



**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-4474 \* Fax: (562) 404-1773  
 ssdi@ssdi-power.com \* www.ssdi-power.com

**SUM60F thru SUM90F  
 and  
 SUM60FSMS thru SUM90FSMS**

**Designer's Data Sheet**

**Part Number/Ordering Information <sup>1/</sup>**

SUM \_ \_ \_

└ **Screening <sup>2/</sup>**  
 \_ = Not Screened  
 TX = TX Level  
 TXV = TXV  
 S = S Level

└ **Package Type**  
 \_ = Axial Leaded  
 SMS = Surface Mount Square Tab

**Voltage/Family**  
 60F = 6,000V  
 70F = 7,000V  
 80F = 8,000V  
 90F = 9,000V

**500 mA  
 6,000 thru 9,000 VOLTS  
 180 ns FAST RECOVERY  
 RECTIFIER**

- FEATURES:**
- PIV to 9,000 Volts
  - Hermetically Sealed Axial and Square Tab Surface Mount Package
  - Fast Recovery 180 nsec Maximum <sup>4/</sup>
  - Void Free Construction
  - Metallurgically Bonded
  - 175°C Maximum Operating Temperature
  - TX, TXV, and S-Level Screening Available <sup>2/</sup>
  - Also Available in Ultra Fast Versions, Consult Factory

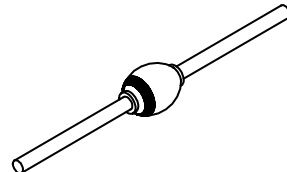
**MAXIMUM RATINGS <sup>3/ 6/</sup>**

RATING	SYMBOL	VALUE	UNIT
Peak Inverse Voltage	SUM60F and SUM60FSMS SUM70F and SUM70FSMS SUM80F and SUM80FSMS SUM90F and SUM90FSMS	PIV 6000 7000 8000 9000	Volts
Average Rectified Current	$T_A = 25^\circ\text{C}$ $T_A = 100^\circ\text{C}$	$I_{O1}$ $I_{O2}$ 500 300	mA
Surge Current (1 Cycle)		$I_{FSM}$ 25	Amps
Operating & Storage Temperature <sup>5/</sup>		$T_J$ and $T_{STG}$ -65 to +175	°C

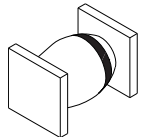
**NOTES:**

- <sup>1/</sup> For Ordering Information, Price, Operating Curves, and Availability- Contact Factory.
- <sup>2/</sup> Screened to MIL-PRF-19500.
- <sup>3/</sup> Unless Otherwise Specified, All Electrical Characteristics @25°C.
- <sup>4/</sup>  $I_F = 500\text{mA}$ ,  $I_R = 1\text{A}$ ,  $I_{RR} = 250\text{mA}$ ,  $T_A = 25^\circ\text{C}$
- <sup>5/</sup> Maximum lead/end temperature for soldering is 250°C, 3/8" from case for 5 sec. maximum.
- <sup>6/</sup> Operating and testing over 10,000 V/inch may require encapsulation or immersion in suitable dielectric material.

**Axial Leaded**



**SMS**





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<b>ELECTRICAL CHARACTERISTICS <sup>3/ 6/</sup></b>				
CHARACTERISTICS		SYMBOL	VALUE	UNIT
Maximum Forward Voltage (300µs pulse minimum)	$I_F = 500 \text{ mA}$	$V_F$	13.5	Vdc
Maximum Reverse Leakage Current ( $V_R = \text{Rated}$ )	$(T_A = +25^\circ\text{C})$ $(T_A = +100^\circ\text{C})$	$I_{R1}$ $I_{R2}$	1.0 15	µA µA
Maximum Junction Capacitance $V_R = 100 \text{ Vdc}, f = 1\text{MHz}$		$C_J$	8	pF
Maximum Reverse Recovery Time $I_F = 500\text{mA}, I_R = 1\text{A}, I_{RR} = 250\text{mA}, T_A = 25^\circ\text{C}$		$t_{rr}$	180	ns
Typical Thermal Impedance	Junction to Lead for Axial, $L = .375''$ Junction to End Tab for Surface Mount	$R_{\theta JL}$ $R_{\theta JE}$	18 18	°C/W

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**Package Outlines:**

DIMENSIONS (inches)			DIMENSIONS (inches)		
DIM.	Minimum	Maximum	DIM	Minimum	Maximum
A	.065	.165	A	.170	.180
B	---	.350	B	.330	.380
C	.047	.053	C	.020	.030
D	1.00	---	D	.002	---

**AXIAL**

**SMS**