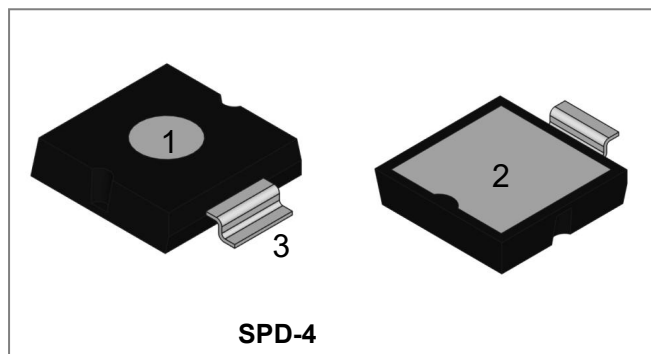


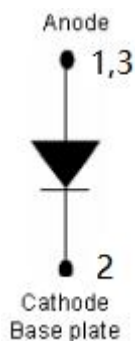
## 123SPD100A Power Surface Mount Schottky Rectifier



### Features

- 175 °C T<sub>J</sub> operation
- Low forward voltage drop
- High surge capacities
- High frequency operation
- Guaranteed reverse avalanche capability
- Low profile surface mount package
- Base plate: Pure Sn plated; Terminals: Pure Sn plated
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Schematic & Pin Configuration



### Applications

- Switching power supply
- Redundant power subsystems
- Reverse battery protection
- Converters
- Many other high current AC/DC power supplies

### Maximum Ratings (limiting values, at 25 °C unless otherwise specified)

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	-	100	V
Average Rectified Forward Current	I <sub>F(AV)</sub>	50% duty cycle @T <sub>C</sub> =116°C, rectangular wave form	120	A
Peak One Cycle Non-Repetitive Surge Current	I <sub>FSM</sub>	8.3 ms, half Sine pulse	1650	A
Non-Repetitive Avalanche Energy	E <sub>AS</sub>	T <sub>J</sub> =25°C, I <sub>AS</sub> =0.75A, L=40 mH	11.25	mJ
Repetitive Avalanche Current	I <sub>AR</sub>	I <sub>AS</sub> decaying linearly to 0 in 1 µsec Frequency limited by T <sub>J</sub> max. V <sub>A</sub> =1.5×V <sub>R</sub>	0.75	A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop *	V <sub>F1</sub>	@ 120A, Pulse, T <sub>J</sub> = 25 °C	0.82	0.87	V
	V <sub>F2</sub>	@ 120A, Pulse, T <sub>J</sub> = 125 °C	0.71	0.75	V
Reverse Current*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , Pulse, T <sub>J</sub> = 25 °C	0.6	2000	uA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , Pulse, T <sub>J</sub> = 125 °C	0.2	48.0	mA
Junction Capacitance	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	2674	3000	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

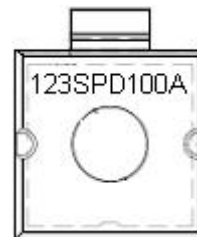
\* Pulse width < 300 μs, duty cycle < 2%

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T <sub>J</sub>	-	-55 to +175	°C
Storage Temperature	T <sub>stg</sub>	-	-55 to +175	°C
Typical Thermal Resistance Junction to Case	R <sub>θJC</sub>	DC operation	0.23	°C/W
Approximate Weight	wt	-	2	g

**Tube Specification**

Device	Package	Shipping
123SPD100A	SPD-4(Pb-Free)	64pcs/ bag

**Marking Diagram**


123SPD100A = Part Name

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**Ratings and Characteristics Curves**

Figure 1  
Typical Forward Characteristics

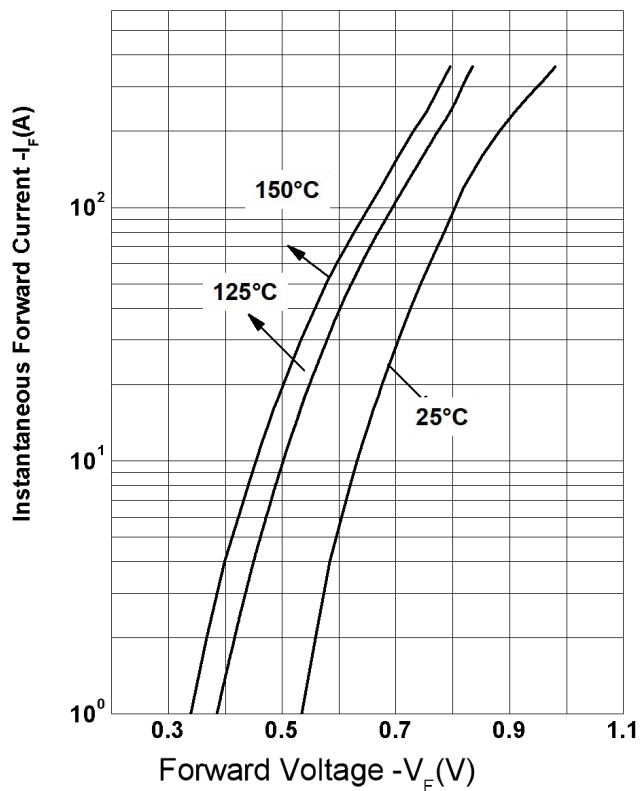


Figure 2  
Typical Reverse Characteristics

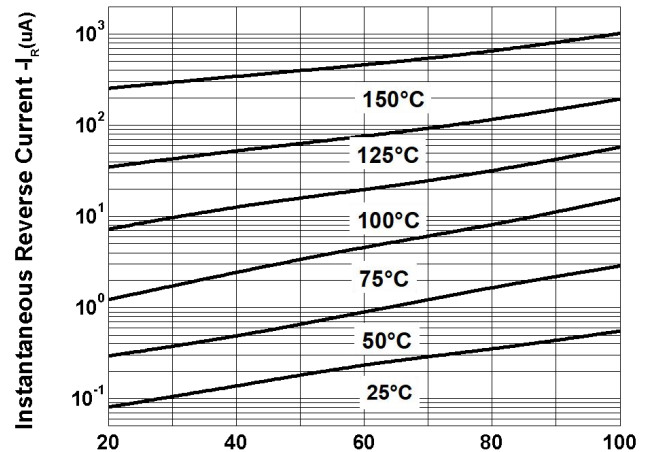
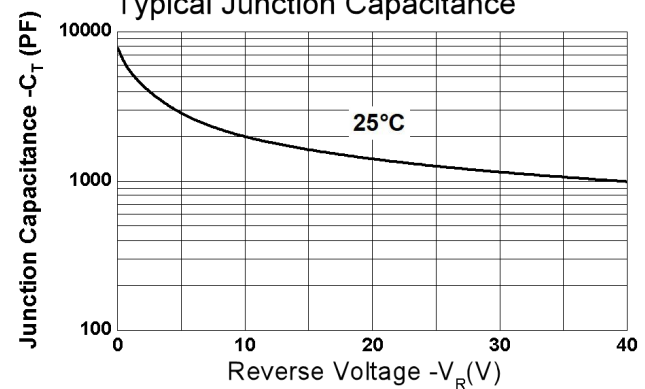
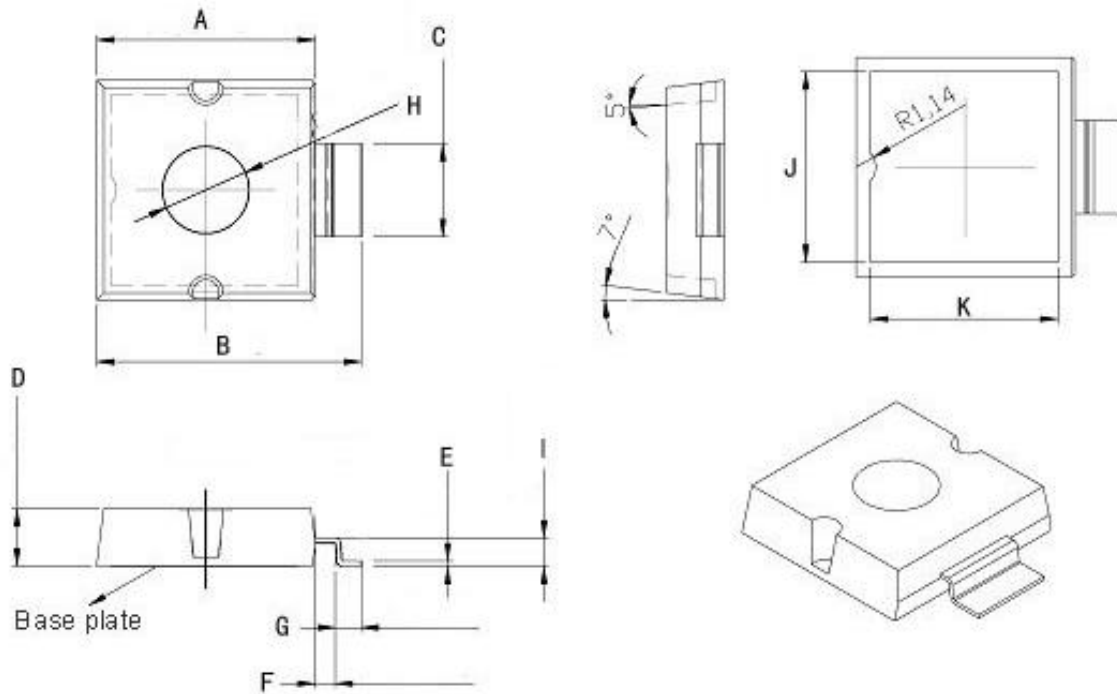


Figure 3  
Typical Junction Capacitance

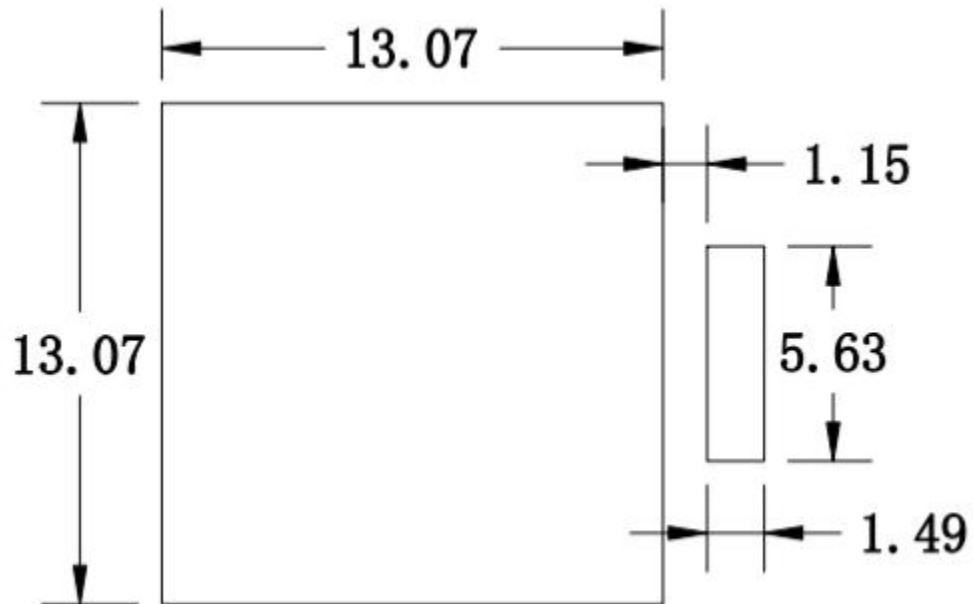


**Mechanical Dimensions SPD-4(Inches/Millimeters)**



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	12.07	13.07	0.475	0.515
B	14.71	15.71	0.579	0.619
C	5.03	5.63	0.198	0.222
D	2.73	3.33	0.107	0.131
E	0.20	0.60	0.008	0.024
F	1.15		0.045	
G	1.49		0.059	
H	5.00		0.197	
I	1.62		0.064	
J	10.92		0.430	
K	10.92		0.430	

**PAD Layout Recommend Size(Millimeters)**



**DISCLAIMER:**

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC Diode Solutions sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall SMC Diode Solutions be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC Diode Solution assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall SMC Diode Solutions be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC Diode Solutions.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC Diode Solutions.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..