

N-CHANNEL ENHANCEMENT MOS FET

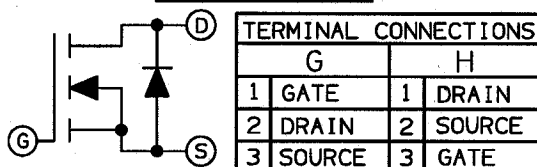
900V, 11A, 0.95 Ω

SDF11N90 GAF

FEATURES

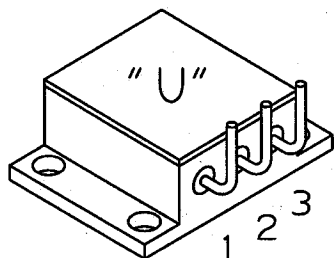
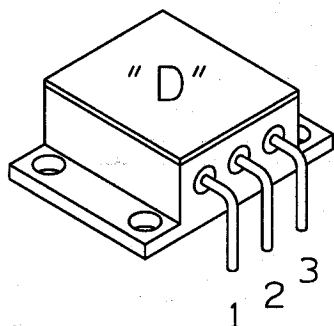
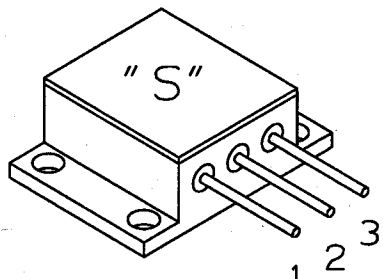
- RUGGED PACKAGE
- HI-REL CONSTRUCTION
- CERAMIC EYELETS
- LEAD BENDING OPTIONS
- COPPER CORED 52 ALLOY PINS
- LOW IR LOSSES
- LOW THERMAL RESISTANCE
- OPTIONAL MIL-S-19500 SCREENING

SCHEMATIC



STANDARD BEND CONFIGURATIONS

GAF



(CUSTOM BEND OPTIONS AVAILABLE)

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL		UNITS
Drain-source Volt.(1)	VDSS	900	Vdc
Drain-Gate Voltage (Rgs=1.0Mn) (1)	VDGR	900	Vdc
Gate-Source Voltage Continuous	VGS	±20	Vdc
Drain Current Continuous (Tc = 25°C)	ID	11	Adc
Drain Current Pulsed(3)	IDM	44	A
Total Power Dissipation	PD	300	W
Power Dissipation Derating > 25°C		2.4	W/°C
Operating & Storage Temp.	TJ/Tsig	-55 TO +150	°C
Thermal Resistance	RthJc	0.42	°C/W
Max.Lead temperature	TL	300	°C

ELECTRICAL CHARACTERISTICS Tc = 25°C (UNLESS OTHERWISE SPECIFIED)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
Drain-source Breakdown Volt.	V(BR)DSS	VGS=0V ID=250 μA	900	-	-	V
Gate Threshold Voltage	VGS(TH)	VDS=VGS ID=250 μA	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 TJ=125°C	-	-	250	μA
Static Drain-Source On-State Resistance(1)	RDS(ON)	VGS=10 V ID=5.5A	-	-	.95	Ω
Forward Trans-Conductance (2)	gfs	VDS ≥ 50 V IDS=5.5A	7.0	-	-	S(O)
Input Capacitance	CISS		-	4500	-	pF
Output Capacitance	COSS	VGS=0V VDS=25 V f=1.0 MHz	-	550	-	pF
Reverse Transfer Capacitance	CRSS		-	160	-	pF
Turn-On Delay	td(on)	VDD=450V Zo=50n	-	-	100	ns
Rise Time	tr	ID=5.5A	-	-	110	ns
Turn-Off Delay	td(off)	(MOSFET switching times are essentially independent of operating temp.)	-	-	220	ns
Fall Time	tf		-	-	105	ns
Total Gate Charge (Gate-Source Plus Gate-Drain)	Qg	VGS=10V, ID=11A	-	145	-	nC
Gate-Source Charge	Qgs	VDS=0.8 MAX.RATING (Gate charge is essentially independent of the operating temperature)	-	55	-	nC
Gate-Drain ("Miller") Charge	Qgd		-	90	-	nC

SOURCE-DRAIN DIODE RATINGS & CHARACT. Tc = 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	-	-	11	A
Pulse Source Current (Body Diode) (1)	ISM	P-N junction rectifier (See schematic)	-	-	44	A
Diode Forward Voltage (2)	VSD	IF=11A VGS=0V Tc=+25°C	-	-	1.5	V
Reverse Recovery Time	trr	Tc=+25° C	-	600	-	ns
Reverse Recovery Charge	Qrr	IF=11A di/dt=100A/μS	-	8.5	-	μC

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