Solitron DEVICES, INC.
3301 ELECTRONICS WAY, WEST PALM BEACH, FLORIDA 33407
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N-CHANNEL ENHANCEMENT MOS FET

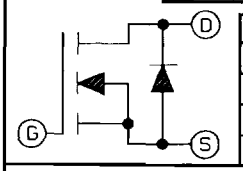
100V, 25A, 0.10Ω

SDF140 JAA
SDF140 JAB
SDF140 JDA

FEATURES

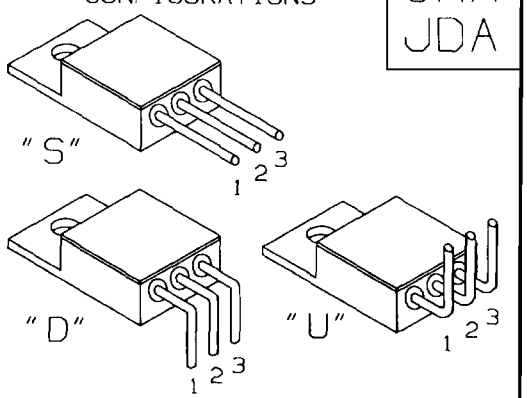
- RUGGED PACKAGE
- HI-REL CONSTRUCTION
- CERAMIC EYELETS: JAA, JAB
- LEAD BENDING OPTIONS
- COPPER CORED 52 ALLOY PINS
- LOW IR LOSSES
- LOW THERMAL RESISTANCE
- OPTIONAL MIL-S-19500 SCREENING

SCHEMATIC



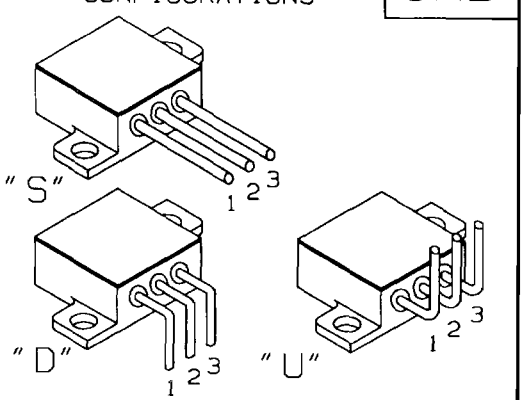
TERMINAL CONNECTIONS			
G		H	
1	GATE	1	DRAIN
2	DRAIN	2	SOURCE
3	SOURCE	3	GATE

STANDARD BEND CONFIGURATIONS — JAA JDA



(CUSTOM BEND OPTIONS AVAILABLE)

STANDARD BEND CONFIGURATIONS — JAB



(CUSTOM BEND OPTIONS AVAILABLE)

REV. 10/93

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL		UNITS
Drain-source Volt.(1)	VDSS	100	Vdc
Drain-Gate Voltage (R_{GS}=1.0MΩ) (1)	VDGR	100	Vdc
Gate-Source Voltage Continuous	VGS	±20	Vdc
Drain Current Continuous (T_C = 25°C)	ID	25	Adc
Drain Current Pulsed(3)	IDM	100	A
Total Power Dissipation	PD	100	W
Power Dissipation Derating > 25°C		0.83	W/°C
Operating & Storage Temp.	TJ/Tsig	-55 TO +150	°C
Thermal Resistance	RthJc	1.2	°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 µA	100	-	-	V
Gate Threshold Voltage	VGS(TH)	VDS=VGS ID=250 µA	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	µA
		VDS=0.8 MAX.RATING VGS=0 TJ=125°C	-	-	1000	µA
Static Drain-Source On-State Resistance(1)	RDS(ON)	VGS=10 V ID=15A	-	-	0.10	Ω
Forward Trans-Conductance (2)	gfs	VDS ≥ 50 V IDS=15A	8.7	-	-	S(℧)
Input Capacitance	CISS	VGS=0V VDS=25 V f=1.0 MHz	-	1500	-	pF
Output Capacitance	COSS		-	500	-	pF
Reverse Transfer Capacitance	CRSS		-	90	-	pF
Turn-On Delay	td(on)	VDD=50V RG=9.1Ω ID=25A RD=1.8Ω (MOSFET switching times are essentially independent of operating temp.)	-	-	23	ns
Rise Time	tr		-	-	110	ns
Turn-Off Delay	td(off)		-	-	60	ns
Fall Time	tf		-	-	75	ns
Total Gate Charge (Gate-Source Plus Gate-Drain)	Qg	VGS=10V, ID=25A VDS=0.8 MAX.RATING (Gate charge is essentially independent of the operating temperature)	-	-	59	nC
Gate-Source Charge	Qgs		-	-	12	nC
Gate-Drain ("Miller") Charge	Qgd		-	-	28	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)	-	-	25	A
Pulse Source Current (Body Diode) (1)	ISM		-	-	100	A
Diode Forward Voltage (2)	VSD	IF=25A, VGS=0V T_C=+25°C	-	-	2.5	V
Reverse Recovery Time	trr	T_C=+25° C IF=25A di/dt=100A/µS	-	-	300	ns
Reverse Recovery Charge	Qrr		-	0.91	-	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.