

PRODUCT CATALOG

N-CHANNEL ENHANCEMENT MOS FET

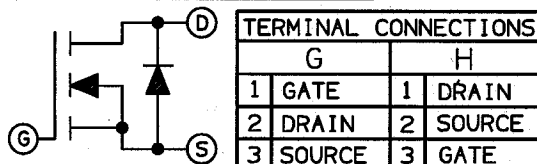
1000V, 9A, 1.4 Ω

SDF9N100 GAF

FEATURES

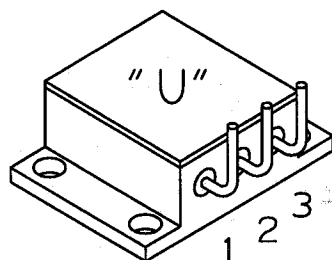
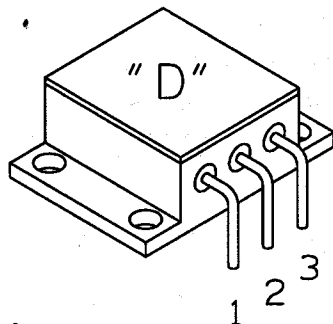
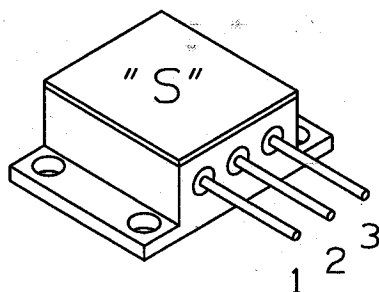
- RUGGED PACKAGE
- HI-REL CONSTRUCTION
- CERAMIC EYELETS
- LEAD BENDING OPTIONS
- COPPER CORED 52 ALLOY PINS
- LOW IR LOSSES
- LOW THERMAL RESISTANCE
- OPTIONAL MIL-S-19500 SCREENING

SCHEMATIC



STANDARD BEND CONFIGURATIONS

GAF



(CUSTOM BEND OPTIONS AVAILABLE)

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL		UNITS
Drain-source Volt.(1)	V _{DSS}	1000	V _{dc}
Drain-Gate Voltage (R _{GS} =1.0M Ω) (1)	V _{DGR}	1000	V _{dc}
Gate-Source Voltage Continuous	V _{GS}	± 20	V _{dc}
Drain Current Continuous (T _c = 25°C)	I _D	9	A _{dc}
Drain Current Pulsed(3)	I _{DM}	36	A
Total Power Dissipation	P _D	300	W
Power Dissipation Derating > 25°C		2.4	W/°C
Operating & Storage Temp.	T _J /T _{sig}	-55 TO +150	°C
Thermal Resistance	R _{thJc}	0.42	°C/W
Max.Lead temperature	T _L	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 μ A	1000	-	-	V
Gate Threshold Voltage	V _{GS(TH)}	V _D =V _{GS} I _D =250 μ A	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	μ A
Static Drain-Source On-State Resistance(1)	R _{DS(ON)}	V _{GS} =10 V I _D =4.5A	-	-	1.4	Ω
Forward Trans-Conductance (2)	g _{fs}	V _D $\geq$ 50 V I _D =4.5A	6.0	-	-	S(U)
Input Capacitance	C _{ISS}	V _{GS} =0V V _D =25 V f=1.0 MHz	-	4500	-	pF
Output Capacitance	C _{OSS}		-	550	-	pF
Reverse Transfer Capacitance	C _{RSS}		-	160	-	pF
Turn-On Delay	t _{d(on)}	V _{DD} =500V Z _o =50 Ω I _D =4.5A	-	-	100	ns
Rise Time	t _r		-	-	110	ns
Turn-Off Delay	t _{d(off)}	(MOSFET switching times are essentially independent of operating temp.)	-	-	220	ns
Fall Time	t _f		-	-	105	ns
Total Gate Charge (Gate-Source Plus Gate-Drain)	Q _g	V _{GS} =10V, I _D =9A V _D =0.8 MAX.RATING (Gate charge is essentially independent of the operating temperature)	-	145	-	nC
Gate-Source Charge	Q _{gs}		-	55	-	nC
Gate-Drain ("Miller") Charge	Q _{gd}		-	90	-	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)	-	-	9	A
Pulse Source Current (Body Diode) (1)	I _{SM}		-	-	36	A
Diode Forward Voltage (2)	V _{SD}	I _F =9A V _{GS} =0V T _c =+25°C	-	-	1.5	V
Reverse Recovery Time	t _{rr}	T _c =+25° C I _F =9A	-	600	-	ns
Reverse Recovery Charge	Q _{rr}	di/dt=100A/ μ S	-	8.5	-	μ C

(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.