IXYS

HiPerFET™ Power MOSFETs

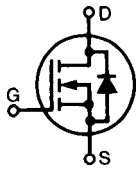
IXFH 26N60/IXFT 26N60
IXFK 28N60

V_{DSS}	I_{D25}	$R_{DS(on)}$
600 V	26 A	0.25 Ω
600 V	28 A	0.25 Ω

$t_{rr} \leq$ 250 ns

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

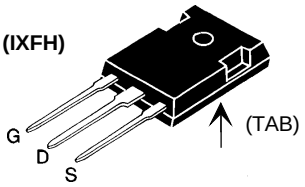
Preliminary data



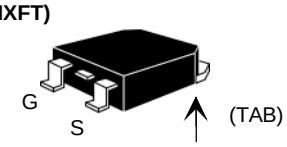
Symbol	Test Conditions	Maximum Ratings IXFH/ IXFT	IXFK	
V_{DSS}	T_J = 25°C to 150°C	600	600	V
V_{DGR}	T_J = 25°C to 150°C; R_{GS} = 1 MΩ	600	600	V
V_{GS}	Continuous	±20	±20	V
V_{GSM}	Transient	±30	±30	V
I_{D25}	T_C = 25°C, Chip capability	26	28	A
I_{DM}	T_C = 25°C, pulse width limited by T_{JM}	104	112	A
I_{AR}	T_C = 25°C	26	28	A
E_{AR}	T_C = 25°C	50	50	mJ
E_{AS}	T_C = 25°C	1.5	1.5	J
dv/dt	$I_S \leq I_{DM}$, di/dt ≤ 100 A/μs, $V_{DD} \leq V_{DSS}$, $T_J \leq$ 150°C, R_G = 2 Ω	5	5	V/ns
P_D	T_C = 25°C	360	416	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	300	°C
M_d	Mounting torque	1.13/10	0.9/6	Nm/lb.in.
Weight		6	10	g

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	600			V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, I_D = 4 mA	2		4.5	V
I_{GSS}	V_{GS} = ±20 V_{DC}, V_{DS} = 0			±200	nA
I_{DSS}	V_{DS} = 0.8 • V_{DSS} T_J = 25°C			25	μA
	V_{GS} = 0 V 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 %			0.25	Ω

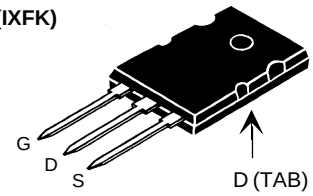
TO-247 AD (IXFH)



TO-268 (D3) (IXFT)



TO-264 AA (IXFK)



G = Gate
S = Source TAB = Drain
Either Source terminal at miniBLOC can be used as Main or Kelvin Source

Features

- 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

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

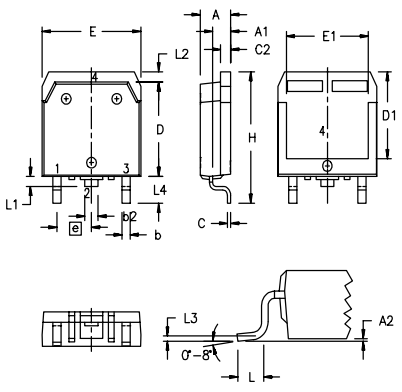
98511B (7/00)

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	11	18		S
C_{iss}	V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz		5000		pF
C_{oss}			600		pF
C_{rss}			250		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),		30		ns
t_r			43		ns
$t_{d(off)}$			110		ns
t_f			30		ns
$Q_{g(on)}$	V_{GS} = 10 V, V_{DS} = 0.5 • V_{DSS}, I_D = 0.5 • I_{D25}		250	300	nC
Q_{gs}			33	45	nC
Q_{gd}			115	150	nC
R_{thJC}	26N60			0.35	K/W
	28N60			0.30	K/W
R_{thCK}	TO-247		0.25		K/W
	TO-264		0.15		K/W

Source-Drain Diode

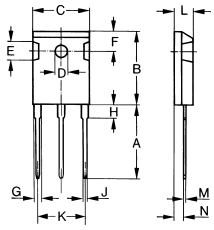
Symbol	Test Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
I_S	V_{GS} = 0 V 26N60			26	A
	28N60			28	A
I_{SM}	Repetitive; pulse width limited by T_{JM} 26N60			104	A
	28N60			112	A
V_{SD}	I_F = I_S, V_{GS} = 0 V, Pulse test, t ≤ 300 µs, duty cycle d ≤ 2 %			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}			10		A

TO-268AA (D^3 PAK)



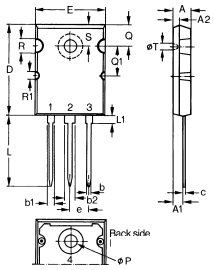
Dim.	Millimeter Min.	Max.	Inches Min.	Max.
A	4.9	5.1	.193	.201
A_1	2.7	2.9	.106	.114
A_2	.02	.25	.001	.010
b	1.15	1.45	.045	.057
b_2	1.9	2.1	.75	.83
C	.4	.65	.016	.026
D	13.80	14.00	.543	.551
E	15.85	16.05	.624	.632
E_1	13.3	13.6	.524	.535
e	5.45 BSC		.215 BSC	
H	18.70	19.10	.736	.752
L	2.40	2.70	.094	.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 (IXFK) 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