

Polar™ Power MOSFET HiPerFET™

N-Channel Enhancement Mode
Avalanche Rated
Fast Intrinsic Diode

IXFH12N120P
IXFV12N120P
IXFV12N120PS

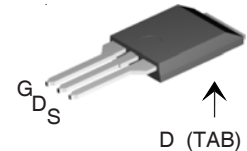


V_{DSS} = 1200V
I_{D25} = 12A
R_{DS(on)} ≤ 1.35Ω
t_{rr} ≤ 300ns

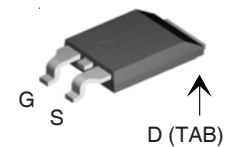
Symbol	Test Conditions	Maximum Ratings	
V _{DSS}	T _J = 25°C to 150°C	1200	V
V _{DGR}	T _J = 25°C to 150°C, R _{GS} = 1MΩ	1200	V
V _{GSS}	Continuous	± 30	V
V _{GSM}	Transient	± 40	V
I _{D25}	T _C = 25°C	12	A
I _{DM}	T _C = 25°C, pulse width limited by T _{JM}	30	A
I _A	T _C = 25°C	6	A
E _{AS}	T _C = 25°C	500	mJ
dV/dt	I _S ≤ I _{DM} , V _{DD} ≤ V _{DSS} , T _J ≤ 150°C	15	V/ns
P _D	T _C = 25°C	543	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
M _d	Mounting torque (TO-247)	1.13/10	Nm/lb.in.
F _C	Mounting force (PLUS 220)	11..65 / 2.5..14.6	N/lb.
Weight	TO-247	6	g
	PLUS 220 types	4	g

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			± 100 nA
I _{DSS}	V _{DS} = V _{DSS} V _{GS} = 0V T _J = 125°C			25 μA 2 mA
R _{DS(on)}	V _{GS} = 10V, I _D = 0.5 • I _{D25} , Note 1	1.15	1.35	Ω

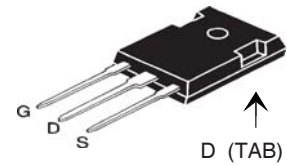
PLUS220 (IXFV)



PLUS220SMD (IXFV_S)



TO-247 (IXFH)



G = Gate D = Drain
S = Source TAB = Drain

Features

- International standard packages
- Fast recovery diode
- Unclamped Inductive Switching (UIS) rated
- Low package inductance
 - easy to drive and to protect

Advantages

- Easy to mount
- Space savings
- High power density

Applications:

- High Voltage Switched-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

Fig. 1. Output Characteristics @ 25°C

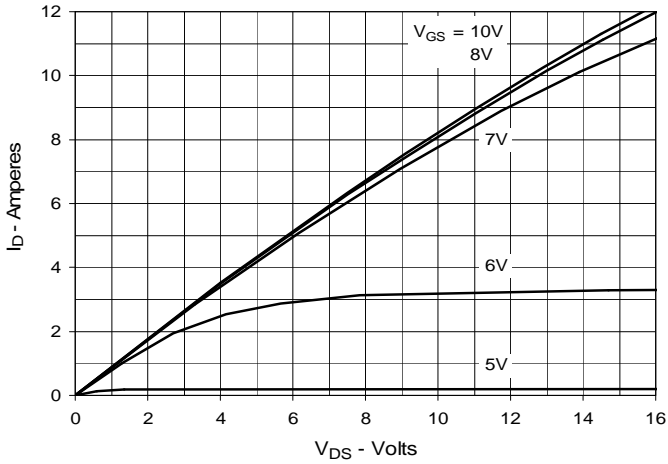


Fig. 2. Extended Output Characteristics @ 25°C

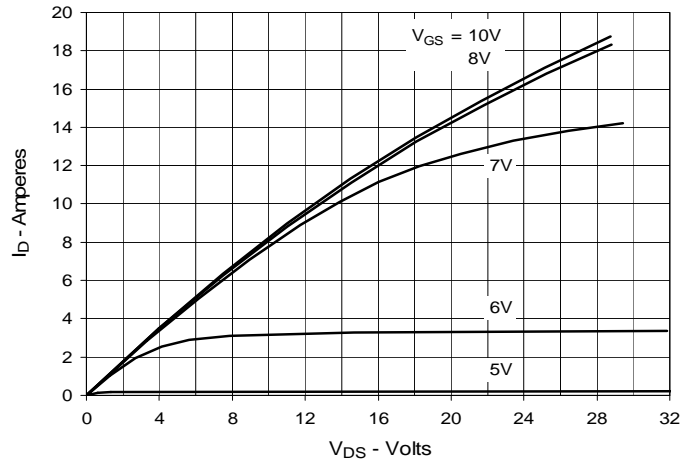


Fig. 3. Output Characteristics @ 125°C

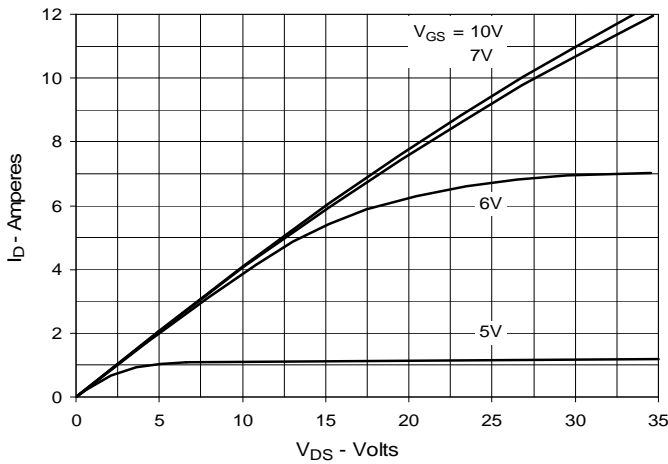


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 6A$ Value vs. Junction Temperature

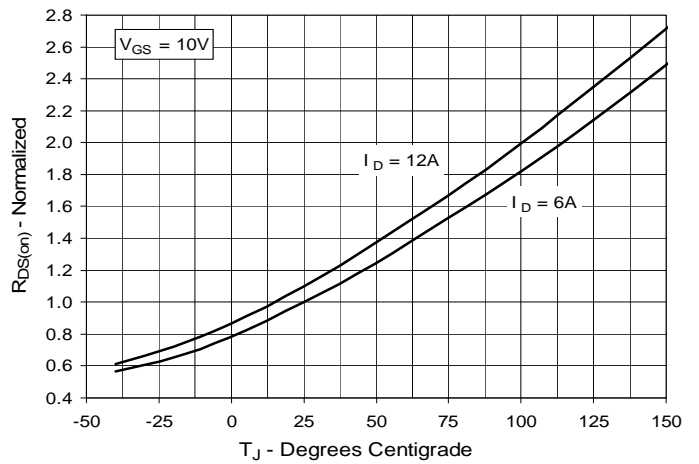


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 6A$ Value vs. Drain Current

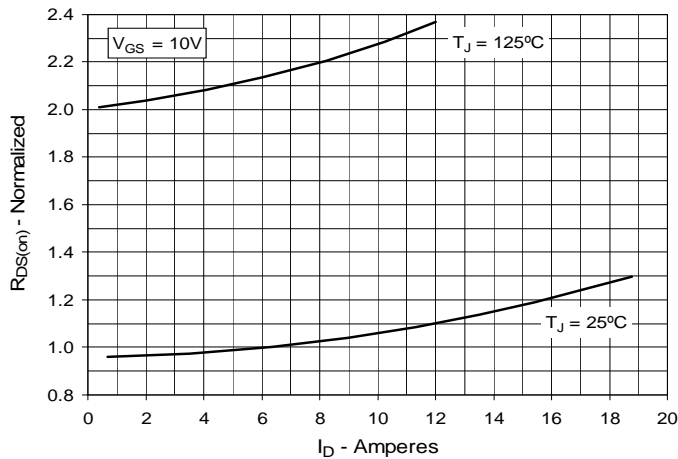


Fig. 6. Maximum Drain Current vs. Case Temperature

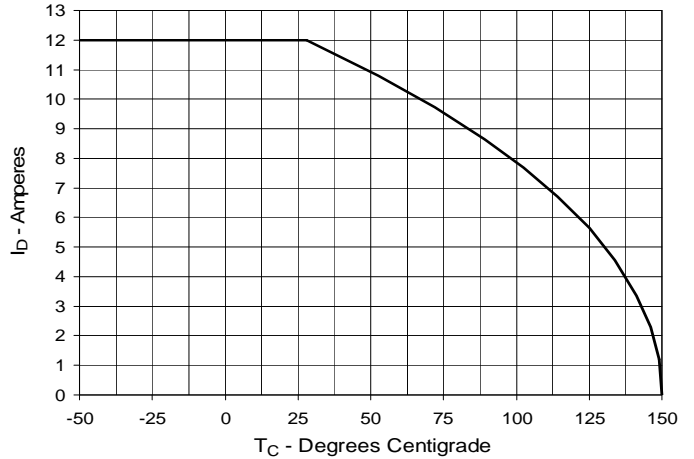


Fig. 7. Input Admittance

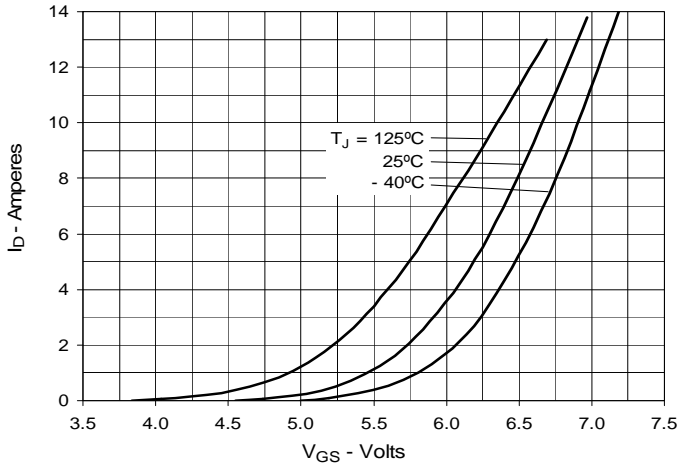


Fig. 8. Transconductance

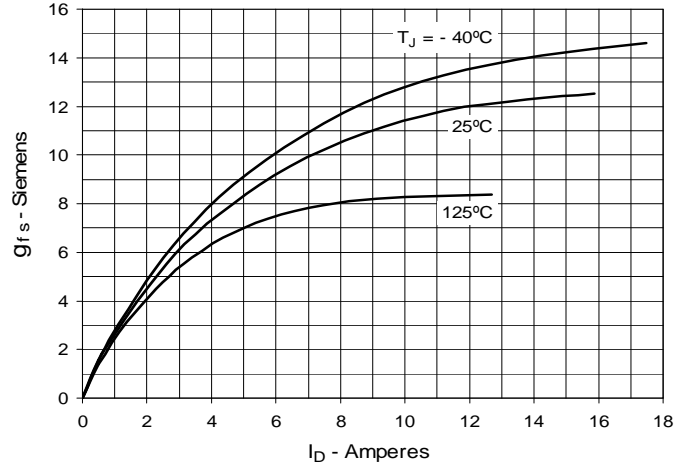


Fig. 9. Forward Voltage Drop of Intrinsic Diode

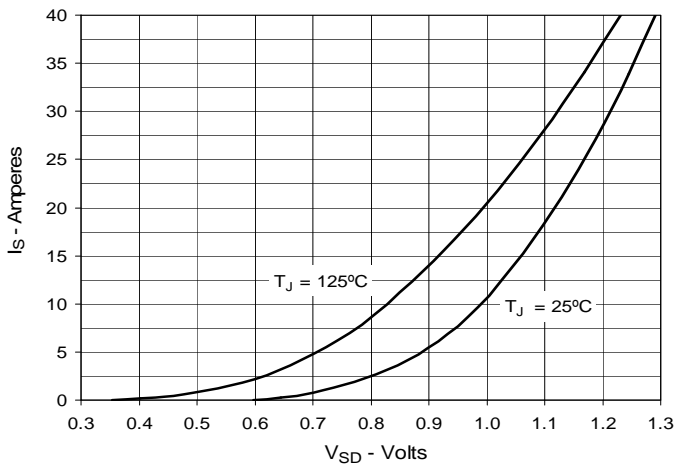


Fig. 10. Gate Charge

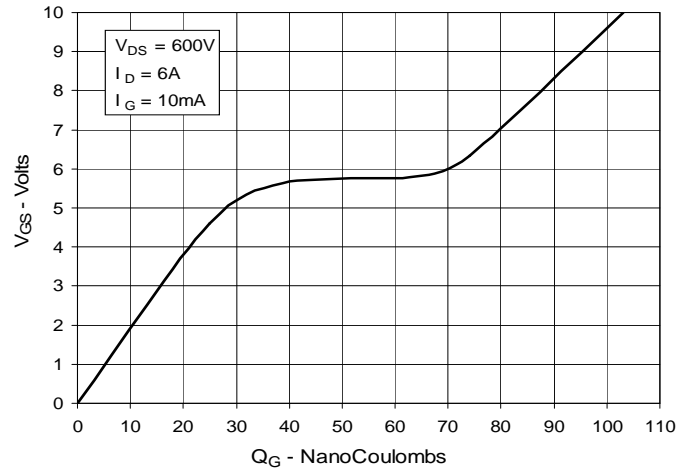


Fig. 11. Capacitance

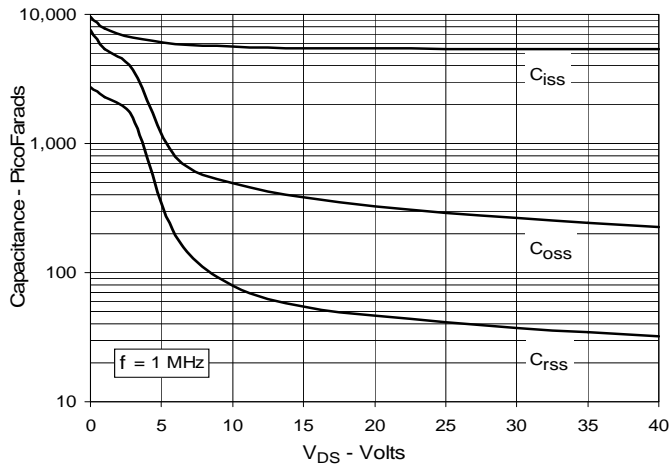
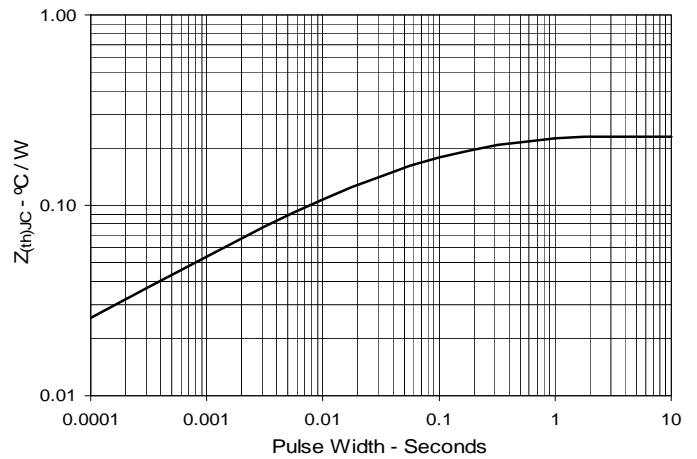


Fig. 12. Maximum Transient Thermal Impedance



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