



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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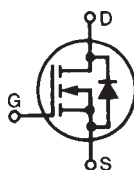
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Polar™ HiPerFET™ Power MOSFET

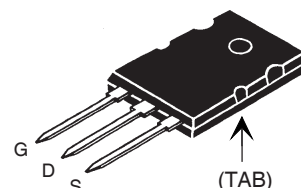
IXFK30N110P
IXFX30N110P

N-Channel Enhancement Mode
Avalanche Rated
Fast Intrinsic Diode

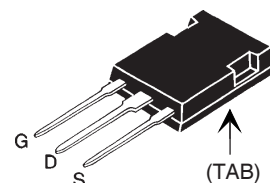


$$\begin{aligned} V_{DSS} &= 1100V \\ I_{D25} &= 30A \\ R_{DS(on)} &\leq 360m\Omega \\ t_{rr} &\leq 300ns \end{aligned}$$

TO-264 (IXFK)



PLUS247 (IXFX)



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

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	1100	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C , $R_{GS} = 1M\Omega$	1100	V
V_{GSS}	Continuous	± 30	V
V_{GSM}	Transient	± 40	V
I_{D25}	$T_C = 25^\circ\text{C}$	30	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	75	A
I_{AR}	$T_C = 25^\circ\text{C}$	15	A
E_{AS}	$T_C = 25^\circ\text{C}$	1.5	J
dV/dt	$I_S \leq I_{DM}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$	15	V/ns
P_D	$T_C = 25^\circ\text{C}$	960	W
T_J		-55 ... +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-55 ... +150	$^\circ\text{C}$
T_L	1.6 mm (0.062 in.) from case for 10s	300	$^\circ\text{C}$
T_{SOLD}	Plastic body for 10s	260	$^\circ\text{C}$
M_d	Mounting torque (IXFK)	1.13/10	Nm/lb.in.
F_C	Mounting force (IXFX)	20..120 / 4.5..27	N/lb
Weight	(IXFK)	10	g
	(IXFX)	6	g

Symbol	Test Conditions	Characteristic Values		
	($T_J = 25^\circ\text{C}$ unless otherwise specified)	Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0V$, $I_D = 3mA$	1100		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}	$V_{DS} = V_{DSS}$ $V_{GS} = 0V$ $T_J = 125^\circ\text{C}$			50 μA 2.5 mA
$R_{DS(on)}$	$V_{GS} = 10V$, $I_D = 0.5 \cdot I_{D25}$, Note 1			360 m Ω

Features

- Fast intrinsic diode
- International standard packages
- 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

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$V_{DS} = 20V$, $I_D = 0.5 \cdot I_{D25}$, Note 1	15	25	S
C_{iss}	$V_{GS} = 0V$, $V_{DS} = 25V$, $f = 1MHz$		13.6	nF
C_{oss}			795	pF
C_{rss}			70	pF
R_{GI}	Gate Input Resistance		1.50	Ω
$t_{d(on)}$	Resistive Switching Times $V_{GS} = 10V$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 0.5 \cdot I_{D25}$ $R_G = 1\Omega$ (External)		50	ns
t_r			48	ns
$t_{d(off)}$			83	ns
t_f			52	ns
$Q_{g(on)}$	$V_{GS} = 10V$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 0.5 \cdot I_{D25}$		235	nC
Q_{gs}			102	nC
Q_{gd}			79	nC
R_{thJC}			0.13	$^{\circ}C/W$
R_{thCS}		0.15		$^{\circ}C/W$

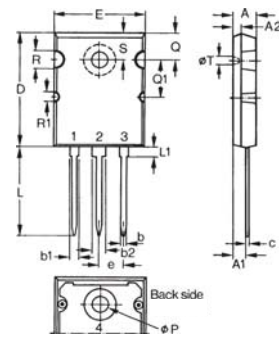
Source-Drain Diode

Characteristic Values
($T_J = 25^{\circ}C$ unless otherwise specified)

Symbol	Test Conditions	Min.	Typ.	Max.
I_S	$V_{GS} = 0V$			30 A
I_{SM}	Repetitive, pulse width limited by T_{JM}			120 A
V_{SD}	$I_F = I_S$, $V_{GS} = 0V$, Note 1			1.5 V
t_{rr}	$I_F = 20A$, $-di/dt = 100 A/\mu s$ $V_R = 100 V$, $V_{GS} = 0V$			300 ns
Q_{RM}		1.8		μC
I_{RM}		13		A

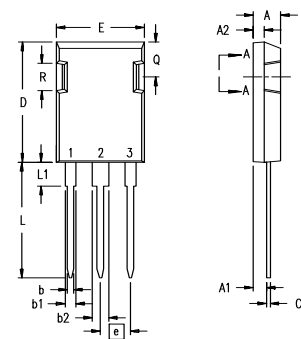
Note 1. Pulse test, $t \leq 300\mu s$, duty cycle, $d \leq 2\%$.

TO-264 Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.82	5.13	.190	.202
A1	2.54	2.89	.100	.114
A2	2.00	2.10	.079	.083
b	1.12	1.42	.044	.056
b1	2.39	2.69	.094	.106
b2	2.90	3.09	.114	.122
c	0.53	0.83	.021	.033
D	25.91	26.16	1.020	1.030
E	19.81	19.96	.780	.786
e	5.46 BSC		.215 BSC	
J	0.00	0.25	.000	.010
K	0.00	0.25	.000	.010
L	20.32	20.83	.800	.820
L1	2.29	2.59	.090	.102
P	3.17	3.66	.125	.144
Q	6.07	6.27	.239	.247
Q1	8.38	8.69	.330	.342
R	3.81	4.32	.150	.170
R1	1.78	2.29	.070	.090
S	6.04	6.30	.238	.248

PLUS 247™ Outline



Terminals: 1 - Gate
2 - Drain (Collector)
3 - Source (Emitter)

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.83	5.21	.190	.205
A1	2.29	2.54	.090	.100
A2	1.91	2.16	.075	.085
b	1.14	1.40	.045	.055
b1	1.91	2.13	.075	.084
b2	2.92	3.12	.115	.123
C	0.61	0.80	.024	.031
D	20.80	21.34	.819	.840
E	15.75	16.13	.620	.635
e	5.45 BSC		.215 BSC	
L	19.81	20.32	.780	.800
L1	3.81	4.32	.150	.170
Q	5.59	6.20	.220	0.244

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	7,157,338 B2
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	

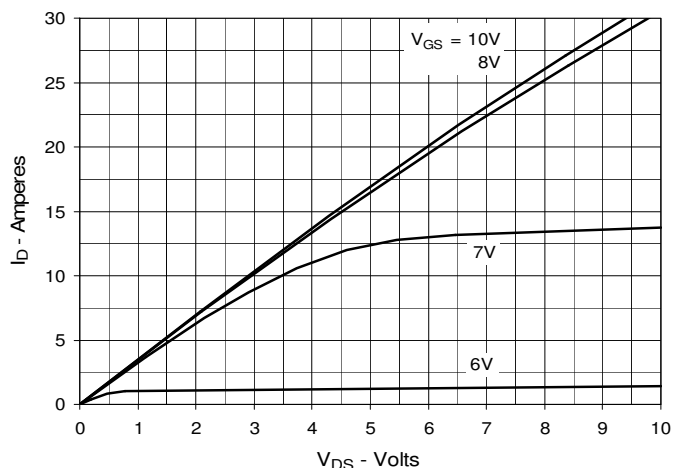
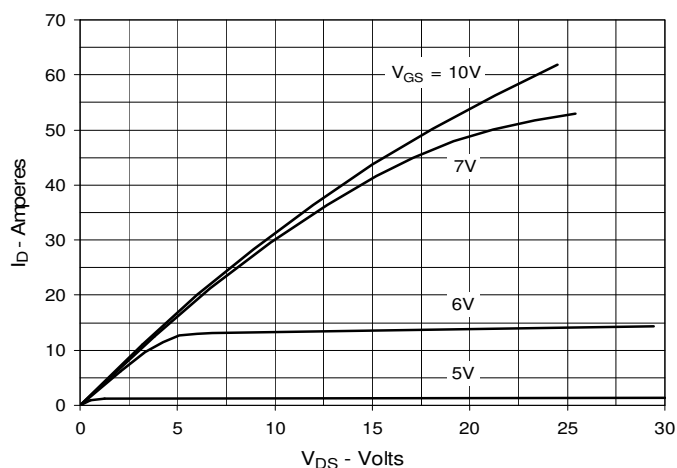
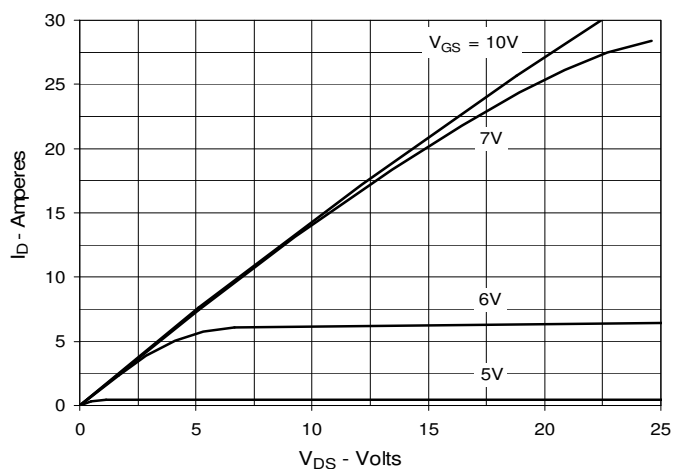
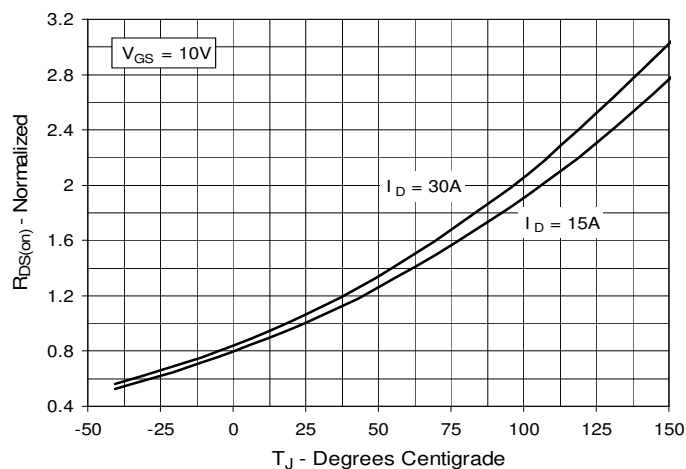
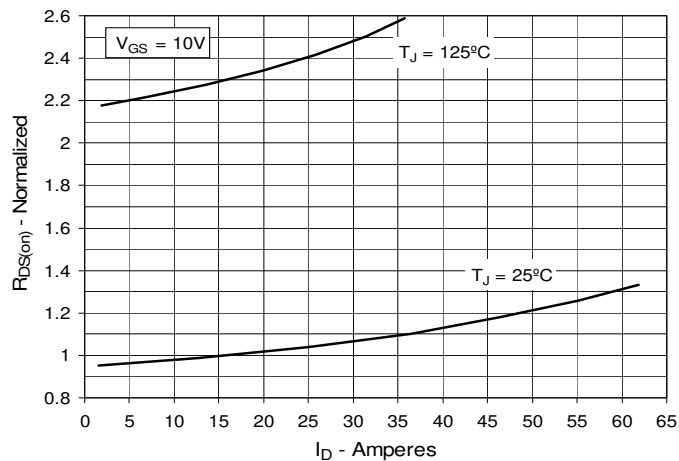
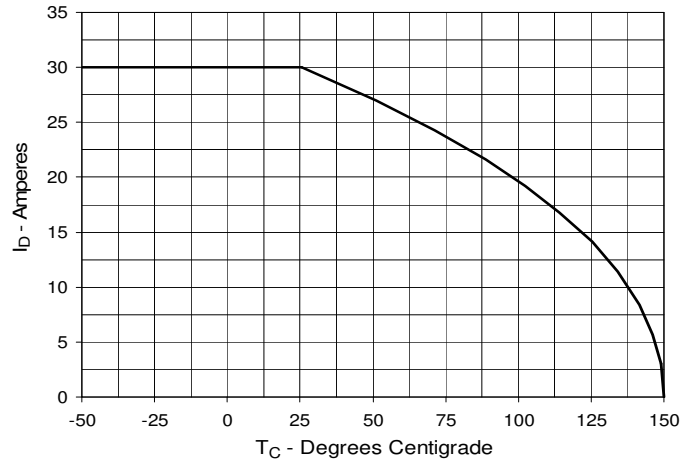
Fig. 1. Output Characteristics
@ 25°CFig. 2. Extended Output Characteristics
@ 25°CFig. 3. Output Characteristics
@ 125°CFig. 4. $R_{DS(on)}$ Normalized to $I_D = 15A$ Value
vs. Junction TemperatureFig. 5. $R_{DS(on)}$ Normalized to $I_D = 15A$ Value
vs. Drain CurrentFig. 6. Maximum Drain Current vs.
Case Temperature

Fig. 7. Input Admittance

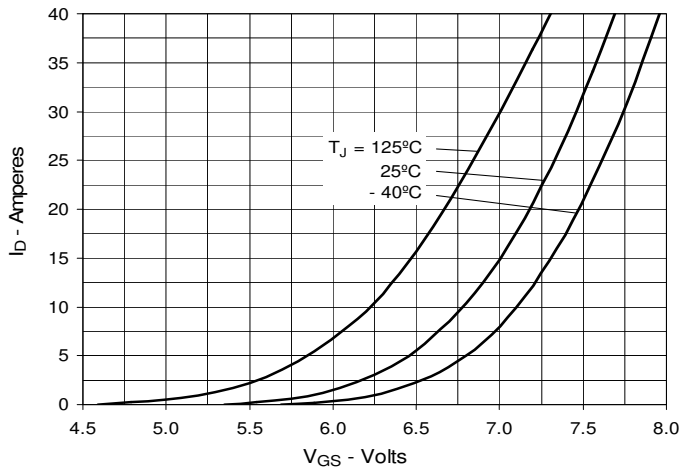


Fig. 8. Transconductance

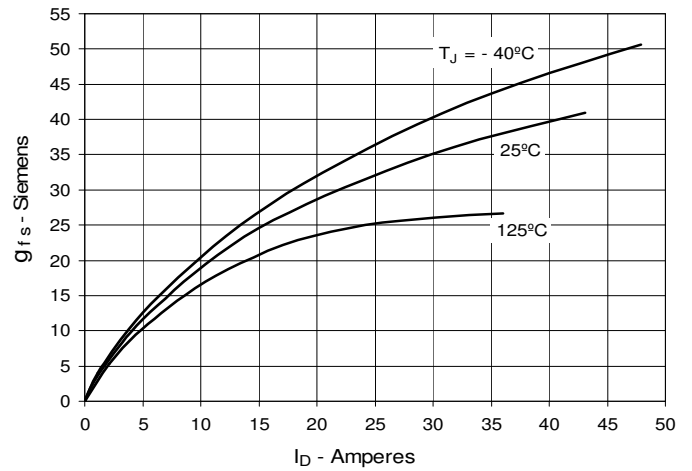


Fig. 9. Forward Voltage Drop of Intrinsic Diode

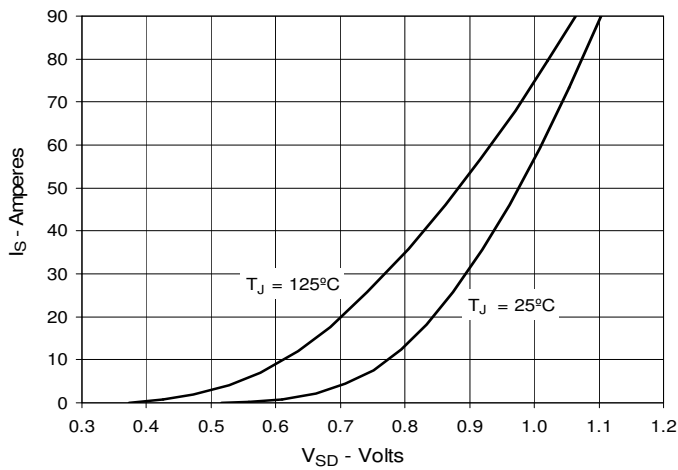


Fig. 10. Gate Charge

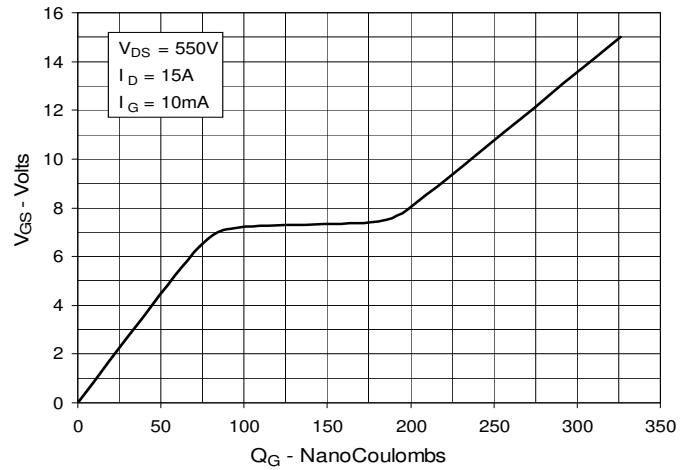


Fig. 11. Capacitance

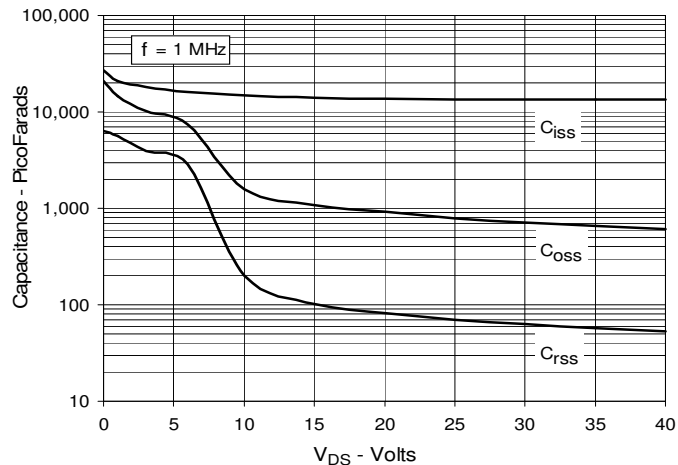


Fig. 12. Maximum Transient Thermal Impedance

