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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IXYS

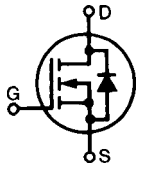
HiPerFET™ Power MOSFETs Q-Class

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

Preliminary data

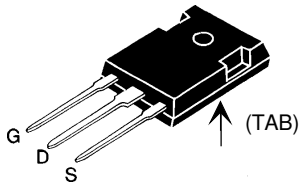
IXFH 52N30Q
IXFK 52N30Q
IXFT 52N30Q

V_{DSS} = 300 V
I_{D25} = 52 A
$R_{DS(on)}$ = 60 mΩ
t_{rr} ≤ 250 ns

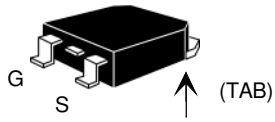


Symbol	Test Conditions		Maximum Ratings	
V_{DSS}	T_J = 25°C to 150°C		300	V
V_{DGR}	T_J = 25°C to 150°C; R_{GS} = 1 MΩ		300	V
V_{GS}	Continuous		±20	V
V_{GSM}	Transient		±30	V
I_{D25}	T_C = 25°C, Chip capability		52	A
I_{DM}	T_C = 25°C, pulse width limited by T_{JM}		208	A
I_{AR}	T_C = 25°C		52	A
E_{AR}	T_C = 25°C		30	mJ
E_{AS}	T_C = 25°C		1.5	J
dv/dt	$I_S \le I_{DM}$, di/dt ≤ 100 A/μs, $V_{DD} \le V_{DSS}$, $T_J \le 150°C$, R_G = 2 Ω		5	V/ns
P_D	T_C = 25°C		360	W
T_J			-55 ... +150	°C
T_{JM}			150	°C
T_{stg}			-55 ... +150	°C
T_L	1.6 mm (0.063 in) from case for 10 s		300	°C
M_d	Mounting torque	TO-247	1.13/10	Nm/lb.in.
		TO-264	0.9/6	Nm/lb.in.
Weight		TO-247	6	g
		TO-264	10	g
		TO-268	4	g

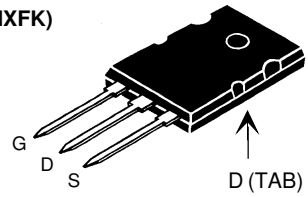
TO-247 AD (IXFH)



TO-268 (D3) (IXFT)



TO-264 AA (IXFK)



G = Gate
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 = 1 mA		300			V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, I_D = 4 mA		2		4	V
I_{GSS}	V_{GS} = ±20 V_{DC}, V_{DS} = 0				±200	nA
I_{DSS}	$V_{DS} = V_{DSS}$	T_J = 25°C			50	μA
	V_{GS} = 0 V	T_J = 125°C			1	mA
$R_{DS(on)}$	V_{GS} = 10 V, $I_D = 0.5 \cdot I_{D25}$ Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %				60	mΩ

Features

- Low gate charge
- International standard packages
- Epoxy meet UL 94 V-0, flammability classification
- Low $R_{DS\ (on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- Avalanche energy and current rated
- Fast intrinsic Rectifier

Advantages

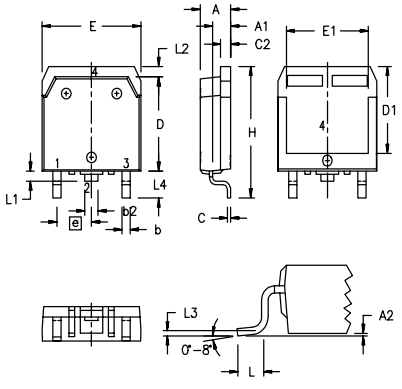
- Easy to mount
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
g_{fs}	V_{DS} = 10 V; I_D = 0.5 • I_{D25}, pulse test	22	35		S
C_{iss}	V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz		5300		pF
C_{oss}			1010		pF
C_{rss}			200		pF
$t_{d(on)}$	V_{GS} = 10 V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{D25} R_G = 1.5 Ω (External),		27		ns
t_r			60		ns
$t_{d(off)}$			80		ns
t_f			25		ns
$Q_{g(on)}$	V_{GS} = 10 V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{D25}		150		nC
Q_{gs}			34		nC
Q_{gd}			75		nC
R_{thJC}				0.35	K/W
R_{thCK}	TO-247		0.25		K/W
	TO-264		0.15		K/W

Source-Drain Diode

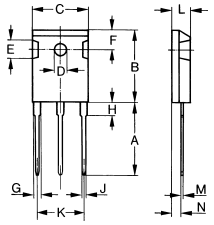
Symbol	Test Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
I_S	V_{GS} = 0 V			52	A
I_{SM}	Repetitive; pulse width limited by T_{JM}			208	A
V_{SD}	I_F = I_S, V_{GS} = 0 V, Pulse test, t ≤ 300 µs, duty cycle d ≤ 2 %			1.5	V
t_{rr}	I_F = I_S -di/dt = 100 A/µs, V_R = 100 V			250	ns
Q_{RM}			1		µC
I_{RM}			8		A

TO-268AA (D^3 PAK)



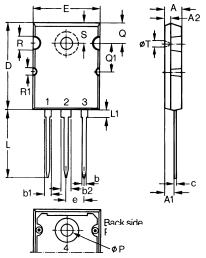
Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	4.9	5.1	.193	.201
A_1	2.7	2.9	.106	.114
A_2	.02	.25	.001	.010
b	1.15	1.45	.045	.057
b_2	1.9	2.1	.75	.83
C	.4	.65	.016	.026
D	13.80	14.00	.543	.551
E	15.85	16.05	.624	.632
E_1	13.3	13.6	.524	.535
e	5.45 BSC		.215 BSC	
H	18.70	19.10	.736	.752
L	2.40	2.70	.094	.106
L1	1.20	1.40	.047	.055
L2	1.00	1.15	.039	.045
L3	0.25 BSC		.010 BSC	
L4	3.80	4.10	.150	.161

TO-247 AD (IXFH) Outline



Dim.	Millimeter Min.	Max.	Inches 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

TO-264 AA Outline



Dim.	Millimeter Min.	Max.	Inches 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
T	1.57	1.83	.062	.072

Min. Recommended Footprint