

ABSOLUTE MAXIMUM RATINGS			
PARAMETER	SYMBOL		UNITS
Drain-source Volt.(1)	VDSS	900	Vdc
Drain-Gate Voltage ($R_{GS}=1.0M\Omega$) (1)	VDGR	900	Vdc
Gate-Source Voltage Continuous	VGS	± 20	Vdc
Drain Current Continuous ($T_c = 25^\circ C$)	ID	12	Adc
Drain Current Pulsed(3)	IDM	48	A
Total Power Dissipation	PD	300	W
Power Dissipation Derating $> 25^\circ C$		2.4	W/ $^\circ C$
Operating & Storage Temp.	TJ/Tsig	-55 TO +150	$^\circ C$
Thermal Resistance	RthJc	0.42	$^\circ C/W$
Max. Lead temperature	TL	300	$^\circ C$

ELECTRICAL CHARACTERISTICS $T_c = 25^\circ C$ (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	-	-	250	μA
		VDS=0.8 MAX. RATING VGS=0 TJ=125 $^\circ C$	-	-	1000	μA
Static Drain-Source On-State Resistance(1)	RDS(ON)	VGS=10 V ID=6.0A	-	-	0.9	Ω
Forward Trans-Conductance (2)	gfs	VDS \geq 50 V IDS=6.0A	7.0	-	-	S(V)
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=50 Ω ID=6.0A	-	-	100	ns
Rise Time	tr	(MOSFET switching times are essentially independent of operating temp.)	-	-	110	ns
Turn-Off Delay	td(off)		-	-	220	ns
Fall Time	tf		-	-	105	ns
Total Gate Charge (Gate-Source Plus Gate-Drain)	Qg	VGS=10V, ID=12A VDS=0.8 MAX. RATING (Gate charge is essentially independent of the operating temperature)	-	145	-	nC
Gate-Source Charge	Qgs		-	55	-	nC
Gate-Drain ("Miller") Charge	Qgd		-	90	-	nC

SOURCE-DRAIN DIODE RATINGS & CHARACT. $T_c = 25^\circ C$ (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)	-	-	12	A
Pulse Source Current (Body Diode) (1)	ISM		-	-	48	A
Diode Forward Voltage (2)	VSD	IF=12A VGS=0V Tc= $\pm 25^\circ C$	-	-	1.5	V
Reverse Recovery Time	trr	Tc= $\pm 25^\circ C$ IF=12A	-	600	-	ns
Reverse Recovery Charge	Qrr	di/dt=100A/ μS	-	8.5	-	μC

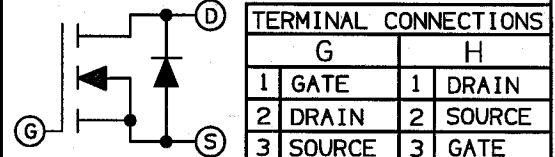
- (1) TJ = 25 $^\circ C$ to 150 $^\circ C$.
 (2) Pulse test: Pulse Width < 300 μS , Duty Cycle < 2%.
 (3) Repetitive Rating: Pulse Width limited By Max. junction Temperature.

 900V, 12A, 0.9 Ω
SDF12N90 GAF

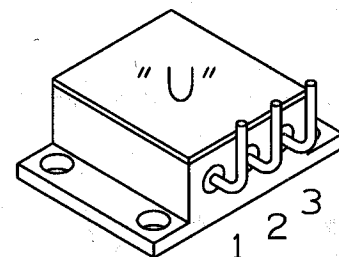
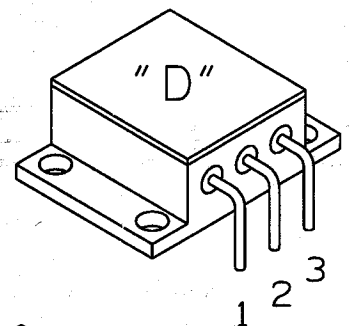
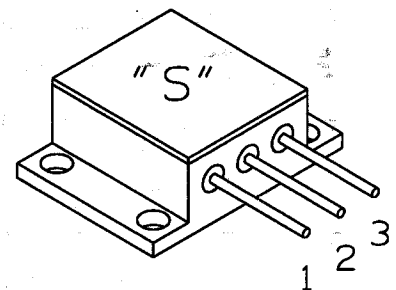
FEATURES

- 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)