

N-CHANNEL ENHANCEMENT MOS FET

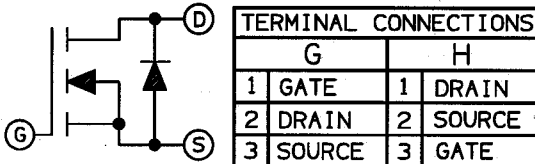
900V, 6.0A, 1.4Ω

SDF6N90 JAA
SDF6N90 JAB

FEATURES

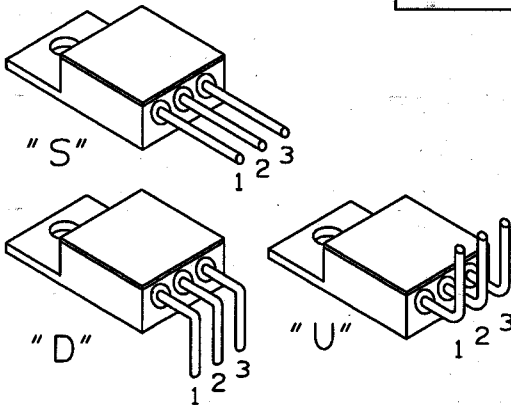
- RUGGED PACKAGE
- HI-REL CONSTRUCTION
- CERAMIC EYELETS
- LEAD BENDING OPTIONS
- COPPER CORED 52 ALLOY PINS
- LOW IR LOSSES
- LOW THERMAL RESISTANCE
- OPTIONAL MIL-S-19500 SCREENING

SCHEMATIC



STANDARD BEND CONFIGURATIONS

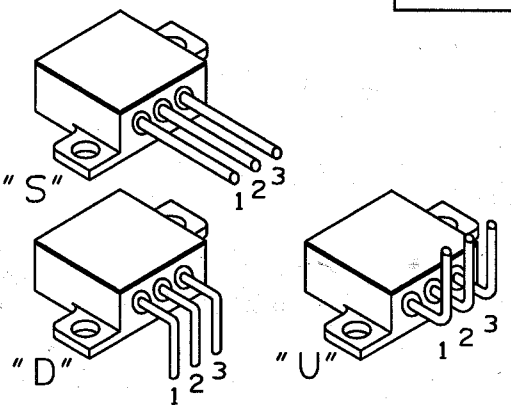
JAA



(CUSTOM BEND OPTIONS AVAILABLE)

STANDARD BEND CONFIGURATIONS

JAB



(CUSTOM BEND OPTIONS AVAILABLE)

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL		UNITS
Drain-source Volt. (1)	VDSS	900	Vdc
Drain-Gate Voltage (R _{GS} =1.0M Ω) (1)	VDGR	900	Vdc
Gate-Source Voltage Continuous	VGS	± 20	Vdc
Drain Current Continuous (T _c = 25°C)	ID	6.0	Adc
Drain Current Pulsed (3)	IDM	24	A
Total Power Dissipation	PD	150	W
Power Dissipation Derating > 25°C		1.2	W/°C
Operating & Storage Temp.	T _J /T _{sig}	-55 TO +150	°C
Thermal Resistance	R _{thJc}	0.8	°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}	VGS=0V ID=250 μ A	900	-	-	V
Gate Threshold Voltage	VGS(TH)	VDS=VGS ID=250 μ A	2.0	-	4.5	V
Gate Source Leakage	IGSS	VGS= ± 20 V	-	-	100	nA
Zero Gate Voltage Drain Current	IDSS	VDS=MAX. RATING VGS=0 VDS=0.8 MAX. RATING VGS=0 T _J =125°C	-	-	250 1000	μ A
Static Drain-Source On-State Resistance (1)	RDS(ON)	VGS=10 V ID=3.0A	-	-	1.4	Ω
Forward Trans-Conductance (2)	g _{fs}	VDS \geq 15 V IDS=3.0A	5.2	-	-	S(Ω)
Input Capacitance	CISS		-	2700	-	pF
Output Capacitance	COSS	VGS=0V VDS=25 V f=1.0 MHz	-	225	-	pF
Reverse Transfer Capacitance	CRSS		-	70	-	pF
Turn-On Delay	t _{d(on)}	VDD=450V Z _o =5 Ω ID=3.0A	-	-	45	ns
Rise Time	t _r	(MOSFET switching times are essentially independent of operating temp.)	-	-	50	ns
Turn-Off Delay	t _{d(off)}		-	-	110	ns
Fall Time	t _f		-	-	70	ns
Total Gate Charge (Gate-Source Plus Gate-Drain)	Q _g	VGS=10V, ID=6.0A VDS=0.8 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}		-	-	50	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)	IS	Modified MOSFET symbol showing the integral reverse P-N junction rectifier (See schematic)	-	-	2.0	A
Pulse Source Current (Body Diode) (1)	ISM		-	-	8.0	A
Diode Forward Voltage (2)	VSD	IF=6.0A VGS=0V T _c =+25°C	-	-	1.5	V
Reverse Recovery Time	t _{rr}	T _c =+25°C IF=6.0A di/dt=100A/ μ S	-	800	-	ns

(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.