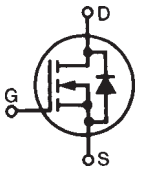
IXYS

Polar™ HiPerFET™ Power MOSFETs

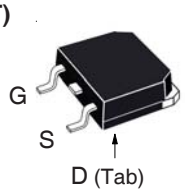
IXFT16N120P
IXFH16N120P

V_{DSS} = 1200V
I_{D25} = 16A
$R_{DS(on)}$ ≤ 950mΩ
t_{rr} ≤ 300ns

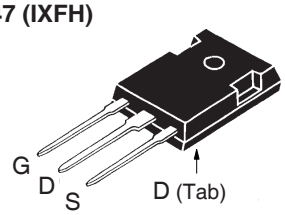
N-Channel Enhancement Mode
Avalanche Rated
Fast Intrinsic Diode



TO-268 (IXFT)



TO-247 (IXFH)



G = Gate D = Drain
S = Source Tab = Drain

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	16	A
I_{DM}	T_C = 25°C, Pulse Width Limited by T_{JM}	35	A
I_A	T_C = 25°C	8	A
E_{AS}	T_C = 25°C	800	mJ
dv/dt	$I_S \le I_{DM}$, $V_{DD} \le V_{DSS}$, $T_J \le 150°C$	15	V/ns
P_D	T_C = 25°C	660	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
T_L	1.6mm (0.062in.) from Case for 10s	300	°C
T_{sold}	Plastic Body for 10 seconds	260	°C
M_d	Mounting Torque (TO-247)	1.13 / 10	Nm/lb.in.
Weight	TO-268	4	g
	TO-247	6	g

Features

- International Standard Packages
- Fast Recovery Diode
- 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 (T_J = 25°C Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.	
BV_{DSS}	V_{GS} = 0V, I_D = 1mA	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			25	μA
	T_J = 125°C			2.5	mA
$R_{DS(on)}$	V_{GS} = 10V, $I_D = 0.5 \bullet I_{D25}$, Note 1			950	mΩ

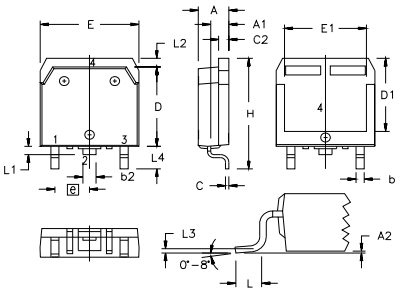
Symbol	Test Conditions (T_J = 25°C Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.	
g_{fs}	V_{DS} = 20V, I_D = 0.5 • I_{D25}, Note 1	11	17		S
C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		6900		pF
C_{oss}			390		pF
C_{rss}			48		pF
R_{Gi}	Gate Input Resistance		1.4		Ω
$t_{d(on)}$	**Resistive Switching Times**		35		ns
t_r	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{D25}		28		ns
$t_{d(off)}$	R_G = 2Ω (External)		66		ns
t_f			35		ns
$Q_{g(on)}$	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{D25}		120		nC
Q_{gs}			37		nC
Q_{gd}			47		nC
R_{thJC}				0.19	°C/W
R_{thCS}	TO-247		0.21		°C/W

Source-Drain Diode

Symbol	Test Conditions (T_J = 25°C Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.	
I_S	V_{GS} = 0V			16	A
I_{SM}	Repetitive, Pulse Width Limited by T_{JM}			64	A
V_{SD}	I_F = I_S, V_{GS} = 0V, Note 1			1.5	V
t_{rr}	I_F = 8A, -di/dt = 100A/μs			300	ns
I_{RM}	V_R = 100V, V_{GS} = 0V		7.5		A
Q_{RM}			0.75		μC

Note 1. Pulse test, t ≤ 300μs, duty cycle, d ≤ 2%.

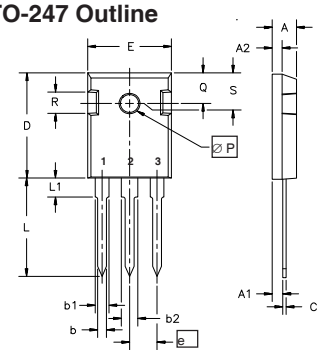
TO-268 Outline



Terminals: 1 - Gate 2,4 - Drain
3 - Source

SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.193	.201	4.90	5.10
A1	.106	.114	2.70	2.90
A2	.001	.010	0.02	0.25
b	.045	.057	1.15	1.45
b2	.075	.083	1.90	2.10
C	.016	.026	0.40	0.65
C2	.057	.063	1.45	1.60
D	.543	.551	13.80	14.00
D1	.488	.500	12.40	12.70
E	.624	.632	15.85	16.05
E1	.524	.535	13.30	13.60
e	.215 BSC		5.45 BSC	
H	.736	.752	18.70	19.10
L	.094	.106	2.40	2.70
L1	.047	.055	1.20	1.40
L2	.039	.045	1.00	1.15
L3	.010 BSC		0.25 BSC	
L4	.150	.161	3.80	4.10

TO-247 Outline



Terminals: 1 - Gate 2 - Drain
3 - Source

Dim.	Millimeter Min.	Millimeter Max.	Inches Min.	Inches Max.
A	4.7	5.3	.185	.209
A_1	2.2	2.54	.087	.102
A_2	2.2	2.6	.059	.098
b	1.0	1.4	.040	.055
b_1	1.65	2.13	.065	.084
b_2	2.87	3.12	.113	.123
C	.4	.8	.016	.031
D	20.80	21.46	.819	.845
E	15.75	16.26	.610	.640
e	5.20	5.72	0.205	0.225
L	19.81	20.32	.780	.800
L1		4.50		.177
ØP	3.55	3.65	.140	.144
Q	5.89	6.40	0.232	0.252
R	4.32	5.49	.170	.216
S	6.15 BSC		242 BSC	

Fig. 1. Output Characteristics T_J = @ 25ºC

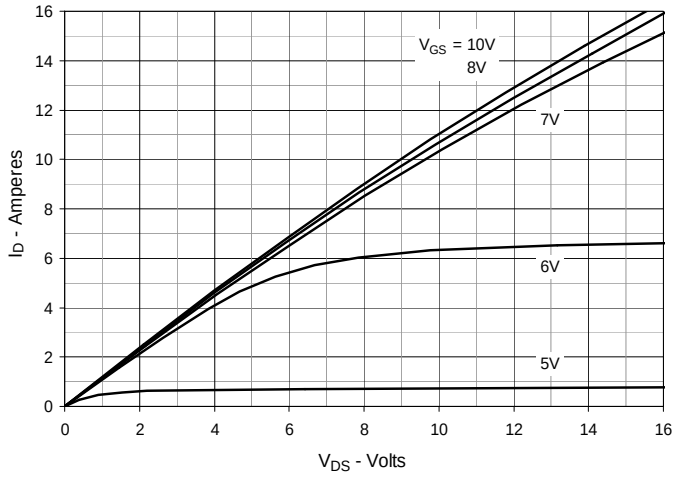


Fig. 2. Extended Output Characteristics T_J = @ 25ºC

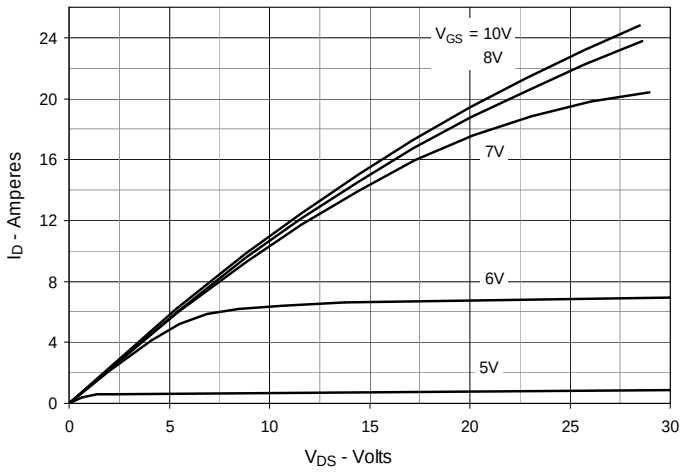


Fig. 3. Output Characteristics T_J = @ 125ºC

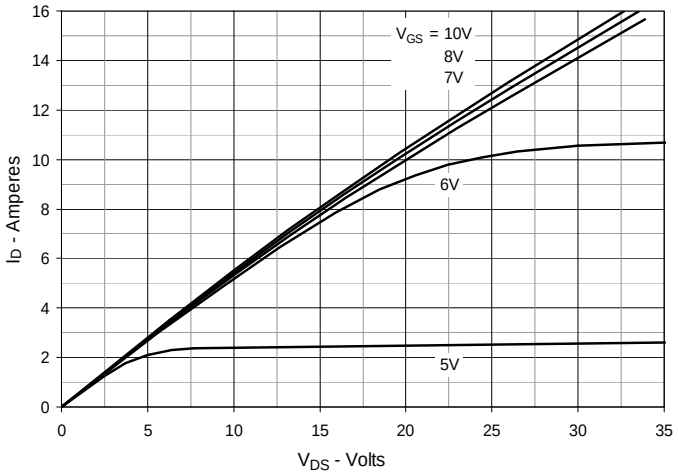


Fig. 4. $R_{DS(on)}$ Normalized to I_D = 8A Value vs. Junction Temperature

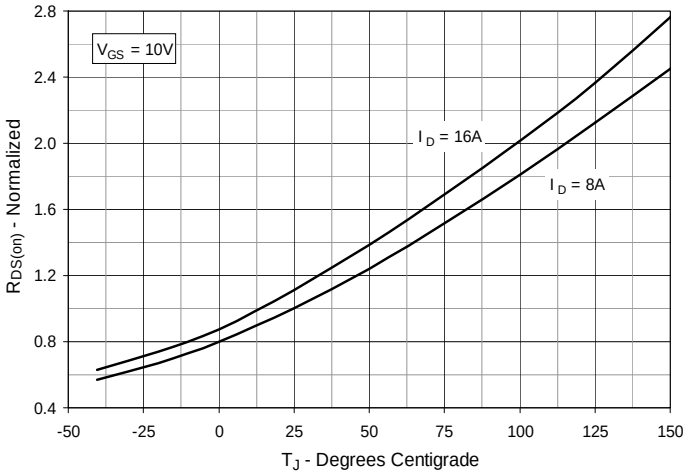


Fig. 5. $R_{DS(on)}$ Normalized to I_D = 8A Value vs. Drain Current

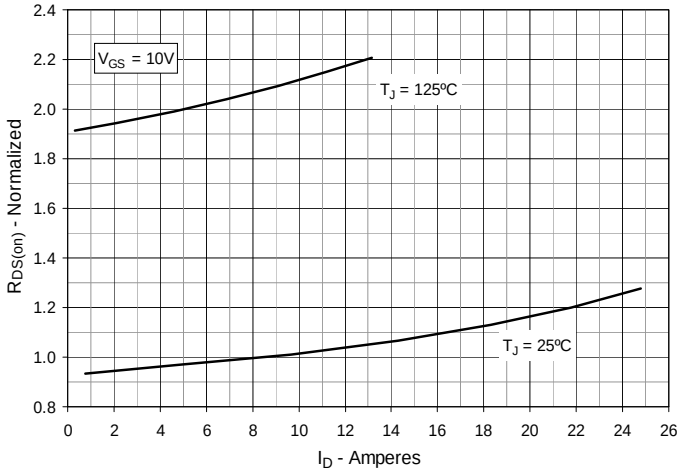


Fig. 6. Maximum Drain Current vs. Case Temperature

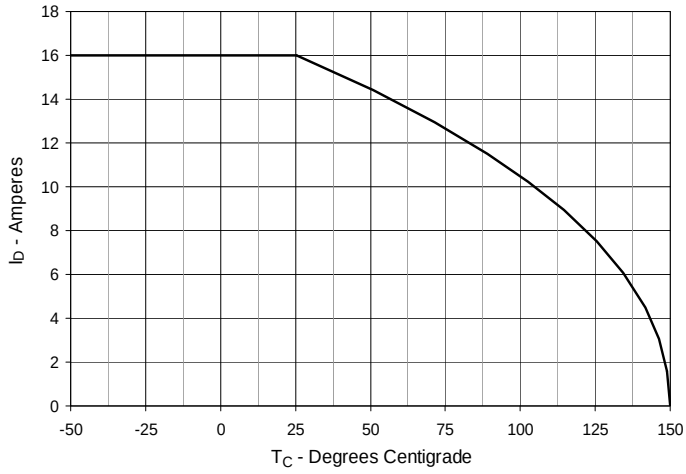


Fig. 7. Input Admittance

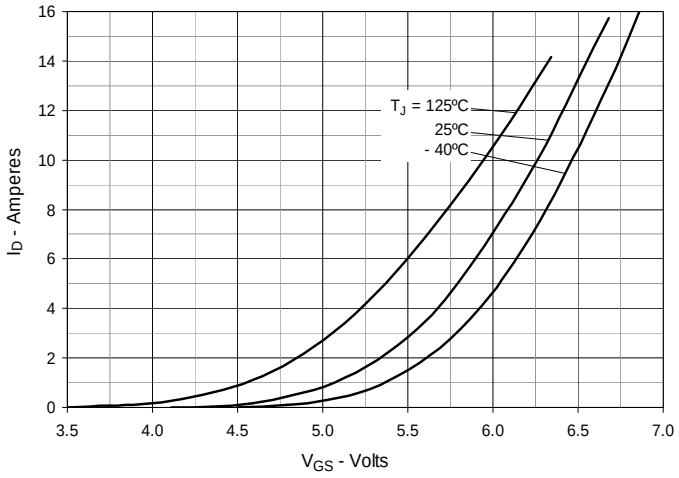


Fig. 8. Transconductance

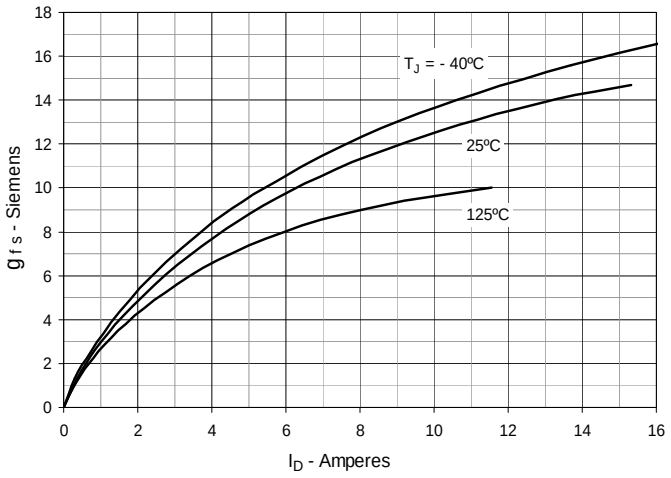


Fig. 9. Forward Voltage Drop of Intrinsic Diode

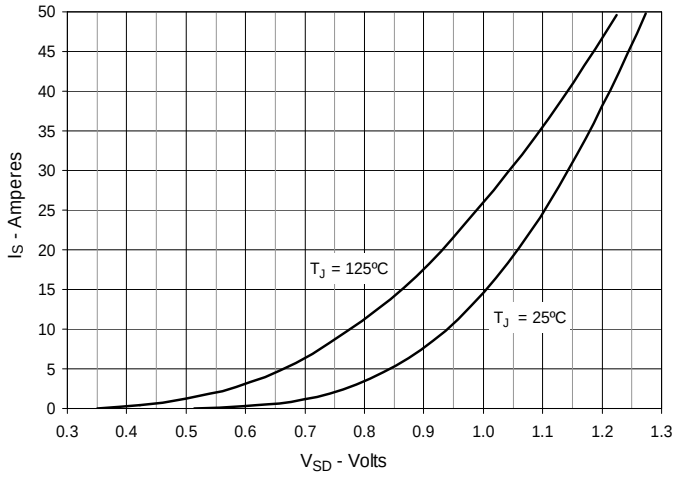


Fig. 10. Gate Charge

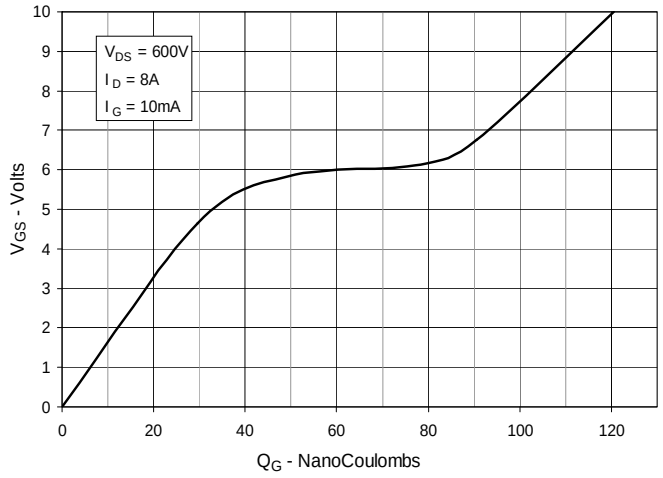


Fig. 11. Capacitance

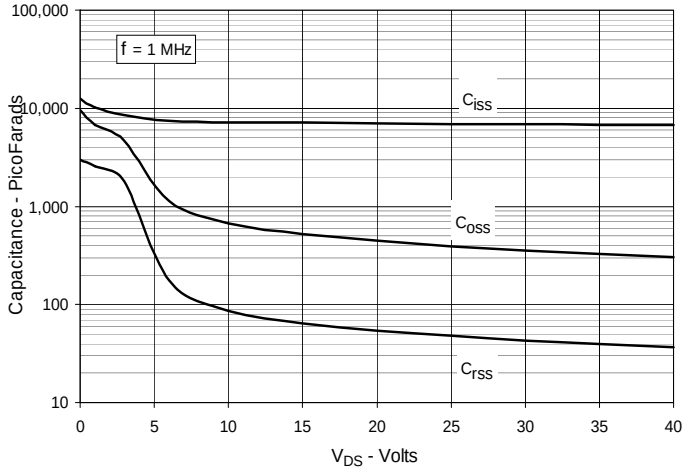


Fig. 12. Breakdown and Threshold Voltages vs. Junction Temperature

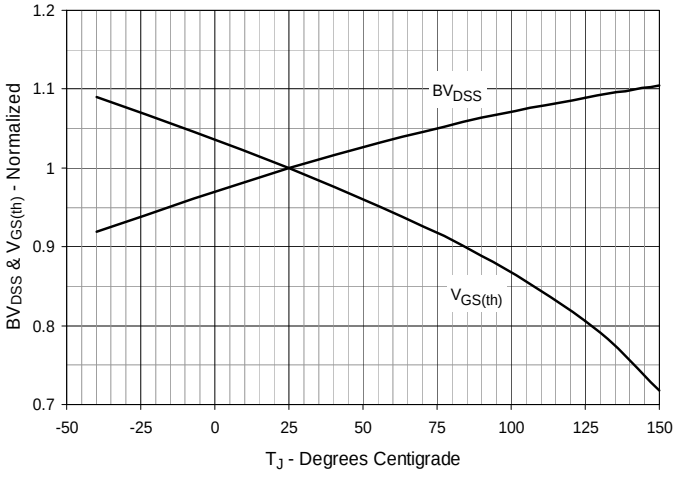
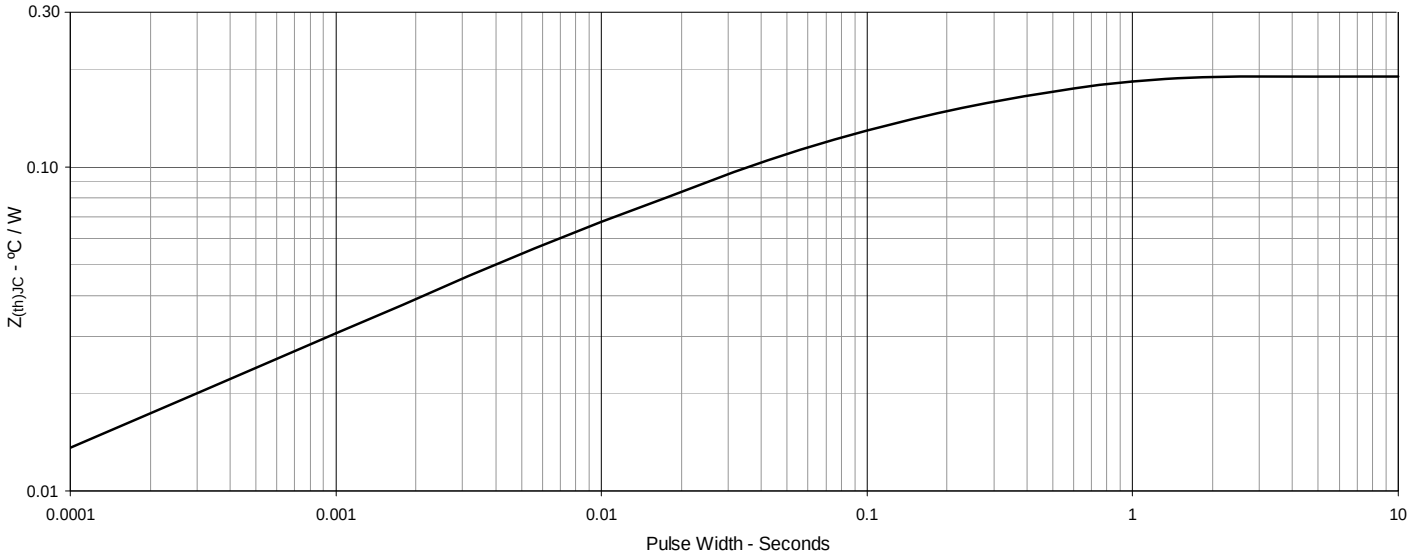


Fig. 13. Maximum Transient Thermal Impedance



单击下面可查看定价，库存，交付和生命周期等信息

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