

**X2-Class HiPerFET™
Power MOSFET**
IXFB150N65X2

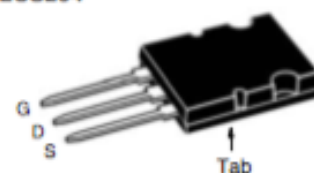
$$\begin{aligned} V_{DSS} &= 650V \\ I_{D25} &= 150A \\ R_{DS(on)} &\leq 17m\Omega \end{aligned}$$

N-Channel Enhancement Mode
Avalanche Rated
Fast Intrinsic Diode



Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	650	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C , $R_{GS} = 1M\Omega$	650	V
V_{GSS}	Continuous	± 30	V
V_{GSM}	Transient	± 40	V
I_{D25}	$T_C = 25^\circ\text{C}$	150	A
I_{DM}	$T_C = 25^\circ\text{C}$, Pulse Width Limited by T_{JM}	300	A
I_A	$T_C = 25^\circ\text{C}$	20	A
E_{AS}	$T_C = 25^\circ\text{C}$	3	J
P_D	$T_C = 25^\circ\text{C}$	1560	W
dv/dt	$I_S \leq I_{DM}$, $V_{DS} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$	50	V/ns
T_J		-55 ... +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-55 ... +150	$^\circ\text{C}$
T_L	Maximum Lead Temperature for Soldering	300	$^\circ\text{C}$
T_{SOLD}	Plastic Body for 10s	260	$^\circ\text{C}$
F_C	Mounting Force	30..120 / 6.7..27	N/lb
Weight		10	g

PLUS264™



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

Features

- Low Q_G
- Avalanche Rated
- Low Package Inductance

Advantages

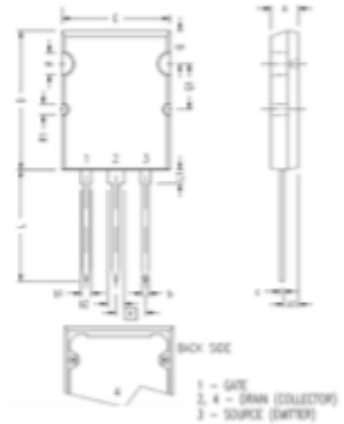
- High Power Density
- Easy to Mount
- Space Savings

Applications

- Switch-Mode and Resonant-Mode Power Supplies
- DC-DC Converters
- PFC Circuits
- AC and DC Motor Drives
- Robotics and Servo Controls

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0V$, $I_D = 3mA$	650		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 8mA$	2.7		5.5 V
I_{GSS}	$V_{GS} = \pm 30V$, $V_{DS} = 0V$			± 200 nA
I_{OSS}	$V_{DS} = V_{DSS}$, $V_{GS} = 0V$ $T_J = 125^\circ\text{C}$			50 μA 5 mA
$R_{DS(on)}$	$V_{GS} = 10V$, $I_D = 0.5 \cdot I_{D25}$, Note 1			17 m Ω

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$V_{GS} = 10\text{V}$, $I_D = 60\text{A}$, Note 1	56	90	S
R_{Gi}	Gate Input Resistance		0.56	Ω
C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = 25\text{V}$, $f = 1\text{MHz}$		20.4	nF
C_{oss}			13.3	nF
C_{rss}			11	pF
$t_{d(on)}$	Resistive Switching Times $V_{GS} = 10\text{V}$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 0.5 \cdot I_{DSS}$ $R_G = 1\Omega$ (External)		62	ns
t_r			35	ns
$t_{d(off)}$			88	ns
t_f			11	ns
$Q_{g(on)}$	$V_{GS} = 10\text{V}$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 0.5 \cdot I_{DSS}$		430	nC
Q_{gs}			160	nC
Q_{gd}			110	nC
R_{thJC}				0.08 $^\circ\text{C/W}$
R_{thCS}		0.13		$^\circ\text{C/W}$

PLUS264™ (IXFB) Outline


SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.385	.209	4.70	5.31
AI	.302	.118	2.59	3.00
b	.017	.055	0.44	1.40
b1	.007	.02	0.21	0.51
b2	.08	.025	2.79	3.28
c	.017	.029	0.43	0.74
D	1.007	1.047	25.58	26.59
E	.760	.799	19.30	20.29
e	2.05 BSC		5.16 BSC	
L	.779	.842	19.79	21.39
L1	.087	.02	2.21	0.51
Q	.240	.256	6.10	6.50
Q1	.330	.346	8.38	8.79
QR	.155	.087	3.94	4.75
QR1	.085	.093	2.36	2.36

Source-Drain Diode

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
I_s	$V_{GS} = 0\text{V}$			150 A
I_{SM}	Repetitive, Pulse Width Limited by T_{JM}			600 A
V_{SD}	$I_F = 100\text{A}$, $V_{GS} = 0\text{V}$, Note 1			1.4 V
t_{rr}	$I_F = 75\text{A}$, $-di/dt = 100\text{A}/\mu\text{s}$		280	ns
Q_{RM}			3.3	μC
I_{RM}	$V_R = 100\text{V}$, $V_{GS} = 0\text{V}$		24.0	A

Note 1. Pulse test, $t \leq 300\mu\text{s}$, duty cycle, $d \leq 2\%$.

ADVANCE TECHNICAL INFORMATION

The product presented herein is under development. The Technical Specifications offered are derived from a subjective evaluation of the design, based upon prior knowledge and experience, and constitute a "considered reflection" of the anticipated result. IXYS reserves the right to change limits, test conditions, and dimensions without notice.

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IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:

4,835,592	4,931,844	5,049,961	5,237,481	6,162,865	6,404,065 B1	6,683,344	6,727,585	7,005,734 B2	7,157,338B2
4,860,072	5,017,508	5,063,307	5,381,025	6,259,123 B1	6,534,343	6,710,405 B2	6,759,692	7,063,975 B2	
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	7,071,537	