

| ABSOLUTE MAXIMUM RATINGS | | | |
|--|----------------------------------|-------------|-----------------|
| PARAMETER | SYMBOL | | UNITS |
| Drain-source Volt.(1) | V _{DSS} | 600 | V _{dc} |
| Drain-Gate Voltage (R _{GS} =1.0M Ω) (1) | V _{DGR} | 600 | V _{dc} |
| Gate-Source Voltage Continuous | V _{GS} | ± 20 | V _{dc} |
| Drain Current Continuous (T _c = 25°C) | I _D | 20 | A _{dc} |
| Drain Current Pulsed(3) | I _{DM} | 80 | A |
| Total Power Dissipation | P _D | 300 | W |
| Power Dissipation Derating > 25°C | | 2.4 | W/°C |
| Operating & Storage Temp. | T _J /T _{stg} | -55 TO +150 | °C |
| Thermal Resistance | R _{thJc} | 0.42 | °C/W |
| Max. Lead temperature | T _L | 300 | °C |

 600V, 20A, 0.35 Ω

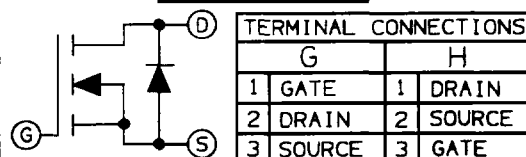
SDF20N60 JEA
 SDF20N60 JEB
 SDF20N60 JEC
 SDF20N60 JED

FEATURES

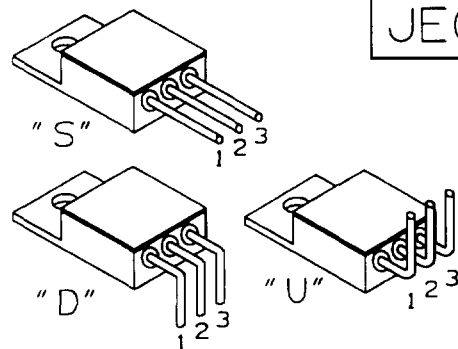
- RUGGED PACKAGE
- HI-REL CONSTRUCTION
- CERAMIC EYELETS
- LEAD BENDING OPTIONS
- COPPER CORED 52 ALLOY PINS
- LOW IR LOSSES
- LOW THERMAL RESISTANCE
- OPTIONAL MIL-S-19500 SCREENING

| ELECTRICAL CHARACTERISTICS T _c = 25°C (UNLESS OTHERWISE SPECIFIED) | | | | | | |
|---|----------------------|--|------|------|------|----------|
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN. | TYP. | MAX. | UNITS |
| Drain-source Breakdown Volt. | V(BR) _{DSS} | V _{GS} =0V I _D =250 μ A | 600 | - | - | V |
| Gate Threshold Voltage | V _{GS(TH)} | V _D =V _{GS} I _D =250 μ A | 2.0 | - | 4.5 | V |
| Gate Source Leakage | I _{GSS} | V _{GS} = ± 20 V | - | - | 100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _D =MAX. RATING V _{GS} =0 | - | - | 250 | μ A |
| | | V _D =0.8 MAX. RATING V _{GS} =0 T _J =125°C | - | - | 1000 | μ A |
| Static Drain-Source On-State Resistance(1) | R _{DS(ON)} | V _{GS} =10 V I _D =10A | - | - | .35 | Ω |
| Forward Trans-Conductance (2) | g _{fs} | V _D \geq 50 V I _D =10A | 9.0 | - | - | S(U) |
| Input Capacitance | C _{ISS} | V _{GS} =0V V _D =25 V f=1.0 MHz | - | 4500 | - | pF |
| Output Capacitance | C _{OSS} | | - | 550 | - | pF |
| Reverse Transfer Capacitance | C _{RSS} | | - | 160 | - | pF |
| Turn-On Delay | t _{d(on)} | V _D =300V Z _o =50 Ω I _D =10A | - | - | 100 | ns |
| Rise Time | t _r | | - | - | 110 | ns |
| Turn-Off Delay | t _{d(off)} | (MOSFET switching times are essentially independent of operating temp.) | - | - | 220 | ns |
| Fall Time | t _f | | - | - | 105 | ns |
| Total Gate Charge (Gate-Source Plus Gate-Drain) | Q _g | V _{GS} =10V, I _D =20A V _D =0.8 MAX. RATING (Gate charge is essentially independent of the operating temperature) | - | 165 | - | nC |
| Gate-Source Charge | Q _{gs} | | - | 65 | - | nC |
| Gate-Drain ("Miller") Charge | Q _{gd} | | - | 100 | - | nC |

SCHEMATIC



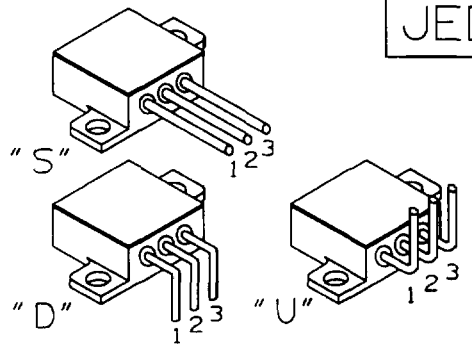
STANDARD BEND CONFIGURATIONS



JEA
JEC

(CUSTOM BEND OPTIONS AVAILABLE)

STANDARD BEND CONFIGURATIONS



JEB
JED

(CUSTOM BEND OPTIONS AVAILABLE)

| SOURCE-DRAIN DIODE RATINGS & CHARACT. T _c = 25°C (UNLESS OTHERWISE SPECIFIED) | | | | | | |
|--|-----------------|--|------|------|------|---------|
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN. | TYP. | MAX. | UNITS |
| Continuous Source Current (Body Diode) | I _S | Modified MOSFET symbol showing the integral reverse P-N junction rectifier (See schematic) | - | - | 20 | A |
| Pulse Source Current (Body Diode) (1) | I _{SM} | | - | - | 80 | A |
| Diode Forward Voltage (2) | V _{SD} | I _F =20A V _{GS} =0V T _c =+25°C | - | - | 1.5 | V |
| Reverse Recovery Time | t _{rr} | T _c =+25°C I _F =20A | - | 500 | - | ns |
| Reverse Recovery Charge | Q _{rr} | di/dt=100A/ μ S | - | 8.0 | - | μ C |

- (1) T_J = 25°C to 150°C.
 (2) Pulse test: Pulse Width < 300 μ S, Duty Cycle < 2%.
 (3) Repetitive Rating: Pulse Width limited By Max. junction Temperature.

REL. 3/93