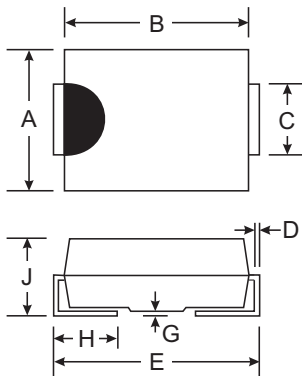


Features

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

Mechanical Data

- Case: Molded Plastic
- Case Material: 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
- Polarity: Cathode Band or Cathode Notch
- Weight: SMB 0.093 grams (approx)
SMC 0.21 grams (approx)
- Marking: Type Number, See Page 3
- Ordering Information: See Page 3



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
All Dimensions in mm				

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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	200	400	600	800	1000	V	
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 (JEDEC Method)	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 @ $T_A = 125^{\circ}\text{C}$	I_{RM}	5.0 250							μA	
Maximum Recovery Time (Note 3)	t_{rr}	150				250		500		ns
Typical Junction Capacitance (Note 2)	C_j	50							pF	
Typical Thermal Resistance Junction to Terminal (Note 1)	$R_{\theta JT}$	25							K/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 mm² (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: $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $I_{RT} = 0.25\text{A}$. See figure 5.
 4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes 5 and 7.

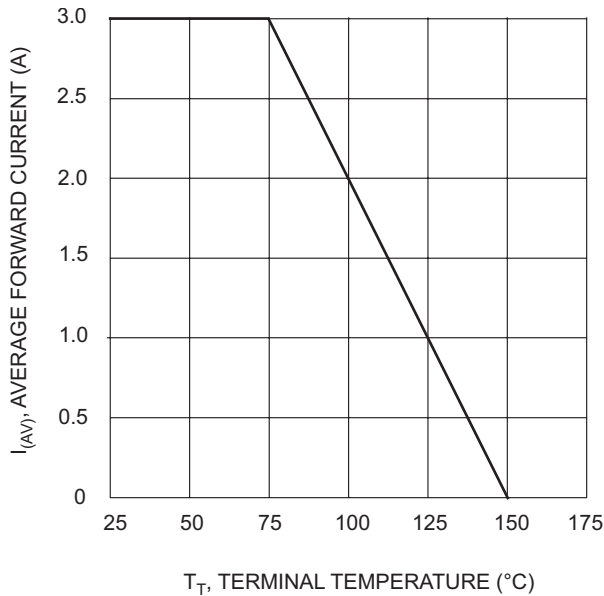


Fig. 1 Forward Current Derating Curve

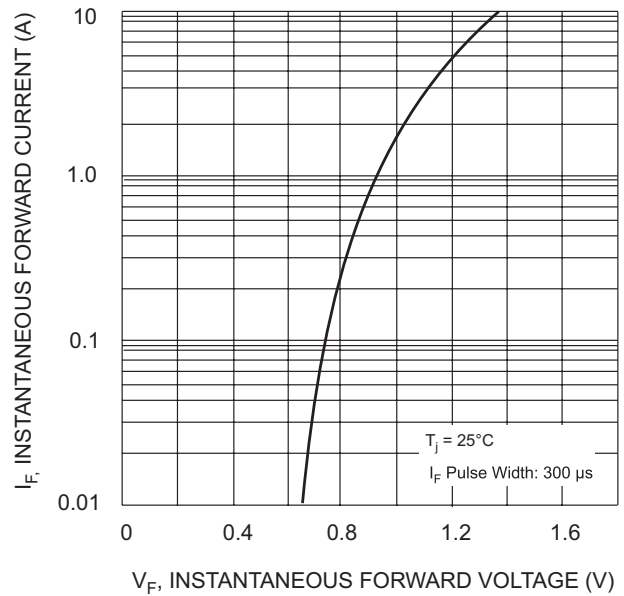


Fig. 2 Typical Forward Characteristics

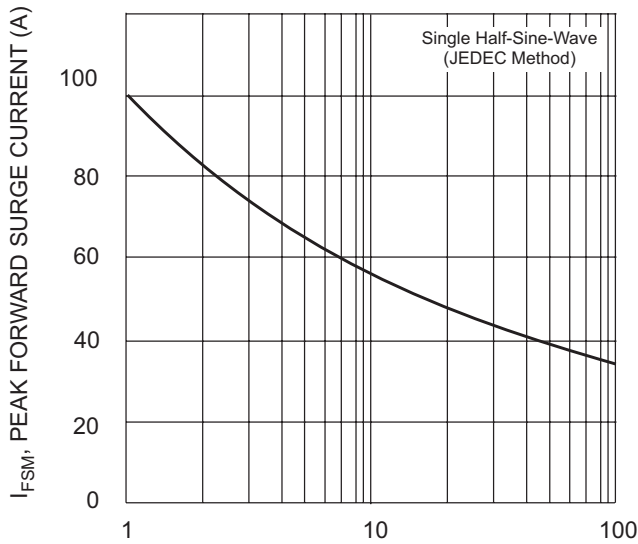


Fig. 3 Forward Surge Current Derating Curve

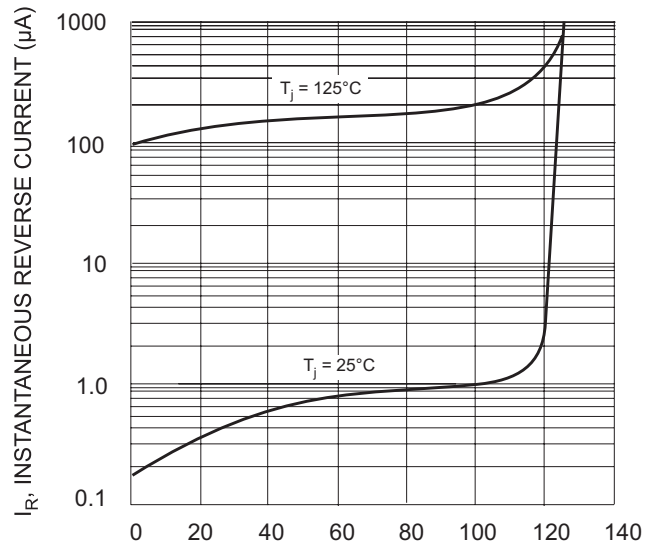
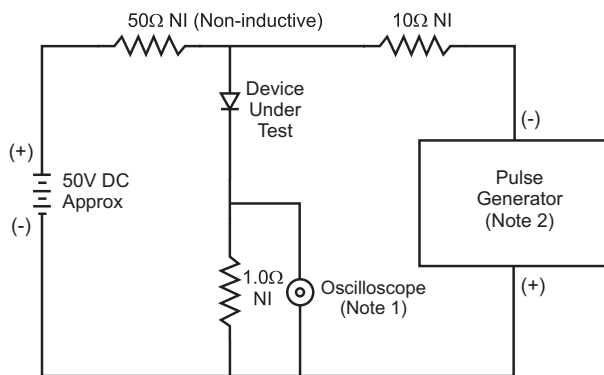


Fig. 4 Typical Reverse Characteristics



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

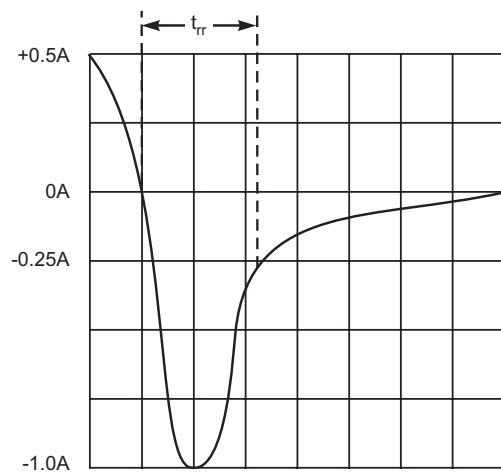


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

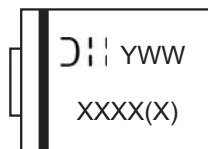
Ordering Information (Note 5)

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

Marking Information



XXX = Product type marking code, ex: RS3A (SMC package)
 XXXX = Product type marking code, ex: RS3AB (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

IMPORTANT NOTICE

Diodes, Inc. and its subsidiaries reserve the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. Diodes, Inc. 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

The products located on our website at www.diodes.com are not recommended for use in life support systems where a failure or malfunction of the component may directly threaten life or cause injury without the express written approval of Diodes Incorporated.