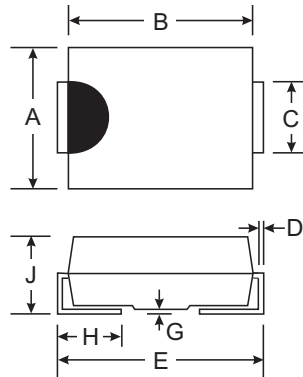


Features

- Glass Passivated Die Construction
- Fast Recovery Time For High Efficiency
- 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 4)**

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 6, on Page 1
- Polarity: Cathode Band or Cathode Notch
- 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

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	RS1 A/AB	RS1 B/BB	RS1 D/DB	RS1 G/GB	RS1 J/JB	RS1 K/KB	RS1 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 = 120°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 Drop @ I _F = 1.0A	V _{FM}	1.3							V
Peak Reverse Current @ T _A = 25°C at Rated DC Blocking Voltage @ T _A = 125°C	I _{RM}	5.0 200							μA
Reverse Recovery Time (Note 3)	t _{rr}	150					250	500	ns
Typical Total Capacitance (Note 2)	C _T	15							pF
Typical Thermal Resistance, Junction to Terminal (Note 1)	R _{θJT}	20							°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150							°C

- Notes: 1. Valid provided that terminals are kept at ambient temperature.
 2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
 3. Reverse Recovery Test Conditions: I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See figure 5.
 4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes 5 and 7.

Ordering Information (Note 5 & 6)

Device*	Packaging	Shipping
RS1x-13 RS1xB-13	SMA SMB	5000/Tape & Reel 3000/Tape & Reel

* x = Device type, e.g. RS1D-13 (SMA package); RS1JB-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 the part numbers above. Example: RS1B-13-F.

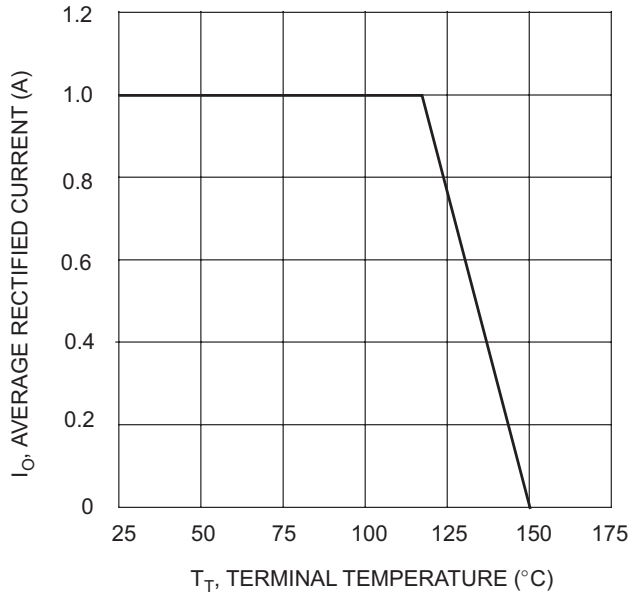


Fig. 1 Forward Current Derating Curve

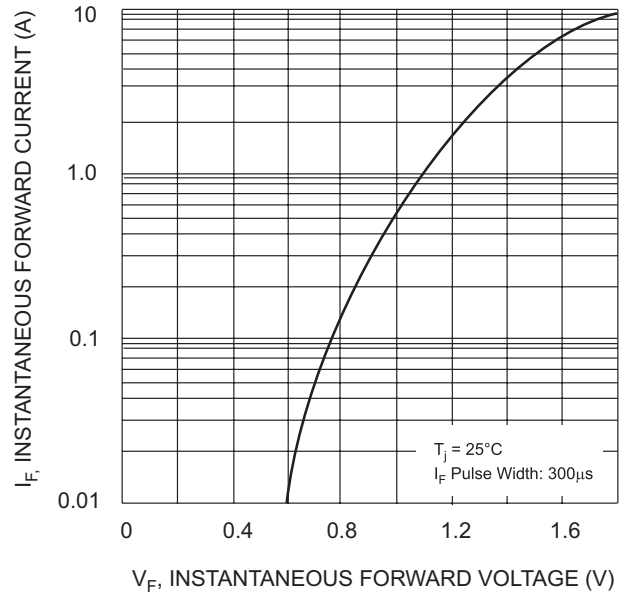


Fig. 2 Typical Forward Characteristics

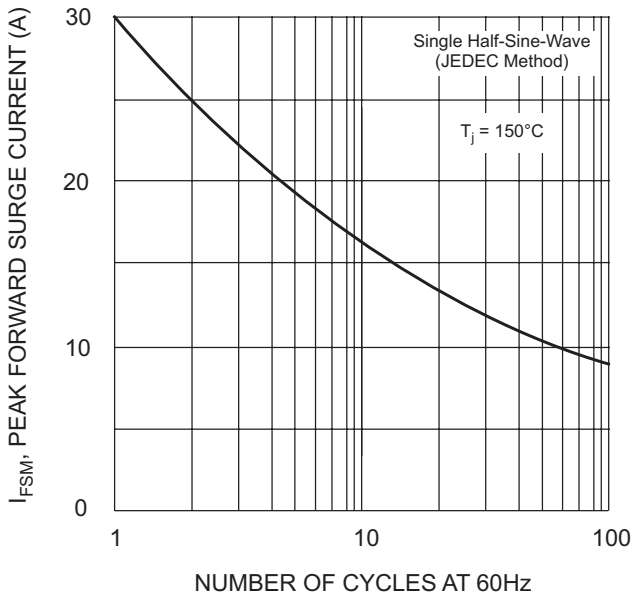


Fig. 3 Forward Surge Current Derating Curve

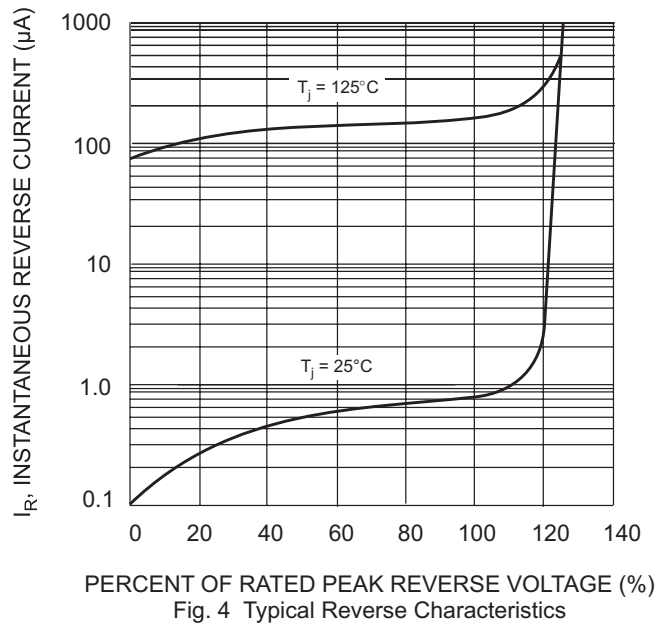
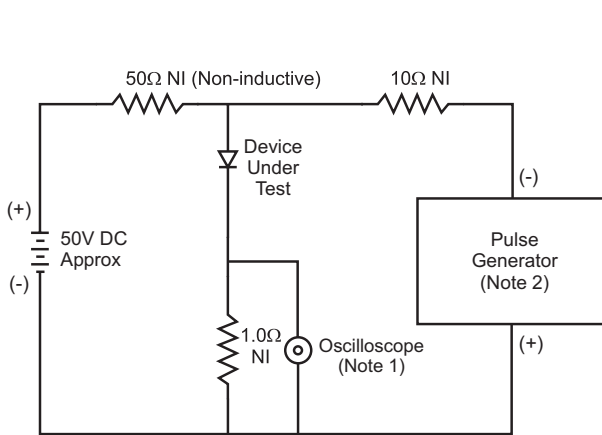


Fig. 4 Typical Reverse Characteristics



- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0M Ω , 22pF.
2. Rise Time = 10ns max. Input Impedance = 50 Ω .

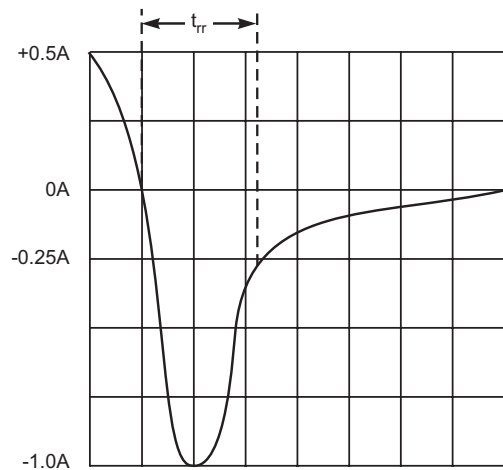


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit