



**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
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**SUM60UF thru SUM100UF  
 and  
 SUM60UFSMS thru SUM100UFSMS**

**Designer's Data Sheet**

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

SUM — — —

    L Screening <sup>2/</sup>  
       — = Not Screened  
       TX = TX Level  
       TXV = TXV Level  
       S = S Level

    Package Type  
       — = Axial Leaded  
       SMS = Surface Mount Square Tab

    Voltage/Family  
       60UF = 6,000V  
       70UF = 7,000V  
       80UF = 8,000V  
       90UF = 9,000V  
       100UF = 10,000V

**500 mA  
 ULTRA FAST RECOVERY RECTIFIER  
 6,000 thru 10,000 VOLTS  
 70 nsec**

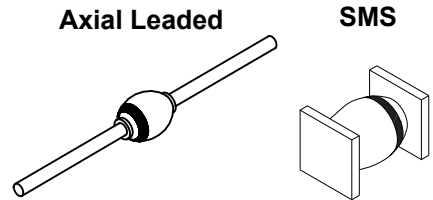
- FEATURES:**
- PIV to 10,000 Volts
  - Hermetically sealed axial and square tab surface mount package
  - Ultra fast recovery 70 nsec maximum <sup>4/</sup>
  - Void free construction
  - Metallurgically bonded
  - 175°C maximum operating temperature
  - TX, TXV, and S-level screening available <sup>2/</sup>
  - Also available in fast versions, consult factory

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

RATING		SYMBOL	VALUE	UNIT
Peak Inverse Voltage	SUM60UF and SUM60UFSMS SUM70UF and SUM70UFSMS SUM80UF and SUM80UFSMS SUM90UF and SUM90UFSMS SUM100UF and SUM100UFSMS	PIV	6000 7000 8000 9000 10000	Volts
Average Rectified Current	Axial @ L = 3/8" T <sub>L</sub> ≤ 75°C T <sub>L</sub> ≤ 115°C	Surface Mount T <sub>EC</sub> ≤ 125°C T <sub>EC</sub> ≤ 140°C	I <sub>O1</sub> I <sub>O2</sub>	500 250 mA
Surge Current (1 Cycle)		I <sub>FSM</sub>	30	Amps
Operating & Storage Temperature <sup>5/</sup>		T <sub>J</sub> and T <sub>STG</sub>	-65 to +175	°C
Typical Thermal Impedance	Junction to Lead for Axial, L = .375" Junction to End Tab for Surface Mount	R <sub>θJL</sub> R <sub>θJE</sub>	15 5	°C/W

**NOTES:**

- <sup>1/</sup> For ordering information, price, operating curves, and availability- contact factory.
- <sup>2/</sup> Screening based on MIL-PRF-19500. Screening flows available on request.
- <sup>3/</sup> Unless otherwise specified, all electrical characteristics @25°C.
- <sup>4/</sup> I<sub>F</sub> = 500mA, I<sub>R</sub> = 1A, I<sub>RR</sub> = 250mA, T<sub>A</sub> = 25°C
- <sup>5/</sup> Maximum lead/end temperature for soldering is 250°C, 3/8" from the 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.





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<b>ELECTRICAL CHARACTERISTICS <sup>3/</sup> <sub>6/</sub></b>				
<b>CHARACTERISTICS</b>		<b>SYMBOL</b>	<b>VALUE</b>	<b>UNIT</b>
Maximum Forward Voltage (pulsed)	$I_F = 500 \text{ mA}$	$V_F$	15.5	Vdc
Maximum Reverse Leakage Current ( $V_R = \text{Rated}$ )	$(T_A = +25^\circ\text{C})$	$I_{R1}$	1.0	$\mu\text{A}$
	$(T_A = +100^\circ\text{C})$	$I_{R2}$	30	$\mu\text{A}$
Maximum Junction Capacitance $V_R = 100 \text{ Vdc}$ , $f = 1\text{MHz}$ , $T_A = 25^\circ\text{C}$		$C_J$	8	pF
Maximum Reverse Recovery Time $I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , $I_{RR} = 250\text{mA}$ , $T_A = 25^\circ\text{C}$		$t_{rr}$	70	ns

**Package Outlines:**

DIMENSIONS (inches)			DIMENSIONS (inches)		
DIM.	Minimum	Maximum	DIM.	Minimum	Maximum
A	.115	.165	A	.170	.180
B	---	.310	B	.330	.380
C	.047	.053	C	.020	.030
D	1.00	---	D	.002	---

AXIAL	SMS