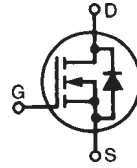


**Polar™ HiperFET™
Power MOSFET**

IXFR26N120P

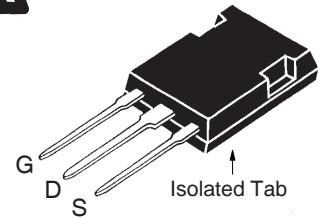
V_{DSS} = 1200V
I_{D25} = 15A
R_{DS(on)} ≤ 550mΩ
t_{rr} ≤ 300ns

(Electrically Isolated Tab)



N-Channel Enhancement Mode
 Fast Intrinsic Rectifier
 Avalanche Rated

ISOPLUS247
 E153432



G = Gate D = Drain
 S = Source

Symbol	Test Conditions	Maximum Ratings	
V _{DSS}	T _J = 25°C to 150°C	1200	V
V _{DGR}	T _J = 25°C to 150°C, R _{GS} = 1MΩ	1200	V
V _{GSS}	Continuous	±30	V
V _{GSM}	Transient	±40	V
I _{D25}	T _C = 25°C	15	A
I _{DM}	T _C = 25°C, Pulse Width Limited by T _{JM}	60	A
I _A	T _C = 25°C	13	A
E _{AS}	T _C = 25°C	1.5	J
dv/dt	I _S ≤ I _{DM} , V _{DD} ≤ V _{DSS} , T _J ≤ 150°C	15	V/ns
P _D	T _C = 25°C	320	W
T _J		-55 ... +150	°C
T _{JM}		150	°C
T _{stg}		-55 ... +150	°C
T _L	Maximum Lead Temperature for Soldering	300	°C
T _{SOLD}	Plastic Body for 10s	260	°C
V _{ISOL}	50/60 Hz, 1 Minute	2500	V~
F _C	Mounting Force	20..120/4.5..27	N/lb
Weight		5	g

Features

- Silicon Chip on Direct-Copper Bond (DCB) Substrate
- Isolated Mounting Surface
- Low Intrinsic Gate Resistance
- 2500V~ Electrical Isolation
- International Standard Package
- Fast Recovery Rectifier
- Avalanche Rated
- Low Package Inductance

Advantages

- Easy to Mount
- Space Savings
- High Power Density

Applications

- High Voltage Switch-mode and Resonant-Mode Power Supplies
- High Voltage Pulse Power Applications
- High Voltage Discharge Circuits in Lasers Pulsers, Spark Igniters, RF Generators
- High Voltage DC-DC Converters
- High Voltage DC-AC Inverters

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
BV _{DSS}	V _{GS} = 0V, I _D = 3mA	1200		V
V _{GS(th)}	V _{DS} = V _{GS} , I _D = 1mA	3.5		6.5 V
I _{GSS}	V _{GS} = ±30V, V _{DS} = 0V			±200 nA
I _{DSS}	V _{DS} = V _{DSS} , V _{GS} = 0V T _J = 125°C			50 μA 5 mA
R _{DS(on)}	V _{GS} = 10V, I _D = 13A, Note 1			550 mΩ

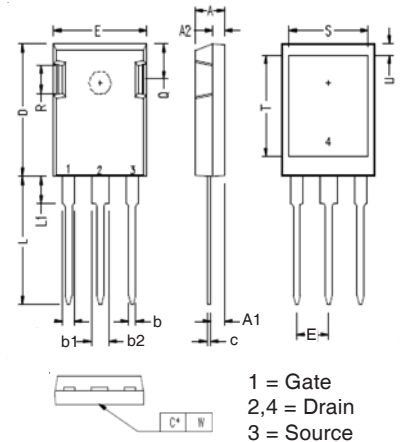
Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$V_{DS} = 20\text{V}, I_D = 13\text{A}$, Note 1	13	21	S
C_{iss}	$V_{GS} = 0\text{V}, V_{DS} = 25\text{V}, f = 1\text{MHz}$		14	nF
C_{oss}			725	pF
C_{rss}			50	pF
R_{Gi}	Gate Input Resistance		1.5	Ω
$t_{d(on)}$	Resistive Switching Times $V_{GS} = 10\text{V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 13\text{A}$ $R_G = 1\Omega$ (External)		56	ns
t_r			55	ns
$t_{d(off)}$			76	ns
t_f			58	ns
$Q_{g(on)}$	$V_{GS} = 10\text{V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 13\text{A}$		225	nC
Q_{gs}			87	nC
Q_{gd}			98	nC
R_{thJC}				0.39°C/W
R_{thCS}		0.15		$^\circ\text{C/W}$

Source-Drain Diode

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
I_s	$V_{GS} = 0\text{V}$			26 A
I_{SM}	Repetitive, Pulse Width Limited by T_{JM}			104 A
V_{SD}	$I_F = I_s, V_{GS} = 0\text{V}$, Note 1			1.5 V
t_{rr}	$I_F = 13\text{A}, -di/dt = 100\text{A}/\mu\text{s}$ $V_R = 100\text{V}, V_{GS} = 0\text{V}$			300 ns
Q_{RM}			1.3	μC
I_{RM}			12.0	A

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

ISOPLUS247 (IXFR) Outline



SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.190	.205	4.83	5.21
A1	.090	.100	2.29	2.54
A2	.075	.085	1.91	2.16
b	.045	.055	1.14	1.40
b1	.075	.085	1.91	2.15
b2	.115	.126	2.92	3.20
C	.024	.033	0.61	0.83
D	.819	.840	20.80	21.34
E	.620	.635	15.75	16.13
e	.215 BSC		5.45 BSC	
L	.780	.811	19.81	20.60
L1	.150	.172	3.81	4.38
Q	.220	.244	5.59	6.20
R	.170	.191	4.32	4.85
S	.520	.540	13.21	13.72
T	.620	.640	15.75	16.26
U	.065	.080	1.65	2.03
W	0	.004	0	0.10

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
	4,860,072	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 @ $T_J = 25^\circ\text{C}$

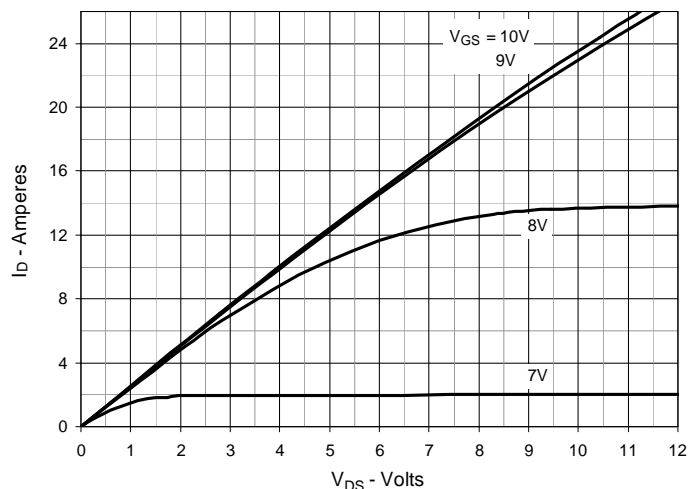


Fig. 2. Extended Output Characteristics @ $T_J = 25^\circ\text{C}$

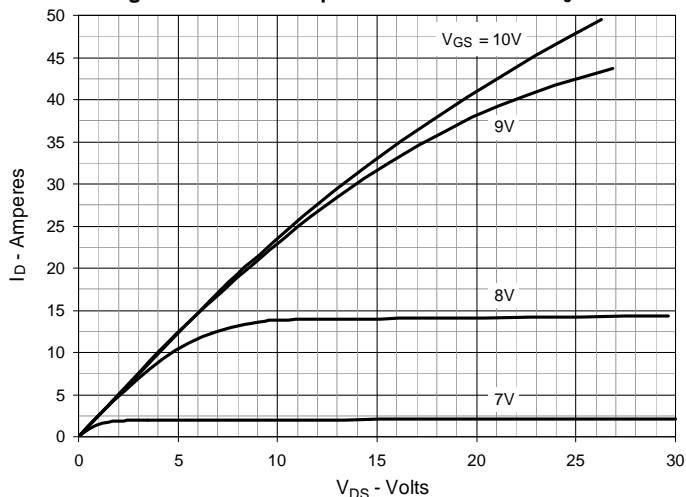


Fig. 3. Output Characteristics @ $T_J = 125^\circ\text{C}$

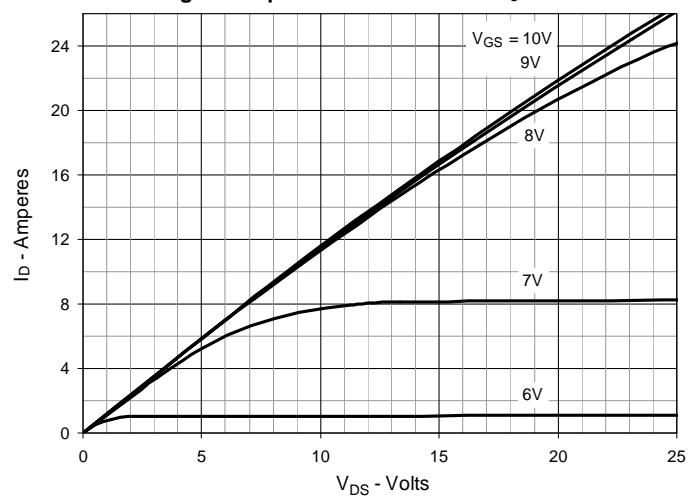


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 13A$ Value vs. Junction Temperature

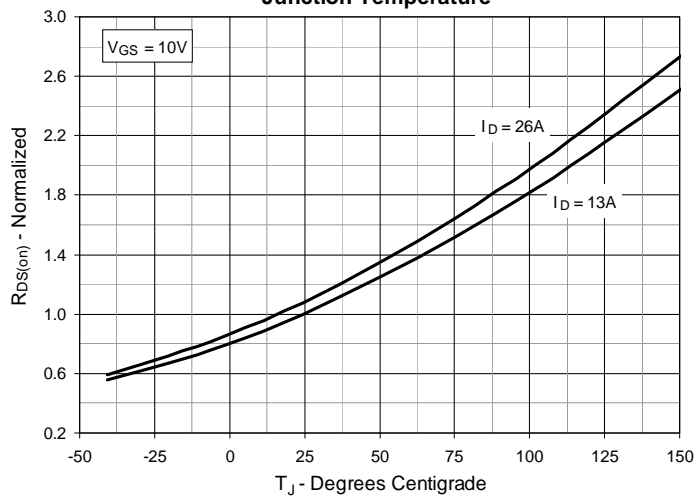


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 13A$ Value vs. Drain Current

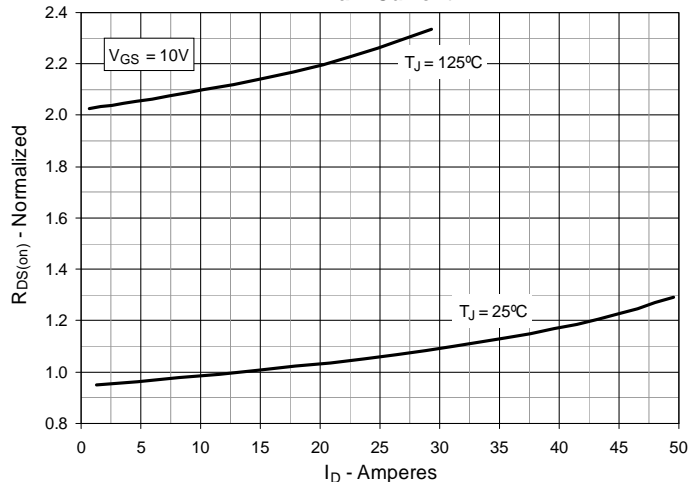


Fig. 6. Maximum Drain Current vs. Case Temperature

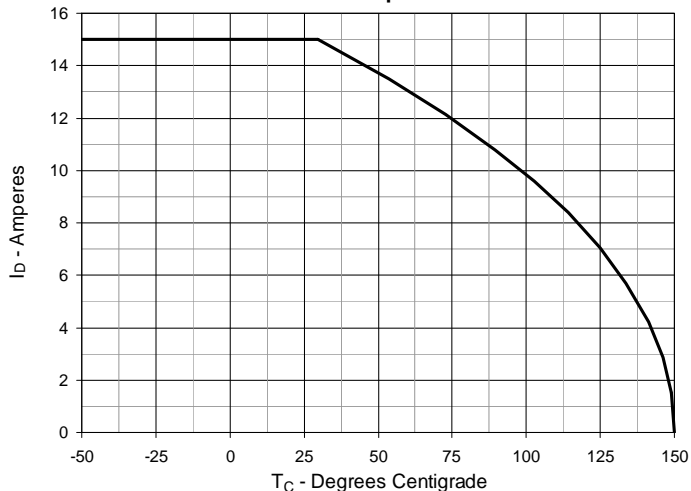


Fig. 7. Input Admittance

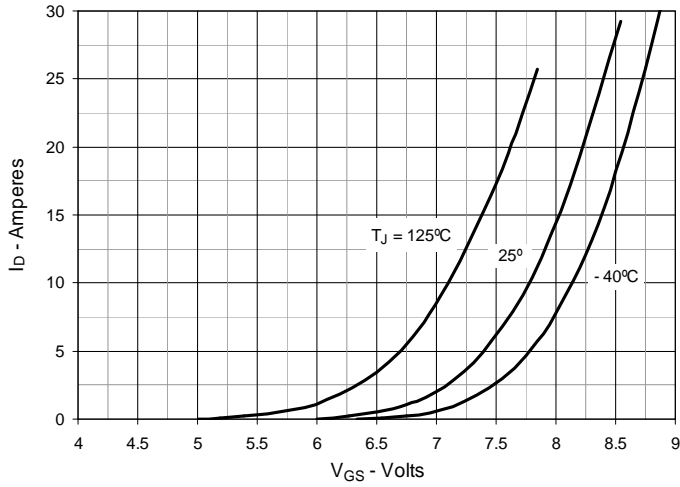


Fig. 8. Transconductance

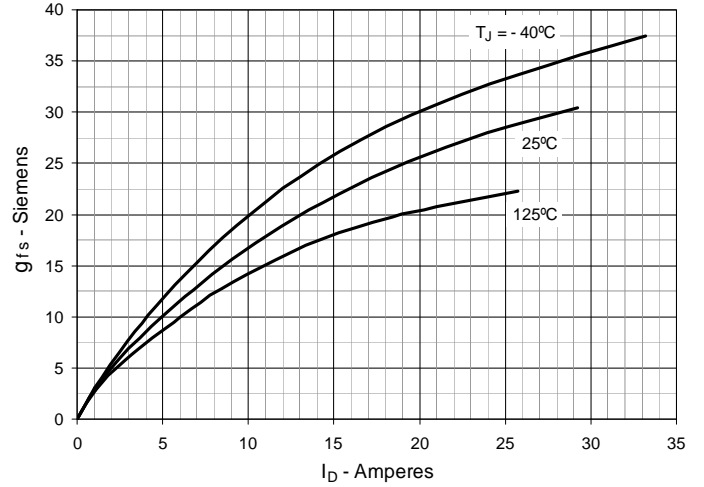


Fig. 9. Forward Voltage Drop of Intrinsic Diode

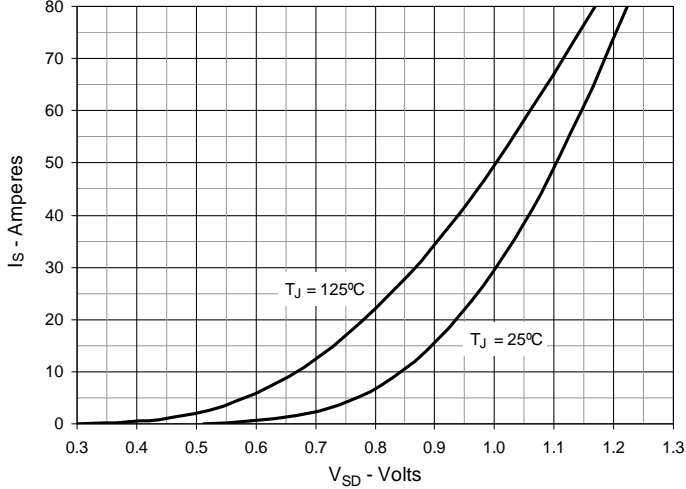


Fig. 10. Gate Charge

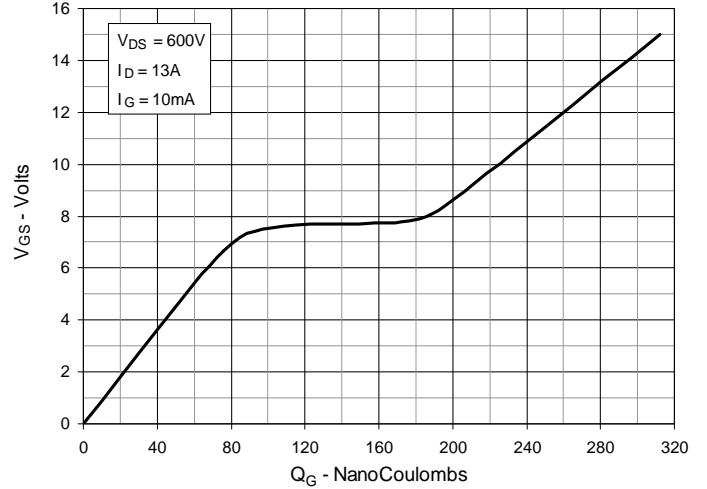


Fig. 11. Capacitance

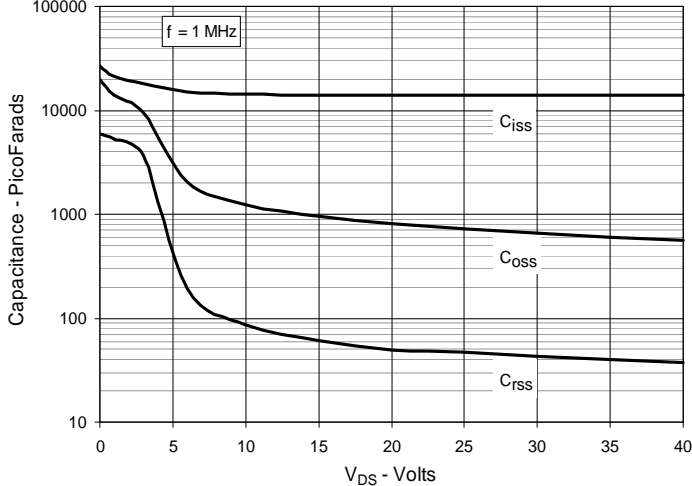
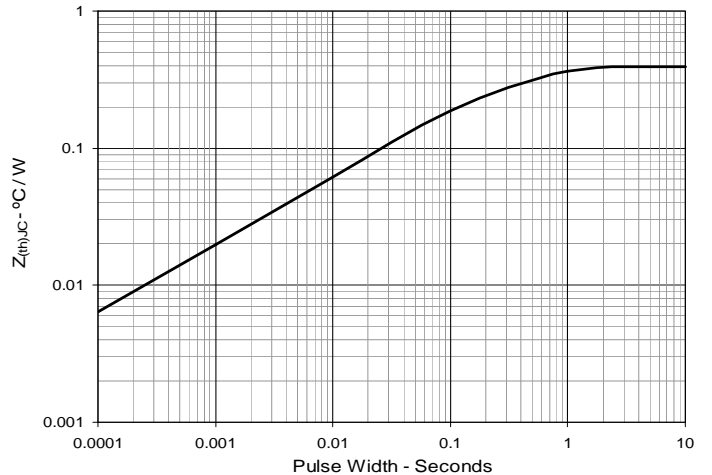


Fig. 12. Maximum Transient Thermal Impedance





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