

N-CHANNEL ENHANCEMENT MOS FET

ABSOLUTE MAXIMUM RATINGS			
PARAMETER	SYMBOL		UNITS
Drain-source Volt.(1)	VDSS	500	Vdc
Drain-Gate Voltage (R _{GS} =1.0M Ω) (1)	VDGR	500	Vdc
Gate-Source Voltage Continuous	VGS	± 20	Vdc
Drain Current Continuous (T _c = 25°C)	ID	2.5	Adc
Drain Current Pulsed(3)	IDM	8.0	A
Total Power Dissipation	PD	50	W
Power Dissipation Derating > 25°C		0.4	W/°C
Operating & Storage Temp.	TJ/Tsig	-55 TO +150	°C
Thermal Resistance	R _{thJc}	2.5	°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	500	-	-	V
Gate Threshold Voltage	VGS(TH)	VDS=VGS ID=250 μ A	2.0	-	4.0	V
Gate Source Leakage	IGSS	VGS= ± 20 V	-	-	100	nA
Zero Gate Voltage Drain Current	IDSS	VDS=MAX. RATING VGS=0	-	-	250	μ A
		VDS=0.8 MAX. RATING VGS=0 TJ=125°C	-	-	1000	μ A
Static Drain-Source On-State Resistance(1)	RDS(ON)	VGS=10 V ID=1.4A	-	-	3.0	Ω
Forward Trans-Conductance (2)	g _{fs}	VDS \geq 50 V IDS=1.4A	1.5	-	-	S(U)
Input Capacitance	CISS	VGS=0V VDS=25 V f=1.0 MHz	-	350	-	pF
Output Capacitance	COSS		-	54	-	pF
Reverse Transfer Capacitance	CRSS		-	9.6	-	pF
Turn-On Delay	t _{d(on)}	VDD=250V RG=18 Ω ID=2.5A RD=100n	-	-	15	ns
Rise Time	t _r	(MOSFET switching times are essentially independent of operating temp.)	-	-	18	ns
Turn-Off Delay	t _{d(off)}		-	-	42	ns
Fall Time	t _f		-	-	18	ns
Total Gate Charge (Gate-Source Plus Gate-Drain)	Q _g	VGS=10V, ID=2.5A VDS=0.8 MAX. RATING	-	-	19	nC
Gate-Source Charge	Q _{gs}	(Gate charge is essentially independent of the operating temperature)	-	-	3.3	nC
Gate-Drain ("Miller") Charge	Q _{gd}		-	-	10	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)	-	-	2.5	A
Pulse Source Current (Body Diode) (1)	ISM		-	-	8.0	A
Diode Forward Voltage (2)	VSD	IF=2.5A VGS=0V T _c =+25°C	-	-	1.6	V
Reverse Recovery Time	t _{rr}	T _c =+25°C	-	-	540	ns
Reverse Recovery Charge	Q _{rr}	IF=2.5A di/dt=100A/ μ S	-	1.2	-	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.

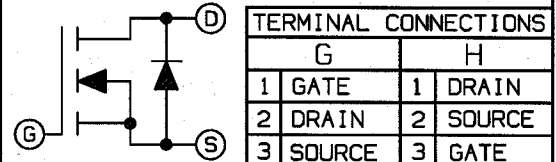
500V, 2.5A, 3.0 Ω

SDF420 JAA
 SDF420 JAB
 SDF420 JDA

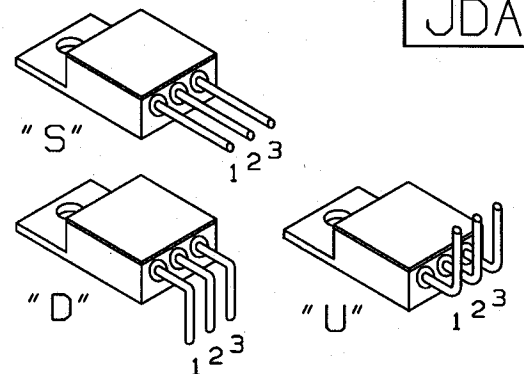
FEATURES

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

SCHEMATIC

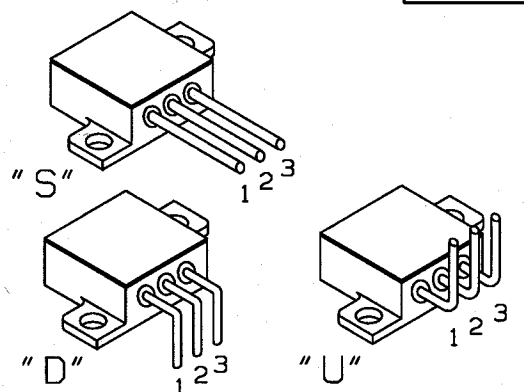


STANDARD BEND CONFIGURATIONS



(CUSTOM BEND OPTIONS AVAILABLE)

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