

N-CHANNEL ENHANCEMENT MOS FET

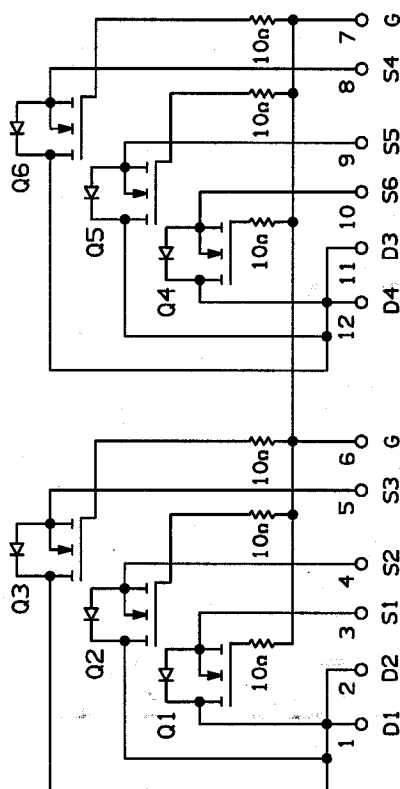
 100V, 200A, 0.011 Ω

SDF200NA10 HE

FEATURES

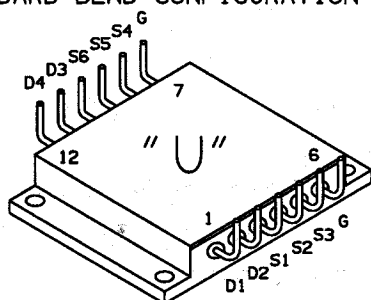
- RUGGED PACKAGE
- HI-REL CONSTRUCTION
- CERAMIC EYELETS
- LEAD BENDING OPTIONS
- COPPER CORED 52 ALLOY PINS
- LOW IR LOSSES
- LOW THERMAL RESISTANCE
- OPTIONAL MIL-STD-883 SCREENING

SCHEMATIC



STANDARD BEND CONFIGURATION

HE



(CUSTOM BEND OPTIONS AVAILABLE)

ABSOLUTE MAXIMUM RATINGS

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

ELECTRICAL CHARACTERISTICS PER MOSFET LEG

 $T_c = 25^\circ C$ (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	-	-	250	μA
		VDS=0.8 MAX.RATING VGS=0 TJ=125 $^\circ C$	-	-	1000	μA
STATIC DRAIN- SOURCE ON-STATE RESISTANCE (2)	RDS(ON)	VGS=10 V ID=20A	-	-	0.065	Ω
FORWARD TRANS- CONDUCTANCE (2)	gfs	VDS ≥ 50 V IDS=20A	14	-	-	S(U)
INPUT CAPACITANCE	CISS	VGS=0V VDS=25 V f=1.0 MHz (3)	-	3000	-	pF
OUTPUT CAPACITANCE	COSS		-	1500	-	pF
REVERSE TRANSFER CAPACITANCE	CRSS		-	500	-	pF
TURN-ON DELAY	td(on)	VDD=24V ID=20A Z θ =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

TOTAL MODULE RATINGS AND CHARACTERISTICS

 $T_c = 25^\circ C$ (UNLESS OTHERWISE SPECIFIED)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	MAX.	UNITS
PIN-CASE ISOLATION	PCI	VCASE-PINS ALL PINS SHORTED TO CASE	10	-	m Ω
STATIC DRAIN- SOURCE ON-STATE VOLTAGE	VDS(ON)	VGS ≥ 10 V 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) TJ = 25 $^\circ C$ TO 150 $^\circ C$.

 (2) PULSE TEST: PULSE WIDTH $< 300\mu S$, DUTY CYCLE $< 2\%$.

(3) TEST ARE PERFORMED AT ELEMENT EVALUATION. TEST CONDITIONS AND LIMITS APPLY TO EACH MOSFET SEPARATELY.