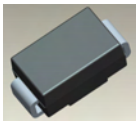
3.0A SURFACE MOUNT FAST RECOVERY RECTIFIER

Features

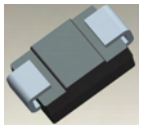
- Glass Passivated Die Construction
- Fast Recovery Time for High Efficiency
- Surge Overload Rating to 100A Peak
- Ideally Suited for Automatic Assembly
- **Lead Free Finish/RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 2)**

Mechanical Data

- Case: SMB, SMC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band or Cathode Notch
- Weight: SMB 0.093 grams (approximate)
  SMC 0.21 grams (approximate)



Top View



Bottom View

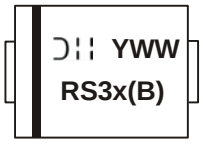
Ordering Information (Note 3)

Part Number	Case	Packaging
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:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
2. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
3. For packaging details, go to our website at http://www.diodes.com.

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 53)

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Maximum Ratings @T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance 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 4)	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°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

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Typical Thermal Resistance Junction to Terminal (Note 5)	SMB SMC	$R_{\theta JT}$	25 11	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic		Symbol	RS3 A/AB	RS3 B/BB	RS3 D/DB	RS3 G/GB	RS3 J/JB	RS3 K/KB	RS3 M/MB	Unit
Forward Voltage	@ I_F = 3.0A	V_{FM}	1.3							V
Peak Reverse Current at Rated DC Blocking Voltage (Note 4	@ T_A = 25°C @ T_A = 125°C	I_{RM}	5.0 250							μA
Maximum Recovery Time (Note 6)		t_{rr}	150				250	500		ns
Typical Total Capacitance (Note 7)		C_T	50							pF

Notes:
4. Short duration pulse test used to minimize self-heating effect.
5. Thermal Resistance: Junction to terminal, unit mounted on PC board with 5.0 mm^2 (0.013 mm thick) copper pads as heat sink.
6. Reverse recovery test conditions: I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See Figure 5.
7. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

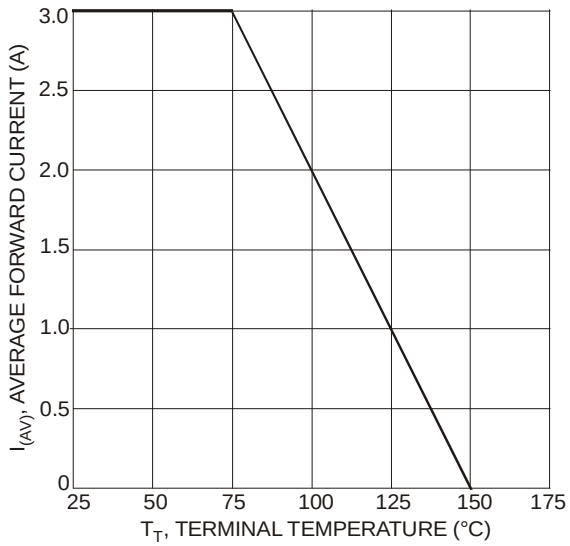


Fig. 1 Forward Current Derating Curve

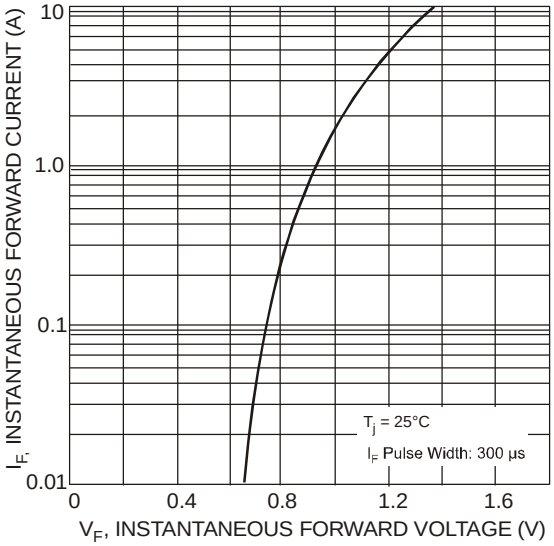


Fig. 2 Typical Forward Characteristics

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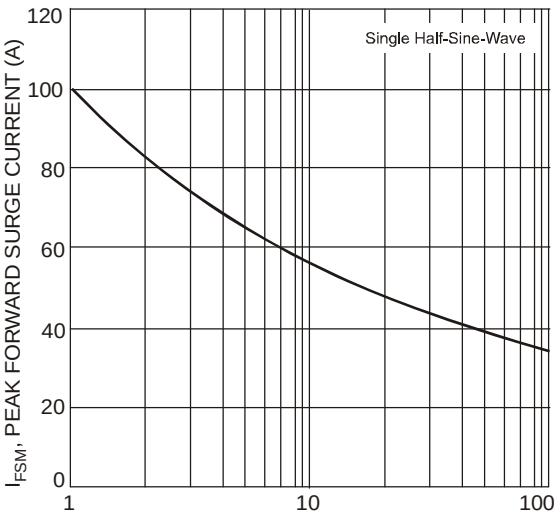


Fig. 3 Forward Surge Current Derating Curve

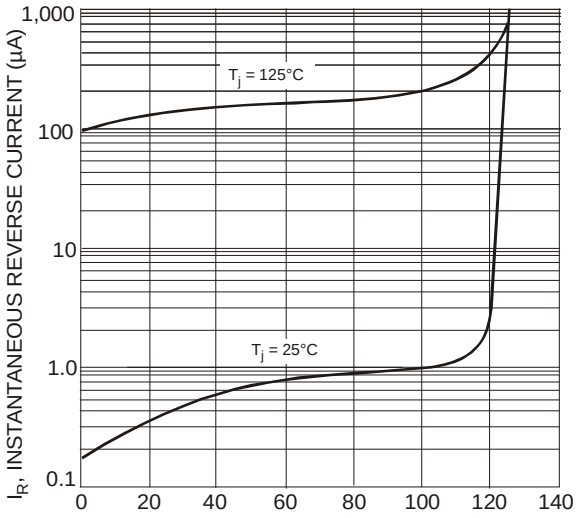
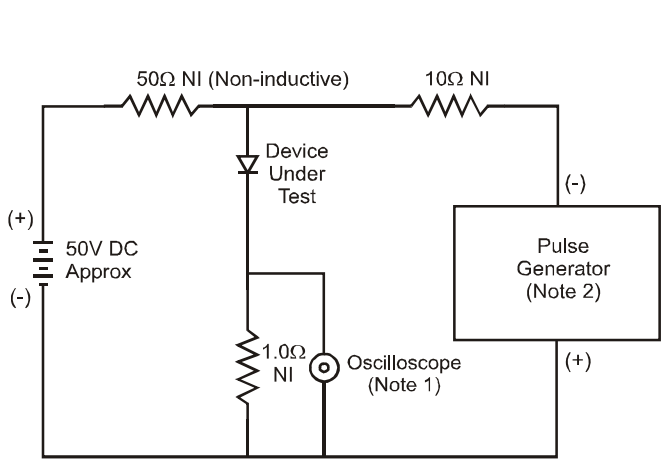
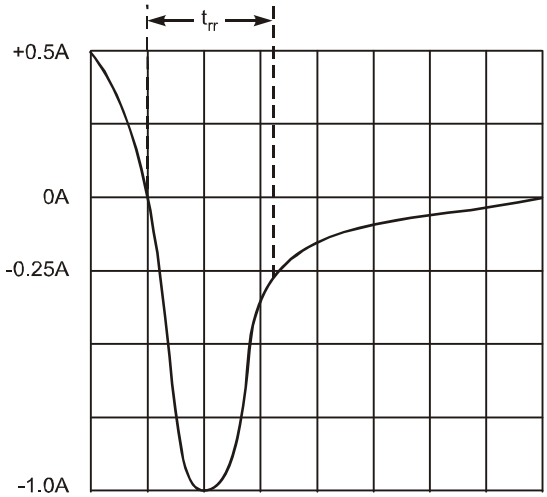


Fig. 4 Typical Reverse Characteristics



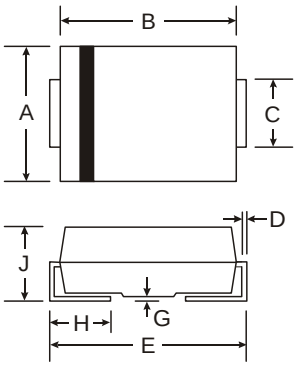
Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

Package Outline Dimensions

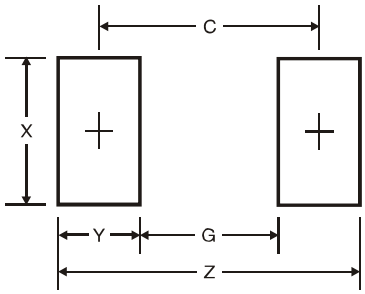


SMB		
Dim	Min	Max
A	3.30	3.94
B	4.06	4.57
C	1.96	2.21
D	0.15	0.31
E	5.00	5.59
G	0.05	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

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Suggested Pad Layout



SMB Dimensions	Value (in mm)
Z	6.7
G	1.8
X	2.3
Y	2.5
C	4.3

SMC Dimensions	Value (in mm)
Z	9.3
G	4.4
X	3.3
Y	2.5
C	6.8

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