



## SOLID STATE DEVICES, INC.

14830 Valley View Blvd \* La Mirada, Ca 90638

Phone: (562) 404-7855 \* Fax: (562) 404-1773

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### Designer's Data Sheet

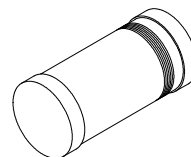
#### FEATURES:

- Hyper Fast Recovery: 5 nsec maximum
  - Subminiature Surface Mount Package
  - Round and Square Tab Mounting
  - Hermetically Sealed
  - Planar Passivated Chip
  - For High Efficiency Applications
- 
- TX, TXV, and Space Level Screening Available

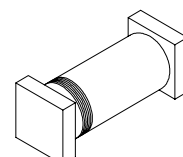
**SPD6642SM**  
**SPD6642SMS**

**300 mAMP**  
**75 VOLTS**  
**5 nsec**  
**HYPER FAST**  
**RECTIFIER**

**SURFACE MOUNT**  
**ROUND TAB**  
**"SM"**



**SURFACE MOUNT**  
**SQUARE TAB**  
**"SMS"**



| Maximum Ratings                                                                                                                                            | SYMBOL                          | VALUE       | UNITS                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------|----------------------------|
| Peak Repetitive Reverse and DC Blocking Voltage                                                                                                            | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 75          | Volts                      |
| Average Rectified Forward Current<br>(Resistive Load, 60Hz, Sine Wave, $T_A = 25^\circ\text{C}$ )                                                          | $I_o$                           | 300         | mAmps                      |
| Peak Surge Current<br>(8.3 ms Pulse, Half Sine Wave Superimposed on $I_o$ , allow junction to reach equilibrium between pulses, $T_A = 25^\circ\text{C}$ ) | $I_{FSM}$                       | 2.5         | Amps                       |
| Operating and Storage Temperature                                                                                                                          | $T_{OP}$ & $T_{STG}$            | -65 TO +200 | $^\circ\text{C}$           |
| Maximum Thermal Resistance<br>Junction to End Tab                                                                                                          | $R_{\theta JE}$                 | 0.35        | $^\circ\text{C}/\text{mW}$ |

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

**DATA SHEET #: RH0004A**

**SPD6642SM**  
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| Electrical Characteristics                                                                                                          |                      | SYMBOL   | MAXIMUM    | UNITS         |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------|------------|---------------|
| <b>Instantaneous Forward Voltage Drop</b><br>( $T_A = 25^\circ\text{C}$ , 300 - 500 $\mu\text{s}$ Pulse)                            | $I_F = 10\text{mA}$  | $V_{F1}$ | <b>1.0</b> | $V_{DC}$      |
|                                                                                                                                     | $I_F = 100\text{mA}$ | $V_{F2}$ | <b>1.2</b> |               |
| <b>Instantaneous Forward Voltage Drop</b><br>( $I_F = 10\text{mA}$ , $T_A = 150^\circ\text{C}$ , 300 - 500 $\mu\text{s}$ Pulse)     |                      | $V_{F3}$ | <b>0.8</b> | $V_{DC}$      |
| <b>Reverse Leakage Current</b><br>( $T_A = 25^\circ\text{C}$ , 300 $\mu\text{s}$ minimum Pulse)                                     | $V_R = 20\text{V}$   | $I_{R1}$ | <b>25</b>  | $\text{nA}$   |
|                                                                                                                                     | $V_R = 75\text{V}$   | $I_{R2}$ | <b>500</b> |               |
| <b>Reverse Leakage Current</b><br>( $T_A = 150^\circ\text{C}$ , 300 $\mu\text{s}$ minimum Pulse)                                    | $V_R = 20\text{V}$   | $I_{R3}$ | <b>50</b>  | $\mu\text{A}$ |
|                                                                                                                                     | $V_R = 75\text{V}$   | $I_{R4}$ | <b>100</b> |               |
| <b>Junction Capacitance</b><br>( $V_R = 1.5V_{DC}$ , $T_A = 25^\circ\text{C}$ , $f = 1\text{ MHz}$ )                                |                      | $C_J$    | <b>2.8</b> | $\text{pF}$   |
| <b>Reverse Recovery Time</b><br>( $I_F = 10\text{ mA}$ , $I_R = 10\text{ mA}$ , $I_{RR} = 1\text{ mA}$ , $T_A = 25^\circ\text{C}$ ) |                      | $t_{RR}$ | <b>5</b>   | $\text{nsec}$ |

|                                         |            |       |       |                                           |            |       |       |
|-----------------------------------------|------------|-------|-------|-------------------------------------------|------------|-------|-------|
| <b>CASE OUTLINE:<br/>ROUND TAB "SM"</b> | DIMENSIONS |       |       | <b>CASE OUTLINE:<br/>SQUARE TAB "SMS"</b> | DIMENSIONS |       |       |
|                                         | DIM        | MIN.  | MAX.  |                                           | DIM        | MIN.  | MAX.  |
|                                         | A          | .130  | .146" |                                           | A          | .180  | .200" |
|                                         | B          | .054" | .064" |                                           | B          | .065" | .085" |
|                                         | C          | .010" | .022" |                                           | C          | .022" | .028" |
|                                         | D          | .001" | --    |                                           | D          | .001" | --    |
|                                         |            |       |       |                                           |            |       |       |