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[IXFP8N50PM](#)

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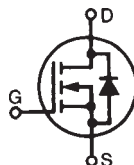
Preliminary Technical Information

PolarHV™ HiPerFET
Power MOSFET
(Electrically Isolated Tab)

IXFP 8N50PM

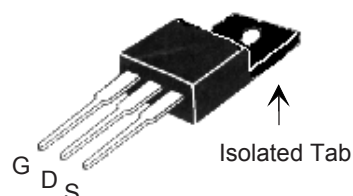
V_{DSS} = 500 V
I_{D25} = 4.4 A
R_{DS(on)} ≤ 0.8 Ω
t_{rr} ≤ 200 ns

N-Channel Enhancement Mode
Avalanche Rated
Fast Intrinsic Diode



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} = 1 MΩ	500	V
V _{GS}	Continuous	±30	V
V _{GSM}	Transient	±40	V
I _{D25}	T _C = 25°C	4.4	A
I _{DM}	T _C = 25°C, pulse width limited by T _{JM}	14	A
I _{AR}	T _C = 25°C	8	A
E _{AR}	T _C = 25°C	20	mJ
E _{AS}	T _C = 25°C	300	mJ
dv/dt	I _S ≤ I _{DM} , di/dt ≤ 100 A/μs, V _{DD} ≤ V _{DSS} , T _J ≤ 150°C, R _G = 18 Ω	10	V/ns
P _D	T _C = 25°C	42	W
T _J		-55 ... +150	°C
T _{JM}		150	°C
T _{stg}		-55 ... +150	°C
T _L	1.6 mm (0.062 in.) from case for 10 s	300	°C
T _{SOLD}	Plastic body for 10 s	260	°C
M _d	Mounting torque	1.13/10	Nm/lb.in.
Weight		4	g

OVERMOLDED TO-220 (IXTP...M) OUTLINE



G = Gate D = Drain
S = Source

Features

- † Plastic overmolded tab for electrical isolation
- † International standard package
- † Unclamped Inductive Switching (UIS) rated
- † Low package inductance
- easy to drive and to protect
- † Fast Intrinsic Diode

Advantages

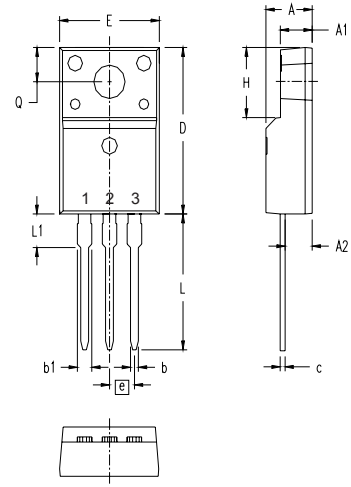
- † Easy to mount
- † Space savings
- † High power density

Symbol	Test Conditions (T _J = 25°C unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV _{DSS}	V _{GS} = 0 V, I _D = 250 μA	500		V
V _{GS(th)}	V _{DS} = V _{GS} , I _D = 1 mA	3.0		5.5 V
I _{GSS}	V _{GS} = ±30 V _{DC} , V _{DS} = 0			±100 nA
I _{DSS}	V _{DS} = V _{DSS} V _{GS} = 0 V T _J = 125°C			5 μA 500 μA
R _{DS(on)}	V _{GS} = 10 V, I _D = 4 A Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %			0.8 Ω

Symbol	Test Conditions	Characteristic Values (T _J = 25°C unless otherwise specified)		
		Min.	Typ.	Max.
g _{fs}	V _{DS} = 10 V; I _D = 4 A	5	8	S
C _{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		1050	pF
C _{oss}			120	pF
C _{rss}			12	pF
t _{d(on)}	V _{GS} = 10 V, V _{DS} = 0.5 V _{DSS} , I _D = 8 A R _G = 18 Ω (External)		22	ns
t _r			28	ns
t _{d(off)}			65	ns
t _f			23	ns
Q _{g(on)}	V _{GS} = 10 V, V _{DS} = 0.5 V _{DSS} , I _D = 4 A		20	nC
Q _{gs}			7	nC
Q _{gd}			7	nC
R _{thJS}				3.0 °C/W

Source-Drain Diode		Characteristic Values (T _J = 25°C, unless otherwise specified)		
Symbol	Test Conditions	Min.	Typ.	Max.
I _s	V _{GS} = 0 V			8 A
I _{SM}	Repetitive			14 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 = 8 A, V _{GS} = 0V, V _R = 100V -di/dt = 100 A/μs		0.25	200 ns
Q _{RM}				μC
I _{RM}				A

ISOLATED TO-220 (IXTP...M)



Terminals: 1 - Gate
 2 - Drain (Collector)
 3 - Source (Emitter)

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.177	.193	4.50	4.90
A1	.092	.108	2.34	2.74
A2	.101	.117	2.56	2.96
b	.028	.035	0.70	0.90
b1	.050	.058	1.27	1.47
c	.018	.024	0.45	0.60
D	.617	.633	15.67	16.07
E	.392	.408	9.96	10.36
e	.100 BSC		2.54 BSC	
H	.255	.271	6.48	6.88
L	.499	.523	12.68	13.28
L1	.119	.135	3.03	3.43
∅P	.121	.129	3.08	3.28
Q	.126	.134	3.20	3.40

PRELIMINARY TECHNICAL INFORMATION

The product presented herein is under development. The Technical Specifications offered are derived from data gathered during objective characterizations of preliminary engineering lots; but also may yet contain some information supplied during a pre-production design evaluation. IXYS reserves the right to change limits, test conditions, and dimensions without notice.

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IXYS MOSFETs and IGBTs are covered by	4,835,592	4,931,844	5,049,961	5,237,481	6,162,665	6,404,065 B1	6,683,344	6,727,585
one or more of the following U.S. patents:	4,850,072	5,017,508	5,063,307	5,381,025	6,259,123 B1	6,534,343	6,710,405B2	6,759,692
	4,881,106	5,034,796	5,187,117	5,486,715	6,306,728 B1	6,583,505	6,710,463	6,771,478 B2