



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, Ca 90638
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SPD205 thru SPD230 and SPD205SMS thru SPD230SMS

**2.0 AMPS
50 – 300 VOLTS
25 ns HYPERFAST RECOVERY
RECTIFIER**

Designer's Data Sheet

Part Number/Ordering Information ^{1/}

SPD

Screening ^{2/}

 = Not Screened

TX = TX Level

TXV = TXV

S = S Level

Package Type

 = Axial Leaded

SMS = Surface Mount Square Tab

Voltage/Family

205 = 50V

210 = 100V

220 = 200V

230 = 300V

FEATURES:

- Hyper Fast Reverse Recovery: 25ns Maximum ^{4/}
- PIV to 300 Volts
- Hermetically Sealed
- Low Forward Voltage Drop
- Void Free Chip Construction
- For High Efficiency Applications
- Available in Axial & Square Tab Versions
- TX, TXV, and S-Level Screening Available ^{2/}
- Replacement for: 1N 5802, US thru 1N5806, US

MAXIMUM RATINGS ^{3/}

| RATING | SYMBOL | VALUE | UNIT |
|---|--|------------------------------------|----------------------------------|
| Peak Repetitive Reverse Voltage And DC Blocking Voltage | SPD205 SPD210 SPD220 SPD230 | V_{RRM} V_{RWM} V_R | 50 100 200 300 Volts |
| Average Rectified Forward Current (Resistive Load, 60Hz, Sine Wave, $T_A = 25^\circ C$) | I_O | 2.0 | Amps |
| Peak Surge Current (8.3ms pulse, half sine wave superimposed on I_O , allow junction to reach equilibrium between pulses, $T_A = 25^\circ C$) | I_{FSM} | 50 | Amps |
| Operating & Storage Temperature | T_J and T_{STG} | -65 to +175 | $^\circ C$ |
| Thermal Resistance | Junction to Lead for Axial, $L = .375"$ Junction to End Tab for Surface Mount | $R_{\theta JL}$ $R_{\theta JE}$ | 38 25 $^\circ C/W$ |

NOTES:

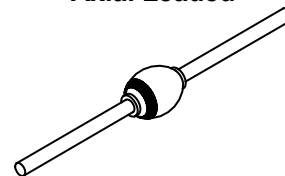
^{1/} For Ordering Information, Price, Operating Curves, and Availability- Contact Factory.

^{2/} Screened to MIL-PRF-19500.

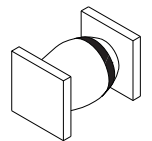
^{3/} Unless Otherwise Specified, All Electrical Characteristics @25 $^\circ C$.

^{4/} $I_F = 500mA$, $I_R = 1A$, $I_{RR} = 250mA$, $T_A = 25^\circ C$

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 #: RH0099E

DOC



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**SPD205 thru SPD230
 and
 SPD205SMS thru SPD230SMS**

ELECTRICAL CHARACTERISTICS ^{3/}

| CHARACTERISTICS | SYMBOL | VALUE | UNIT |
|--|----------------------|------------|---------------------|
| | | MAX | |
| Instantaneous Forward Voltage Drop $I_F = 2.0 \text{ Adc}, T_A = +25^\circ\text{C}, 300 - 500\mu\text{s pulse}$ $I_F = 2.0 \text{ Adc}, T_A = -55^\circ\text{C}, 300 - 500\mu\text{s pulse}$ | V_{F1} V_{F2} | 1.0 1.2 | Vdc |
| Reverse Leakage Current (Rated $V_R, T_A = +25^\circ\text{C}$) (Rated $V_R, T_A = +100^\circ\text{C}$) | I_{R1} I_{R2} | 10 1 | μA mA |
| Junction Capacitance $V_R = 10 \text{ Vdc}, f = 1\text{MHz}, T_A = 25^\circ\text{C}$ | C_J | 45 | pF |
| Maximum Reverse Recovery Time $I_F = 500\text{mA}, I_R = 1\text{A}, I_{RR} = 250\text{mA}, T_A = 25^\circ\text{C}$ | t_{rr} | 25 | ns |

NOTES:

- 1/ For Ordering Information, Price, Operating Curves, and Availability- Contact Factory.
- 2/ Screened to MIL-PRF-19500.
- 3/ Unless Otherwise Specified, All Electrical Characteristics @25°C.
- 4/ $I_F = 500\text{mA}, I_R = 1\text{A}, I_{RR} = 250\text{mA}, T_A = 25^\circ\text{C}$

Package Outlines:

| DIMENSIONS (inches) | | | DIMENSIONS (inches) | | |
|---------------------|---------|---------|---------------------|---------|---------|
| DIM. | Minimum | Maximum | DIM. | Minimum | Maximum |
| A | --- | .140 | A | .134 | .155 |
| B | .190 | .230 | B | .230 | .280 |
| C | .027 | .033 | C | .022 | .028 |
| D | 1.00 | --- | D | .002 | --- |

AXIAL

SMS