

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL		UNITS
Drain-source Volt.(1)	VDSS	600	Vdc
Drain-Gate Voltage (R _{GS} =1.0M Ω) (1)	VDGR	600	Vdc
Gate-Source Voltage Continuous	VGS	± 20	Vdc
Drain Current Continuous (T _c = 25°C)	ID	3.6	Adc
Drain Current Pulsed(3)	IDM	14	A
Total Power Dissipation	PD	75	W
Power Dissipation Derating > 25°C		0.6	W/°C
Operating & Storage Temp.	TJ/Tstg	-55 TO +150	°C
Thermal Resistance	RthJc	1.7	°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	600	-	-	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=2.0A	-	-	2.2	Ω
Forward Trans-Conductance (2)	gfs	VDS $\geq$ 100 V IDS=2.0A	2.4	-	-	S(U)
Input Capacitance	CISS	VGS=0V VDS=25 V f=1.0 MHz	-	630	-	pF
Output Capacitance	COSS		-	80	-	pF
Reverse Transfer Capacitance	CRSS		-	15	-	pF
Turn-On Delay	td(on)	VDD=300V RG=12 Ω ID=3.6A RD=82 Ω	-	-	17	ns
Rise Time	tr	(MOSFET switching times are essentially independent of operating temp.)	-	-	20	ns
Turn-Off Delay	td(off)		-	-	53	ns
Fall Time	tf		-	-	21	ns
Total Gate Charge (Gate-Source Plus Gate-Drain)	Qg	VGS=10V, ID=3.6A VDS=0.8 MAX.RATING (Gate charge is essentially independent of the operating temperature)	-	-	31	nC
Gate-Source Charge	Qgs		-	-	4.6	nC
Gate-Drain ("Miller") Charge	Qgd		-	-	17	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)	-	-	3.6	A
Pulse Source Current (Body Diode) (1)	ISM		-	-	14	A
Diode Forward Voltage (2)	VSD	IF=3.6A VGS=0V Tc=+25°C	-	-	1.6	V
Reverse Recovery Time	trr	Tc=+25° C IF=3.6A	-	-	810	ns
Reverse Recovery Charge	Qrr	di/dt=100A/ μ S	-	2.0	-	μ C

(1) TJ = 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.

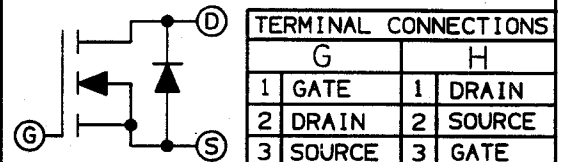
600V, 3.6A, 2.2 Ω

SDFC30 JAA
SDFC30 JAB

FEATURES

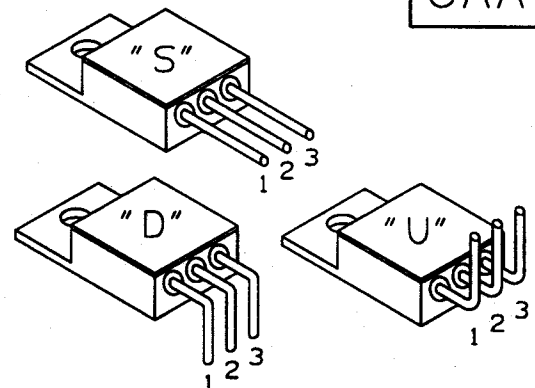
- RUGGED PACKAGE
- HI-REL CONSTRUCTION
- CERAMIC EYELETS
- LEAD BENDING OPTIONS
- COPPER CORED 52 ALLOY PINS
- LOW IR LOSSES
- LOW THERMAL RESISTANCE
- OPTIONAL MIL-S-19500 SCREENING

SCHEMATIC



STANDARD BEND CONFIGURATIONS

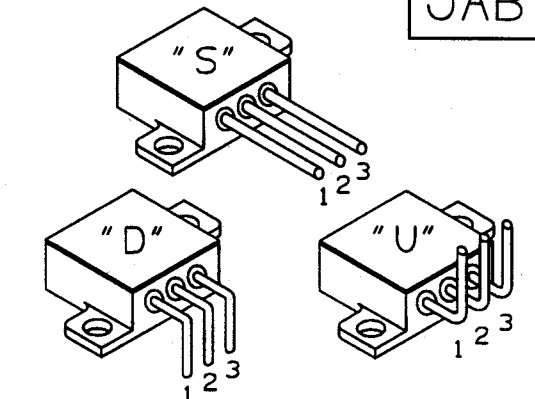
JAA



(CUSTOM BEND OPTIONS AVAILABLE)

STANDARD BEND CONFIGURATIONS

JAB



(CUSTOM BEND OPTIONS AVAILABLE)