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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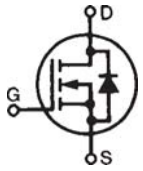
HiPerFET™ Power MOSFETs

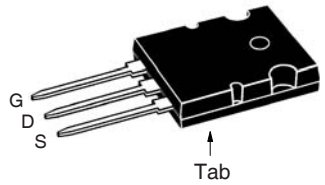
IXFK33N50
IXFX35N50

V_{DSS}	I_{D25}	$R_{DS(on)}$
500V	33A	160mΩ
	35A	150mΩ

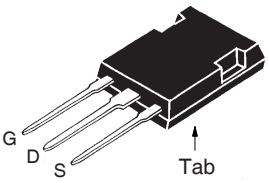
N-Channel Enhancement Mode
Avalanche Rated
High dv/dt, Low t_{rr}



TO-264 (IXFK)



PLUS247 (IXFX)



G = Gate D = Drain
S = Source Tab = Drain

Symbol	Test Conditions		Maximum Ratings	
V_{DSS}	T_J = 25°C to 150°C		500	V
V_{DGR}	T_J = 25°C to 150°C, R_{GS} = 1MΩ		500	V
V_{GSS}	Continuous		± 20	V
V_{GSM}	Transient		± 30	V
I_{D25}	T_C = 25°C	33N50	33	A
		35N50	35	A
I_{DM}	T_C = 25°C, Pulse Width Limited by T_{JM}	33N50	132	A
		35N50	140	A
I_A	T_C = 25°C		33	A
E_{AS}	T_C = 25°C		2.5	J
dv/dt	$I_S \le I_{DM}$, $V_{DD} \le V_{DSS}$, $T_J \le 150°C$		5	V/ns
P_D	T_C = 25°C		416	W
T_J			-55 ... +150	°C
T_{JM}			150	°C
T_{stg}			-55 ... +150	°C
T_L	Maximum Lead Temperature for Soldering		300	°C
T_{SOLD}	1.6 mm (0.062in.) from Case for 10s		260	°C
M_d	Mounting Torque (TO-264)		1.13/10	Nm/lb.in
F_C	Mounting Force (PLUS247)		20..120 /4.5..27	N/lb
Weight	TO-264		10	g
	PLUS247		6	g

Symbol	Test Conditions (T_J = 25°C Unless Otherwise Specified)		Characteristic Values Min.	Typ.	Max.	
BV_{DSS}	V_{GS} = 0V, I_D = 1mA		500			V
	V_{DSS} Temperature Coefficient			0.102		%/K
$V_{GS(th)}$	$V_{DS} = V_{GS}$, I_D = 4mA		2.0		4.5	V
	$V_{GS(th)}$ Temperature Coefficient			-0.206		%/K
I_{GSS}	V_{GS} = ± 20V, V_{DS} = 0V				± 200	nA
I_{DSS}	V_{DS} = 0.8 • V_{DSS}, V_{GS} = 0V				200	μA
	T_J = 125°C				2	mA
$R_{DS(on)}$	V_{GS} = 10V, I_D = 0.5 • I_{DSS}, Note 1	33N50			160	mΩ
		35N50			150	mΩ

Features

- International Standard Packages
- Avalanche Rated
- Low Intrinsic Gate Resistance
- Low Package Inductance
- Fast Intrinsic Rectifier
- Molding epoxies meet UL 94 V-0 flammability classification
- Low $R_{DS(on)}$ HDMOS™ process

Advantages

- High Power Density
- Easy to Mount
- Space Savings

Applications

- DC-DC Converters
- Battery Chargers
- Synchronous rectification
- Switch-Mode and Resonant-Mode Power Supplies
- DC Choppers
- Temperature and Lighting Controls

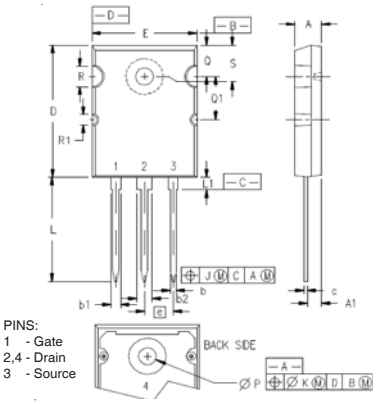
Symbol	Test Conditions (T_J = 25°C, Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.	
g_{fs}	V_{DS} = 10V, I_D = 0.5 • I_{DSS}, Note 1	18	28		S
C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		5200	5700	nF
C_{oss}			640	750	pF
C_{rss}			240	310	pF
$t_{d(on)}$	**Resistive Switching Times**		35	45	ns
t_r	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{DSS}		42	50	ns
$t_{d(off)}$	R_G = 1Ω (External)		110	140	ns
t_f			23	35	ns
$Q_{g(on)}$	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{DSS}		227		nC
Q_{gs}			29		nC
Q_{gd}			110		nC
R_{thJC}				0.30	°C/W
R_{thCS}			0.15		°C/W

Source-Drain Diode

Symbol	Test Conditions (T_J = 25°C, Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.	
I_S	V_{GS} = 0V			33	A
I_{SM}	Repetitive, Pulse Width Limited by T_{JM}			132	A
V_{SD}	I_F = I_S, V_{GS} = 0V, Note 1			1.5	V
t_{rr}	I_F = I_S, V_{GS} = 0V			250	ns
I_{RM}	-di/dt = 100A/μs		7		A
Q_{RM}	V_R = 100V		750		nC

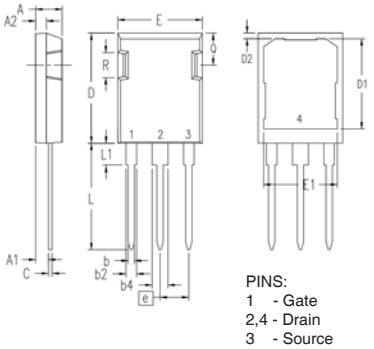
Note 1. Pulse test, t ≤ 300μs, duty cycle, d ≤ 2%.

TO-264 Outline



SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.185	.209	4.70	5.31
A1	.102	.118	2.59	3.00
b	.037	.055	0.94	1.40
b1	.087	.102	2.21	2.59
b2	.110	.126	2.79	3.20
c	.017	.029	0.43	0.74
D	1.007	1.047	25.58	26.59
E	.760	.799	19.30	20.29
e	.215BSC		5.46 BSC	
J	.000	.010	0.00	0.25
K	.000	.010	0.00	0.25
L	.779	.842	19.79	21.39
L1	.087	.102	2.21	2.59
ØP	.122	.138	3.10	3.51
Q	.240	.256	6.10	6.50
Q1	.330	.346	8.38	8.79
ØR	.155	.187	3.94	4.75
ØR1	.085	.093	2.16	2.36
S	.243	.253	6.17	6.43

PLUS247™ Outline



SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.190	.205	4.83	5.21
A1	.090	.100	2.29	2.54
A2	.075	.085	1.91	2.16
b	.045	.055	1.14	1.40
b2	.075	.087	1.91	2.20
b4	.115	.126	2.92	3.20
C	.024	.031	0.61	0.80
D	.819	.840	20.80	21.34
D1	.650	.690	16.51	17.53
D2	.035	.050	0.89	1.27
E	.620	.635	15.75	16.13
E1	.545	.565	13.84	14.35
e	.215 BSC		5.45 BSC	
L	.780	.810	19.81	20.57
L1	.150	.170	3.81	4.32
Q	.220	.244	5.59	6.20
R	.170	.190	4.32	4.83