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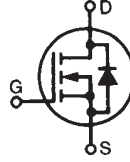
[IXFL44N100P](#)

For any questions, you can email us directly:

sales@integrated-circuit.com


Polar™ Power MOSFET
HiPerFET™

 N-Channel Enhancement Mode
 Avalanche Rated
 Fast Intrinsic Diode

IXFL44N100P


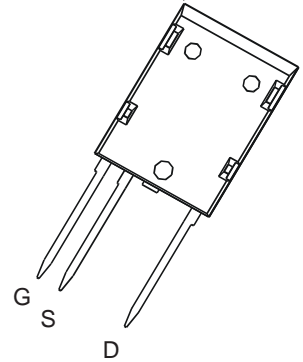
$$V_{DSS} = 1000V$$

$$I_{D25} = 22A$$

$$R_{DS(on)} \leq 240m\Omega$$

$$t_{rr} \leq 300ns$$

ISOPLUS i5-Pak™ (HV)


 G = Gate
 S = Source D = Drain

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ C$ to $150^\circ C$	1000	V
V_{DGR}	$T_J = 25^\circ C$ to $150^\circ C$, $R_{GS} = 1M\Omega$	1000	V
V_{GSS}	Continuous	± 30	V
V_{GSM}	Transient	± 40	V
I_{D25}	$T_C = 25^\circ C$	22	A
I_{DM}	$T_C = 25^\circ C$, pulse width limited by T_{JM}	110	A
I_{AR}	$T_C = 25^\circ C$	22	A
E_{AS}	$T_C = 25^\circ C$	2	J
dV/dt	$I_S \leq I_{DM}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ C$	15	V/ns
P_D	$T_C = 25^\circ C$	357	W
T_J		-55 ... +150	$^\circ C$
T_{JM}		150	$^\circ C$
T_{stg}		-55 ... +150	$^\circ C$
T_L	Maximum lead temperature for soldering	300	$^\circ C$
T_{SOLD}	Plastic body for 10s	260	$^\circ C$
V_{ISOL}	50/60 Hz, RMS, 1 minute	2500	V~
	$I_{ISOL} \leq 1mA$ $t = 1s$	3000	V~
F_C	Mounting force	40..120/4.5..27	N/lb.
Weight		8	g

Symbol	Test Conditions ($T_J = 25^\circ C$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0V$, $I_D = 3mA$	1000		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 1mA$	3.5		6.5 V
I_{GSS}	$V_{GS} = \pm 30V$, $V_{DS} = 0V$			± 200 nA
I_{DSS}	$V_{DS} = V_{DSS}$ $V_{GS} = 0V$ $T_J = 125^\circ C$			50 μA 3 mA
$R_{DS(on)}$	$V_{GS} = 10V$, $I_D = 22A$, Note 1			240 m Ω

Features

- Silicon chip on Direct-Copper-Bond substrate
 - High power dissipation
 - Isolated mounting surface
 - 2500V electrical isolation
- Low drain to tab capacitance (<30pF)
- Rugged polysilicon gate cell structure
- Unclamped Inductive Switching (UIS) rated
- Fast intrinsic Rectifier

Applications

- Switched-mode and resonant-mode power supplies
- DC-DC converters
- Laser Drivers
- AC and DC motor controls
- Robotics and servo controls

Advantages

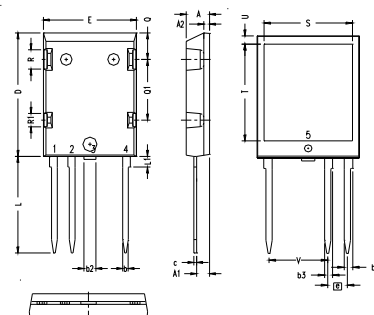
- Easy assembly
- Space savings
- High power density

IXYS

IXFL44N100P

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$V_{DS} = 20\text{V}, I_D = 22\text{A}$, Note 1	20	35	S
C_{iss}	$V_{GS} = 0\text{V}, V_{DS} = 25\text{V}, f = 1\text{MHz}$		19	nF
C_{oss}			1060	pF
C_{rss}			41	pF
R_{Gi}	Gate input resistance		1.70	Ω
$t_{d(on)}$	Resistive Switching Times $V_{GS} = 10\text{V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 22\text{A}$ $R_G = 1\Omega$ (External)		60	ns
t_r			68	ns
$t_{d(off)}$			90	ns
t_f			54	ns
$Q_{g(on)}$	$V_{GS} = 10\text{V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 22\text{A}$		305	nC
Q_{gs}			104	nC
Q_{gd}			125	nC
R_{thJC}				0.35 $^\circ\text{C/W}$
R_{thCS}		0.15		$^\circ\text{C/W}$

ISOPLUS i5-Pak™ HV (IXFL) Outline



Note: Bottom heatsink meets 2500 Vrms isolation to the other pins.

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.190	.205	4.83	5.21
A1	.102	.118	2.59	3.00
A2	.046	.055	1.17	1.40
b	.045	.055	1.14	1.40
b1	.063	.072	1.60	1.83
b2	.100	.110	2.54	2.79
b3	.058	.068	1.47	1.73
c	.020	.029	0.51	0.74
D	1.020	1.040	25.91	26.42
E	.770	.799	19.56	20.29
e	.150 BSC		3.81 BSC	
L	.780	.820	19.81	20.83
L1	.080	.102	2.03	2.59
Q	.210	.235	5.33	5.97
Q1	.490	.513	12.45	13.03
R	.150	.180	3.81	4.57
R1	.100	.130	2.54	3.30
S	.668	.690	16.97	17.53
T	.801	.821	20.34	20.85
U	.065	.080	1.65	2.03
V	.440	.460	11.18	11.68

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
I_S	$V_{GS} = 0\text{V}$			44 A
I_{SM}	Repetitive, pulse width limited by T_{JM}			176 A
V_{SD}	$I_F = I_S, V_{GS} = 0\text{V}$, Note 1			1.5 V
t_{rr}	$I_F = 22\text{A}, -di/dt = 100\text{A}/\mu\text{s}$ $V_R = 100\text{V}, V_{GS} = 0\text{V}$			300 ns
Q_{RM}			2.5	μC
I_{RM}			17	A

Note 1: Pulse test, $t \leq 300\mu\text{s}$; duty cycle, $d \leq 2\%$.

IXYS reserves the right to change limits, test conditions, and dimensions.

IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:	4,835,592	4,931,844	5,049,961	5,237,481	6,162,665	6,404,065 B1	6,683,344	6,727,585	7,005,734 B2	7,157,338B2
	4,850,072	5,017,508	5,063,307	5,381,025	6,259,123 B1	6,534,343	6,710,405 B2	6,759,692	7,063,975 B2	
	4,881,106	5,034,796	5,187,117	5,486,715	6,306,728 B1	6,583,505	6,710,463	6,771,478 B2	7,071,537	

Fig. 1. Output Characteristics @ 25°C

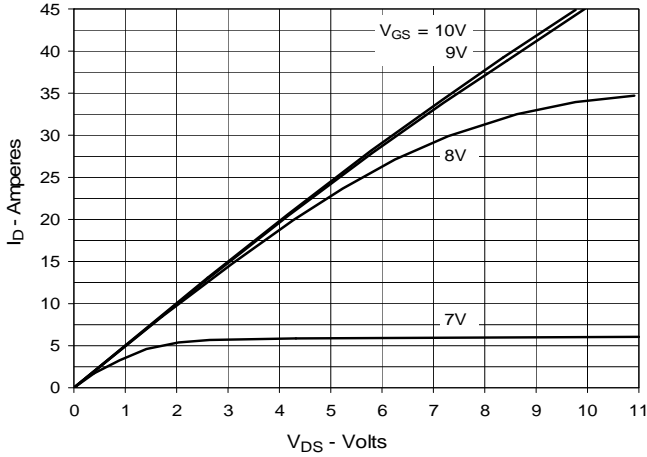


Fig. 2. Extended Output Characteristics @ 25°C

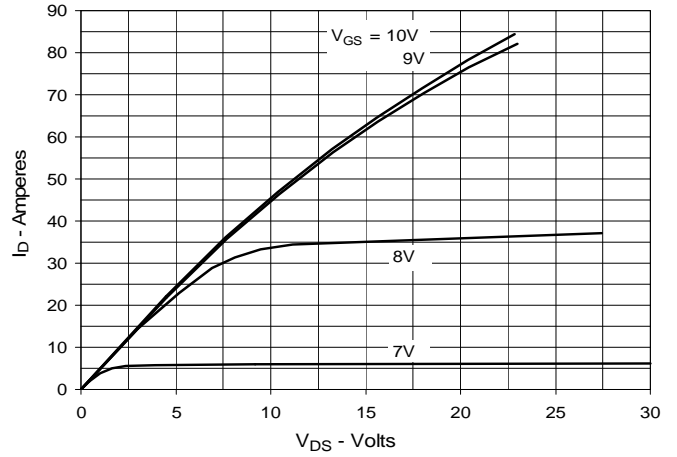


Fig. 3. Output Characteristics @ 125°C

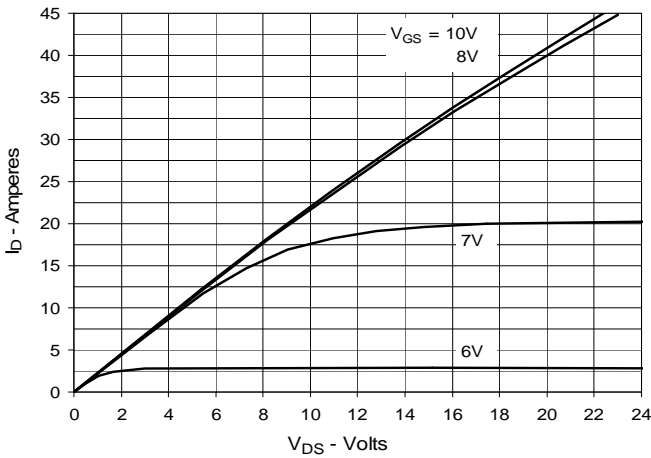


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 22A$ Value vs. Junction Temperature

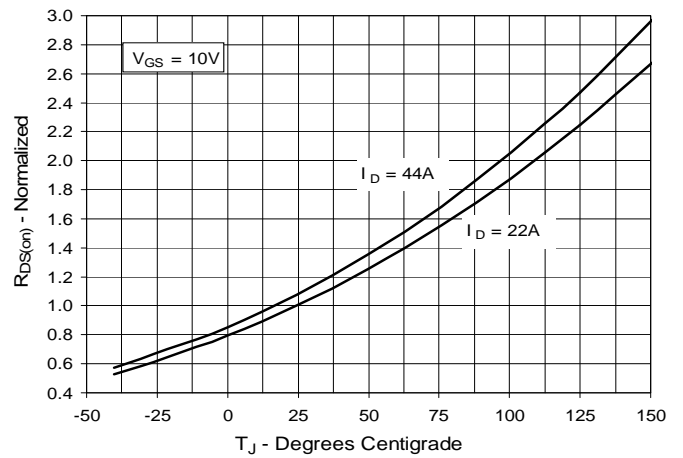


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 22A$ Value vs. Drain Current

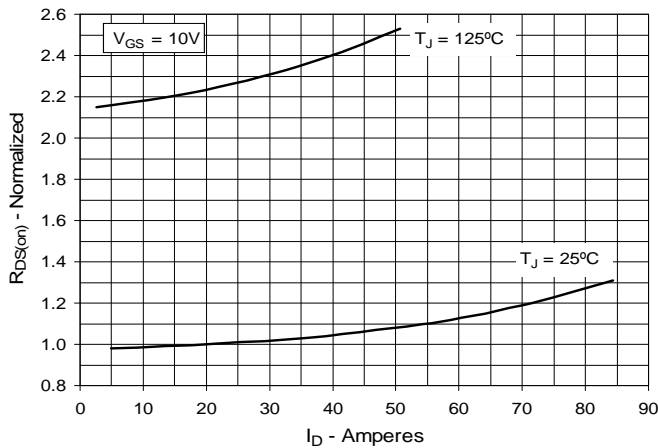


Fig. 6. Maximum Drain Current vs. Case Temperature

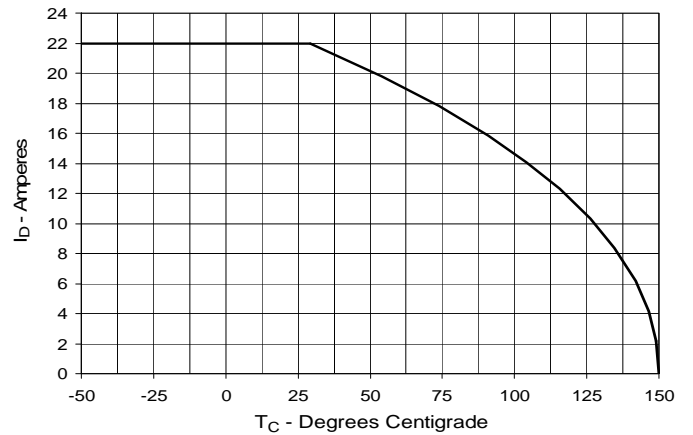


Fig. 7. Input Admittance

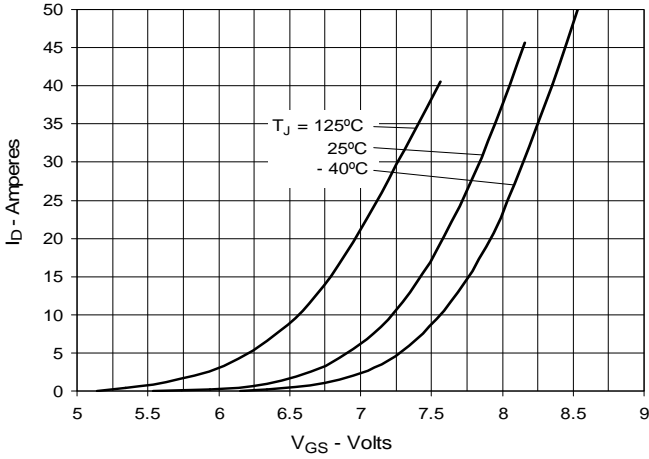


Fig. 8. Transconductance

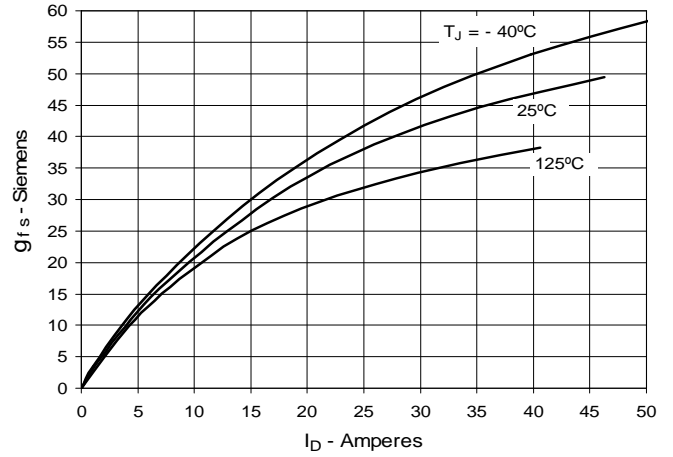


Fig. 9. Forward Voltage Drop of Intrinsic Diode

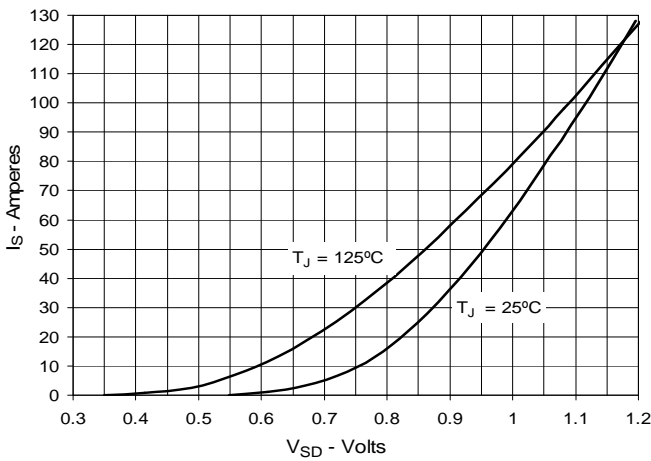


Fig. 10. Gate Charge

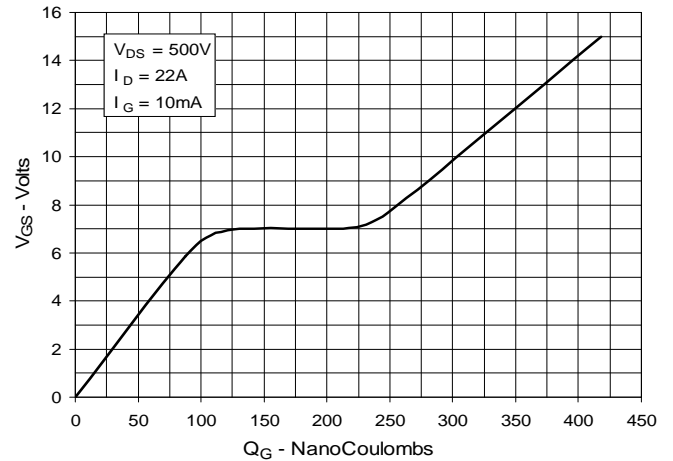


Fig. 11. Capacitance

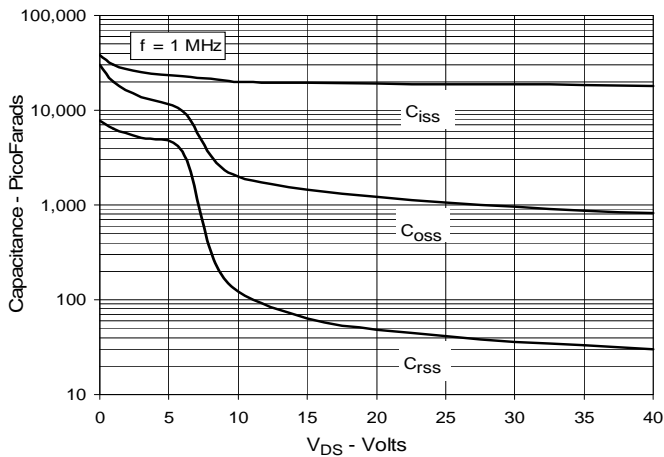
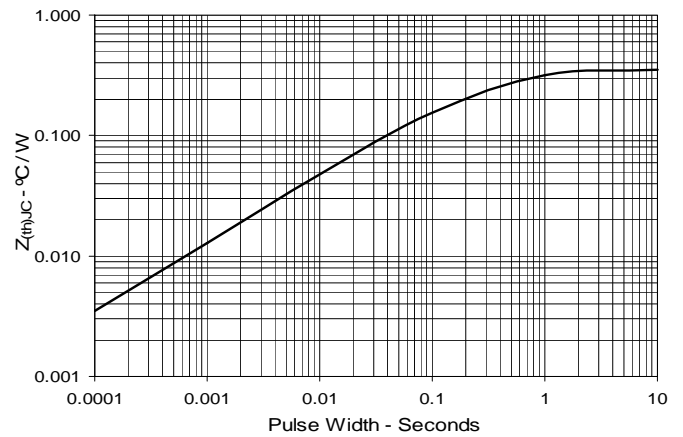


Fig. 12. Maximum Transient Thermal Impedance



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