



PRELIMINARY

SOLID STATE DEVICES, INC

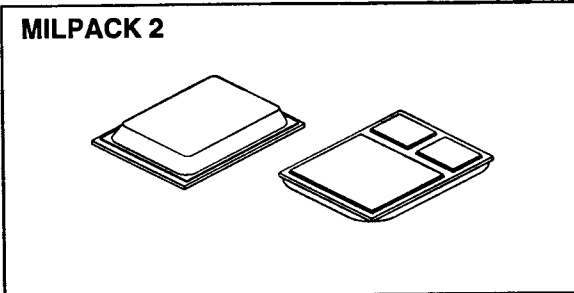
14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

SFF10N100B

**10 AMP
1000 VOLTS
1.2 Ω
N-CHANNEL
POWER MOSFET**

Designer's Data Sheet

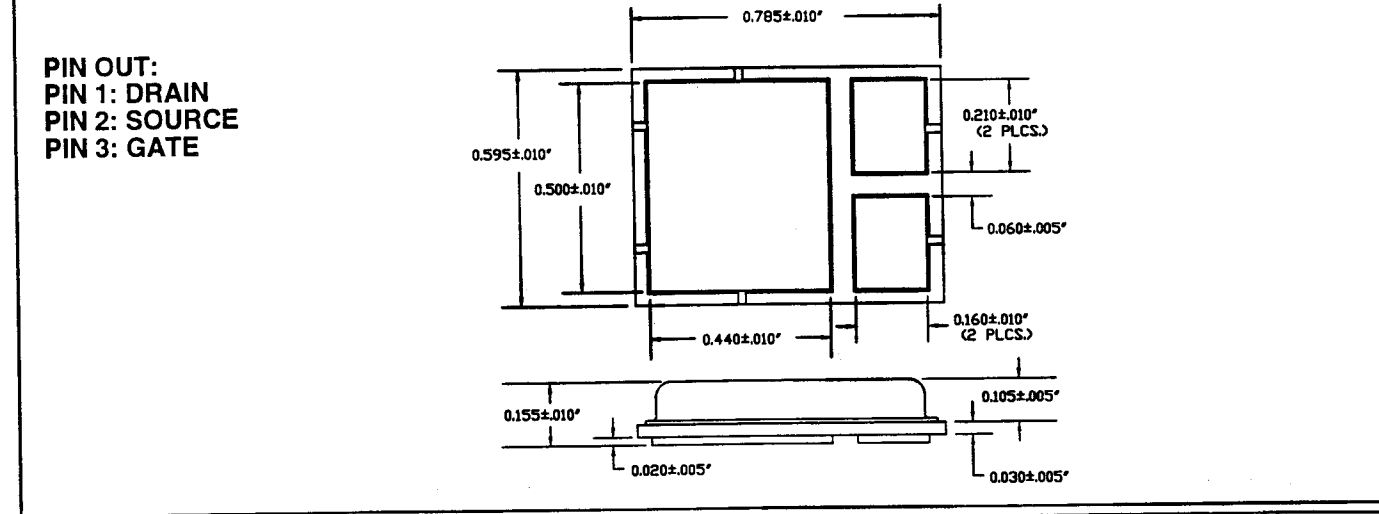
- FEATURES:**
- Rugged construction with polysilicon gate
 - Low RDS(on) and high transconductance
 - Excellent high temperature stability
 - Very fast switching speed
 - Fast recovery and superior dv/dt performance
 - Increased reverse energy capability
 - Low input and transfer capacitance for easy paralleling
 - Hermetically sealed surface mount power package
 - TX, TXV and Space Level screening available
 - Replaces: IXTH10N100 Types



MAXIMUM RATINGS:

| CHARACTERISTIC | SYMBOL | VALUE | UNIT |
|--------------------------------------|------------------------------------|-------------|-------|
| Drain to Source Voltage | V _{DS} | 1000 | Volts |
| Gate to Source Voltage | V _{GS} | ±20 | Volts |
| Continuous Drain Current | I _D | 10 | 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



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

DATA SHEET #: F00185 C

MED

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ELECTRICAL CHARACTERISTICS @ $T_J=25^\circ\text{C}$ (Unless Otherwise Specified)

| RATING | | SYMBOL | MIN | TYP | MAX | UNIT |
|--|---|---|------|-----------------------|-----------------------|-----------------------|
| Drain to Source Breakdown Voltage ($V_{GS}=0\text{ V}$, $I_D=3\text{mA}$) | | BV_{DSS} | 1000 | --- | --- | V |
| Drain to Source on State Resistance ($V_{GS}=10\text{ V}$, $I_D=50\%$ Rated ID) | | $R_{DS(on)}$ | --- | 1.05 | 1.2 | Ω |
| On State Drain Current ($V_{DS}=15\text{V}$, $V_{GS}=10\text{ V}$) | | $I_{D(on)}$ | 10 | --- | --- | A |
| Gate Threshold Voltage ($V_{DS}\geq V_{GS}$, $I_D=4\text{mA}$) | | $V_{GS(th)}$ | 2.0 | --- | 4.5 | V |
| Forward Transconductance ($V_{DS}>I_{D(on)} \times R_{DS(on)}$ Max, $I_{DS}=50\%$ rated ID) | | g_{fs} | 5 | 8 | --- | $S(\Omega)$ |
| Zero Gate Voltage Drain Current ($V_{DS}=\text{max rated voltage}$, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated V_{DS} , $V_{GS}=0\text{ V}$, $T_A=125^\circ\text{C}$) | | I_{DSS} | --- | --- | 250 1000 | μA |
| Gate to Source Leakage Forward Gate to Source Leakage Reverse | At rated V_{GS} | I_{GSS} | --- | --- | +100 -100 | nA |
| Total Gate Charge Gate to Source Charge Gate to Drain Charge | $V_{GS}=10\text{ Volts}$ 50% rated V_{DS} Rated ID | Q_g Q_{gs} Q_{gd} | --- | 110 20 40 | 155 45 80 | nC |
| Turn on Delay Time Rise Time Turn Off Delay Time Fall Time | $V_{DD}=50\%$ rated V_{DS} 50% rated ID $R_G=6.2\Omega$ $V_{GS}=10\text{V}$ | $t_{d(on)}$ t_r $t_{d(off)}$ t_f | --- | 30 20 110 40 | 50 50 130 50 | nsec |
| Diode Forward Voltage ($I_S=\text{rated } I_D$, $V_{GS}=0\text{ V}$, $T_J=25^\circ\text{C}$) | | V_{SD} | --- | --- | 1.5 | V |
| Diode Reverse Recovery Time Reverse Recovery Charge | $T_J=25^\circ\text{C}$ $I_F=\text{rated } I_D$ $di/dt=100\text{ A}/\mu\text{sec}$ | t_{rr} Q_{RR} | --- | 850 --- | 1200 --- | nsec μC |
| Input Capacitance Output Capacitance Reverse Transfer Capacitance | $V_{GS}=0\text{ Volts}$ $V_{DS}=25\text{ Volts}$ $f=1\text{ MHz}$ | C_{iss} C_{oss} C_{rss} | --- | 4000 310 70 | --- | pF |

SAFE OPERATING AREA (S.O.A.)
 $T_C = 25^\circ\text{C}$, D.C. CONDITION

