

1.5A SURFACE MOUNT FAST RECOVERY RECTIFIER

RS2A/A - RS2M/A Vishaymas General Semiconductor

Features

- Glass Passivated Die Construction
- Fast Recovery Time For High Efficiency
- Surge Overload Rating to 50A Peak
- Ideally Suited for Automated Assembly
- Lead Free Finish/RoHS Compliant (Note 1)
- Green Molding Compound (No Halogen and Antimony)
(Note 2)

Mechanical Data

Case: SMA/SMB

Case Material: Molded Plastic. UL Flammability

Classification Rating 94V-0

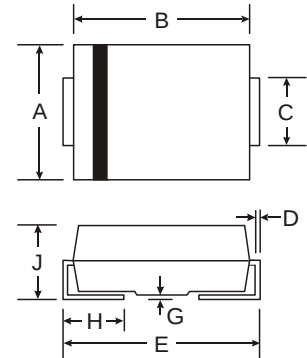
Moisture Sensitivity: Level 1 per J-STD-020

Terminals: Lead Free Plating (Matte Tin Finish).
Solderable per MIL-STD-202, Method 208

Polarity: Cathode Band or Cathode Notch

SMA Weight: 0.065 grams (approximate)

SMB Weight: 0.09 grams (approximate)



	SMA		SMB	
Dim	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	2.62	2.00	2.62
All Dimensions in mm				

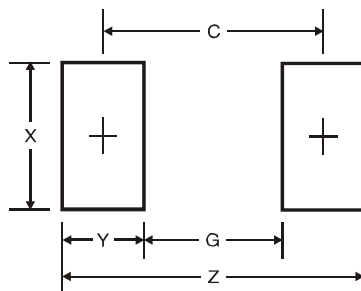
Ordering Information (Note 3)

Part Number	Case	Packaging
RS2xA-13-F	SMA	5000/Tape & Reel
RS2x-13-F	SMB	3000/Tape & Reel

*x = Device type, e.g. RS2DA-13-F (SMA package); RS2J-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.

Suggested Pad Layout



SMA Dimensions	Value(in mm)
Z	6.5
G	1.5
X	1.7
Y	2.5
C	4.0

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

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	RS2 A/AA	RS2 B/BA	RS2 D/DA	RS2 G/GA	RS2 J/JA	RS2 K/KA	RS2 M/MA	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 = 120°C	I _O	1.5							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	50							A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Terminal (Note 5)	R _{θJT}	20	°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	RS2 A/AA	RS2 B/BA	RS2 D/DA	RS2 G/GA	RS2 J/JA	RS2 K/KA	RS2 M/MA	Unit
Forward Voltage @ I _F = 1.5A	V _{FM}	1.3							V
Peak Reverse Current @ T _A = 25°C	I _{RM}	5.0							μA
at Rated DC Blocking Voltage (Note 4) @ T _A = 125°C		200							
Reverse Recovery Time (Note 6)	t _{rr}	150				250	500		ns
Typical Total Capacitance (Note 7)	C _T	30							pF

- Notes:
- Short duration pulse test used to minimize self-heating effect.
 - Reverse recovery test conditions: I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See Figure 5.
 - Thermal Resistance: Junction to terminal, unit mounted on PC board with 5.0 mm² (0.013 mm thick) copper pads as heat sink.
 - Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

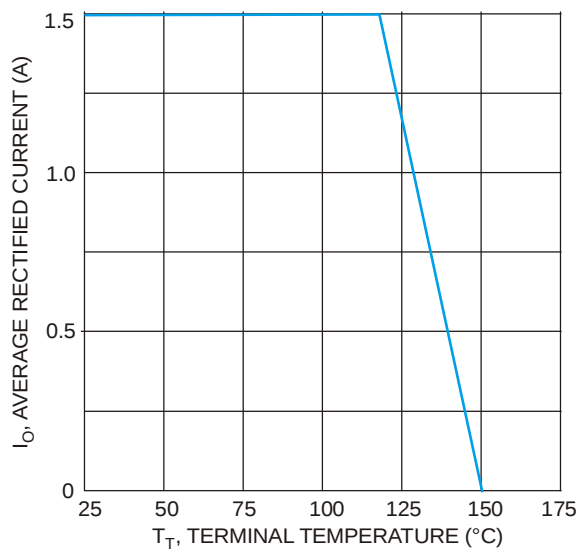


Fig. 1 Forward Current Derating Curve

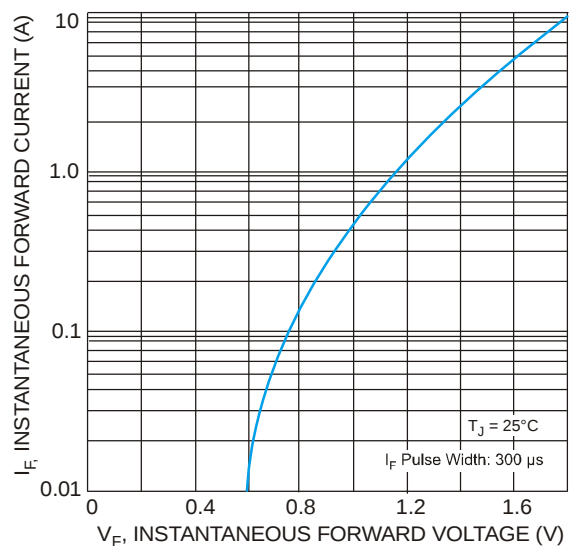


Fig. 2 Typical Forward Characteristics

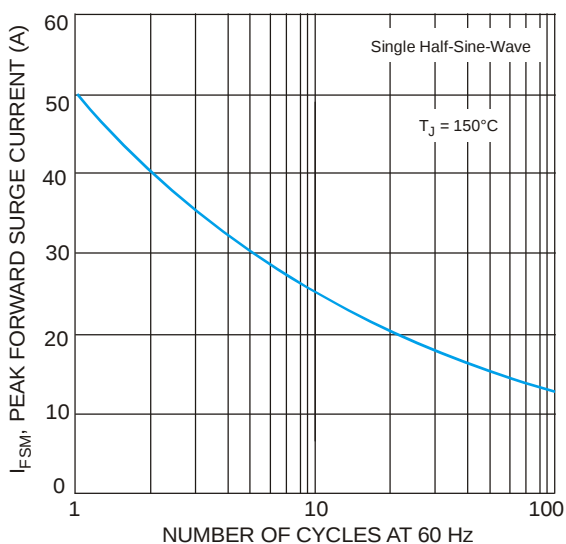


Fig. 3 Forward Surge Current Derating Curve

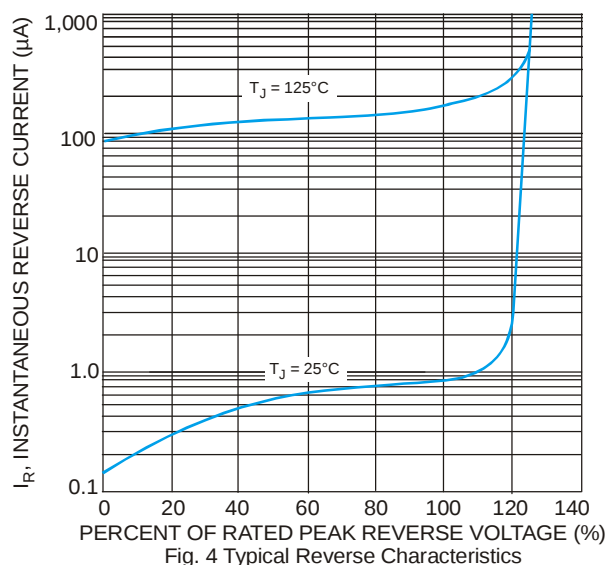
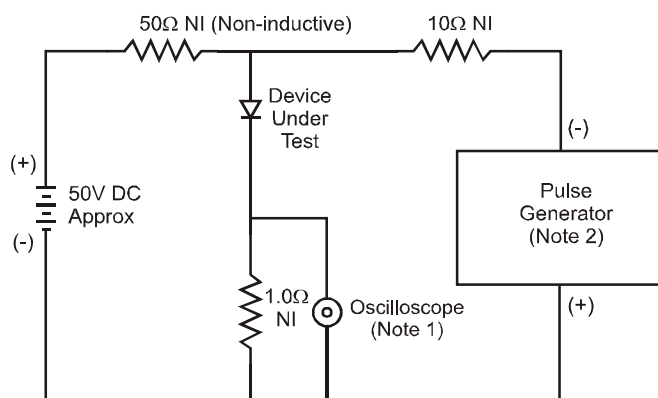
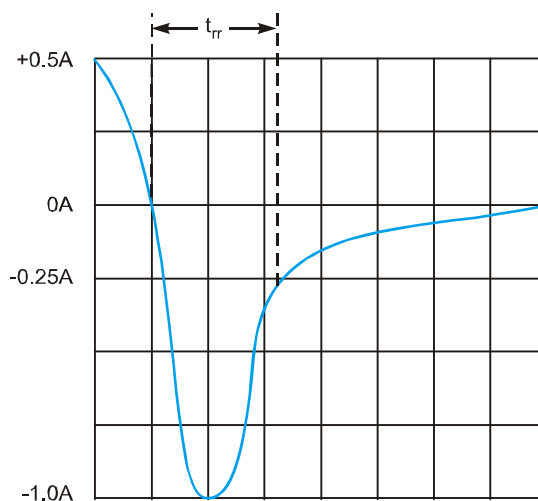


Fig. 4 Typical Reverse Characteristics



Notes:

1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 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

