



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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HiPerFET™ Power MOSFETs

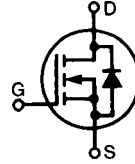
IXFH/IXFT/IXFX14N100
IXFH/IXFT/IXFX15N100

N-Channel Enhancement Mode
High dv/dt, Low t_{rr} , HDMOS™ Family

V_{DSS}	I_{D25}	$R_{DS(on)}$
1000 V	14 A	0.75 Ω
1000 V	15 A	0.70 Ω

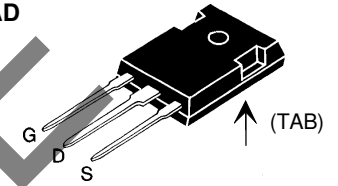
$t_{rr} \leq 200$ ns

Preliminary data sheet

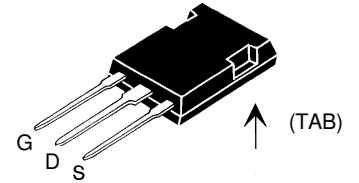


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	1000	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1$ M Ω	1000	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	14N100 14 15N100 15	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	14N100 56 15N100 60	A
I_{AR}	$T_C = 25^\circ\text{C}$	14N100 14 15N100 15	A
E_{AR}	$T_C = 25^\circ\text{C}$	45	mJ
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 100$ A/ μs , $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$, $R_G = 2$ Ω	5	V/ns
P_D	$T_C = 25^\circ\text{C}$	360	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 10 s	300	$^\circ\text{C}$
M_d	Mounting torque	1.13/10	Nm/lb.in.
Weight		6	g

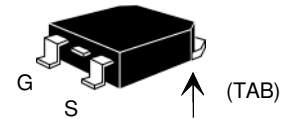
TO-247 AD
(IXFH)



PLUS 247™
(IXFX)



TO-268 (D3)
(IXFT)



Features

- International standard packages
- Low $R_{DS(on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- Unclamped Inductive Switching (UIS) rated
- Low package inductance
 - easy to drive and to protect
- Fast intrinsic Rectifier

Applications

- DC-DC converters
- Battery chargers
- Switched-mode and resonant-mode power supplies
- DC choppers
- AC motor control
- Temperature and lighting controls

Advantages

- Easy to mount with 1 screw (TO-247) (isolated mounting screw hole) or mounting clip or spring (PLUS 247™)
- High power surface mountable package
- High power density

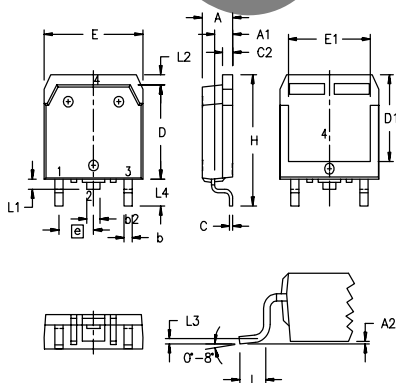
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_{DSS}	$V_{GS} = 0$ V, $I_D = 1$ mA	1000		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 4$ mA	2.5		4.5 V
I_{GSS}	$V_{GS} = \pm 20$ V $_{DC}$, $V_{DS} = 0$			± 100 nA
I_{DSS}	$V_{DS} = 0.8 \cdot V_{DSS}$, $T_J = 25^\circ\text{C}$ $V_{GS} = 0$ V, $T_J = 125^\circ\text{C}$			250 μA 1 mA
$R_{DS(on)}$	$V_{GS} = 10$ V, $I_D = 0.5 \cdot I_{D25}$ Pulse test, $t \leq 300$ μs , duty cycle $d \leq 2$ %	14N100 0.75 15N100 0.70		Ω Ω

Symbol	Test Conditions	Characteristic Values (T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
g_{fs}	V _{DS} = 10 V; I _D = 0.5 • I _{D25} , pulse test	6	10	S
C_{iss} C_{oss} C_{rss}	$\left. \begin{array}{l} \\ \\ \end{array} \right\} V_{GS} = 0 \text{ V}, V_{DS} = 25 \text{ V}, f = 1 \text{ MHz}$		4500	pF
			430	pF
			150	pF
t_{d(on)} t_r t_{d(off)} t_f	$\left. \begin{array}{l} \\ \\ \\ \end{array} \right\} V_{GS} = 10 \text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$ $R_G = 2 \Omega \text{ (External),}$		27	ns
			30	ns
			120	ns
			30	ns
Q_{g(on)} Q_{gs} Q_{gd}	$\left. \begin{array}{l} \\ \\ \end{array} \right\} V_{GS} = 10 \text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$		220	nC
			30	nC
			85	nC
R_{thJC} R_{thCK}	(TO-247 Case Style)		0.25	0.35 K/W K/W

Source-Drain Diode

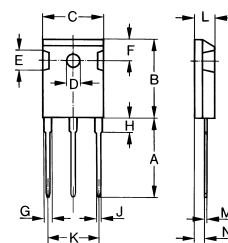
Source-Drain Diode		Characteristic Values			
		(T _J = 25°C, unless otherwise specified)			
Symbol	Test Conditions	min.	typ.	max.	
I _S	V _{GS} = 0 V	14N100 15N100		14 15	A A
I _{SM}	Repetitive; pulse width limited by T _{JM}	14N100 15N100		56 60	A A
V _{SD}	I _F = I _S , V _{GS} = 0 V, Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %			1.5	V
t _{rr}	$\left. \begin{array}{l} I_F = I_S \\ -di/dt = 100 \text{ A}/\mu\text{s}, \\ V_R = 100 \text{ V} \end{array} \right\}$	T _J = 25°C		200	ns
		T _J = 125°C		350	ns
Q _{RM}		T _J = 25°C	1		μC
		T _J = 125°C	2		μC
I _{RM}		T _J = 25°C	10		A
		T _J = 125°C	15		A

TO-268AA (D³ PAK)



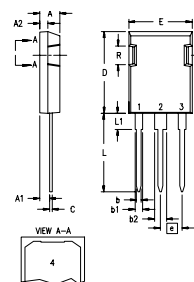
Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.9	5.1	.193	.201
A ₁	2.7	2.9	.106	.114
A ₂	.02	.25	.001	.010
b	1.15	1.45	.045	.057
b ₂	1.9	2.1	.75	.83
C	.4	.65	.016	.026
D	13.80	14.00	.543	.551
E	15.85	16.05	.624	.632
E ₁	13.3	13.6	.524	.535
e	5.45 BSC		.215 BSC	
H	18.70	19.10	.736	.752
L	2.40	2.70	.094	.106
L1	1.20	1.40	.047	.055
L2	1.00	1.15	.039	.045
L3	.025 BSC		.010 BSC	
L4	3.80	4.10	.150	.161

TO-247 AD (IXFH) Outline



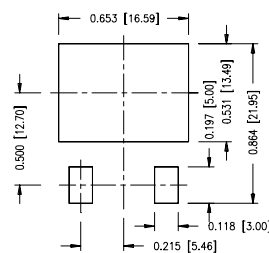
Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

PLUS247™ (IXFX) Outline



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.83	5.21	.190	.205
A ₁	2.29	2.54	.090	.100
A ₂	1.91	2.16	.075	.085
b	1.14	1.40	.045	.055
b ₁	1.91	2.13	.075	.084
b ₂	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	.244
R	4.32	4.83	.170	.190

Min. Recommended Footprint



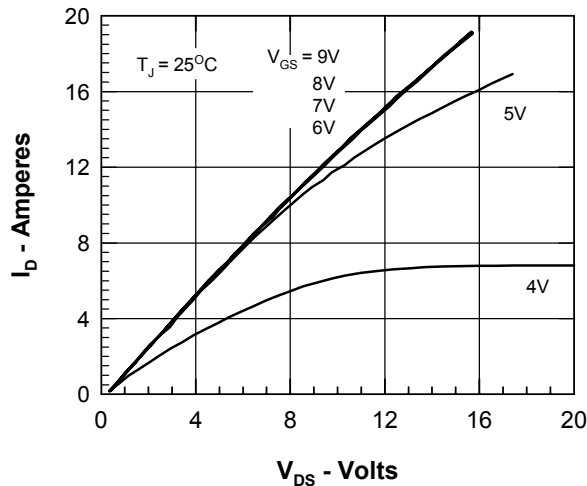


Fig.1 Output Characteristics

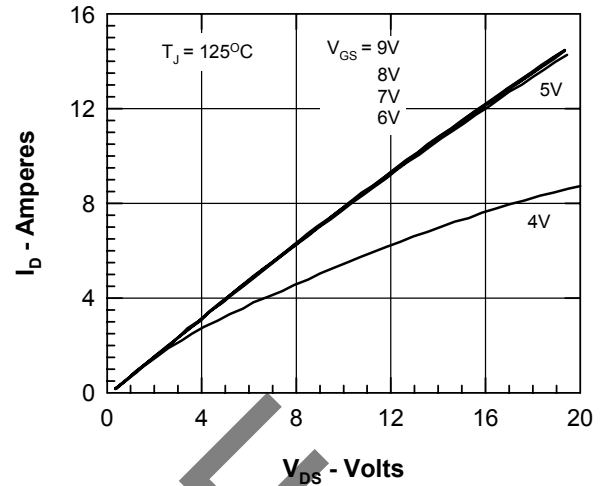


Fig.2 Output characteristics at elevated temperature

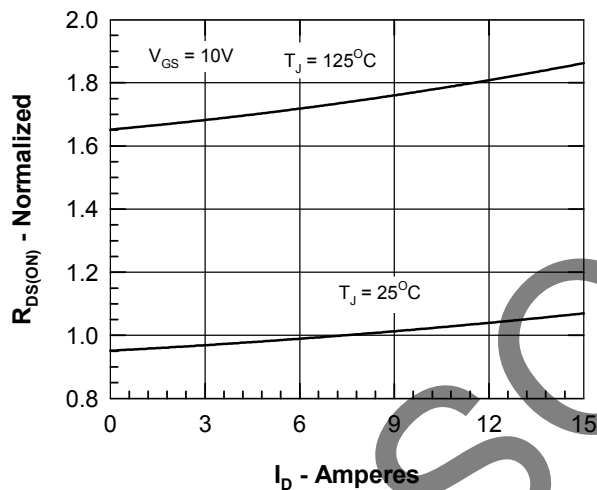


Fig.3 $R_{DS(on)}$ vs. Drain Current

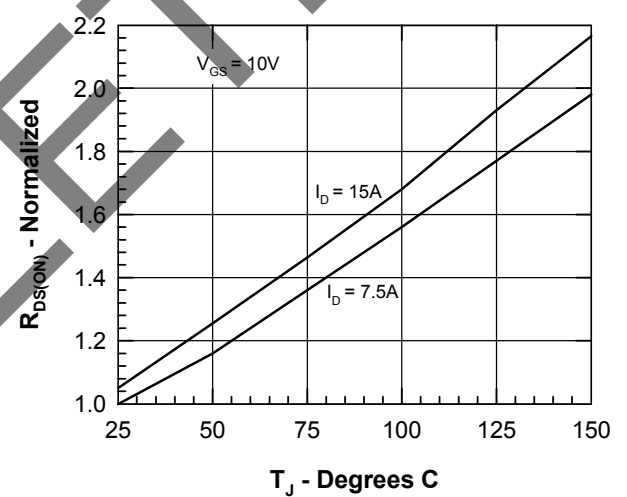


Fig.4 Temperature Dependence of Drain to Source Resistance

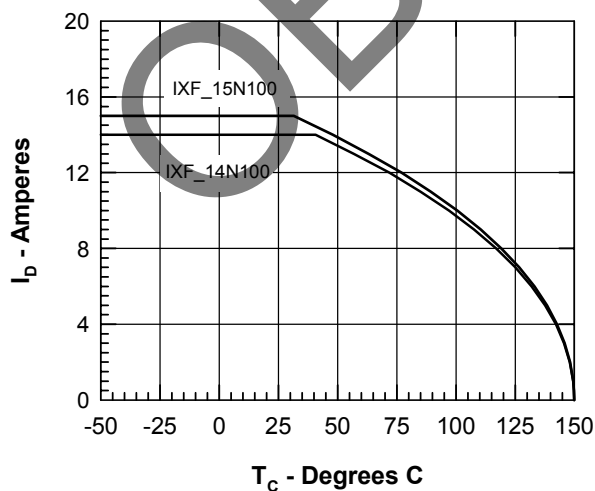


Fig.5 Drain Current vs. Case Temperature

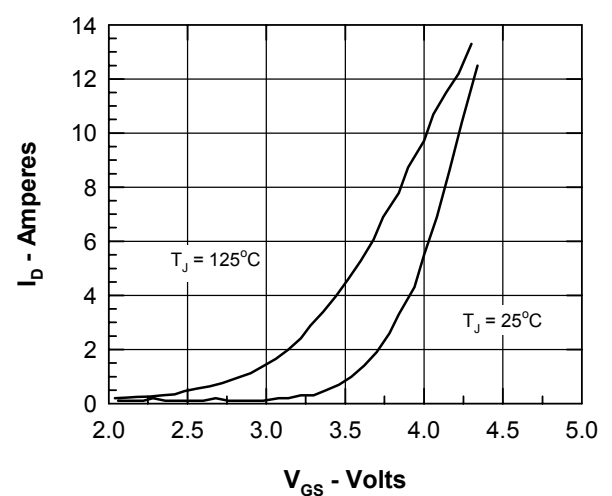


Fig.6 Input admittance

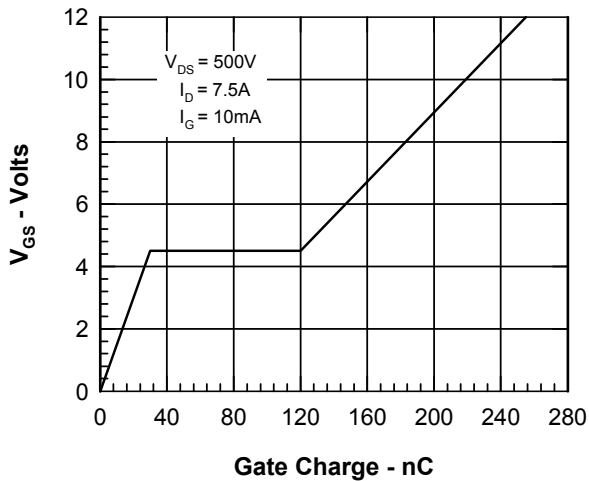


Fig.7 Gate Charge Characteristic Curve

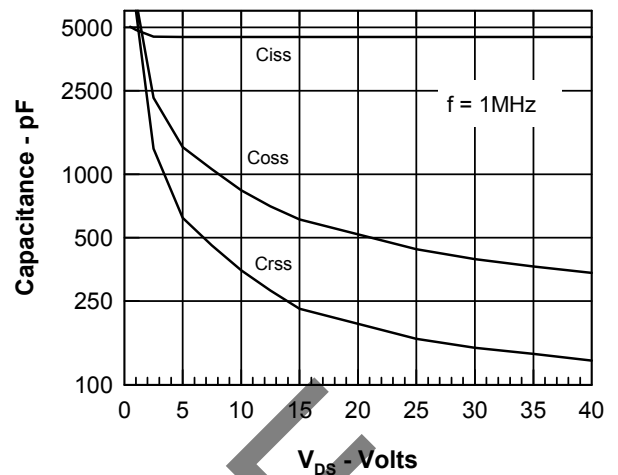


Fig.8 Capacitance Curves

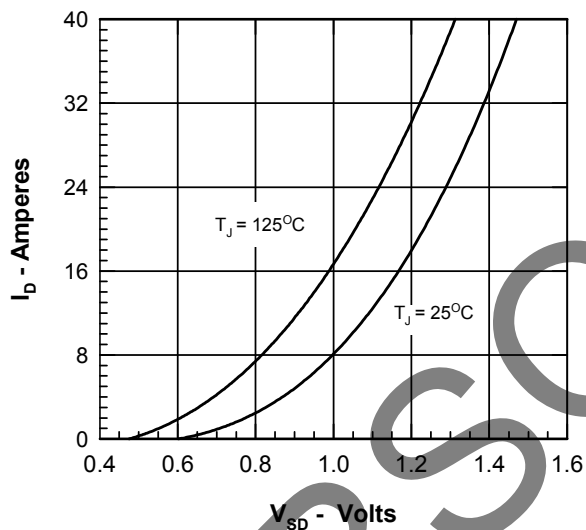


Fig.9 Source current vs Source drain voltage.

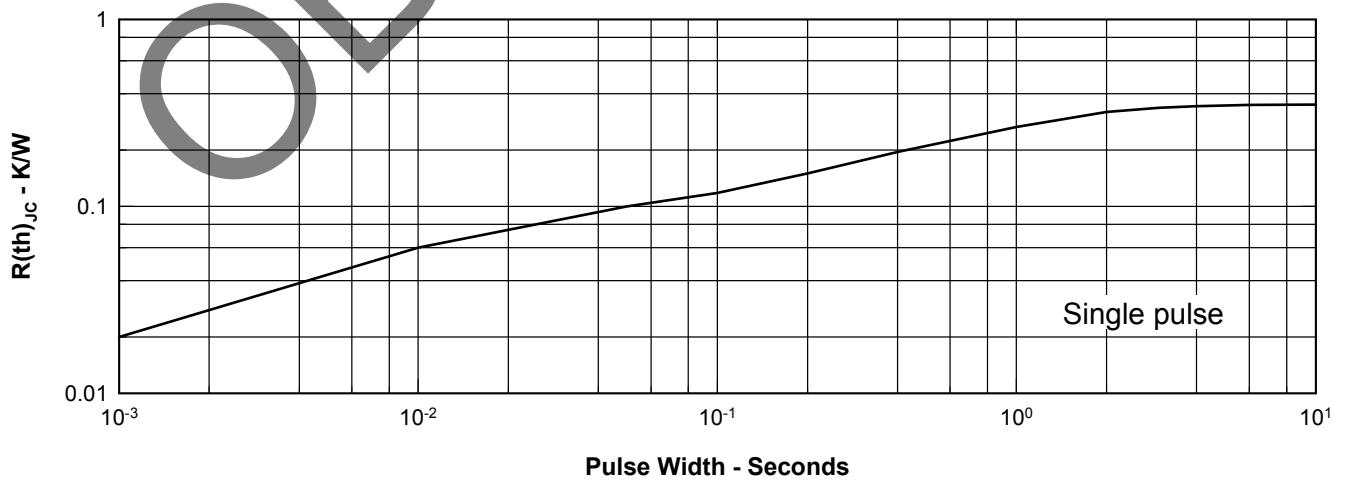


Fig.10 Transient Thermal Impedance