



PRELIMINARY

SOLID STATE DEVICES, INC

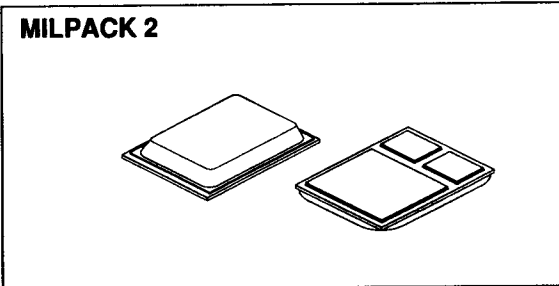
**SFF40N30B**

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

**Designer's Data Sheet**

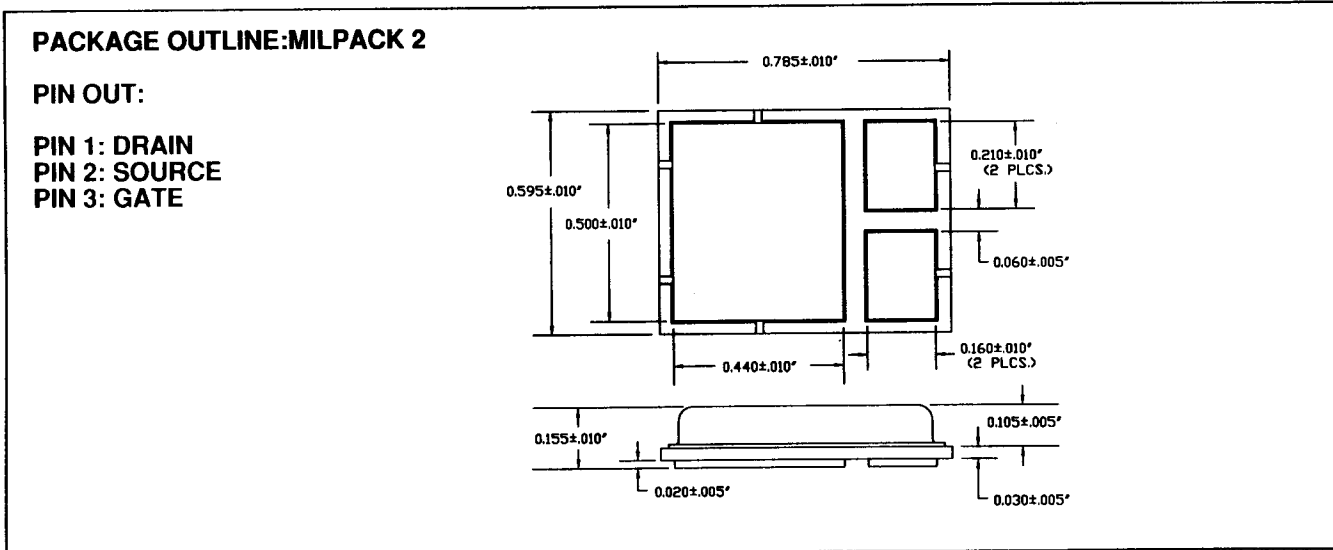
- FEATURES:**
- Rugged construction with polysilicon gate
  - Low RDS(on) and high transconductance
  - Excellent high temperature stability
  - Very fast switching speed
  - Fast recovery and superior dv/dt performance
  - Increased reverse energy capability
  - Low input and transfer capacitance for easy paralleling
  - Ceramic Seals for improved hermeticity
  - Hermetically sealed power surface mount package
  - TX, TXV and Space Level screening available
  - Replaces: IXTH40N30 Types

**40 AMP  
300 VOLTS  
0.10 Ω  
N-CHANNEL  
POWER MOSFET**



**MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V <sub>DS</sub>	300	Volts
Gate to Source Voltage	V <sub>GS</sub>	±20	Volts
Continuous Drain Current	I <sub>D</sub>	40	Amps
Operating and Storage Temperature	Top & Tstg	-55 to +150	°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	0.5	°C/W
Total Device Dissipation @ TC=25°C	P <sub>D</sub>	250	Watts
Total Device Dissipation @ TC=55°C		190	



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

**DATA SHEET #: F00149 C**

**MED**

# SFF40N30B

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## ELECTRICAL CHARACTERISTICS @ T<sub>J</sub>=25 °C (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
<b>Drain to Source Breakdown Voltage</b> (VGS=0 V, ID=250μA)		<b>BVDSS</b>	300	---	---	<b>V</b>
<b>Drain to Source on State Resistance</b> (VGS=10 V, ID=50% Rated ID)		<b>RDS(on)</b>	---	---	0.10	<b>Ω</b>
<b>On State Drain Current</b> (VDS > ID(on) X RDS(on) Max, VGS=10 V)		<b>ID(on)</b>	40	---	---	<b>A</b>
<b>Gate Threshold Voltage</b> (VDS ≥ VGS, ID=4mA)		<b>VGS(th)</b>	2.0	---	4.0	<b>V</b>
<b>Forward Transconductance</b> (VDS > ID(on) X RDS(on) Max, IDS=50% rated ID)		<b>gfs</b>	22	25	---	<b>S(Ω)</b>
<b>Zero Gate Voltage Drain Current</b> (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125°C)		<b>IDSS</b>	---	---	250 1000	<b>μA</b>
<b>Gate to Source Leakage Forward</b> <b>Gate to Source Leakage Reverse</b>	At rated VGS	<b>IGSS</b>	---	---	+100 -100	<b>nA</b>
<b>Total Gate Charge</b> <b>Gate to Source Charge</b> <b>Gate to Drain Charge</b>	VGS=10 Volts 50% rated VDS 50% Rated ID	<b>Qg</b> <b>Qgs</b> <b>Qgd</b>	---	177 28 78	200 50 105	<b>nC</b>
<b>Turn on Delay Time</b> <b>Rise Time</b> <b>Turn Off Delay Time</b> <b>Fall Time</b>	VDD=50% rated VDS 50% rated ID RG= 2.0 Ω VGS=10V	<b>td(on)</b> <b>tr</b> <b>td(off)</b> <b>tf</b>	---	30 60 175 45	50 90 250 90	<b>nsec</b>
<b>Diode Forward Voltage</b> (IS=rated ID, VGS=0 V, TJ=25°C)		<b>VSD</b>	---	---	1.5	<b>V</b>
<b>Diode Reverse Recovery Time</b> <b>Reverse Recovery Charge</b>	TJ=25°C IF=rated ID di/dt=100 A/μsec	<b>trr</b> <b>QRR</b>	---	---	325 ---	<b>nsec</b> <b>μC</b>
<b>Input Capacitance</b> <b>Output Capacitance</b> <b>Reverse Transfer Capacitance</b>	VGS=0 Volts VDS=25 Volts f= 1 MHz	<b>Ciss</b> <b>Coss</b> <b>Crss</b>	---	4800 745 283	---	<b>pF</b>

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