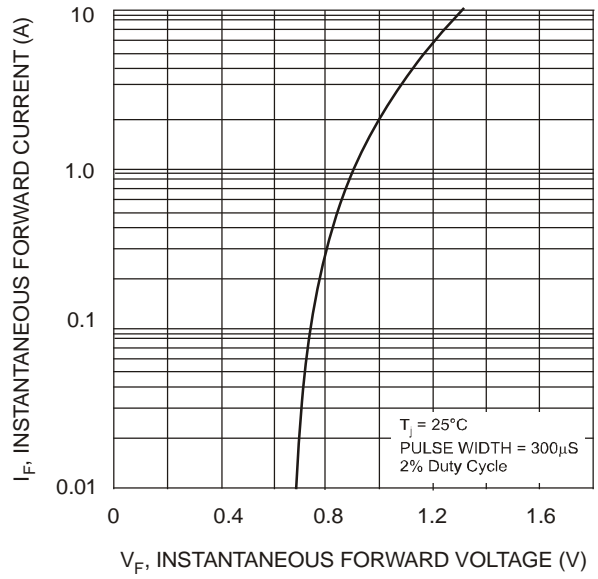
Single phase, half wave, 60Hz, resistive or inductive load.
 For capacitive load, derate current by 20%.

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	V _{RRM}	50	100	200	400	600	800	1000	V
Working Peak Reverse Voltage	V _{RWM}								
DC Blocking Voltage	V _R								
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	I _{RM}	5.0							μA
at Rated DC Blocking Voltage @ T _A = 125°C		100							
Maximum Reverse Recovery Time (Note 4)	t _{rr}	3.0							μs
Typical Total Capacitance (Note 1)	C _T	10							pF
Typical Thermal Resistance, Junction to Terminal (Note 2)	R _{θJT}	30							°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150							°C

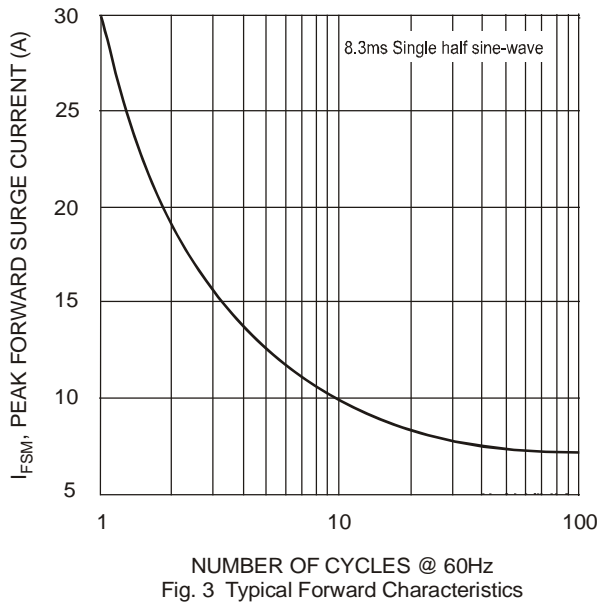
- Notes:
1. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
 2. Thermal resistance junction to terminal, unit mounted on PC board with 5.0 mm² (0.013 mm thick) copper pads as heat sink.
 3. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
 4. Measured with I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A.



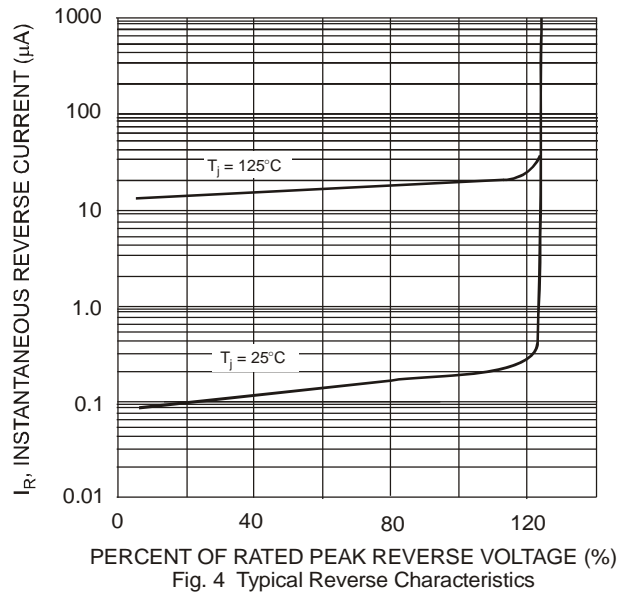
T_T , TERMINAL TEMPERATURE (°C)
Fig. 1 Forward Current Derating Curve



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

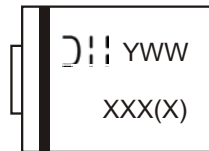
Ordering Information (Note 5)

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

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

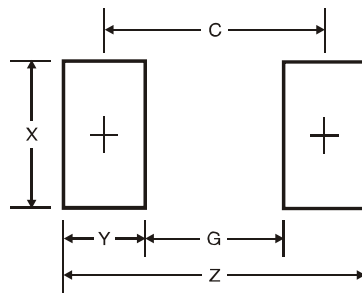
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



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

Suggested Pad Layout



SMA Dimensions	Value (in mm)
Z	6.5
G	1.5
X	1.7
Y	2.5
C	4.0

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

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