



**Solid State Devices, Inc.**

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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

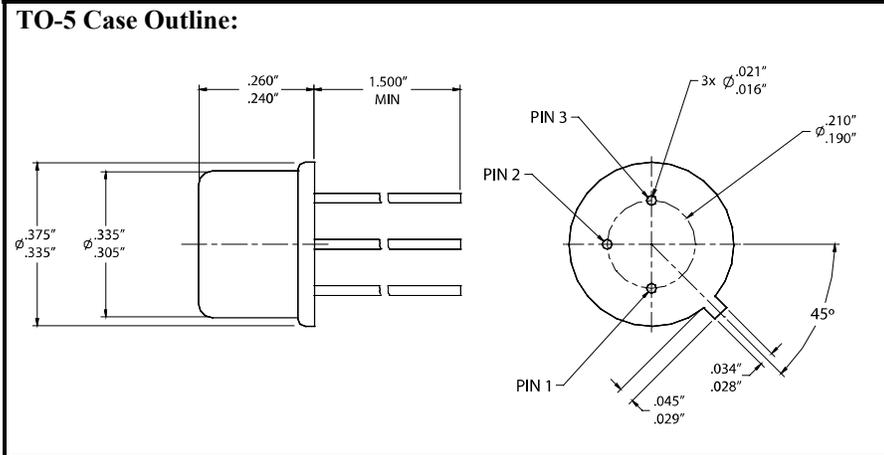
**Package**  
 /5= TO-5

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