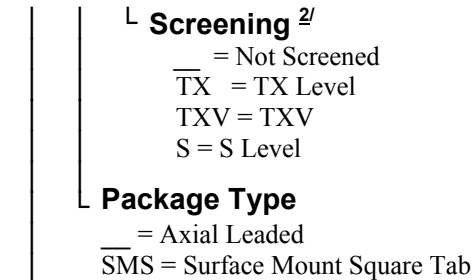



Solid State Devices, Inc.

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 Phone: (562) 404-4474 * Fax: (562) 404-1773
 ssdi@ssdi-power.com * www.ssdi-power.com

Designer's Data Sheet
Part Number/Ordering Information ^{1/}
SPD


| | |
|-----------------------|---------------|
| Family/Voltage | 5615 = 200 V |
| | 5617 = 400 V |
| | 5619 = 600 V |
| | 5621 = 800 V |
| | 5623 = 1000 V |

**SPD5615 thru SPD5623
 and
 SPD5615SMS thru SPD5623SMS**

**1.0 AMP
 200 – 1000 VOLTS
 FAST RECOVERY RECTIFIER**

FEATURES:

- **Fast Recovery: 150-500 ns Maximum ^{4/}**
- **Single Chip Construction**
- **PIV to 1000 Volts**
- **Low Thermal Resistance**
- **Low Reverse Leakage Current**
- **Hermetically Sealed**
- **High Surge Rating**
- **Available in Axial and Surface Mount Versions**
- **TX, TXV, and S-Level Screening Available**
- **Replacement for 1N5615 thru 1N5623 Series**
- **Ultra Fast and Hyper Fast Versions available**

MAXIMUM RATINGS ^{3/}

| RATING | | SYMBOL | VALUE | UNIT |
|---|---------------------------|---------------------------------|-------------|--------------------|
| Peak Repetitive Reverse Voltage And DC Blocking Voltage | SPD5615 | V_{RRM} V_{RWM} V_R | 200 | Volts |
| | SPD5617 | | 400 | |
| | SPD5619 | | 600 | |
| | SPD5621 | | 800 | |
| | SPD5623 | | 1000 | |
| Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave) | $T_A = 55^\circ\text{C}$ | I_{O1} | 1.00 | Amp |
| | $T_A = 100^\circ\text{C}$ | I_{O2} | 0.75 | |
| Peak Surge Current (8.3 msec Pulse, Half Sine Wave Superimposed on I_o , allow junction to reach equilibrium between pulses, $T_A = 100^\circ\text{C}$) | | I_{FSM} | 25 | Amps |
| Operating & Storage Temperature | | T_{OP} and T_{STG} | -65 to +175 | $^\circ\text{C}$ |
| Thermal Resistance, Junction to Lead, L = 3/8" (Axial) Junction to End Tab (SMS) | | $R_{\theta JL}$ | 38 | $^\circ\text{C/W}$ |
| | | $R_{\theta JE}$ | 7 | |

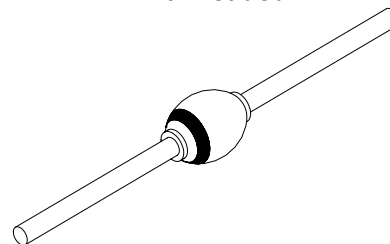
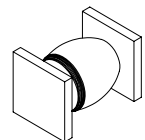
NOTES:

1/ For Ordering Information, Price, and Availability- Contact Factory.

2/ Screened to MIL-PRF-19500.

3/ Unless Otherwise Specified, All Electrical Characteristics @25 $^\circ\text{C}$.

4/ Recovery Conditions: $I_F = 0.5$ Amp, $I_R = 1.0$ Amp, I_{RR} to .25 Amp.

Axial Leaded

SMS


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

DATA SHEET #: RC0104A
DOC



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**SPD5615 thru SPD5623
 and
 SPD5615SMS thru SPD5623SMS**

ELECTRICAL CHARACTERISTICS ^{3/ 5/}

| CHARACTERISTICS | SYMBOL | VALUE | UNIT |
|--|----------|--|---------|
| Maximum Instantaneous Forward Voltage Drop ($I_F = 3A_{dc}$, 300- 500 μs Pulse, $T_A = 25^\circ C$) | V_F | 1.60 | Vdc |
| Maximum Reverse Leakage Current (Rated V_R , 300 μs Pulse Minimum , $T_A = 25^\circ C$) | I_{R1} | .5 | μA |
| Maximum Reverse Leakage Current (Rated V_R , 300 μs Pulse Minimum , $T_A = 100^\circ C$) | I_{R2} | 25 | μA |
| Junction Capacitance ($V_R = 12V_{dc}$, $T_A = 25^\circ C$, $f = 1MHz$) | C_J | SPD5615: 45 SPD5617: 35 SPD5619: 25 SPD5621: 20 SPD5623: 15 | pf |
| Maximum Reverse Recovery Time ^{4/} | t_{rr} | SPD5615: 150 SPD5617: 150 SPD5619: 250 SPD5621: 300 SPD5623: 500 | ns |

| <p>Axial Leaded Case Outline:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="3">DIMENSIONS</th> </tr> <tr> <th>DIM.</th> <th>MIN.</th> <th>MAX.</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>---</td> <td>.150"</td> </tr> <tr> <td>B</td> <td>.140</td> <td>.190"</td> </tr> <tr> <td>C</td> <td>.027"</td> <td>.033"</td> </tr> <tr> <td>D</td> <td>.95"</td> <td>---</td> </tr> </tbody> </table> | DIMENSIONS | | | DIM. | MIN. | MAX. | A | --- | .150" | B | .140 | .190" | C | .027" | .033" | D | .95" | --- | <p>Square Tab Surface Mount Case Outline:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="3">DIMENSIONS</th> </tr> <tr> <th>DIM.</th> <th>MIN.</th> <th>MAX.</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>.128"</td> <td>.132"</td> </tr> <tr> <td>B</td> <td>.190"</td> <td>.240"</td> </tr> <tr> <td>C</td> <td>.022"</td> <td>.028"</td> </tr> <tr> <td>D</td> <td>.001"</td> <td>---</td> </tr> </tbody> </table> | DIMENSIONS | | | DIM. | MIN. | MAX. | A | .128" | .132" | B | .190" | .240" | C | .022" | .028" | D | .001" | --- |
|---|------------|-------|--|------|------|------|---|-----|-------|---|------|-------|---|-------|-------|---|------|-----|---|------------|--|--|------|------|------|---|-------|-------|---|-------|-------|---|-------|-------|---|-------|-----|
| DIMENSIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIM. | MIN. | MAX. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | --- | .150" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | .140 | .190" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | .027" | .033" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | .95" | --- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIMENSIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIM. | MIN. | MAX. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | .128" | .132" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | .190" | .240" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | .022" | .028" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | .001" | --- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

NOTES:

- 1/ For Ordering Information, Price, and Availability- Contact Factory.
- 2/ Screened to MIL-PRF-19500.
- 3/ Unless Otherwise Specified, All Electrical Characteristics @25°C.

- 4/ Recovery Conditions: $I_F = 0.5$ Amp, $I_R = 1.0$ Amp, I_{RR} to .25 Amp.
- 5/ For information on operating curves, contact factory.