



**Solid State Devices, Inc.**

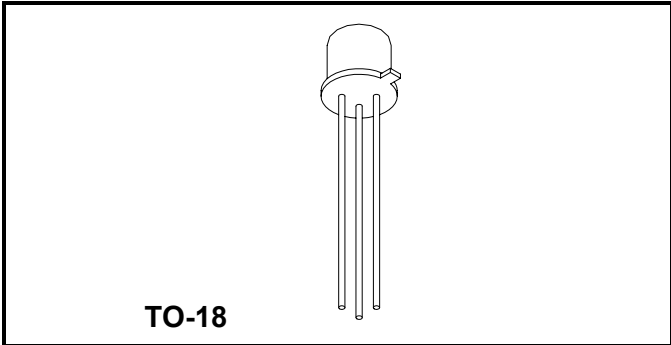
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**SFS884 thru SFS889**

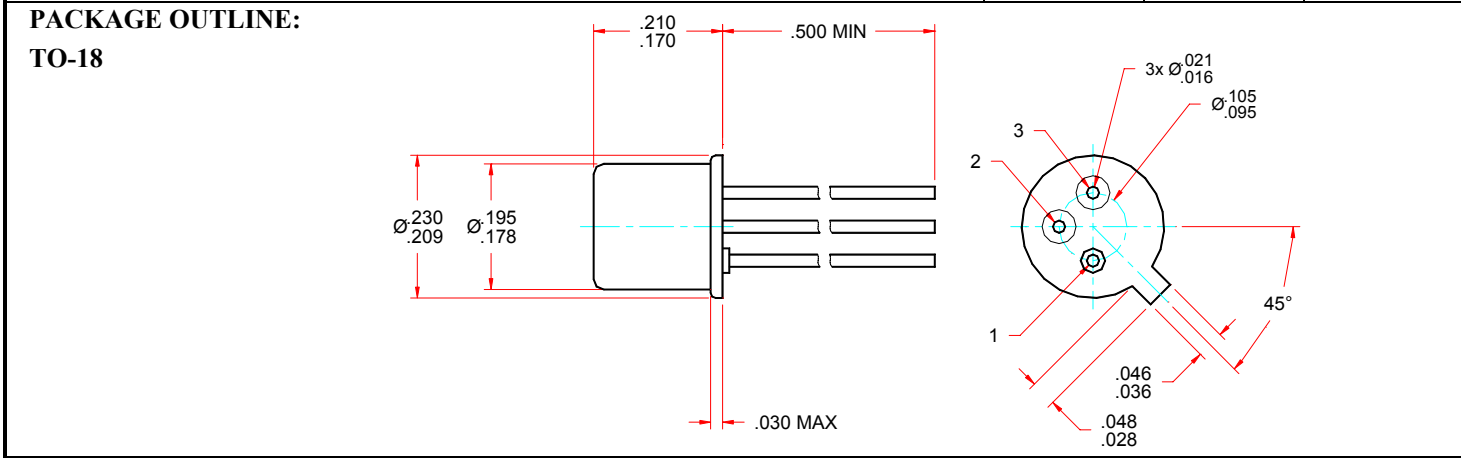
**20 AMPS  
 15 – 200 VOLTS  
 SILICON CONTROLLED  
 RECTIFIER**

**Designer's Data Sheet**

- FEATURES:**
- High Surge Current
  - High On State Current
  - High Frequency up to 400 Hz operation
  - Anode Common to Case
  - Hermetically Sealed
  - Replacement for part number 2N884 thru 2N889 and 2N876 thru 2N881 devices.
  - TX, TXV, S-Level Screening Available. Consult Factory



<b>MAXIMUM RATINGS</b> ( $T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED, $R_{GK} = 1\text{K}\Omega$ )		<b>Symbol</b>	<b>Value</b>	<b>Units</b>
<b>Peak Repetitive Reverse Voltage and DC Blocking Voltage</b>	SFS884	$V_{DRM}$	15	<b>Volts</b>
	SFS885		30	
	SFS886		60	
	SFS887	$V_{RRM}$	100	
	SFS888		150	
	SFS889		200	
<b>Average On-State Current</b>	$T_a = 30^\circ\text{C}$	$I_{F(AV)}$	0.5	<b>Amps</b>
	$T_a = 100^\circ\text{C}$		0.35	
<b>Peak Recurrent Surge Current</b> ( $T_a \leq 100^\circ\text{C}$ , $t_p = 0.2$ ms, duty cycle = 0.1 %)		$I_{FSR}$	20	<b>Amps</b>
<b>Peak Gate Current</b>		$I_{GM}$	250	<b>mA</b>
<b>Peak Gate Voltage</b>		$V_{GM}$	5	<b>Volts</b>
<b>Operating Junction Temperature Range</b>		$T_J$	-65 to +150	<b>°C</b>
<b>Storage Temperature Range</b>		$T_{stg}$	-65 to +150	<b>°C</b>





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**SFS884 thru SFS889**

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_a = 25^\circ\text{C}$ unless otherwise indicated)		<b>Symbol</b>	<b>Min</b>	<b>Typical</b>	<b>Max</b>	<b>Unit</b>
<b>Peak Reverse Blocking Current</b> (Rated $V_{RRM}$ )	$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	$I_{RRM}$	—	—	10 100	$\mu\text{A}$
<b>Peak Forward Blocking Current</b> (Rated $V_{DRM}$ )	$T_j = 25^\circ\text{C}$ $T_j = 125^\circ\text{C}$	$I_{DRM}$	—	—	10 100	$\mu\text{A}$
<b>Peak On-State Voltage</b> ( $I_F = 0.2 \text{ A Peak}$ )		$V_{TM}$	—	1.0	1.50	<b>Volts</b>
<b>Reverse Gate Current</b> ( $V_G = -2 V_{DC}$ , Anode = open)		$I_{GR}$	—	—	10	$\mu\text{A}$
<b>Gate Trigger Current</b> ( $V_D = 12 V_{DC}$ , $R_L = 33 \Omega$ )		$I_{GT}$	—	50	80	$\mu\text{A}$
<b>Gate Trigger Voltage</b> ( $V_D = 12 V_{DC}$ , $R_L = 33 \Omega$ )		$V_{GT}$	0.4	0.65	0.72	<b>Volts</b>
<b>Holding Current</b> ( $I_T = 500 \text{ mA}$ , Gate Open)		$I_H$	—	1.0	2.2	<b>mA</b>
<b>Critical Rate of Voltage Rise</b> (Linear slope up to $V_D = 67\%$ of $V_{DRM}$ , $R_{gk} = 1\text{K}\Omega$ )		$dV/dt$	—	750	—	<b>V/<math>\mu\text{s}</math></b>
<b>Commutated Turn-off Time</b> ( $I_f = 2\text{A}$ , $I_g = 200 \text{ mA}$ , $dI_g/dt = 0.1\text{A}/\mu\text{s}$ )		$t_{qt}$	—	2	—	$\mu\text{s}$

**NOTES:**

1/ Unless Otherwise Specified, All Electrical Characteristics @  $T_C = 25^\circ\text{C}$ ,  $R_{GK} = 1\text{K}\Omega$ .

**Available Part Numbers:**  
 SFS884, SFS885, SFS886, SFS887, SFS888, SFS889

<b>PIN ASSIGNMENT (Standard)</b>			
<b>Package</b>	<b>Cathode</b>	<b>Gate</b>	<b>Anode</b>
<b>TO-18</b>	Pin 1	Pin 2	Pin 3 (case)