



**Solid State Devices, Inc.**

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 Phone: (562) 404-7855 \* Fax: (562) 404-1773  
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**SFF130/5**

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

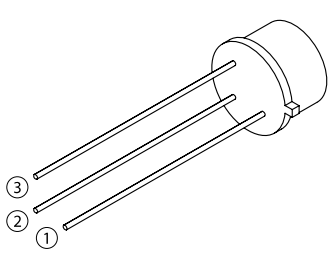
**DESIGNER'S DATA SHEET**

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

**SFF130**

└─ Screening <sup>2/</sup>  
 └─ = Not Screen  
     TX = TX Level  
     TXV = TXV Level  
     S = S Level

└─ Package  
 /5= TO-5



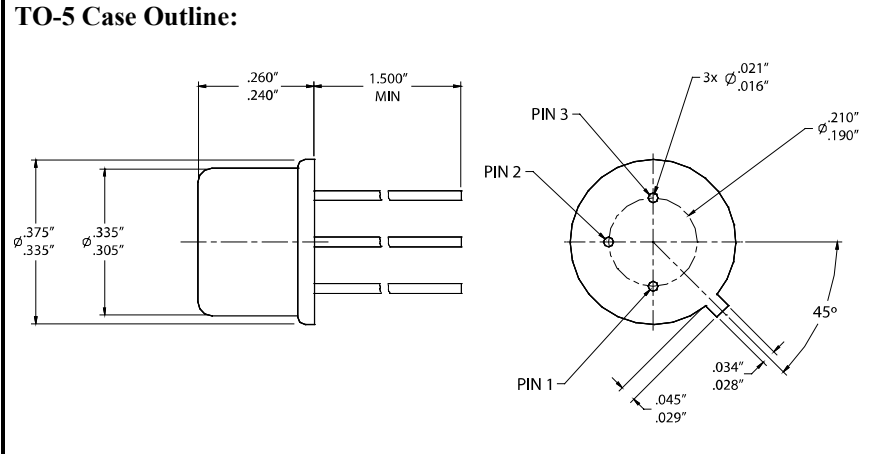
**TO-5**

- Features:**
- Rugged Construction with Poly Silicon Gate
  - Low R<sub>DS(ON)</sub> 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 <sup>2/</sup>
  - Replacement for IRFF130 Types

Maximum Ratings <sup>3/</sup>		Symbol	Value	Units
Drain – Source Voltage		V <sub>DS</sub>	100	Volts
Gate – Source Voltage		V <sub>GS</sub>	±20	Volts
Continuous Collector Current	T <sub>C</sub> = 25°C T <sub>C</sub> = 100°C	I <sub>D</sub>	8 5	Amps
Power Dissipation	T <sub>C</sub> = 25°C T <sub>A</sub> = 25°C	P <sub>D</sub>	25 19	Watts
Operating & Storage Temperature		Top & Tstg	-55 to +150	°C
Thermal Resistance Junction to Case		R <sub>θJC</sub>	5	°C/W
Single Pulse Avalanche Energy		E <sub>AS</sub>	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 @25°C.



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

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

**Available Part Number:**  
SFF130/5

**PIN ASSIGNMENT (Standard)**

<b>Package</b>	<b>Drain</b>	<b>Source</b>	<b>Gate</b>
<b>TO-5</b>	Pin 3	Pin 1	Pin 2

**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**