



**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

**DESIGNER'S DATA SHEET**

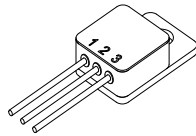
**Part Number / Ordering Information <sup>1/</sup>**

**SFL044 J**

Screening <sup>2/</sup> \_\_ = Not Screen  
 TX = TX Level  
 TXV = TXV Level  
 S = S Level  
 Lead Option <sup>3/</sup> \_\_ = Straight  
 UB = Up Bend  
 DB = Down Bend

Package: TO-257

TO-257 Pin Out: Pin1: Drain  
 Pin2: Source  
 Pin3: Gate



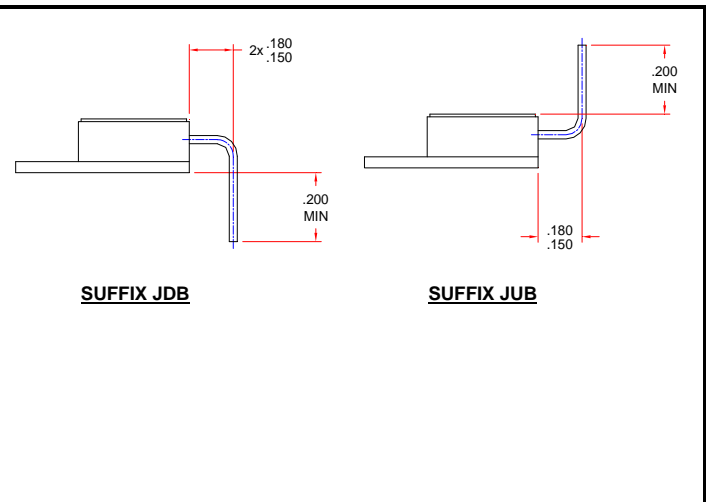
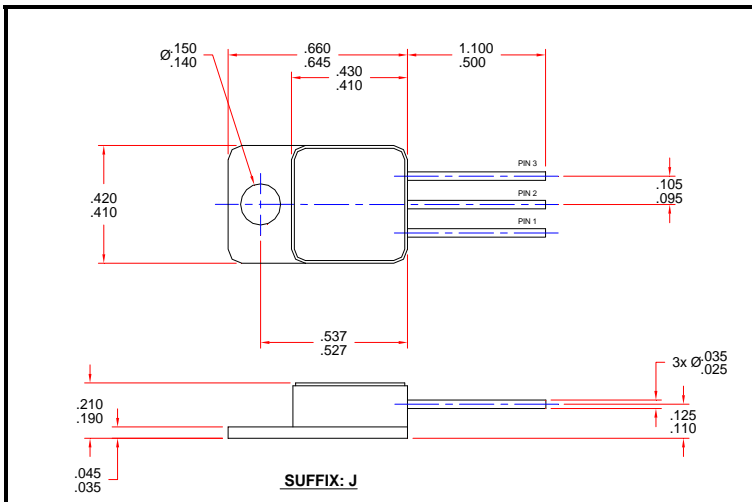
**SFL044J**

**30 AMP / 60 Volts / 0.030 Ω  
 N-Channel, Logic Level  
 POWER MOSFET**

**Features:**

- Logic Level Gate Drive
- Rugged Construction with Polysilicon 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 Surface Mount Power Package
- Ceramic Seals Available for Improved Hermeticity
- TX, TXV, Space Level Screening Available
- Replacement for IRLIZ44G Types

Maximum Ratings		Symbol	Value	Units
Drain to Source Voltage		V <sub>DS</sub>	60	Volts
Gate to Source Voltage		V <sub>GS</sub>	±10	Volts
Continuous Drain Current @ V <sub>GS</sub> = 5V		I <sub>D</sub>	30	Amps
Operating & Storage Temperature		Top & Tstg	-55 to +175	°C
Thermal Resistance, Junction to Case		R <sub>θJC</sub>	2	°C/W
Power Dissipation	T <sub>C</sub> = 25°C	P <sub>D</sub>	63	W
	T <sub>C</sub> = 55°C		48	



Notes: 1/ For ordering information, Price, and Availability, Contact Factory.  
 2/ Screened to MIL-PRF-19500.  
 3/ Per Leg.



**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

**SFL044J**

<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>	60	—	—	<b>Volts</b>
<b>Drain to Source On State Resistance</b> (VGS=5 V, ID=18A)		<b>R<sub>DS(on)1</sub></b>	—	0.026	0.030	<b>Ω</b>
<b>Drain to Source On Resistance</b> (VGS=4 V, ID= 15A)		<b>R<sub>DS(on)2</sub></b>		0.034	0.040	<b>Ω</b>
<b>Gate Threshold Voltage</b> (VDS=VGS, ID= 250μA)		<b>V<sub>GS(th)</sub></b>	1.0	1.5	2.0	<b>V</b>
<b>Forward Transconductance</b> (VDS>10V, IDS=18A)		<b>g<sub>fs</sub></b>	22	35	—	<b>S(mho)</b>
<b>Zero Gate Voltage Drain Current</b> (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=150°C)		<b>I<sub>DSS</sub></b>	— —	— —	25 250	<b>μA</b>
<b>Gate to Source Leakage Forward</b>	At rated VGS	<b>I<sub>GSS</sub></b>	—	—	+100	<b>nA</b>
<b>Gate to Source Leakage Reverse</b>			—	—	-100	
<b>Total Gate Charge</b>	VGS= 5 Volts 80% rated VDS ID= 51 A	<b>Q<sub>g</sub></b>	—	50	66	<b>nC</b>
<b>Gate to Source Charge</b>		<b>Q<sub>gs</sub></b>	—	10	12	
<b>Gate to Drain Charge</b>		<b>Q<sub>gd</sub></b>	—	38	43	
<b>Turn on Delay Time</b>	VDD=50% Rated VDS ID= 51 A RG= 4.6Ω RD= 0.56Ω	<b>td<sub>(on)</sub></b>	—	17	—	<b>nsec</b>
<b>Rise Time</b>		<b>tr</b>	—	230	—	
<b>Turn on Delay Time</b>		<b>td<sub>(off)</sub></b>	—	42	—	
<b>Fall Time</b>		<b>tf</b>	—	110	—	
<b>Diode Forward Voltage</b> (IS= Rated ID, VGS=0 V, TJ=25°C)		<b>V<sub>SD</sub></b>	—	—	2.5	<b>V</b>
<b>Diode Reverse Recovery Time</b>	T <sub>J</sub> =25°C, IF=51A di/dt=100A/μsec	<b>t<sub>rr</sub></b>	—	100	180	<b>nsec</b>
<b>Input Capacitance</b>	VGS=0 Volts VDS=25 Volts f=1 MHz	<b>C<sub>iss</sub></b>	—	3300	—	<b>pF</b>
<b>Input Capacitance</b>		<b>C<sub>oss</sub></b>	—	1200	—	
<b>Reverse Transfer Capacitance</b>		<b>C<sub>rss</sub></b>	—	200	—	

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