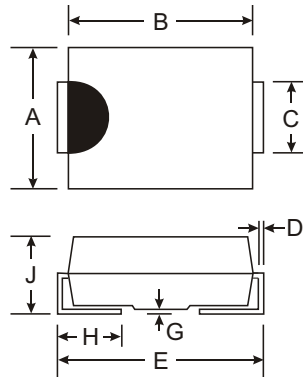


### Features

- 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
- Plastic Material: UL Flammability Classification Rating 94V-0

### Mechanical Data

- Case: Molded Plastic
- Moisture sensitivity: Level 1 per J-STD-020B
- 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 1
- Polarity: Cathode Band or Cathode Notch
- SMA Weight: 0.064 grams (approx.)
- SMB Weight: 0.093 grams (approx.)



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<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	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 Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	35	70	140	280	420	560	700	V
Average Rectified Output Current @ T <sub>T</sub> = 120°C	I <sub>O</sub>	1.0							A
Non-Repetitive Peak Forward Surge Current, 8.3ms single half sine-wave Superimposed on Rated Load (JEDEC Method)	I <sub>FSM</sub>	30							A
Forward Voltage Drop @ I <sub>F</sub> = 1.0A	V <sub>FM</sub>	1.3							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>	5.0 200							μA
Reverse Recovery Time (Note 3)	t <sub>rr</sub>	150				250	500		ns
Typical Total Capacitance (Note 2)	C <sub>T</sub>	15							pF
Typical Thermal Resistance, Junction to Terminal (Note 1)	R <sub>θJT</sub>	20							°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-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<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>rr</sub> = 0.25A. See figure 5.

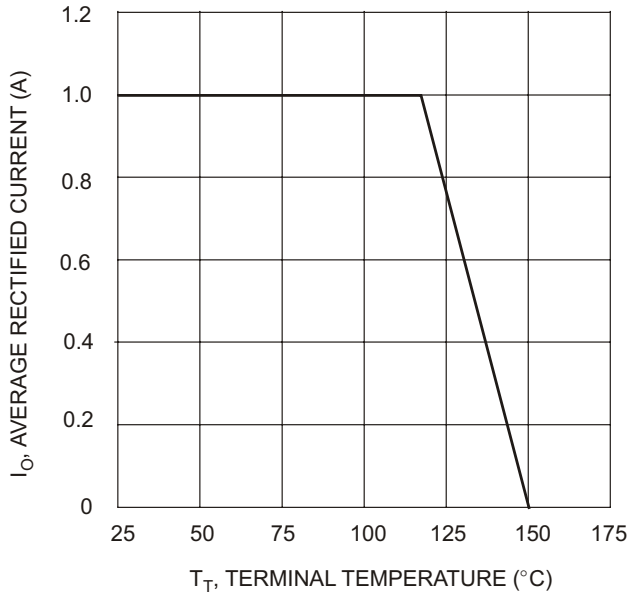
### Ordering Information (Note 4 & 5)

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

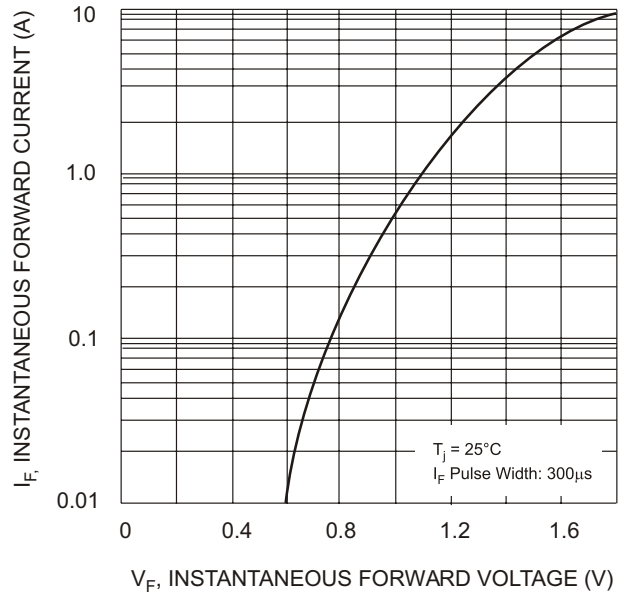
Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

\* x = Device type, e.g. RS1D-13 (SMA package); RS1JB-13 (SMB package).

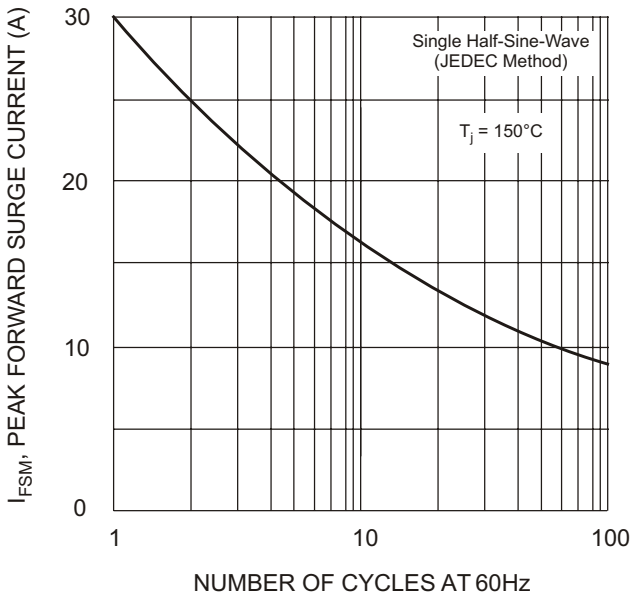
5. For lead free terminal plating part number, please add "-F" suffix to part number above. Example: B250-13-F.



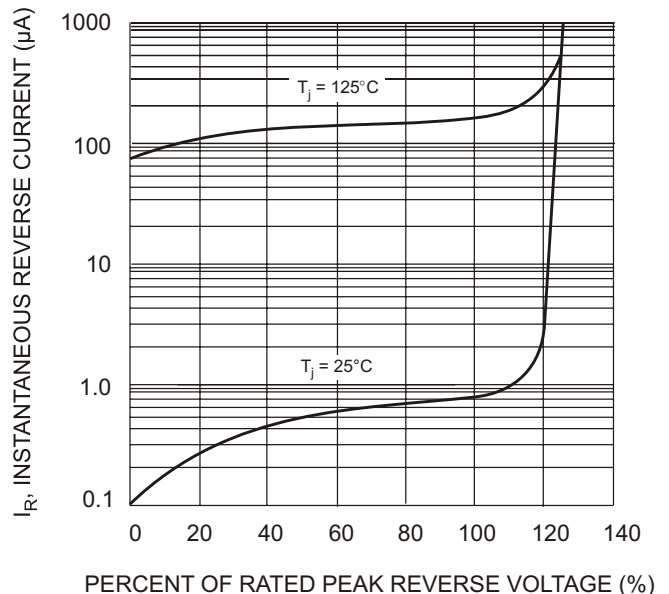
$T_T$ , TERMINAL TEMPERATURE ( $^{\circ}\text{C}$ )  
Fig. 1 Forward Current Derating Curve



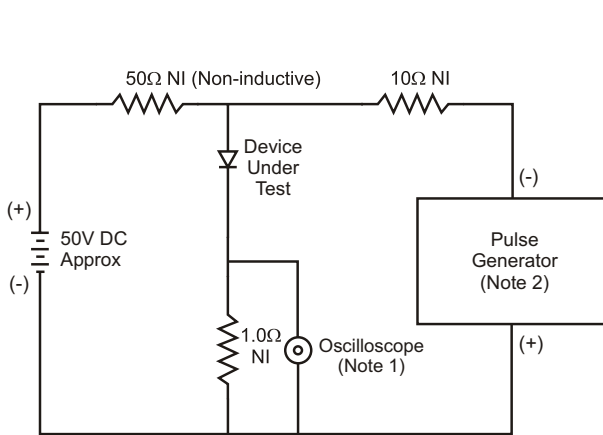
$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



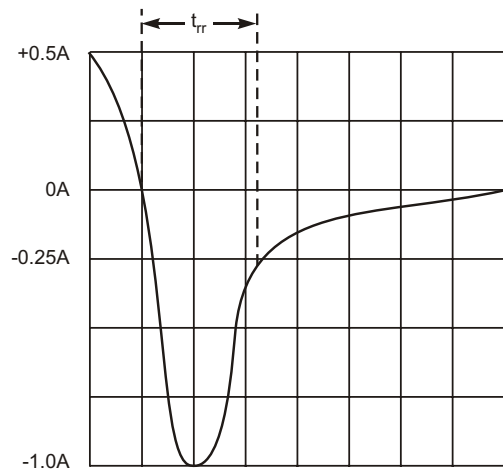
NUMBER OF CYCLES AT 60Hz  
Fig. 3 Forward Surge Current Derating Curve



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



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



Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit