



Solid State Devices, Inc.

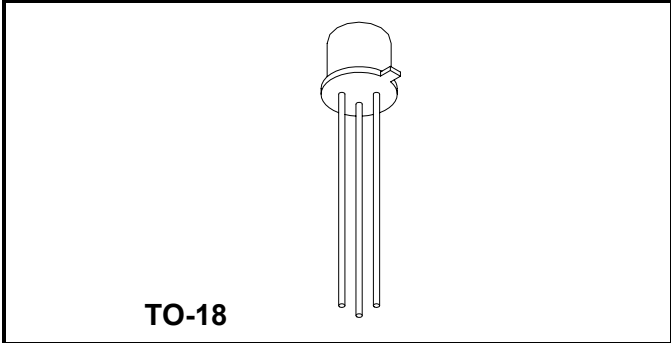
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SFS884 thru SFS889

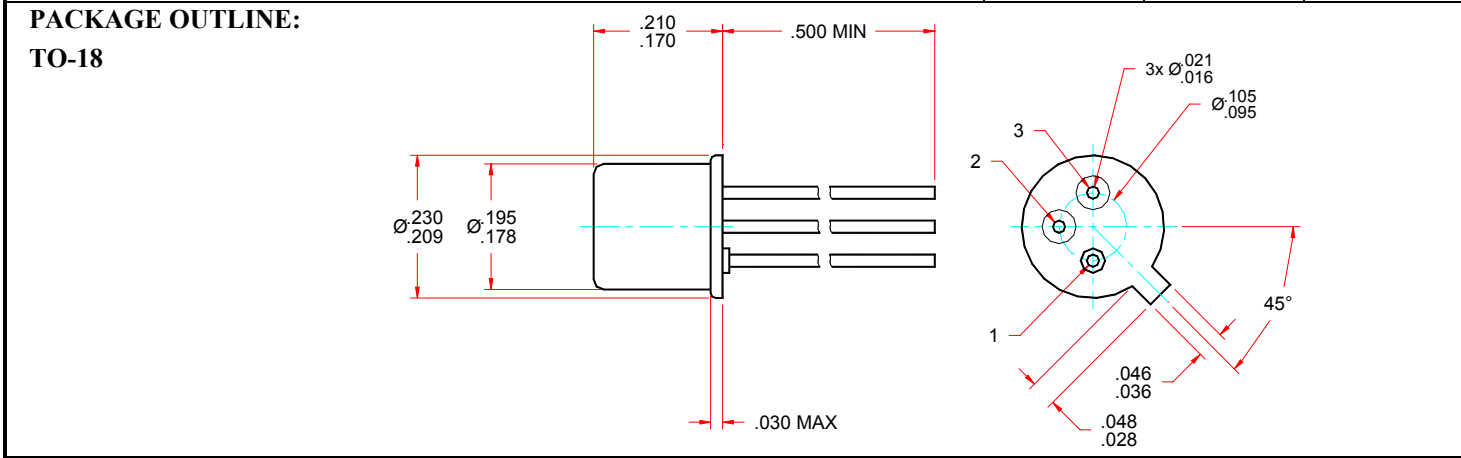
**20 AMPS
 15 – 200 VOLTS
 SILICON CONTROLLED
 RECTIFIER**

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



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





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SFS884 thru SFS889

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

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

| PIN ASSIGNMENT (Standard) | | | |
|---------------------------|---------|-------|--------------|
| Package | Cathode | Gate | Anode |
| TO-18 | Pin 1 | Pin 2 | Pin 3 (case) |
| | | | |
| | | | |