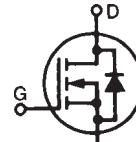


HiPerFET™ Power MOSFETs

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

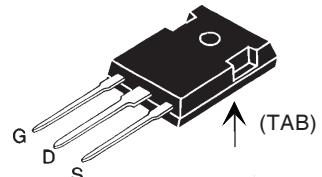
	V_{DSS}	I_{D25}	$R_{DS(on)}$
IXFH/IXFM 10 N100	1000 V	10 A	1.20 Ω
IXFH/IXFM 12 N100	1000 V	12 A	1.05 Ω

$t_{rr} \leq 250$ ns

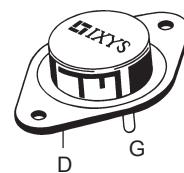


Symbol	Test Conditions	Maximum Ratings		
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	1000	V	
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1\text{ M}\Omega$	1000	V	
V_{GS}	Continuous	± 20	V	
V_{GSM}	Transient	± 30	V	
I_{D25}	$T_c = 25^\circ\text{C}$	10N100 12N100	10 12	A
I_{DM}	$T_c = 25^\circ\text{C}$, pulse width limited by T_{JM}	10N100 12N100	40 48	A
I_{AR}	$T_c = 25^\circ\text{C}$	10N100 12N100	10 12	A
E_{AR}	$T_c = 25^\circ\text{C}$	30	mJ	
dv/dt	$I_s \leq I_{DM}$, $dI/dt \leq 100\text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$, $R_G = 2\Omega$	5	V/ns	
P_D	$T_c = 25^\circ\text{C}$	300	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		TO-204 = 18 g, TO-247 = 6 g		

TO-247 AD (IXFH)



TO-204 AA (IXFM)



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

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
- Synchronous rectification
- Battery chargers
- Switched-mode and resonant-mode power supplies
- DC choppers
- AC motor control
- Temperature and lighting controls
- Low voltage relays

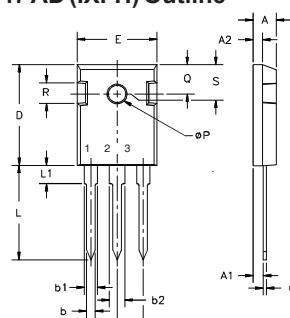
Advantages

- Easy to mount with 1 screw (TO-247) (isolated mounting screw hole)
- Space savings
- High power density

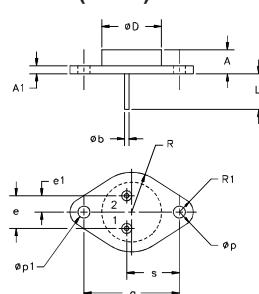
Symbol	Test Conditions	Characteristic Values		
		($T_J = 25^\circ\text{C}$, unless otherwise specified)	min.	typ.
V_{DSS}	$V_{GS} = 0\text{ V}$, $I_D = 3\text{ mA}$	1000		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 4\text{ mA}$	2.0	4.5	V
I_{GSS}	$V_{GS} = \pm 20\text{ V}_{DC}$, $V_{DS} = 0$		± 100	nA
I_{DSS}	$V_{DS} = 0.8 \cdot V_{DSS}$ $V_{GS} = 0\text{ V}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	250 1	μA mA
$R_{DS(on)}$	$V_{GS} = 10\text{ V}$, $I_D = 0.5 \cdot I_{D25}$	10N100 12N100	1.20 1.05	Ω
	Pulse test, $t \leq 300\text{ }\mu\text{s}$, duty cycle $d \leq 2\%$			

Symbol	Test Conditions	Characteristic Values			
		($T_J = 25^\circ\text{C}$, unless otherwise specified)	min.	typ.	max.
g_{fs}	$V_{DS} = 10 \text{ V}; I_D = 0.5 \cdot I_{D25}$, pulse test	6	10	S	
C_{iss} C_{oss} C_{rss}	$V_{GS} = 0 \text{ V}, V_{DS} = 25 \text{ V}, f = 1 \text{ MHz}$	4000		pF	
		310		pF	
		70		pF	
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$V_{GS} = 10 \text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$ $R_G = 2 \Omega$ (External),	21	50	ns	
		33	50	ns	
		62	100	ns	
		32	50	ns	
$Q_{g(on)}$ Q_{gs} Q_{gd}	$V_{GS} = 10 \text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$	122	155	nC	
		30	45	nC	
		50	80	nC	
R_{thJC}			0.42	K/W	
R_{thCK}			0.25	K/W	

Symbol	Test Conditions	Characteristic Values			
		($T_J = 25^\circ\text{C}$, unless otherwise specified)	min.	typ.	max.
I_s	$V_{GS} = 0 \text{ V}$	10N100 12N100 13N100		10 12 12.5	A
I_{SM}	Repetitive; pulse width limited by T_{JM}	10N100 12N100 13N100		40 48 50	A
V_{SD}	$I_F = I_S, V_{GS} = 0 \text{ V},$ Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $d \leq 2 \%$			1.5	V
t_{rr} Q_{RM}	$I_F = I_S$ $-di/dt = 100 \text{ A}/\mu\text{s},$ $V_R = 100 \text{ V}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		250 400	ns
		$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		1 2	μC
		$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		10 15	A

TO-247 AD (IXFH) Outline

Terminals: 1 - Gate 2 - Drain
3 - Source Tab - Drain

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	.205	.225
L	19.81	20.32	.780	.800
L1		4.50		.177
$\emptyset P$	3.55	3.65	.140	.144
Q	5.89	6.40	.232	.252
R	4.32	5.49	.170	.216
S	6.15	BSC	242	BSC

TO-204 AA (IXFM) Outline

Pins 1 - Gate 2 - Source
Case - Drain

Dim.	Millimeter Min.	Millimeter Max.	Inches Min.	Inches Max.
A	6.4	11.4	.250	.450
A_1		3.42	.135	
$\emptyset b$.97	1.09	.038	.043
$\emptyset D$		22.22		.875
e	10.67	11.17	.420	.440
e1	5.21	5.71	.205	.225
L	7.93		.312	
$\emptyset p$	3.84	4.19	.151	.165
$\emptyset p_1$	3.84	4.19	.151	.165
q	30.15	BSC	1.187	BSC
R		13.33		.525
R1		4.77		.188
S	16.64	17.14	.655	.675

IXYS reserves the right to change limits, test conditions, and dimensions.

Fig. 1 Output Characteristics

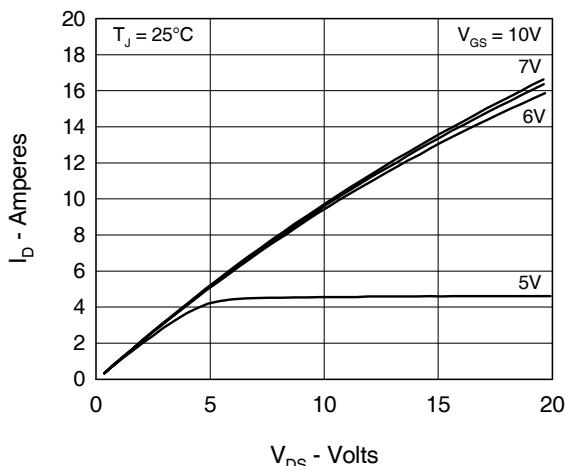


Fig. 3 $R_{DS(on)}$ vs. Drain Current

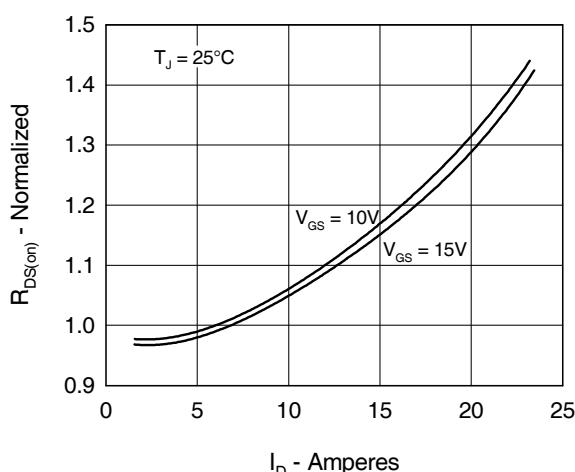


Fig. 5 Drain Current vs.
Case Temperature

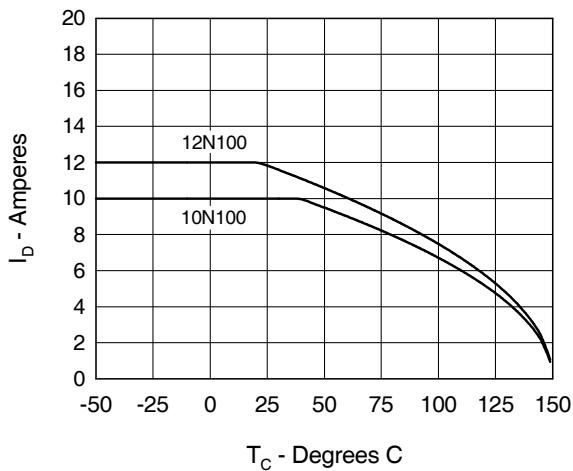


Fig. 2 Input Admittance

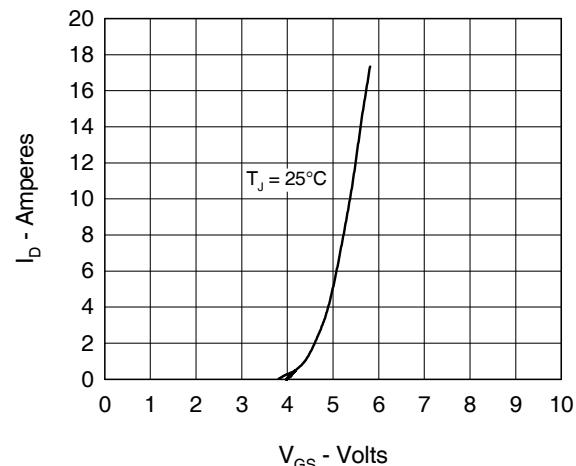


Fig. 4 Temperature Dependence
of Drain to Source Resistance

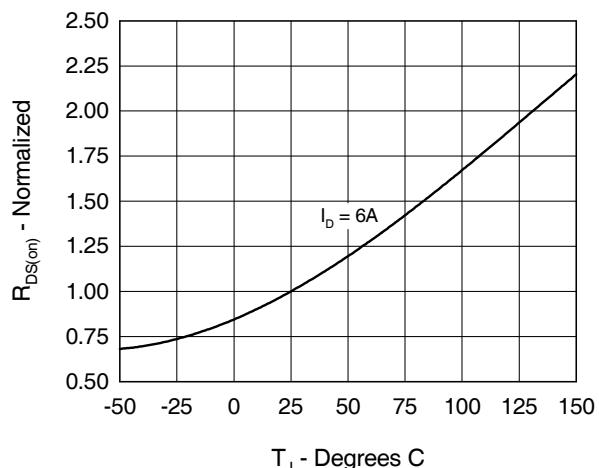


Fig. 6 Temperature Dependence of
Breakdown and Threshold Voltage

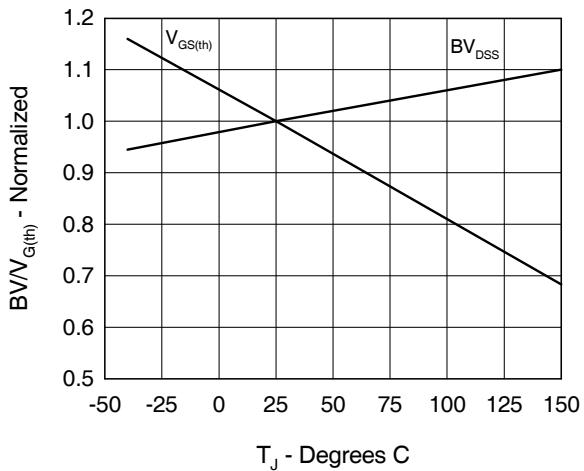


Fig.7 Gate Charge Characteristic Curve

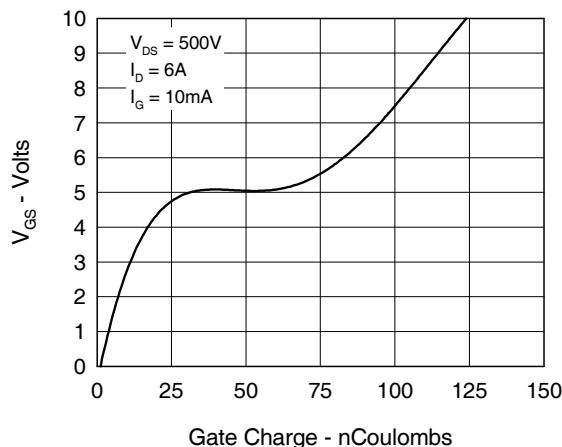


Fig.8 Capacitance Curves

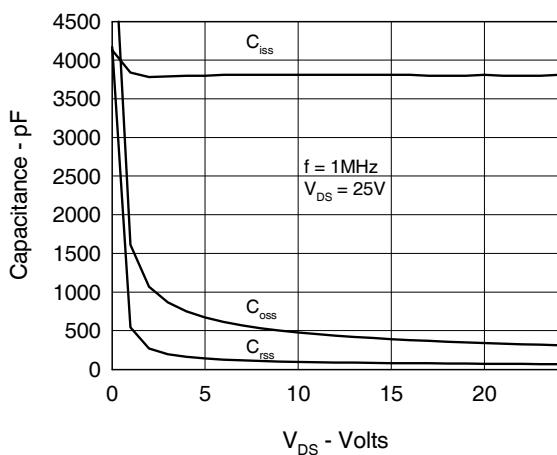


Fig.9 Source Current vs. Source to Drain Voltage

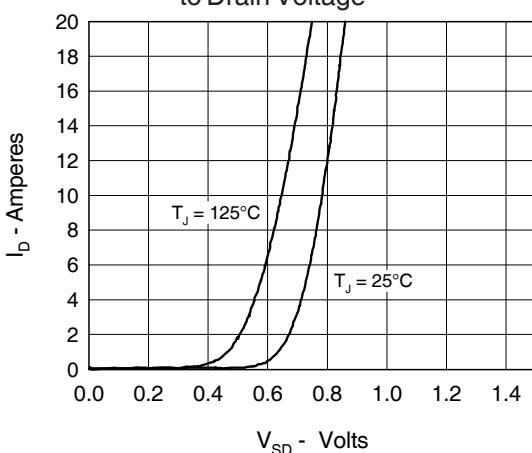
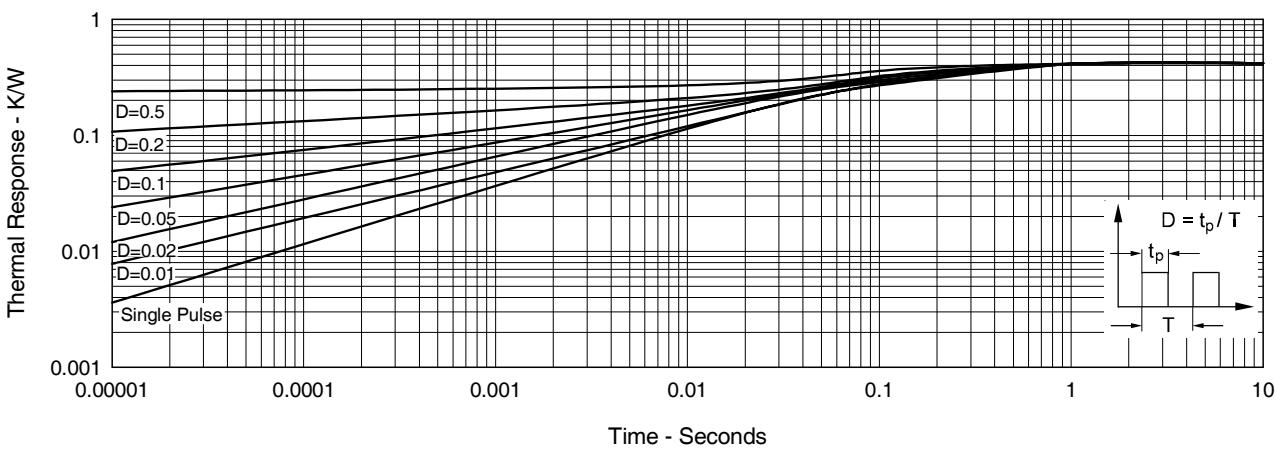


Fig.10 Transient Thermal Impedance



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET category:

Click to view products by IXYS manufacturer:

Other Similar products are found below :

[614233C](#) [648584F](#) [MCH3443-TL-E](#) [MCH6422-TL-E](#) [FDPF9N50NZ](#) [FW216A-TL-2W](#) [FW231A-TL-E](#) [APT5010JVR](#) [NTNS3A92PZT5G](#)
[IRF100S201](#) [JANTX2N5237](#) [2SK2464-TL-E](#) [2SK3818-DL-E](#) [FCA20N60_F109](#) [FDZ595PZ](#) [STD6600NT4G](#) [FSS804-TL-E](#) [2SJ277-DL-E](#)
[2SK1691-DL-E](#) [2SK2545\(Q,T\)](#) [405094E](#) [423220D](#) [MCH6646-TL-E](#) [TPCC8103,L1Q\(CM](#) [367-8430-0972-503](#) [VN1206L](#) [424134F](#)
[026935X](#) [051075F](#) [SBVS138LT1G](#) [614234A](#) [715780A](#) [NTNS3166NZT5G](#) [751625C](#) [873612G](#) [IRF7380TRHR](#) [IPS70R2K0CEAKMA1](#)
[RJK60S3DPP-E0#T2](#) [RJK60S5DPK-M0#T0](#) [APT5010JVFR](#) [APT12031JFLL](#) [APT12040JVR](#) [DMN3404LQ-7](#) [NTE6400](#) [JANTX2N6796U](#)
[JANTX2N6784U](#) [JANTXV2N5416U4](#) [SQM110N05-06L-GE3](#) [SIHF35N60E-GE3](#) [2SK2614\(TE16L1,Q\)](#)