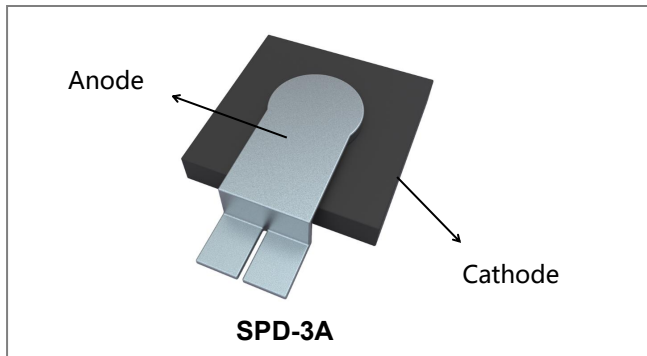


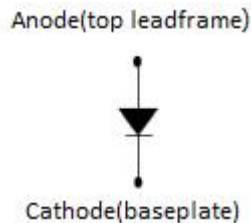
## Power Surface Mount Schottky Rectifier (30V, 120Amp)



### Features

- 150 °C T<sub>J</sub> operation
- Low forward voltage drop
- Low reverse leakage current
- 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:

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>	-	30	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> =16.9A, L=0.53mH	76	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>	16.9	A

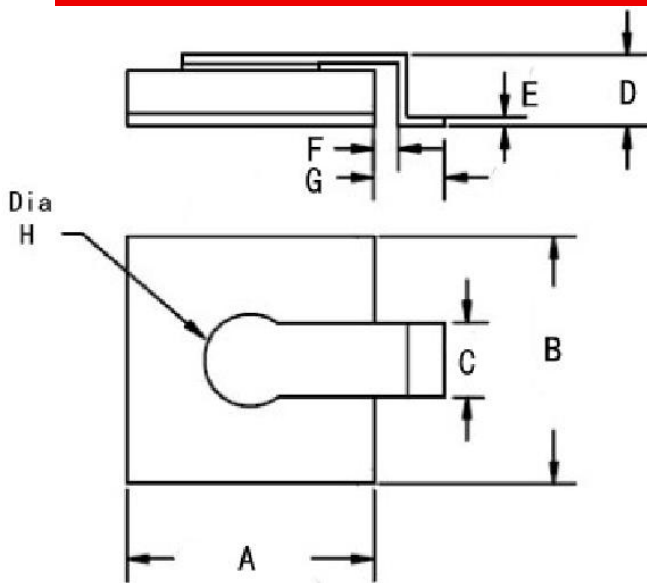
**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop *	$V_{F1}$	@ 120A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.50	0.53	V
	$V_{F2}$	@ 120A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.41	0.43	V
Reverse Current*	$I_{R1}$	@ $V_R = \text{rated } V_R$ , Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.4	12	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R$ , Pulse, $T_J = 125\text{ }^\circ\text{C}$	75	600	mA
Junction Capacitance	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	5500	6600	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/ $\mu\text{s}$

\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-	-55 to +150	$^\circ\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	0.20	$^\circ\text{C/W}$

**Mechanical Dimensions (Inches/Millimeters)**


SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	11.08	11.78	0.436	0.464
B	11.08	11.78	0.436	0.464
C	4.93	5.23	0.194	0.206
D	2.57	3.37	0.101	0.133
E	0.20	0.60	0.008	0.024
F	1.02		0.040	
G	4.52		0.178	
H	5.59		0.220	

**SPD-3A**

**Ratings and Characteristics Curves**

Figure 1  
Typical Forward Characteristics

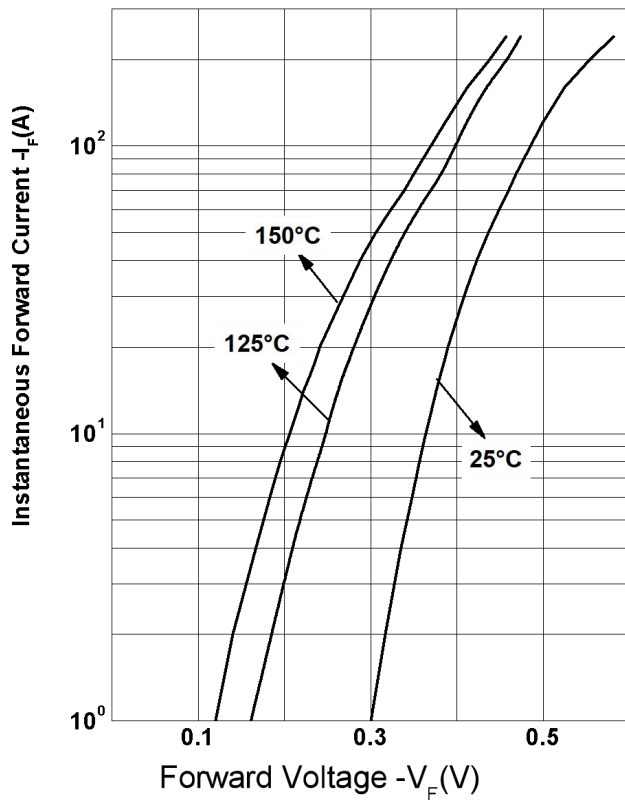


Figure 2  
Typical Reverse Characteristics

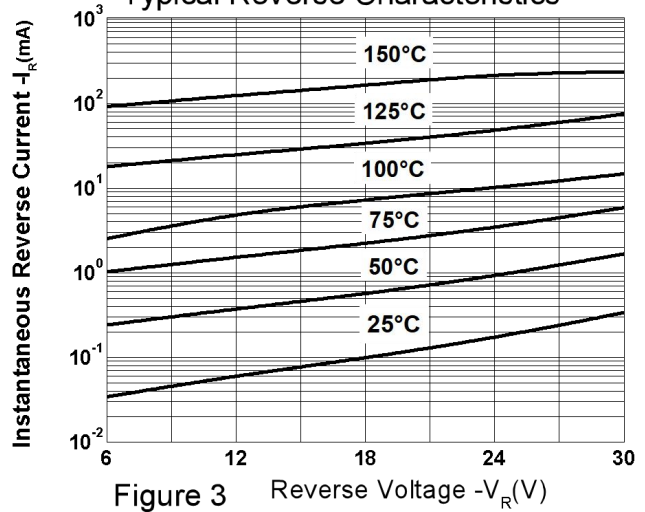
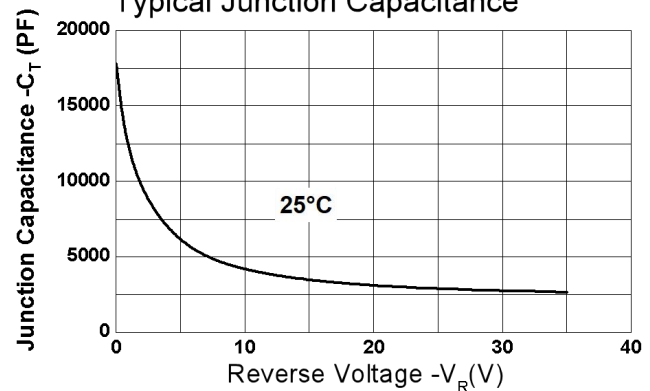


Figure 3  
Typical Junction Capacitance



**Ordering Information**

Device	Package	Shipping
122SPC030A	SPD-3A(Pb-Free)	100pcs/ box

**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..