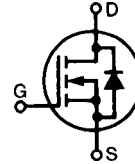


HiPerFET™ MOSFETs ISOPLUS220™

IXFC 26N50
IXFC 24N50

Electrically Isolated Back Surface

N-Channel Enhancement Mode
High dV/dt, Low t_{rr}, HDMOS™ Family

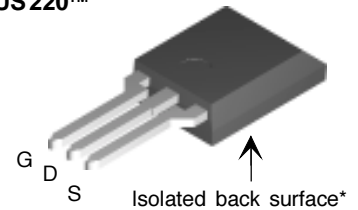


V _{DSS}	I _{D25}	R _{DS(on)}
500 V	23 A	0.20 Ω
500 V	21 A	0.23 Ω

t_{rr} ≤ 250 ns

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	±20	V
V _{GSM}	Transient	±30	V
I _{D25}	T _C = 25°C	26N50 23 24N50 21	A
I _{DM}	T _C = 25°C, Pulse width limited by T _{JM}	26N50 92 24N50 84	A
I _{AR}	T _C = 25°C	26N50 26 24N50 24	A
E _{AR}	T _C = 25°C	30	mJ
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	230	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
V _{ISOL}	50/60 Hz, RMS t = 1 minute leads-to-tab	2500	V~
Weight		3	g

ISOPLUS220™



G = Gate D = Drain
S = Source

* Patent pending

Features

- Silicon chip on Direct-Copper-Bond substrate
 - High power dissipation
 - Isolated mounting surface
 - 2500V electrical isolation
- Low drain to tab capacitance (<35pF)
- Low R_{DS(on)} HDMOS™ process
- Rugged polysilicon gate cell structure
- Unclamped Inductive Switching (UIS) rated
- Fast intrinsic Rectifier

Applications

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

Advantages

- Easy assembly: no screws, or isolation foils required
- Space savings
- High power density
- Low collector capacitance to ground (low EMI)

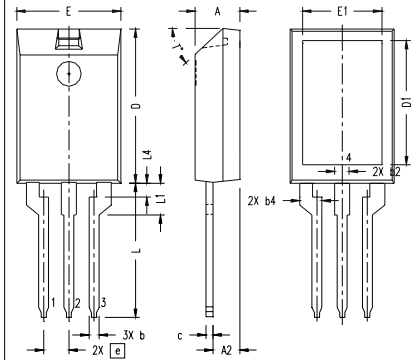
Symbol	Test Conditions	Characteristic Values (T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
V _{DSS}	V _{GS} = 0 V, I _D = 250μA	500		V
V _{GS(th)}	V _{DS} = V _{GS} , I _D = 4mA	2		V
I _{GSS}	V _{GS} = ±20 V _{DC} , V _{DS} = 0			±100 nA
I _{DSS}	V _{DS} = 0.8 V _{DSS} V _{GS} = 0 V			200 μA 1 mA
R _{DS(on)}	V _{GS} = 10 V, I _D = I _T Notes 1 & 2	26N50 24N50		0.20 Ω 0.23 Ω

Symbol	Test Conditions		Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
			min.	typ.	max.
g_{fs}	$V_{DS} = 15\text{ V}; I_D = I_T$	Note 1	11	21	S
C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$			4200	pF
C_{oss}				450	pF
C_{rss}				135	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = I_T$ $R_G = 1\ \Omega$ (External),			16	ns
t_r				33	ns
$t_{d(off)}$				65	ns
t_f				30	ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = I_T$			135	nC
Q_{gs}				28	nC
Q_{gd}				62	nC
R_{thJC}				0.54	K/W
R_{thCK}				0.30	K/W

Symbol	Test Conditions		Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
			min.	typ.	max.
I_S	$V_{GS} = 0\text{ V}$			26	A
I_{SM}	Repetitive; pulse width limited by T_{JM}			104	A
V_{SD}	$I_F = I_S, V_{GS} = 0\text{ V}$, Note 1			1.5	V
t_{rr}	$I_F = I_S, -di/dt = 100\text{ A}/\mu\text{s}$, $V_R = 100\text{ V}$			$T_J = 25^\circ\text{C}$	250 ns
Q_{RM}				$T_J = 125^\circ\text{C}$	400 ns
				$T_J = 25^\circ\text{C}$	1
I_{RM}				$T_J = 125^\circ\text{C}$	2
	$T_J = 25^\circ\text{C}$	10	A		
	$T_J = 125^\circ\text{C}$	15	A		

- Note: 1. Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$
 2. I_T test current: IXFC26N50 $I_T = 13\text{ A}$
 IXFC24N50 $I_T = 12\text{ A}$
 3. See IXFH26N50 data sheet for characteristic curves.

ISOPLUS220 OUTLINE



SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.157	.197	4.00	5.00
A2	.098	.118	2.50	3.00
b	.035	.051	0.90	1.30
b2	.049	.065	1.25	1.65
b4	.093	.100	2.35	2.55
c	.028	.039	0.70	1.00
D	.591	.630	15.00	16.00
D1	.472	.512	12.00	13.00
E	.394	.433	10.00	11.00
E1	.295	.335	7.50	8.50
e	.100 BASIC		2.55 BASIC	
L	.512	.571	13.00	14.50
L1	.118	.138	3.00	3.50
L4	.039	.059	1.00	1.50
T*			42.5*	47.5*

Note: All terminals are solder plated.

- 1 - Gate
- 2 - Drain
- 3 - Source

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

IXYS MOSFETS and IGBTs are covered by one or more of the following U.S. patents: 4,835,592 4,881,106 5,017,508 5,049,961 5,187,117 5,486,715
 4,850,072 4,931,844 5,034,796 5,063,307 5,237,481 5,381,025