

HiPerFET™ Power MOSFETs

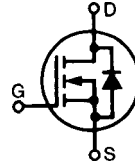
IXFH 70N15
IXFT 70N15

$V_{DSS} = 150 \text{ V}$
 $I_{D25} = 70 \text{ A}$
 $R_{DS(on)} = 28 \text{ m}\Omega$

$t_{rr} \leq 250 \text{ ns}$

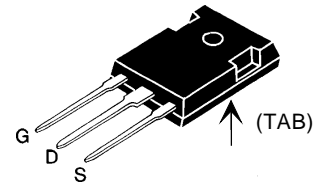
N-Channel Enhancement Mode
Avalanche Rated, High dv/dt, Low t_{rr}

Preliminary Data Sheet

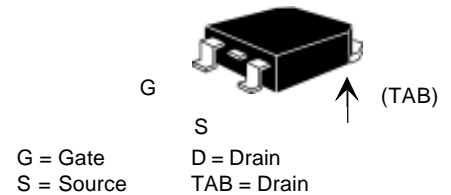


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	150	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1 \text{ M}\Omega$	150	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	70	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	280	A
I_{AR}	$T_C = 25^\circ\text{C}$	70	A
E_{AR}	$T_C = 25^\circ\text{C}$	30	mJ
E_{AS}	$T_C = 25^\circ\text{C}$	1.0	J
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-247 AD	6	g
	TO-268	4	g

TO-247 AD (IXFH)



TO-268 (IXFT) Case Style



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

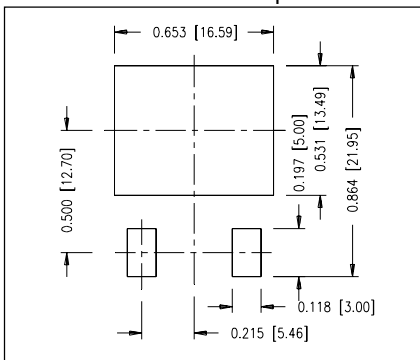
Advantages

- Easy to mount
- Space savings
- High power density

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
V_{DSS}	$V_{GS} = 0 \text{ V}$, $I_D = 250 \mu\text{A}$	150		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 4 \text{ mA}$	2.0		V
I_{GSS}	$V_{GS} = \pm 20 \text{ V}_{DC}$, $V_{DS} = 0$			$\pm 100 \text{ nA}$
I_{DSS}	$V_{DS} = V_{DSS}$, $V_{GS} = 0 \text{ V}$	$T_J = 25^\circ\text{C}$		25 μA
		$T_J = 125^\circ\text{C}$		750 μA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$, $I_D = 0.5 I_{D25}$ Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $d \leq 2 \%$			28 $\text{m}\Omega$

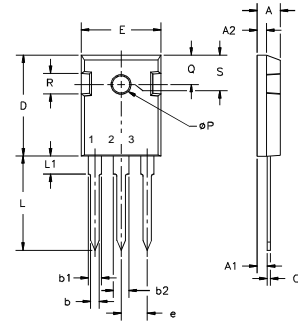
Symbol	Test Conditions	Characteristic Values		
		(T _J = 25°C, unless otherwise specified)		
		Min.	Typ.	Max.
g_{fs}	V _{DS} = 10 V; I _D = 0.5 I _{D25} , pulse test	30	45	S
C_{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		3600	pF
C_{oss}			1080	pF
C_{rss}			360	pF
t_{d(on)}	V _{GS} = 10 V, V _{DS} = 0.5 V _{DSS} , I _D = 0.5 I _{D25} R _G = 2 Ω (External)		35	ns
t_r			52	ns
t_{d(off)}			70	ns
t_f			23	ns
Q_{g(on)}	V _{GS} = 10 V, V _{DS} = 0.5 V _{DSS} , I _D = 0.5 I _{D25}		180	nC
Q_{gs}			28	nC
Q_{gd}			92	nC
R_{thJC}			0.42	K/W
R_{thCK}	(TO-247)		0.25	K/W

Symbol	Test Conditions	Characteristic Values		
		(T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
I_S	V _{GS} = 0 V			70 A
I_{SM}	Repetitive;			280 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}	I _F = 25A, -di/dt = 100 A/μs, V _R = 25 V		0.85	250 ns
Q_{RM}				8 μC
I_{RM}				

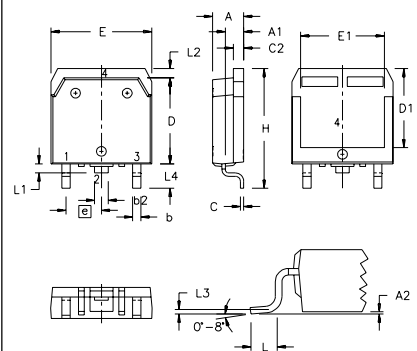
Min Recommended Footprint


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	4,881,106	5,017,508	5,049,961	5,187,117	5,486,715	6,306,728B1
	4,850,072	4,931,844	5,034,796	5,063,307	5,237,481	5,381,025	

TO-247 AD Outline

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

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	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
∅P	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

TO-268 Outline

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

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	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



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.