



PRELIMINARY

SOLID STATE DEVICES, INC

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

Designer's Data Sheet

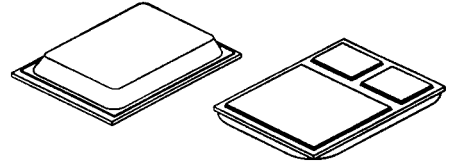
FEATURES:

- 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
- Ceramic Seals for improved hermeticity
- Hermetically sealed power surface mount package
- TX, TXV and Space Level screening available
- Replaces: IXTH50N20 Type

SFF50N20B

50 AMP 200 VOLTS 0.050 Ω N-CHANNEL POWER MOSFET

MILPACK 2



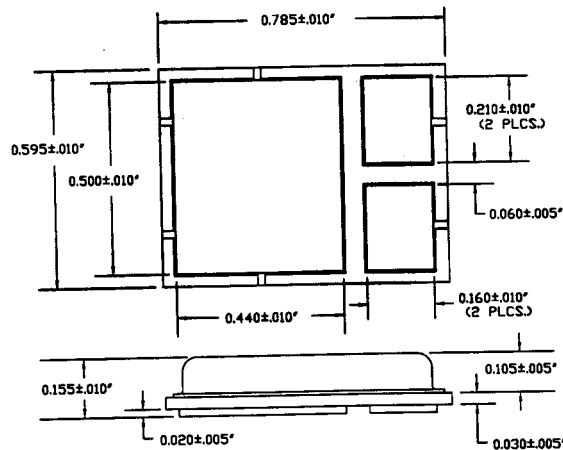
MAXIMUM RATINGS:

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	200	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current	I _D	50	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	P _D	250	Watts
Total Device Dissipation @ TC=55°C		190	

PACKAGE OUTLINE: MILPACK 2

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 #: F00137 C

MED

SFF50N20B

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**SOLID STATE DEVICES, INC**14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424**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)		BV _{DSS}	200	---	---	V
Drain to Source on State Resistance (VGS=10 V, ID=60% Rated ID)		R _{DS(on)}	---	---	0.05	Ω
On State Drain Current (V _{DS} > I _{D(on)} X R _{DS(on)} Max, VGS=10 V)		I _{D(on)}	50	---	---	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 ID)		g _{fs}	20	25	---	S(τ)
Zero Gate Voltage Drain Current (V _{DS} =max rated voltage, VGS=0 V) (V _{DS} =80% rated V _{DS} , VGS=0 V, T _A =125°C)		I _{DSS}	---	---	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS	I _{GSS}	---	---	+100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	VGS=10 Volts 50% rated VDS 50% Rated ID	Q _g Q _{gs} Q _{gd}	---	190 35 95	220 50 120	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	t _{d(on)} t _r t _{d(off)} t _f	---	28 33 110 30	35 40 130 35	nsec
Diode Forward Voltage (I _S =rated ID, VGS=0 V, T _J =25°C)		V _{SD}	---	---	1.5	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}	---	---	225 ---	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	VGS=0 Volts VDS=25 Volts f= 1 MHz	C _{iss} C _{oss} C _{rss}	---	4400 800 285	---	pF

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