



PRELIMINARY

SOLID STATE DEVICES, INC

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

**SFF150/3**

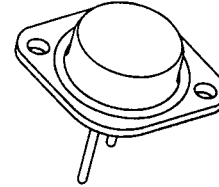
**30 AMP  
 100 VOLTS  
 0.055 Ω  
 N-CHANNEL  
 POWER MOSFET**

**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: IRF150 Types

TO-3



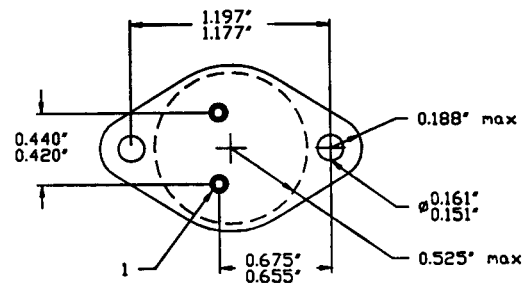
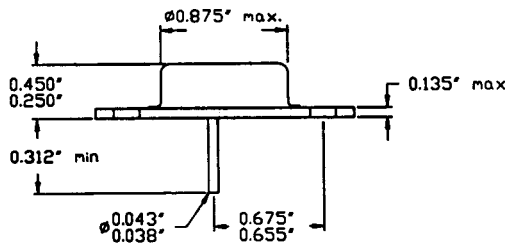
**MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V <sub>DS</sub>	100	Volts
Gate to Source Voltage	V <sub>GS</sub>	± 20	Volts
Continuous Drain Current	I <sub>D</sub>	30	Amps
Operating and Storage Temperature	Top & Tstg	-55 to +150	°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	0.83	°C/W
Total Device Dissipation @ TC=25°C	P <sub>D</sub>	150	Watts
Total Device Dissipation @ TC=55°C		114	

**PACKAGE OUTLINE: TO-3**

**PIN OUT:**

PIN 1: SOURCE  
 PIN 2: GATE  
 CASE: DRAIN



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

DATA SHEET #: F00045 B

MED

**SFF150/3**

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
Drain to Source Breakdown Voltage (V <sub>GS</sub> =0 V, I <sub>D</sub> =250μA)		BV <sub>DSS</sub>	100	---	---	V
Drain to Source on State Resistance (V <sub>GS</sub> =10 V, I <sub>D</sub> =20 A)		R <sub>DS(on)</sub>	---	---	0.055	Ω
On State Drain Current (V <sub>DS</sub> > I <sub>D(on)</sub> X R <sub>DS(on)</sub> Max, V <sub>GS</sub> =10 V)		I <sub>D(on)</sub>	30	---	---	A
Gate Threshold Voltage (V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA)		V <sub>GS(th)</sub>	2	---	4	V
Forward Transconductance (V <sub>DS</sub> > I <sub>D(on)</sub> X R <sub>DS(on)</sub> Max, I <sub>DS</sub> =20 A)		g <sub>fs</sub>	9	11	---	S(Ω)
Zero Gate Voltage Drain Current (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> =125°C)		I <sub>DSS</sub>	---	---	250 1000	μA
Gate to Source Leakage Forward	At rated V <sub>GS</sub>	I <sub>GSS</sub>	---	---	100	nA
Gate to Source Leakage Reverse			---	---	100	
Total Gate Charge	V <sub>GS</sub> =10 Volts 80% rated V <sub>DS</sub> Rated I <sub>D</sub>	Q <sub>g</sub>	---	63	120	nC
Gate to Source Charge		Q <sub>gs</sub>	---	27	---	
Gate to Drain Charge		Q <sub>gd</sub>	---	36	---	
Turn on Delay Time	V <sub>DD</sub> = 24 V I <sub>D</sub> = 20 A R <sub>G</sub> = 6.2 Ω	t <sub>d(on)</sub>	---	---	35	nsec
Rise Time		t <sub>r</sub>	---	---	100	
Turn Off Delay Time		t <sub>d(off)</sub>	---	---	125	
Fall Time		t <sub>f</sub>	---	---	100	
Diode Forward Voltage (I <sub>S</sub> = 40 A, V <sub>GS</sub> =0 V, T <sub>J</sub> =25°C)		V <sub>SD</sub>	---	---	2.5	V
Diode Reverse Recovery Time	T <sub>J</sub> =25°C I <sub>F</sub> =40 A di/dt=100 A/μsec	t <sub>rr</sub>	---	600	---	nsec
Reverse Recovery Charge		Q <sub>RR</sub>	---	3.3	---	μC
Input Capacitance	V <sub>GS</sub> =0 Volts V <sub>DS</sub> =25 Volts f= 1 MHz	C <sub>iss</sub>	---	2000	3000	pF
Output Capacitance		C <sub>oss</sub>	---	1000	1500	
Reverse Transfer Capacitance		C <sub>rss</sub>	---	350	500	

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