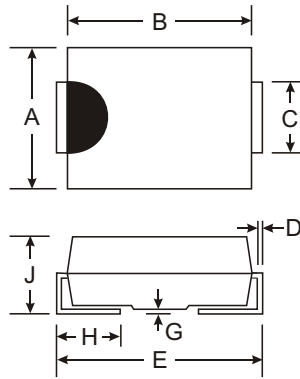


### Features

- Glass Passivated Die Construction
- Fast Recovery Time for High Efficiency
- Surge Overload Rating to 100A Peak
- Ideally Suited for Automatic Assembly
- Lead Free Finish/RoHS Compliant (Note 4)**

### Mechanical Data

- Case: SMB, SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- 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
- Weight: SMB 0.093 grams (approx)  
SMC 0.21 grams (approx)



Dim	SMB		SMC	
	Min	Max	Min	Max
A	3.30	3.94	5.59	6.22
B	4.06	4.57	6.60	7.11
C	1.96	2.21	2.75	3.18
D	0.15	0.31	0.15	0.31
E	5.00	5.59	7.75	8.13
G	0.10	0.20	0.10	0.20
H	0.76	1.52	0.76	1.52
J	2.00	2.62	2.00	2.62
<b>All Dimensions in mm</b>				

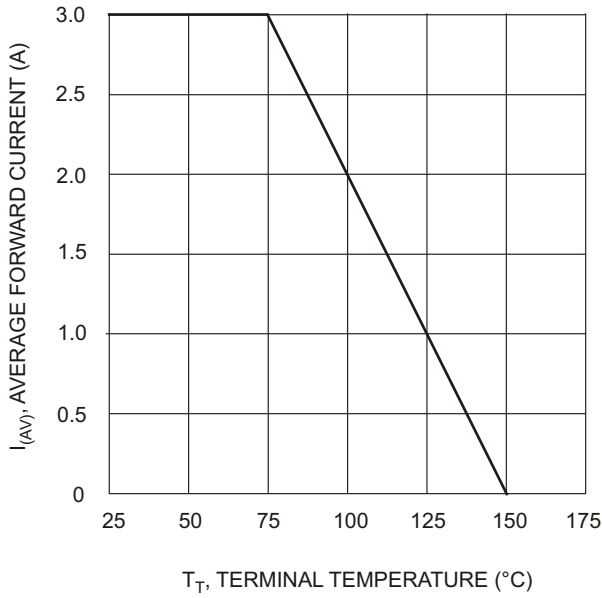
AB, BB, DB, GB, JB, KB, MB Suffix Designates SMB Package  
A, B, D, G, J, K, M Suffix Designates SMC Package

### Maximum Ratings and Electrical Characteristics @ T<sub>A</sub> = 25 °C unless otherwise specified

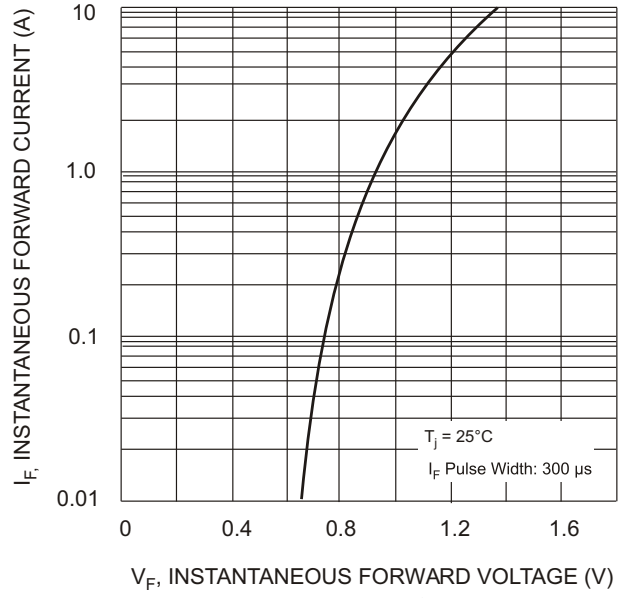
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	RS3 A/AB	RS3 B/BB	RS3 D/DB	RS3 G/GB	RS3 J/JB	RS3 K/KB	RS3 M/MB	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage (Note 5)	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> = 75 °C	I <sub>O</sub>				3.0				A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load	I <sub>FSM</sub>				100				A
Forward Voltage @ I <sub>F</sub> = 3.0A	V <sub>FM</sub>				1.3				V
Peak Reverse Current @ T <sub>A</sub> = 25 °C at Rated DC Blocking Voltage (Note 5) @ T <sub>A</sub> = 125 °C	I <sub>RM</sub>				5.0 250				A
Maximum Recovery Time (Note 3)	t <sub>rr</sub>	150			250	500			ns
Typical Total Capacitance (Note 2)	C <sub>T</sub>				50				pF
Typical Thermal Resistance Junction to Terminal (Note 1)	R <sub>JT</sub>				25				°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>				-65 to +150				°C

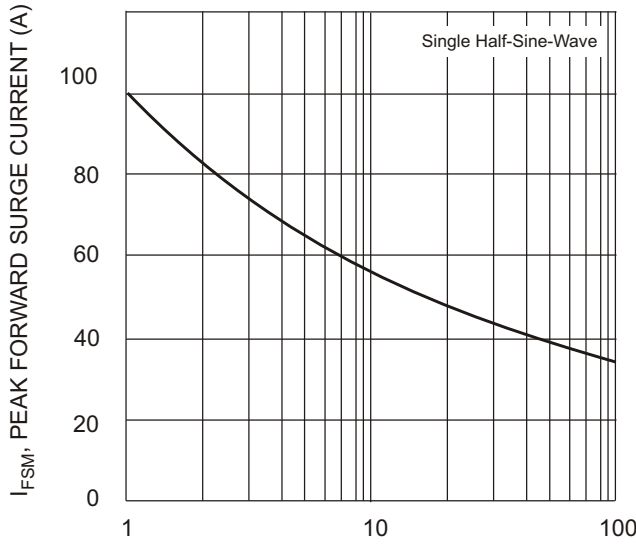
- Notes:
1. Thermal resistance: junction to terminal, unit mounted on PC board with 5.0 mm<sup>2</sup> (0.013 mm thick) copper pad as heat sink.
  2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
  3. Reverse recovery test conditions: I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>rr</sub> = 0.25A. See figure 5.
  4. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see *EU Directive Annex Notes 5 and 7*.
  5. Short duration pulse test used to minimize self-heating effect.



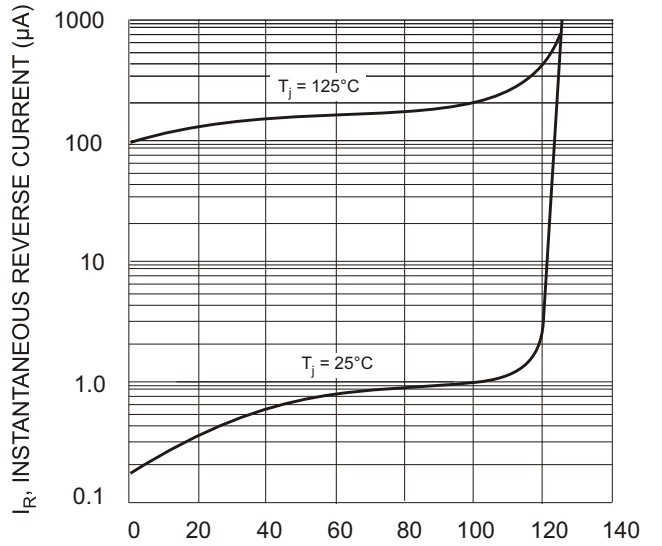
$T_T$ , TERMINAL TEMPERATURE (°C)  
Fig. 1 Forward Current Derating Curve



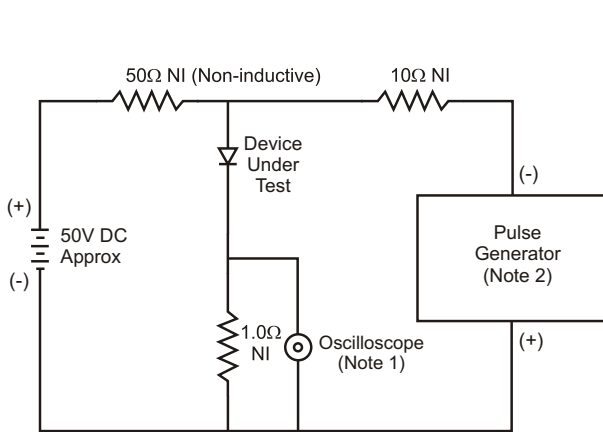
$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



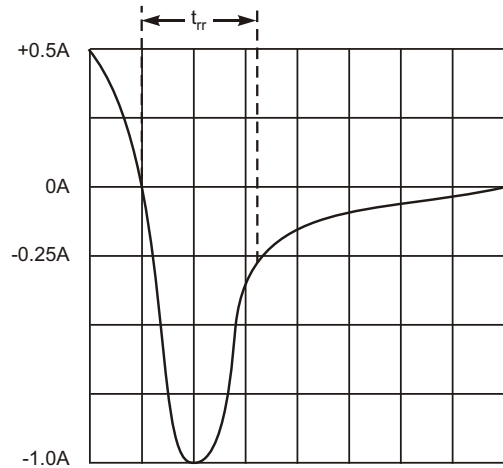
NUMBER OF CYCLES AT 60 Hz  
Fig. 3 Forward Surge Current Derating Curve



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

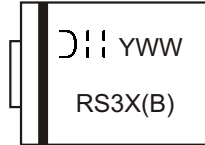
**Ordering Information** (Note 6)

Device*	Packaging	Shipping
RS3x-13-F RS3xB-13-F	SMC SMB	3000/Tape & Reel 3000/Tape & Reel

\* x = Device type, e.g. RS3A-13-F (SMC package); RS3AB-13-F (SMB package).

Notes: 6. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



RS3X = Product type marking code, ex: RS3A (SMC package)  
 RS3XB = Product type marking code, ex: RS3AB (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

**IMPORTANT NOTICE**

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

**LIFE SUPPORT**

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.