

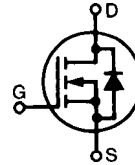
HiPerFET™ Power MOSFETs Q-Class

IXFH 30N40Q
IXFT 30N40Q

V_{DSS} = 400 V
I_{D25} = 30 A
R_{DS(on)} = 0.16 Ω

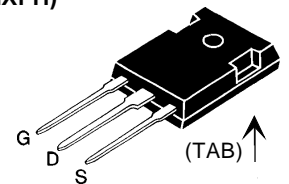
t_{rr} ≤ 250 ns

N-Channel Enhancement Mode
Avalanche Rated, Low Q_g, High dv/dt

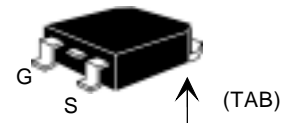


Symbol	Test Conditions	Maximum Ratings	
V _{DSS}	T _J = 25°C to 150°C	400	V
V _{DGR}	T _J = 25°C to 150°C; R _{GS} = 1 MΩ	400	V
V _{GS}	Continuous	±20	V
V _{GSM}	Transient	±30	V
I _{D25}	T _C = 25°C	30	A
I _{DM}	T _C = 25°C, pulse width limited by T _{JM}	120	A
I _{AR}	T _C = 25°C	30	A
E _{AR}	T _C = 25°C	30	mJ
E _{AS}		1.5	mJ
dv/dt	I _S ≤ I _{DM} , di/dt ≤ 100 A/μs, V _{DD} ≤ V _{DSS} , T _J ≤ 150°C, R _G = 2 Ω	5	V/ns
P _D	T _C = 25°C	300	W
T _J		-55 to +150	°C
T _{JM}		150	°C
T _{stg}		-55 to +150	°C
T _L	1.6 mm (0.063 in) from case for 10 s	300	°C
M _d	Mounting torque	1.13/10	Nm/lb.in.
Weight	TO-247	6	g
	TO-268	4	g

TO-247 AD (IXFH)



TO-268 (D3) (IXFT)



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

Symbol	Test Conditions	Characteristic Values (T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
V _{DSS}	V _{GS} = 0 V, I _D = 250 μA	400		V
V _{GS(th)}	V _{DS} = V _{GS} , I _D = 4 mA	2.0		4.0 V
I _{GSS}	V _{GS} = ±20 V _{DC} , V _{DS} = 0			±100 nA
I _{DSS}	V _{DS} = V _{DSS} V _{GS} = 0 V	T _J = 25°C		25 μA
		T _J = 125°C		1 mA
R _{DS(on)}	V _{GS} = 10 V, I _D = 0.5 I _{D25} Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %			0.16 Ω

Features

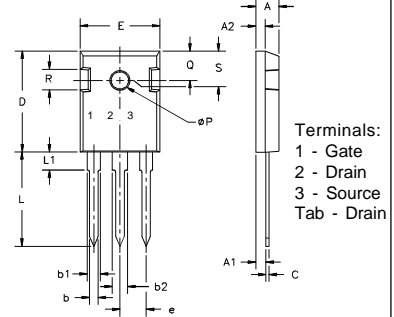
- IXYS advanced low Q_g process
- Low gate charge and capacitances
 - easier to drive
 - faster switching
- International standard packages
- Low R_{DS(on)}
- Rated for unclamped Inductive load switching (UIS) rated
- Molding epoxies meet UL 94 V-0 flammability classification

Advantages

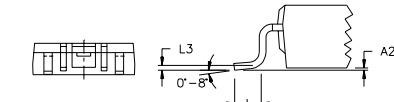
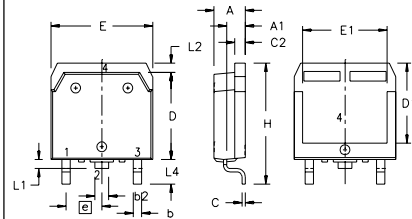
- Easy to mount
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values		
		(T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
g_{fs}	V _{DS} = 20 V; I _D = 0.5 • I _{D25} , pulse test	18	25	S
C_{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		3300	pF
C_{oss}			540	pF
C_{rss}			150	pF
t_{d(on)}	V _{GS} = 10 V, V _{DS} = 0.5 • V _{DSS} , I _D = 0.5 • I _{D25} R _G = 2.0 Ω (External),		25	ns
t_r			35	ns
t_{d(off)}			51	ns
t_f			12	ns
Q_{g(on)}	V _{GS} = 10 V, V _{DS} = 0.5 • V _{DSS} , I _D = 0.5 • I _{D25}		95	nC
Q_{gs}			22	nC
Q_{gd}			44	nC
R_{thJC}	(TO-247)		0.42	KW
R_{thCK}			0.25	KW

Symbol	Test Conditions	Characteristic Values		
		(T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
I_s	V _{GS} = 0 V			30 A
I_{SM}	Repetitive; pulse width limited by T _{JM}			120 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 = I _S , -di/dt = 100 A/μs, V _R = 100 V		1.1	ns
Q_{RM}			250	μC
I_{RM}			10	A

TO-247 AD (IXFH) Outline


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

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
4,850,072 4,931,844 5,034,796 5,063,307 5,237,481 5,381,025