

HiPerFET™ Power MOSFETs

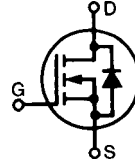
IXFK 34N80
IXFX 34N80

V_{DSS} = 800 V
I_{D25} = 34 A
R_{DS(on)} = 0.24 Ω

Single MOSFET Die

Avalanche Rated

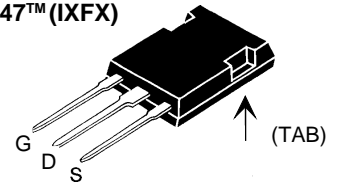
Preliminary data sheet



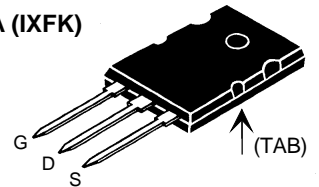
t_{rr} ≤ 250 ns

Symbol	Test Conditions	Maximum Ratings	
V _{DSS}	T _J = 25°C to 150°C	800	V
V _{DGR}	T _J = 25°C to 150°C; R _{GS} = 1 MΩ	800	V
V _{GS}	Continuous	±20	V
V _{GSM}	Transient	±30	V
I _{D25}	T _C = 25°C	34	A
I _{DM}	T _C = 25°C, pulse width limited by T _{JM}	136	A
I _{AR}	T _C = 25°C	36	A
E _{AR}	T _C = 25°C	64	mJ
E _{AS}	T _C = 25°C	3	J
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	560	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-264	0.9/6 Nm/lb.in.
Weight		PLUS 247	6 g
		TO-264	10 g

PLUS 247™ (IXFX)



TO-264 AA (IXFK)



G = Gate
S = Source

D = Drain
TAB = Drain

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

Applications

- DC-DC converters
- Battery chargers
- Switched-mode and resonant-mode power supplies
- DC choppers
- AC motor control
- Temperature and lighting controls

Advantages

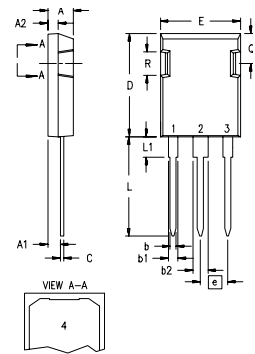
- PLUS 247™ package for clip or spring mounting
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values (T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
V _{DSS}	V _{GS} = 0 V, I _D = 3mA	800		V
V _{GS(th)}	V _{DS} = V _{GS} , I _D = 8mA	3.0		5.0 V
I _{GSS}	V _{GS} = ±20 V, V _{DS} = 0			±200 nA
I _{DSS}	V _{DS} = V _{DSS} V _{GS} = 0 V	T _J = 25°C		100 μA
		T _J = 125°C		2 mA
R _{DS(on)}	V _{GS} = 10 V, I _D = 0.5 • I _{D25} Note 1			0.24 Ω

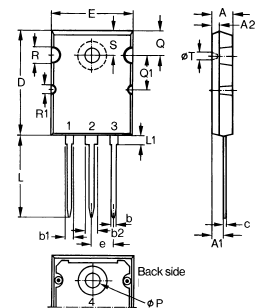
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
g_{fs}	$V_{DS} = 10\text{ V}; I_D = 0.5 \cdot I_{D25}$ Note 1	20	35	S
C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$		7500	pF
C_{oss}			920	pF
C_{rss}			220	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$ $R_G = 1\ \Omega$ (External),		45	ns
t_r			45	ns
$t_{d(off)}$			100	ns
t_f			40	ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$		270	nC
Q_{gs}			60	nC
Q_{gd}			140	nC
R_{thJC}			0.22	K/W
R_{thCK}		0.15		K/W

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
I_S	$V_{GS} = 0\text{ V}$		34	A
I_{SM}	Repetitive; pulse width limited by T_{JM}		136	A
V_{SD}	$I_F = I_S, V_{GS} = 0\text{ V}$, Note 1		1.5	V
t_{rr}	$I_F = I_S, -di/dt = 100\text{ A}/\mu\text{s}, V_R = 100\text{ V}$		250	ns
Q_{RM}			1.4	μC
I_{RM}			10	A

Note: 1. Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$
 2. See characterization curves in datasheet IXFN34N80.

PLUS247™ (IXFX) Outline


Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.83	5.21	.190	.205
A ₁	2.29	2.54	.090	.100
A ₂	1.91	2.16	.075	.085
b	1.14	1.40	.045	.055
b ₁	1.91	2.13	.075	.084
b ₂	2.92	3.12	.115	.123
C	0.61	0.80	.024	.031
D	20.80	21.34	.819	.840
E	15.75	16.13	.620	.635
e	5.45 BSC		.215 BSC	
L	19.81	20.32	.780	.800
L1	3.81	4.32	.150	.170
Q	5.59	6.20	.220	.244
R	4.32	4.83	.170	.190

TO-264 AA Outline


Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.82	5.13	.190	.202
A ₁	2.54	2.89	.100	.114
A ₂	2.00	2.10	.079	.083
b	1.12	1.42	.044	.056
b ₁	2.39	2.69	.094	.106
b ₂	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