

N-CHANNEL ENHANCEMENT MOS FET

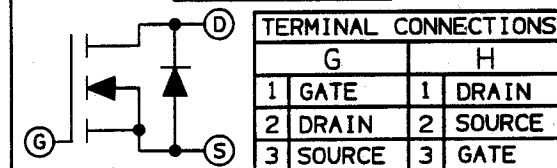
1000V, 4.0A, 3.5Ω

SDF4N100 JAA
SDF4N100 JAB

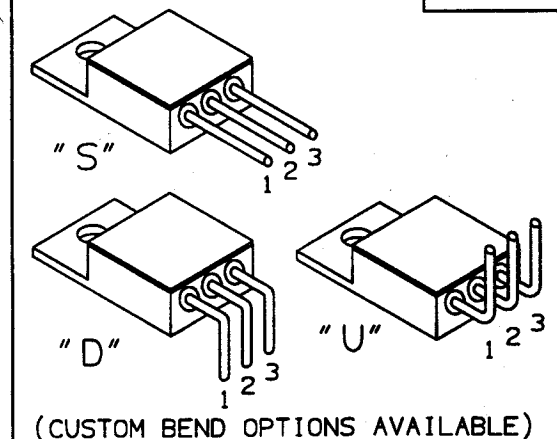
FEATURES

- 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

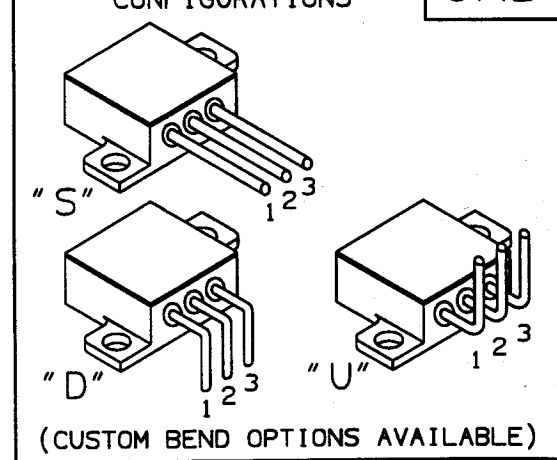
SCHEMATIC



STANDARD BEND CONFIGURATIONS



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ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL		UNITS
Drain-source Volt.(1)	V _{DSS}	1000	V _{dc}
Drain-Gate Voltage (R _{GS} =1.0MΩ) (1)	V _{DGR}	1000	V _{dc}
Gate-Source Voltage Continuous	V _{GS}	±20	V _{dc}
Drain Current Continuous (T _c = 25°C)	I _D	4.0	A _{dc}
Drain Current Pulsed(3)	I _{DM}	16	A
Total Power Dissipation	P _D	100	W
Power Dissipation Derating > 25°C		0.83	W/°C
Operating & Storage Temp.	T _J /T _{stg}	-55 TO +150	°C
Thermal Resistance	R _{thJc}	1.2	°C/W
Max.Lead temperature	TL	300	°C

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 μA	1000	-	-	V
Gate Threshold Voltage	V _{GS(TH)}	V _D =V _{GS} I _D =250 μA	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 V _D =0.8 MAX.RATING V _{GS} =0 T _J =125°C	-	-	250 1000	μA
Static Drain-Source On-State Resistance(1)	R _{DS(ON)}	V _{GS} =10 V I _D =2.0A	-	-	3.5	Ω
Forward Trans-Conductance (2)	g _{fs}	V _D ≥ 15 V I _D =2.0A	3.5	-	-	S(U)
Input Capacitance	C _{ISS}	V _{GS} =0V V _D =25 V f=1.0 MHz	-	1500	-	pF
Output Capacitance	C _{OSS}		-	100	-	pF
Reverse Transfer Capacitance	C _{RSS}		-	30	-	pF
Turn-On Delay	t _{d(on)}	V _{DD} =500V Z _o =10 Ω I _D =2.0A (MOSFET switching times are essentially independent of operating temp.)	-	-	40	ns
Rise Time	t _r		-	-	60	ns
Turn-Off Delay	t _{d(off)}		-	-	170	ns
Fall Time	t _f		-	-	60	ns
Total Gate Charge (Gate-Source Plus Gate-Drain)	Q _g	V _{GS} =10V, I _D =4.0A V _D =0.4 MAX.RATING (Gate charge is essentially independent of the operating temperature)	-	-	120	nC
Gate-Source Charge	Q _{gs}		-	-	15	nC
Gate-Drain ("Miller") Charge	Q _{gd}		-	-	66	nC

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)	-	-	4.0	A
Pulse Source Current (Body Diode) (1)	I _{SM}		-	-	16	A
Diode Forward Voltage (2)	V _{SD}	I _F =4.0A V _{GS} =0V T _c =+25°C	-	-	1.8	V
Reverse Recovery Time	t _{rr}	T _c =+25°C I _F =4.0A di/dt=100A/μS	-	800	-	ns

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