



PRELIMINARY

SOLID STATE DEVICES, INC

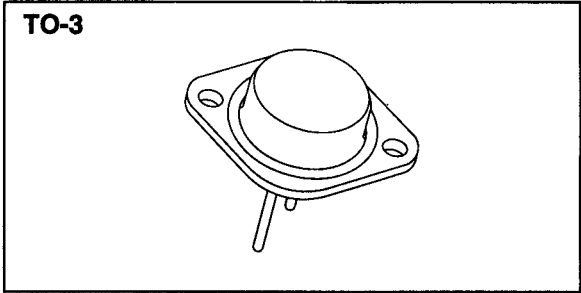
14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

SFF75N10/3

**75 AMP
100 VOLTS
0.025 Ω
N-CHANNEL
POWER MOSFET**

Designer's Data Sheet

- FEATURES:**
- Rugged construction with polysilicon 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 power package
 - TX, TXV and Space Level screening available
 - Replaces: IXTH75N10 Types



MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	100	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current	I _D	75	Amps
Operating and Storage Temperature	Top & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	0.5	°C/W
Total Device Dissipation @ TC=25°C Total Device Dissipation @ TC=55°C	P _D	250 190	Watts
Repetitive Avalanche Energy	E _{AR}	30	mJ

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 #: F00163 B

MED

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ELECTRICAL CHARACTERISTICS @ T_J=25°C (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (V _{GS} =0 V, I _D =250μA)		BV _{DSS}	100	---	---	V
Drain to Source on State Resistance (V _{GS} =10 V)	I _D =37.5A I _D =75 A	R _{DS(on)}	---	---	0.025 0.030	Ω
On State Drain Current (V _{DS} > I _{D(on)} X R _{DS(on)} Max, V _{GS} =10 V)		I _{D(on)}	75	---	---	A
Gate Threshold Voltage (V _{DS} ≥ V _{GS} , I _D =4mA)		V _{GS(th)}	2.0	---	4.0	V
Forward Transconductance (V _{DS} > I _{D(on)} X R _{DS(on)} Max, I _{DS} =50% rated I _D)		g _{fs}	25	30	---	S(Ω)
Zero Gate Voltage Drain Current (V _{DS} =max rated voltage, V _{GS} =0 V) (V _{DS} =80% rated V _{DS} , V _{GS} =0 V, T _A =125°C)		I _{DSS}	---	---	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated V _{GS}	I _{GSS}	---	---	+200 -200	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	V _{GS} =10 Volts 50% rated V _{DS} 50% Rated I _D	Q _g Q _{gs} Q _{gd}	---	160 16 50	260 70 160	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	V _{DD} =50% rated V _{DS} 50% rated I _D R _G =6.2Ω V _{GS} =10V	t _{d(on)} t _r t _{d(off)} t _f	---	30 35 100 40	40 100 120 80	nsec
Diode Forward Voltage (I _S =rated I _D , V _{GS} =0 V, T _J =25°C)		V _{SD}	---	1.3	1.75	V
Diode Reverse Recovery Time Reverse Recovery Charge	T _J =25°C I _F =10 A di/dt=100 A/μsec	t _{rr} Q _{RR}	---	120 ---	200 ---	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	V _{GS} =0 Volts V _{DS} =25 Volts f= 1 MHz	C _{iss} C _{oss} C _{rss}	---	4500 1600 800	---	pF

SAFE OPERATING AREA (S.O.A.)
T_C = 25 C, D.C. CONDITION

