**Solid State Devices, Inc.**
14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-7855 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

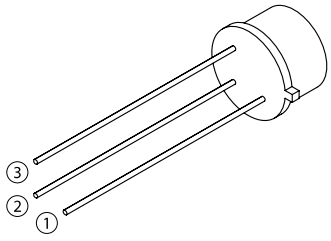
# SFF130/5

## 8 AMP / 100 Volts
## 0.18 Ω
## N-Channel Power MOSFET

**DESIGNER'S DATA SHEET**

**Part Number / Ordering Information** [1/]

**SFF130**
- **Screening** [2/]
  - __ = Not Screen
  - TX = TX Level
  - TXV = TXV Level
  - S = S Level
- **Package**
  - /5= TO-5




**TO-5**

**Features:**
- Rugged Construction with Poly Silicon Gate
- Low $R_{DS(ON)}$ and High Transconductance
- Excellent High Temperature Stability
- Very Fast Switching Speed
- Fast Recovery and Superior dV/dt Performance
- Increased Reverse Energy Capability
- Low Input and Transfer Capacitance for Easy Paralleling
- Hermetically Sealed Package
- Available in both hot case and isolated versions
- Ideal for low power applications
- TX, TXV, Space Level Screening Available [2/]
- Replacement for IRFF130 Types

| Maximum Ratings [3/] | | Symbol | Value | Units |
|---|---|---|---|---|
| **Drain – Source Voltage** | | $V_{DS}$ | 100 | **Volts** |
| **Gate – Source Voltage** | | $V_{GS}$ | ±20 | **Volts** |
| **Continuous Collector Current** | $T_C$ = 25ºC<br>$T_C$ = 100ºC | $I_D$ | 8<br>5 | **Amps** |
| **Power Dissipation** | $T_C$ = 25ºC<br>$T_A$ = 25ºC | $P_D$ | 25<br>19 | **Watts** |
| **Operating & Storage Temperature** | | **Top & Tstg** | -55 to +150 | **ºC** |
| **Thermal Resistance**<br>Junction to Case | | $R_{\theta JC}$ | 5 | **ºC/W** |
| **Single Pulse Avalanche Energy** | | $E_{AS}$ | 75 | **mJ** |

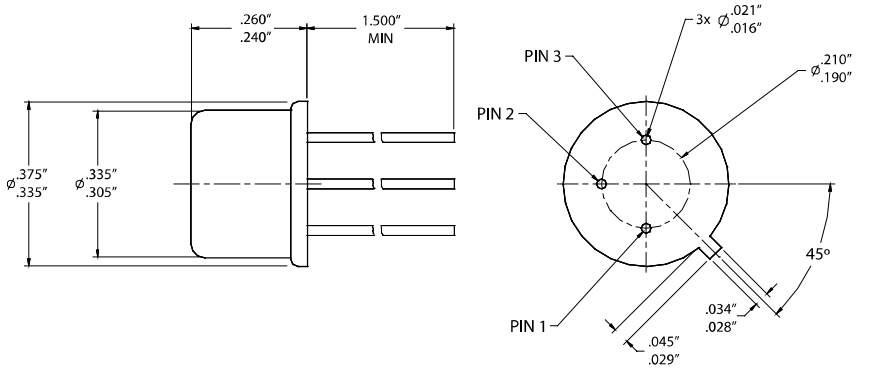
**NOTES:**

**1/** For Ordering Information, Price, Operating Curves, and Availability- Contact Factory.

**2/** Screened to MIL-PRF-19500.

**3/** Unless Otherwise Specified, All Maximum Ratings and Electrical Characteristics @25ºC.

**TO-5 Case Outline:**




| NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release. | DATA SHEET #: F00019D | DOC |
|---|---|---|

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| Electrical Characteristics @ $T_J$ = 25°C (Unless Otherwise Specified) | | Symbol | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| **Drain to Source Breakdown Voltage** (VGS=0 V, ID=250 μA) | | $BV_{DSS}$ | 100 | — | — | **Volts** |
| **Temperature Coefficient of Breakdown Voltage** | | $\frac{\Delta BV_{DSS}}{\Delta Tj}$ | — | 100 | — | **mV/ °C** |
| **Drain to Source On State Resistance** (VGS=10 V ) | ID=5A<br>ID=8A | $R_{DS(on)}$ | — | 0.13<br>0.14 | 0.18<br>0.21 | **Ω** |
| **Gate Threshold Voltage** (VDS=VGS, ID=250 μA ) | | $V_{GS(th)}$ | 2.0 | 2.8 | 4.0 | **V** |
| **Forward Transconductance** (VDS>ID(on) X RDS(on) Max, IDS= 9A) | | $g_{fs}$ | 3 | 7 | — | **mho** |
| **Zero Gate Voltage Drain Current**<br>(VDS=80% max rated voltage, VGS=0 V)<br>(VDS=80% rated VDS, VGS=0 V, TA=125°C) | | $I_{DSS}$ | —<br>— | —<br>— | 25<br>250 | **μA** |
| **Gate to Source Leakage Forward**<br>**Gate to Source Leakage Reverse** | At rated VGS | $I_{GSS}$ | —<br>— | —<br>— | +100<br>-100 | **nA** |
| **Total Gate Charge**<br>**Gate to Source Charge**<br>**Gate to Drain Charge** | VGS=10 Volts<br>50% rated VDS<br>Rated ID | $Q_g$<br>$Q_{gs}$<br>$Q_{gd}$ | 12<br>1<br>3.8 | 17<br>3.7<br>7.0 | 28<br>6.3<br>16.6 | **nC** |
| **Turn on Delay Time**<br>**Rise Time**<br>**Turn on Delay Time**<br>**Fall Time** | VDD=50%<br>Rated VDS<br>ID = 8A<br>RG= 7.5Ω | $t_{d(on)}$<br>$t_r$<br>$t_{d(off)}$<br>$t_f$ | —<br>—<br>—<br>— | 9.5<br>42<br>22<br>25 | 30<br>75<br>40<br>45 | **nsec** |
| **Diode Forward Voltage** (IS= Rated ID, VGS=0 V, TJ=25°C) | | $V_{SD}$ | — | 1 | 1.5 | **V** |
| **Diode Reverse Recovery Time**<br>**Reverse Recovery Charge** | $T_J$=25°C<br>IF=10A<br>Di/dt=100A/μsec | $t_{rr}$<br>$Q_{RR}$ | —<br>— | 120<br>0.7 | 300<br>3 | **nsec**<br>**nC** |
| **Input Capacitance**<br>**Output Capacitance**<br>**Reverse Transfer Capacitance** | VGS=0 Volts<br>VDS=25 Volts<br>f=1 MHz | $C_{iss}$<br>$C_{oss}$<br>$C_{rss}$ | —<br>—<br>— | 650<br>250<br>44 | —<br>—<br>— | **pF** |

**For thermal derating curves and other characteristics please contact SSDI Marketing Department.**

**Available Part Number:**

**SFF130/5**

| PIN ASSIGNMENT (Standard) | | | |
|---|---|---|---|
| **Package** | **Drain** | **Source** | **Gate** |
| **TO-5** | Pin 3 | Pin 1 | Pin 2 |
| | | | |
| | | | |