

N-CHANNEL ENHANCEMENT MOS FET

900V; 3.0A, 4.6Ω

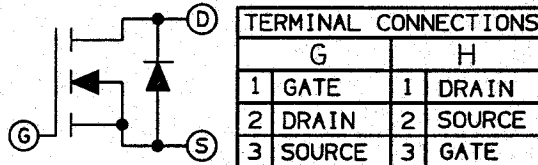
SDF3N90 JAA

SDF3N90 JAB

FEATURES

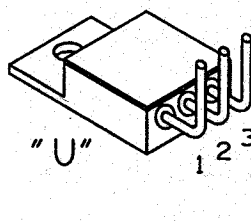
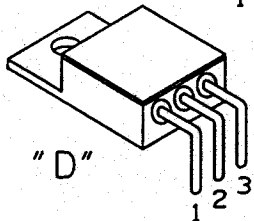
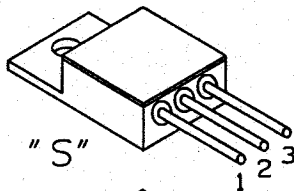
- RUGGED PACKAGE
- HI-REL CONSTRUCTION
- CERAMIC EYELETS
- LEAD BENDING OPTIONS
- COPPER CORED 52 ALLOY PINS
- LOW IR LOSSES
- LOW THERMAL RESISTANCE
- OPTIONAL MIL-S-19500 SCREENING

SCHEMATIC



STANDARD BEND CONFIGURATIONS

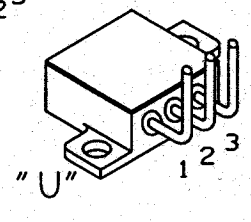
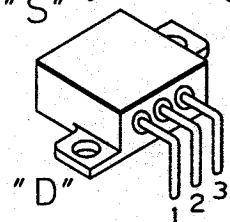
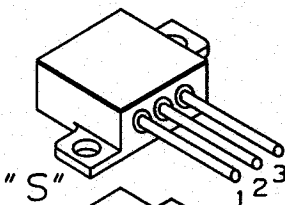
JAA



(CUSTOM BEND OPTIONS AVAILABLE)

STANDARD BEND CONFIGURATIONS

JAB



(CUSTOM BEND OPTIONS AVAILABLE)

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL		UNITS
Drain-source Volt. (1)	V _{DSS}	900	V _{dc}
Drain-Gate Voltage (Res=1.0MΩ) (1)	V _{DGR}	900	V _{dc}
Gate-Source Voltage Continuous	V _{GS}	±20	V _{dc}
Drain Current Continuous (T _c = 25°C)	I _D	3.0	A _{dc}
Drain Current Pulsed(3)	I _{DM}	10	A
Total Power Dissipation	PD	75	W
Power Dissipation Derating > 25°C		0.6	W/°C
Operating & Storage Temp.	T _J /T _{sig}	-55 TO +150	°C
Thermal Resistance	R _{thJc}	1.7	°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	900	-	-	V
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =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 _{DS} =MAX. RATING V _{GS} =0 T _J =125°C	-	-	250	μA
Static Drain-Source On-State Resistance(1)	R _{DS(ON)}	V _{GS} =10 V I _D =1.5A	-	-	4.6	Ω
Forward Trans-Conductance (2)	g _f s	V _{DS} ≥ 15 V I _{DS} =1.5A	1.5	-	-	S(U)
Input Capacitance	C _{ISS}	V _{GS} =0V V _{DS} =25 V f=1.0 MHz	-	720	-	pF
Output Capacitance	C _{OSS}		-	70	-	pF
Reverse Transfer Capacitance	C _{RSS}		-	15	-	pF
Turn-On Delay	t _{d(on)}	V _{DD} =450V Z _o =20 n	-	-	30	ns
Rise Time	t _r	I _D =1.5A	-	-	35	ns
Turn-Off Delay	t _{d(off)}	(MOSFET switching times are essentially independent of operating temp.)	-	-	80	ns
Fall Time	t _f		-	-	55	ns
Total Gate Charge (Gate-Source Plus Gate-Drain)	Q _g	V _{GS} =10V, I _D =3.0A	-	-	40	nC
Gate-Source Charge	Q _{gs}	V _{DS} =0.8 MAX. RATING (Gate charge is essentially independent of the operating temperature)	-	-	10	nC
Gate-Drain ("Miller") Charge	Q _{gd}		-	-	15	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)	-	-	3.0	A
Pulse Source Current (Body Diode) (1)	I _{SM}		-	-	10	A
Diode Forward Voltage (2)	V _{SD}	I _F =3.0A V _{GS} =0V T _c =+25°C	-	-	1.5	V
Reverse Recovery Time	t _{rr}	T _c =+25°C I _F =3.0A 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.