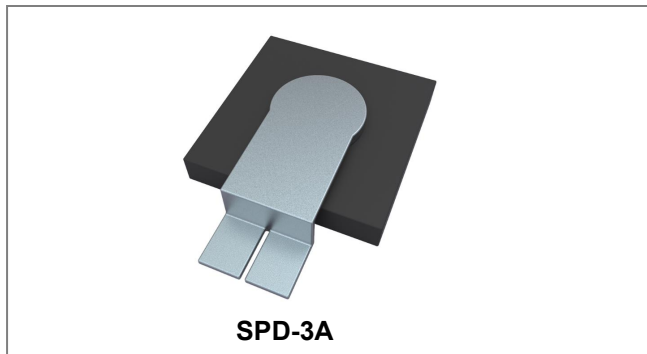


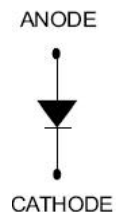
## Power Surface Mount Schottky Rectifier (45V, 120Amp)



### Features

- 150 °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
- 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<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | -   | 45   | V     |
| Average Rectified Forward Current  | I <sub>F(AV)</sub>                                     | 50% duty cycle @T <sub>C</sub> =116°C,<br>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> =11A, L=1.2mH   | 76   | mJ    |
| Repetitive Avalanche Current   | I <sub>AR</sub>  | I <sub>AS</sub> decaying linearly to 0 in 1 μ sec<br>Frequency limited by T <sub>J</sub> max. V <sub>A</sub> =1.5<br>× V <sub>R</sub> | 11   | A     |

**Electrical Characteristics:**

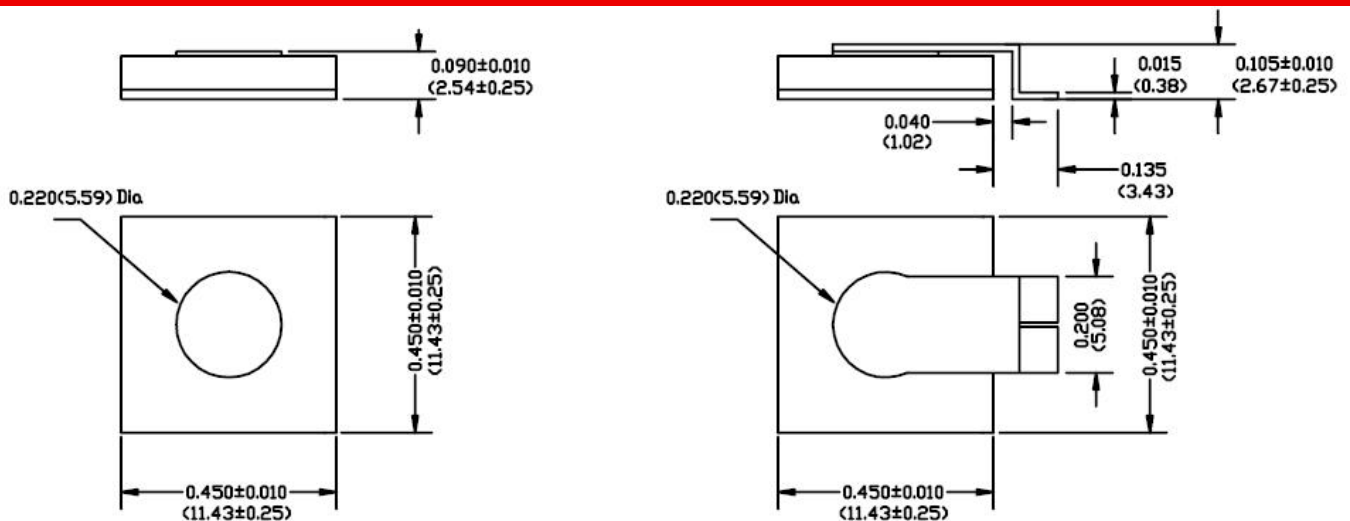
| Characteristics        | Symbol          | Condition  | Typ. | Max.   | Units |
|------------------------|-----------------|--|------|--------|-------|
| Forward Voltage Drop * | V <sub>F1</sub> | @ 120A, Pulse, T <sub>J</sub> = 25 °C                                      | 0.58 | 0.60   | V     |
|                        | V <sub>F2</sub> | @ 120A, Pulse, T <sub>J</sub> = 125 °C                                     | 0.53 | 0.57   | V     |
| Reverse Current*       | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , Pulse,<br>T <sub>J</sub> = 25 °C  | 0.2  | 9.0    | mA    |
|                        | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , Pulse,<br>T <sub>J</sub> = 125 °C | 140  | 420    | mA    |
| Junction Capacitance   | C <sub>T</sub>  | @V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C<br>f <sub>SIG</sub> = 1MHz    | 4000 | 4800   | 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 +150   | °C    |
| Storage Temperature                            | T <sub>stg</sub> | -            | -55 to +150   | °C    |
| Typical Thermal Resistance<br>Junction to Case | R <sub>θJC</sub> | DC operation | 0.20          | °C/W  |

**Mechanical Dimensions (Inches/Millimeters)**



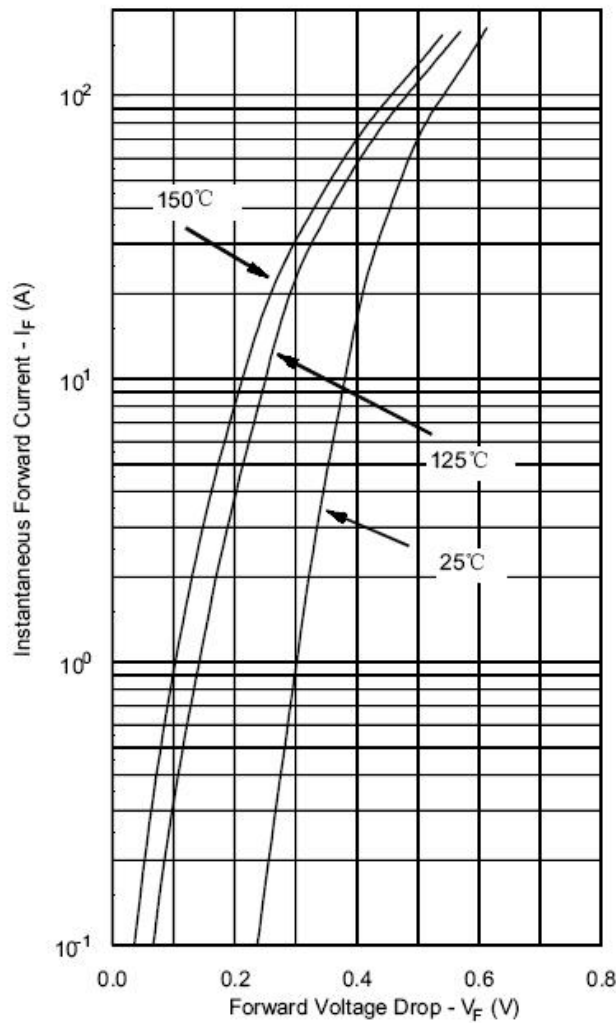
**SPD-3**

**SPD-3A**

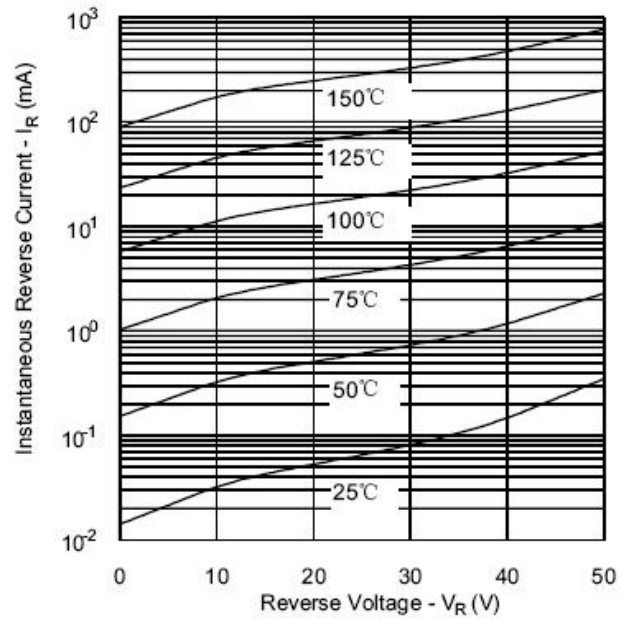
Suffix "R" Denotes Reversed Polarity

**Ratings and Characteristics Curves**

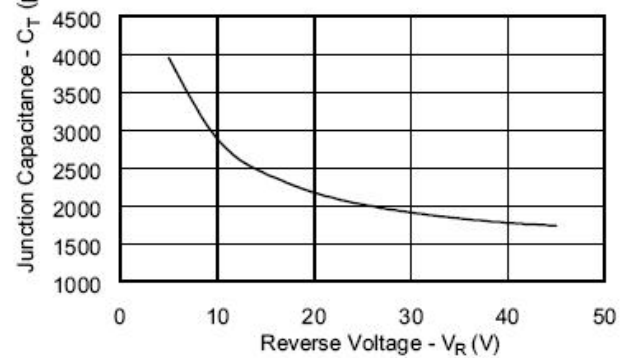
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



**Ordering Information**

| Device       | Package         | Shipping    |
|--------------|-----------------|-------------|
| 120SPC045(A) | SPD-3A(Pb-Free) | 100pcs/ box |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

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