



PRELIMINARY

SOLID STATE DEVICES, INC

14849 Firestone Boulevard · La Mirada, CA 90638  
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

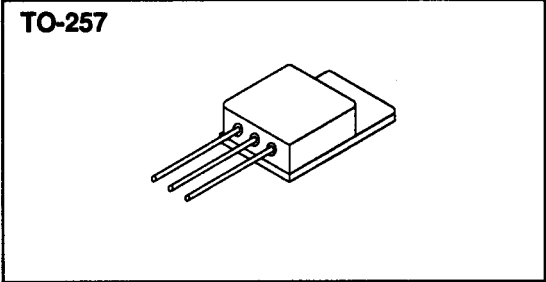
**SFF044J**

**Designer's Data Sheet**

**FEATURES:**

- Rugged construction with poly silicon gate
- Low RDS(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
- TX, TXV and Space Level screening available
- Replaces: IRFY044 Types

**35 AMP  
60 VOLT  
0.035 Ω  
N-CHANNEL  
POWER MOSFET**



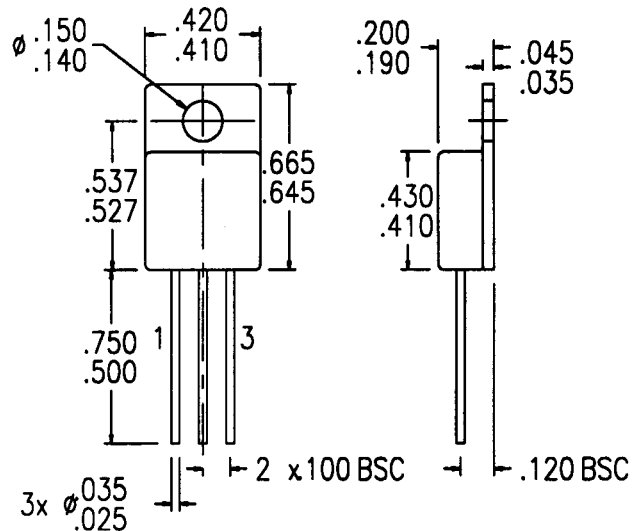
**MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V <sub>DS</sub>	60	Volts
Gate to Source Voltage	V <sub>GS</sub>	±20	Volts
Continuous Drain Current	I <sub>D</sub>	35	Amps
Operating and Storage Temperature	Top & Tstg	-55 to +175	°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	2	°C/W
Total Device Dissipation @ TC=25°C	P <sub>d</sub>	63	Watts
Total Device Dissipation @ TC=55°C		48	

**PACKAGE OUTLINE: TO-257**

**PIN OUT:**

- PIN 1: DRAIN**
- PIN 2: SOURCE**
- PIN 3: GATE**



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: F00031 A

MED

**SFF044J**

PRELIMINARY

**SOLID STATE DEVICES, INC**14849 Firestone Boulevard · La Mirada, CA 90638  
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424**ELECTRICAL CHARACTERISTICS @ T<sub>J</sub>=25° C (Unless Otherwise Specified)**

RATING		SYMBOL	MIN	TYP	MAX	UNIT
<b>Drain to Source Breakdown Voltage</b> (V <sub>GS</sub> =0 V, I <sub>D</sub> =250μA)		<b>BV<sub>DSS</sub></b>	60	---	---	<b>V</b>
<b>Drain to Source on State Resistance</b> (V <sub>GS</sub> =10 V, I <sub>D</sub> = 33 A)		<b>R<sub>DS(on)</sub></b>	---	0.028	0.035	<b>Ω</b>
<b>On State Drain Current</b> (V <sub>DS</sub> > I <sub>D(on)</sub> X R <sub>DS(on)</sub> Max, V <sub>GS</sub> =10 V)		<b>I<sub>D(on)</sub></b>	35	---	---	<b>A</b>
<b>Gate Threshold Voltage</b> (V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA)		<b>V<sub>GS(th)</sub></b>	2.0	2.5	4.0	<b>V</b>
<b>Forward Transconductance</b> (V <sub>DS</sub> ≥ 50V, I <sub>DS</sub> = 33 A)		<b>g<sub>fs</sub></b>	15	25	---	<b>S(Ω)</b>
<b>Zero Gate Voltage Drain Current</b> (V <sub>DS</sub> =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> =150°C)		<b>I<sub>DSS</sub></b>	---	---	250 1000	<b>μA</b>
<b>Gate to Source Leakage Forward</b> <b>Gate to Source Leakage Reverse</b>	At rated V <sub>GS</sub>	<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>	V <sub>GS</sub> =10 Volts 80% rated V <sub>DS</sub> Rated I <sub>D</sub>	<b>Q<sub>g</sub></b> <b>Q<sub>gs</sub></b> <b>Q<sub>gd</sub></b>	---	69 14 39	100 21 58	<b>nC</b>
<b>Turn on Delay Time</b> <b>Rise Time</b> <b>Turn Off Delay Time</b> <b>Fall Time</b>	V <sub>DD</sub> =50% rated V <sub>DS</sub> rated I <sub>D</sub> R <sub>G</sub> = 9.1Ω	<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>	---	21 140 50 88	32 210 75 130	<b>nsec</b>
<b>Diode Forward Voltage</b> (I <sub>S</sub> =rated I <sub>D</sub> , V <sub>GS</sub> =0 V, T <sub>J</sub> =25°C)		<b>V<sub>SD</sub></b>	---	---	2.5	<b>V</b>
<b>Diode Reverse Recovery Time</b> <b>Reverse Recovery Charge</b>	T <sub>J</sub> =25°C I <sub>F</sub> =rated I <sub>D</sub> di/dt=100 A/ sec	<b>t<sub>rr</sub></b> <b>Q<sub>RR</sub></b>	54 0.23	110 0.53	250 1.2	<b>nsec</b> <b>μC</b>
<b>Input Capacitance</b> <b>Output Capacitance</b> <b>Reverse Transfer Capacitance</b>	V <sub>GS</sub> =0 Volts V <sub>DS</sub> =25 Volts f= 1 MHz	<b>C<sub>iss</sub></b> <b>C<sub>oss</sub></b> <b>C<sub>rss</sub></b>	---	2500 1200 310	---	<b>pF</b>

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