


SOLID STATE DEVICES, INC

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

Designer's Data Sheet

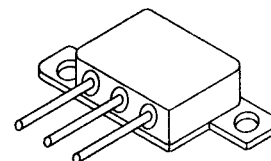
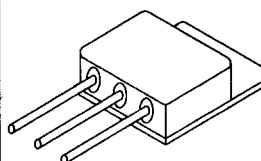
FEATURES:

- 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 package
- TX, TXV and Space Level screening available
- Replaces: IXTH20N60 Types


SFF20N60N
SFF20N60P
20 AMPS
600 VOLTS
0.40 Ω
N-CHANNEL
POWER MOSFET

TO-258

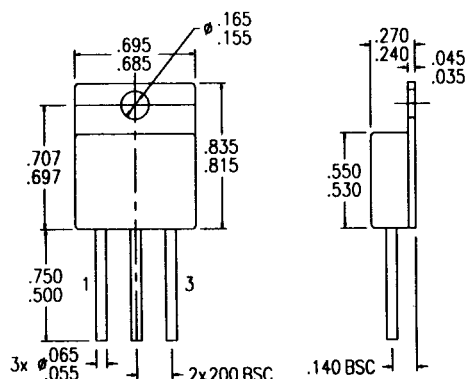
TO-259



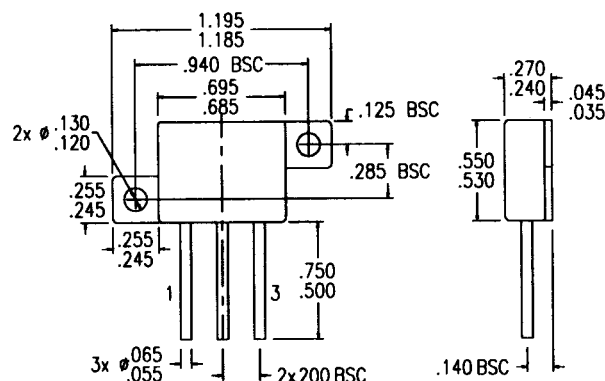
MAXIMUM RATINGS

| CHARACTERISTIC | SYMBOL | VALUE | UNIT |
|--------------------------------------|------------------|-------------|-------|
| Drain to Source Voltage | V _{DS} | 600 | Volts |
| Gate to Source Voltage | V _{GS} | ±20 | Volts |
| Continuous Drain Current | I _D | 20 | Amps |
| Operating and Storage Temperature | Top & Tstg | -55 to +175 | °C |
| Thermal Resistance, Junction to Case | R _{θJC} | 0.83 | °C/W |
| Total Device Dissipation @ TC=25°C | P _D | 150 | Watts |
| Total Device Dissipation @ TC=55°C | | 114 | |

PACKAGE OUTLINE: TO-258 (N)

 PIN OUT:
 PIN 1: DRAIN
 PIN 2: SOURCE
 PIN 3: GATE


PACKAGE OUTLINE: TO-259 (P)

 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 #: F00205 B
MED

SFF20N60N

SFF20N60P

PRELIMINARY



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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} | 600 | --- | --- | V |
| Drain to Source on State Resistance (V _{GS} =10 V, I _D =60% Rated ID) | | R _{DS(on)} | --- | 0.35 | 0.40 | Ω |
| On State Drain Current (V _{DS} > I _{D(on)} X R _{DS(on)} Max, V _{GS} =10 V) | | I _{D(on)} | 20 | --- | --- | A |
| Gate Threshold Voltage (V _{DS} =V _{GS} , I _D =250μA) | | V _{GS(th)} | 2.0 | --- | 4.5 | V |
| Forward Transconductance (V _{DS} > I _{D(on)} X R _{DS(on)} Max, I _{DS} =60% rated ID) | | g _{fs} | 12 | 18 | --- | 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} | --- | --- | 200 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 Volts 80% rated V _{DS} 50 %Rated ID | Q _g Q _{gs} Q _{gd} | --- | 150 29 60 | 170 40 85 | 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 | t _{d(on)} t _r t _{d(off)} t _f | --- | 30 30 110 30 | 40 60 150 60 | nsec |
| Diode Forward Voltage (I _S =rated I _D , V _{GS} =0 V, T _J =25°C) | | V _{SD} | --- | --- | 1.5 | V |
| Diode Reverse Recovery Time Reverse Recovery Charge | T _J =25°C I _F =10A di/dt=100 A/μsec | t _{rr} Q _{RR} | --- | 600 --- | 800 --- | 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 420 140 | --- | pF |

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