



PRELIMINARY

SOLID STATE DEVICES, INC

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

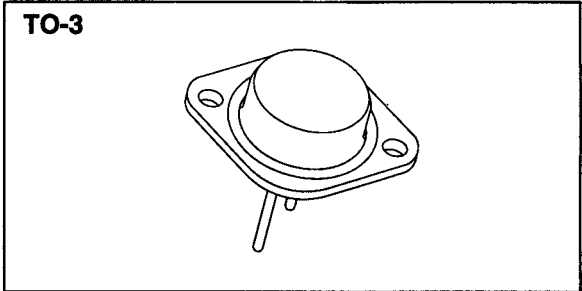
SFF75N10/3

**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	T _{OP} & 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 (VGS=0 V, ID=250μA)	BVDSS	100	---	---	V
Drain to Source on State Resistance (VGS=10 V) ID=37.5A ID=75 A	RDS(on)	---	---	0.025 0.030	Ω
On State Drain Current (VDS > ID(on) X RDS(on) Max, VGS=10 V)	ID(on)	75	---	---	A
Gate Threshold Voltage (VDS ≥ VGS, ID=4mA)	VGS(th)	2.0	---	4.0	V
Forward Transconductance (VDS > ID(on) X RDS(on) Max, IDS=50% rated ID)	gfs	25	30	---	S(Ω)
Zero Gate Voltage Drain Current (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125°C)	IDSS	---	---	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS IGSS	---	---	+200 -200	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	VGS=10 Volts 50% rated VDS 50% Rated ID Qg Qgs Qgd	---	160 16 50	260 70 160	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	VDD=50% rated VDS 50% rated ID RG=6.2Ω VGS=10V td(on) tr td(off) tf	---	30 35 100 40	40 100 120 80	nsec
Diode Forward Voltage (IS=rated ID, VGS=0 V, T _J =25°C)	VSD	---	1.3	1.75	V
Diode Reverse Recovery Time Reverse Recovery Charge	T _J =25°C IF=10 A di/dt=100 A/μsec trr QRR	---	120 ---	200 ---	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	VGS=0 Volts VDS=25 Volts f= 1 MHz Ciss Coss Crss	---	4500 1600 800	---	pF

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

