

N-CHANNEL ENHANCEMENT MOS FET

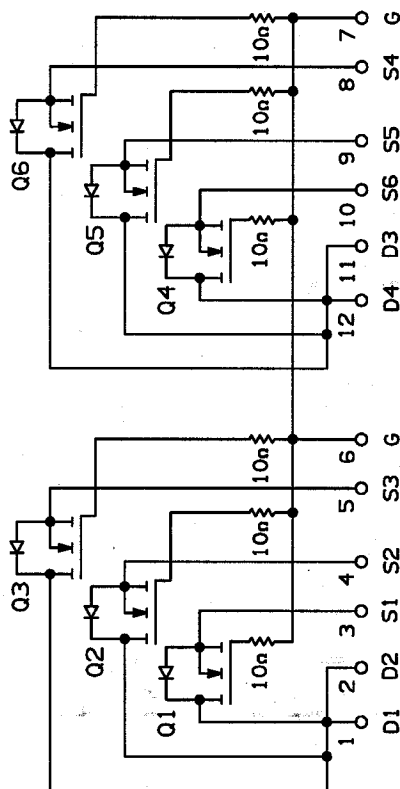
100V, 200A, 0.011Ω

SDF200NA10 HE

FEATURES

- RUGGED PACKAGE
- HI-REL CONSTRUCTION
- CERAMIC EYELETS
- LEAD BENDING OPTIONS
- COPPER CORED 52 ALLOY PINS
- LOW IR LOSSES
- LOW THERMAL RESISTANCE
- OPTIONAL MIL-STD-883 SCREENING

SCHEMATIC



ABSOLUTE MAXIMUM RATINGS

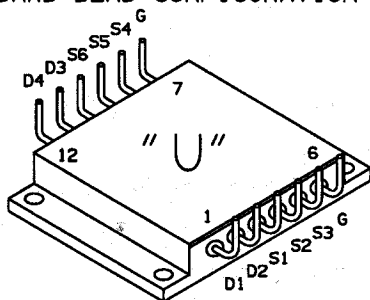
PARAMETER	SYMBOL		UNITS
DRAIN-SOURCE VOLTAGE	VDSS	100	Vdc
DRAIN-GATE VOLTAGE (R _{GS} =1.0MΩ)	VDGR	100	Vdc
GATE-SOURCE VOLTAGE CONTINUOUS	VGS	±20	Vdc
DRAIN CURRENT CONTINUOUS (T _c = 25°C)	ID	200	Adc
DRAIN CURRENT PULSED	IDM	800	A
TOTAL POWER DISSIPATION	PD	900	W
POWER DISSIPATION DERATING > 25°C		7.7	W/°C
OPERATING & STORAGE TEMP.	TJ/Tsig	-55 TO +150	°C
THERMAL RESISTANCE	RthJc	0.13	°C/W
MAX. LEAD TEMPERATURE	TL	300	°C

ELECTRICAL CHARACTERISTICS PER MOSFET LEG T_c = 25°C (UNLESS OTHERWISE SPECIFIED)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNITS
DRAIN-SOURCE BREAKDOWN VOLTAGE (1 & 2)	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 VDS=0.8 MAX.RATING VGS=0 TJ=125°C	-	-	250 1000	μA
STATIC DRAIN-SOURCE ON-STATE RESISTANCE (2)	RDS(ON)	VGS=10 V ID=20A	-	-	.065	Ω
FORWARD TRANS-CONDUCTANCE (2)	gfs	VDS ≥ 50 V IDS=20A	14	-	-	S(Ω)
INPUT CAPACITANCE	CISS		-	3000	-	pF
OUTPUT CAPACITANCE	COSS	VGS=0V VDS=25 V f=1.0 MHz (3)	-	1500	-	pF
REVERSE TRANSFER CAPACITANCE	CRSS		-	500	-	pF
TURN-ON DELAY	td(on)	VDD=24V ID=20A Z _o =4.7 Ω	-	-	35	ns
RISE TIME	tr	(MOSFET SWITCHING TIMES ARE ESSENTIALLY INDEPENDENT OF OPERATING TEMP. NOTE 3)	-	-	100	ns
TURN-OFF DELAY	td(off)		-	-	125	ns
FALL TIME	tf		-	-	100	ns
TOTAL GATE CHARGE (GATE-SOURCE PLUS GATE-DRAIN)	Qg	VGS=10V, ID=50A VDS=0.8 MAX.RATING (GATE CHARGE IS ESSENTIALLY INDEPENDENT OF THE OPERATING TEMPERATURE NOTE 3)	-	-	120	nC
GATE SOURCE CHARGE	Qgs		-	27	-	nC
GATE-DRAIN ("MILLER") CHARGE	Qgd		-	36	-	nC

STANDARD BEND CONFIGURATION

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(CUSTOM BEND OPTIONS AVAILABLE)

TOTAL MODULE RATINGS AND CHARACTERISTICS T_c = 25°C (UNLESS OTHERWISE SPECIFIED)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	MAX.	UNITS
PIN-CASE ISOLATION	PCI	VCASE-PINS ALL PINS SHORTED TO CASE	10	-	mΩ
STATIC DRAIN-SOURCE ON-STATE VOLTAGE	VDS(ON)	VGS ≥ 10V ID = 200A	-	2.5	V
STATIC DRAIN-SOURCE ON-STATE RESISTANCE	RDS(ON)	VGS = 10V ID = 100A	-	0.011	OHM
ZERO GATE VOLTAGE DRAIN CURRENT	IDSS	VGS = 0V VDS = 100V	-	6.0	mA

- (1) T_J = 25°C TO 150°C.
- (2) PULSE TEST: PULSE WIDTH < 300μS, DUTY CYCLE < 2%.
- (3) TEST ARE PERFORMED AT ELEMENT EVALUATION. TEST CONDITIONS AND LIMITS APPLY TO EACH MOSFET SEPARATELY.