Green

1.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER

Features

- Glass Passivated Die Construction for High Reliability
- Low Forward Voltage Drop
- Surge Overload Rating to 30A Peak
- Ideally Suited for Automated Assembly
- Very High Reverse Breakdown Voltage
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SMA
- 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: 0.064 grams (Approximate)

Top View

Bottom View

Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
S1V-13-F	Commercial	SMA	5,000/Tape & Reel

Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information

S1V = Product Type Marking Code
= Manufacturers' Code Marking
YWW = Date Code Marking
Y = Last Digit of Year (ex: 7 for 2017)
WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	2,000	V
RMS Reverse Voltage	$V_{R(RMS)}$	1400	V
Average Rectified Output Current @ T_T = +100°C	I_O	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	30	A
I^2t Rating for Fusing (t < 8.3ms)	I^2t	3.74	A^2S

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	50	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage(Note 7)	@ I_R = 5μA	$V_{(BR)R}$	2,000	—	—	V
Forward Voltage	@ I_F = 1.0A	V_F	—	1.0	1.3	V
Peak Reverse Leakage Current at Rated DC Blocking Voltage	@ T_A = +25°C @ T_A = +125°C	I_R	— —	0.2 37	5.0 100	μA
Typical Total Capacitance (Note 6)		C_T	—	4	—	pF

Notes: 5. Thermal resistance junction to ambient at 0.375 inch (9.5mm) lead length.
6. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
7. Short duration pulse test used to minimize self-heating effect.

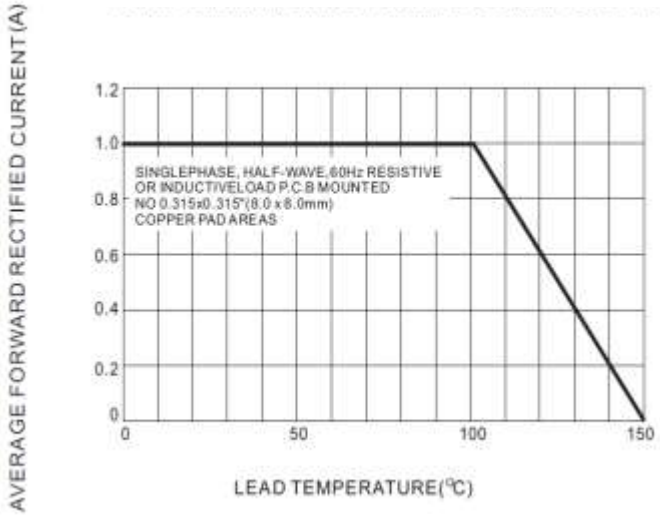


Figure 1 Maximum Average Forward Current Derating

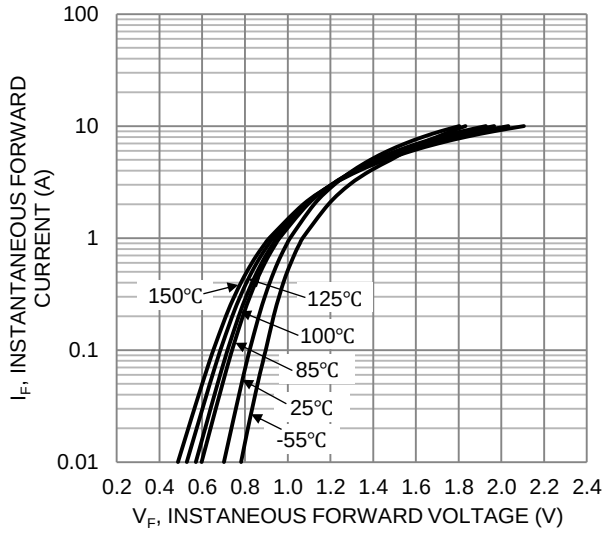


Figure 2 Typical Forward Characteristics

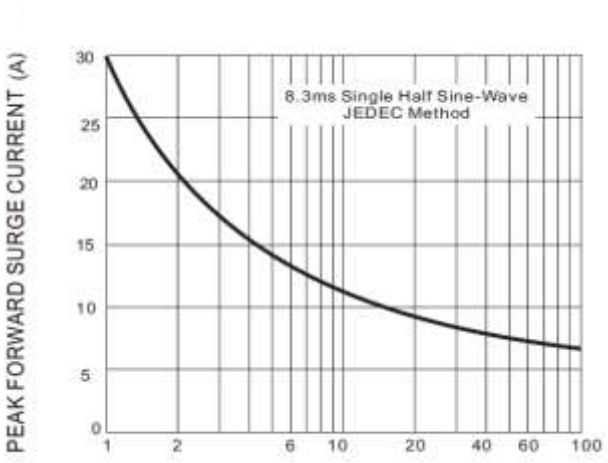


Figure 3 Maximum Non-Repetitive Surge Current

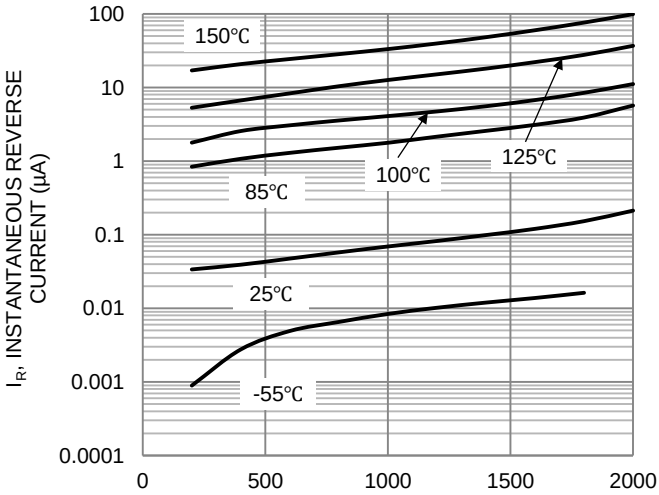


Figure 4 Typical Reverse Characteristics

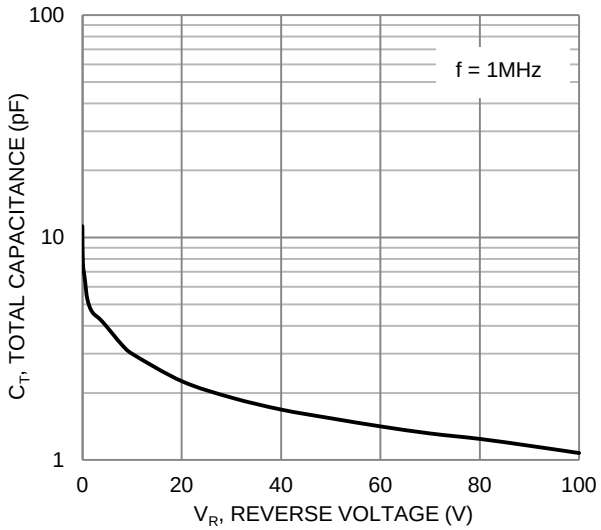
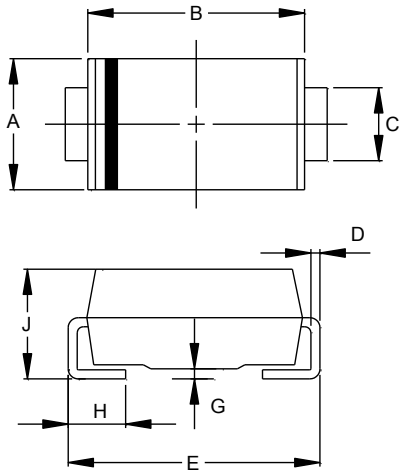


Figure 5 Typical Total Capacitance

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SMA



SMA		
Dim	**Min**	**Max**
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	1.96	2.40
All Dimensions in mm		

Suggested Pad Layout

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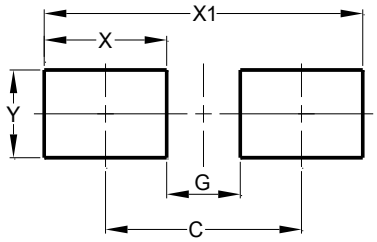
SMA



Dimensions	Value (in mm)
C	4.00
G	1.50
X	2.50
X1	6.50
Y	1.70

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to creepage and clearance distances between device terminals and PCB tracking.

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