



# Solid State Devices, Inc.

14701 Firestone Blvd \* La Mirada, Ca 90638  
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## SPD4963-1 thru SPD4963-3

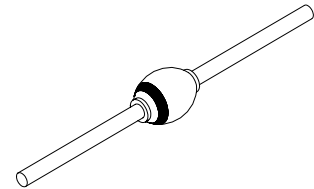
### Designer's Data Sheet

#### FEATURES:

- Fast Recovery: 130 nsec maximum
- PIV up to 800 Volts
- Low Reverse Leakage Current
- Hermetically Sealed
- Single Chip Construction
- High Surge Rating
- Low Thermal Resistance
- TX, TXV, and Space Level Screening Available

**1 AMP**  
**550 – 800 VOLTS**  
**130 nsec**  
**FAST RECOVERY**  
**RECTIFIER**

Axial



| MAXIMUM RATINGS   |           | Symbol               | Value       | Units              |
|---|-----------|----------------------|-------------|--------------------|
| DC Blocking Voltage   | SPD4963-1 | $V_R$                | 500         | Volts              |
|   | SPD4963-2 |                      | 600         |                    |
|   | SPD4963-3 |                      | 600         |                    |
| Peak Repetitive Reverse Voltage   | SPD4963-1 | $V_{BR}$             | 550         | Volts              |
|   | SPD4963-2 |                      | 670         |                    |
|   | SPD4963-3 |                      | 800         |                    |
| Average Rectified Forward Current<br>(Resistive Load, 60 Hz, Sine Wave, $T_A=25^\circ\text{C}$ )  |           | $I_O$                | 1           | Amps               |
| Peak Surge Current<br>(8.3 ms Pulse, Half Sine Wave, Superimposed on $I_O$ ; Allow junction to reach equilibrium between pulses; $T_A=25^\circ\text{C}$ ) |           | $I_{FSM}$            | 20          | Amps               |
| Operating and Storage Temperature   |           | $T_{OP}$ & $T_{stg}$ | -65 to +175 | $^\circ\text{C}$   |
| Maximum Thermal Resistance<br>Junction to Lead, $L = 0.375''$   |           | $R_{\theta JL}$      | 40          | $^\circ\text{C/W}$ |

NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: RC0051B

DOC



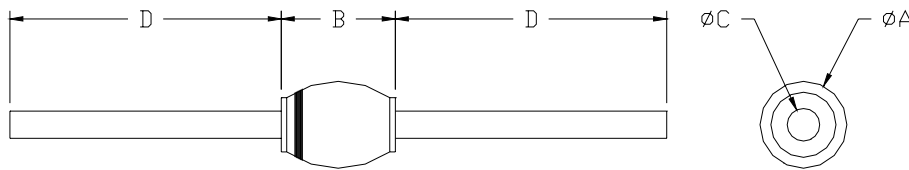
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**SPD4963-1 thru SPD4963-3**

| ELECTRICAL CHARACTERISTICS  |   | Symbol   | Min | Max  | Unit    |
|---|---|----------|-----|------|---------|
| <b>Instantaneous Forward Voltage Drop</b><br>( $I_F = 1 A_{DC}$ , $T_A = 25^\circ C$ , 300 - 500 $\mu$ sec Pulse) | SPD4963-1                                 | $V_{F1}$ | —   | 1.30 | Volts   |
|   | SPD4963-2                                 |          | —   | 1.30 |         |
|   | SPD4963-3                                 |          | —   | 1.35 |         |
| <b>Instantaneous Forward Voltage Drop</b><br>( $I_F = 60 A_{DC}$ , $T_A = 25^\circ C$ , 50 - 500 $\mu$ sec Pulse) | ALL                                       | $V_{F2}$ | —   | 10.0 | Volts   |
| <b>Reverse Breakdown Voltage</b><br>( $I_R = 100 \mu A_{DC}$ , $T_A = 25^\circ C$ , 300 $\mu$ sec min Pulse)      | SPD4963-1                                 | $V_{BR}$ | 550 | —    | Volts   |
|   | SPD4963-2                                 |          | 670 | —    |         |
|   | SPD4963-3                                 |          | 800 | —    |         |
| <b>Reverse Leakage Current</b><br>(Rated $V_R$ , 300 $\mu$ sec min Pulse)   | $T_A = 25^\circ C$<br>$T_A = 150^\circ C$ | $I_{R1}$ | —   | 2    | $\mu A$ |
|   |   | $I_{R2}$ | —   | 1    | mA      |
| <b>Storage Charge</b><br>( $I_F = 100 mA$ , $T_A = 25^\circ C$ )  |   | $Q_S$    | —   | 30   | nC      |
| <b>Reverse Recovery Time</b><br>( $I_F = 500 mA$ , $I_R = 1 A$ , $I_{RR} = 250 mA$ , $T_A = 25^\circ C$ )         |   | $t_{rr}$ | —   | 130  | ns      |

**Case Outline:**



| DIM | MIN    | MAX    |
|-----|--------|--------|
| A   | --     | 0.120" |
| B   | --     | 0.250" |
| C   | 0.027" | 0.033" |
| D   | 1.00"  | —      |

**NOTES:**

Consult manufacturing for operating curves.