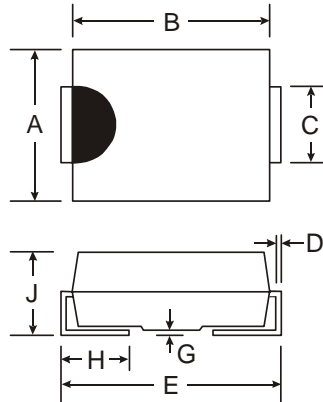


### Features

- 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)**



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>				

### 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 (approximate)  
SMC 0.21 grams (approximate)

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

@ $T_A = 25^\circ\text{C}$  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	$V_{RRM}$	50	100	200	400	600	800	1000	V
Working Peak Reverse Voltage	$V_{RWM}$								
DC Blocking Voltage (Note 5)	$V_R$								
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Average Rectified Output Current @ $T_T = 75^\circ\text{C}$	$I_O$				3.0				A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$				100				A
Forward Voltage @ $I_F = 3.0\text{A}$	$V_{FM}$				1.3				V
Peak Reverse Current @ $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage (Note 5) @ $T_A = 125^\circ\text{C}$	$I_{RM}$				5.0 250				$\mu\text{A}$
Maximum Recovery Time (Note 3)	$t_{rr}$	150			250	500			ns
Typical Total Capacitance (Note 2)	$C_T$				50				pF
Typical Thermal Resistance Junction to Terminal (Note 1)	$R_{\theta JT}$				25 11				$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{STG}$				-65 to +150				$^\circ\text{C}$

- Notes:
1. Thermal Resistance: Junction to terminal, unit mounted on PC board with 5.0 mm<sup>2</sup> (0.013 mm thick) copper pads as heat sink.
  2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
  3. Reverse recovery test conditions:  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{rr} = 0.25\text{A}$ . 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.

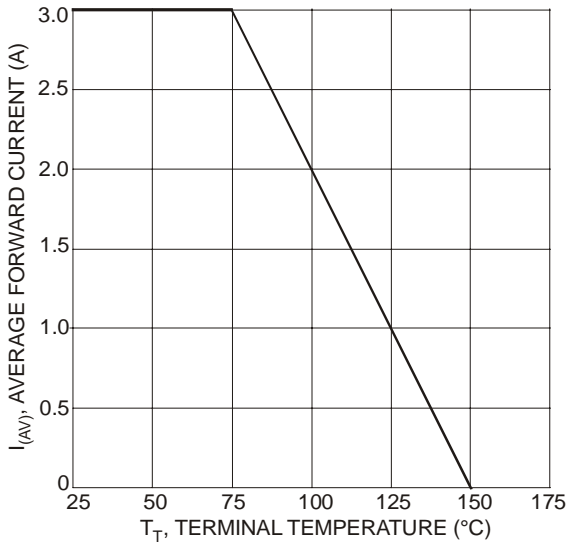


Fig. 1 Forward Current Derating Curve

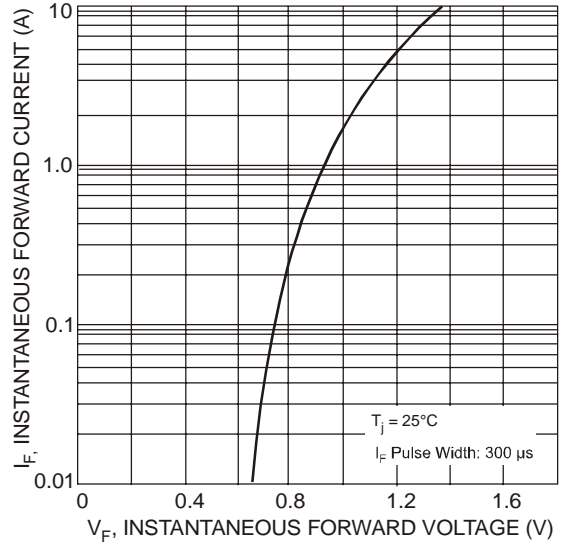


Fig. 2 Typical Forward Characteristics

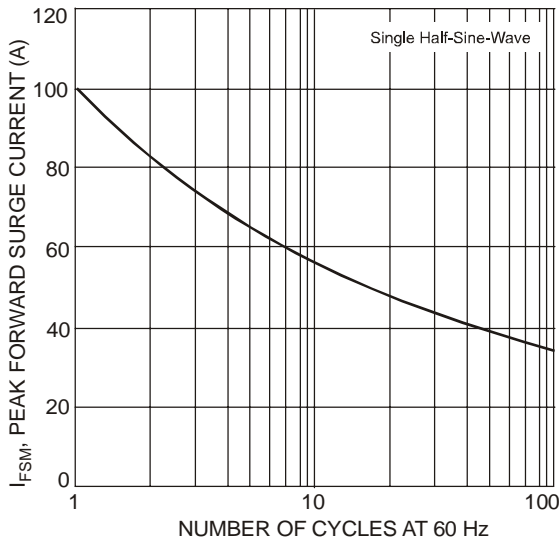


Fig. 3 Forward Surge Current Derating Curve

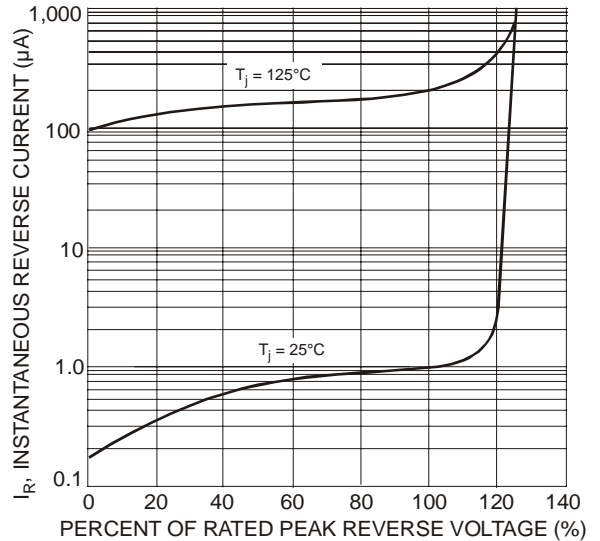
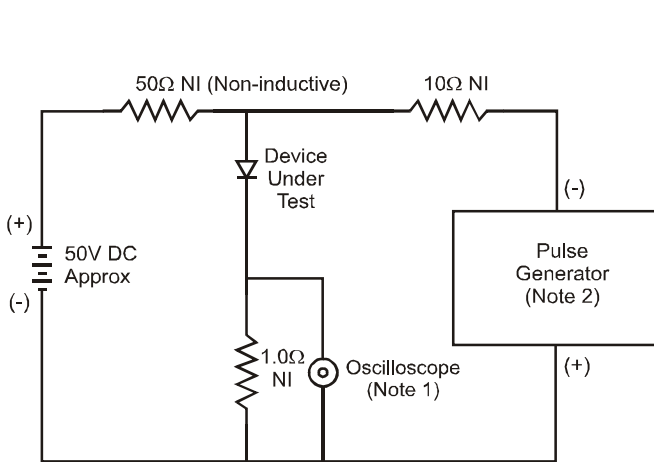
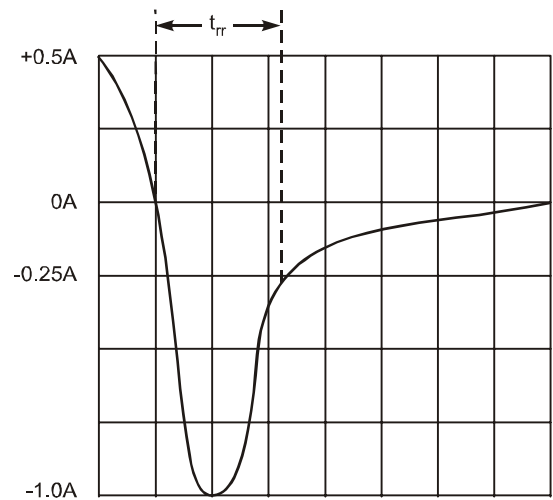


Fig. 4 Typical Reverse Characteristics



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



Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

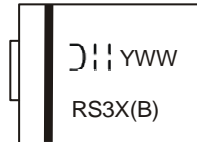
**Ordering Information** (Note 6)

Device*	Packaging	Shipping
RS3x-13-F	SMC	3000/Tape & Reel
RS3xB-13-F	SMB	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)  
 ⌋!! = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year ex: 2 for 2002  
 WW = Week code 01 to 52

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