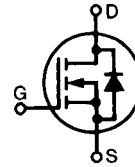


HiPerFET™ Power MOSFETs ISOPLUS247™

IXFR 26N50
IXFR 24N50

(Electrically Isolated Back Surface)

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

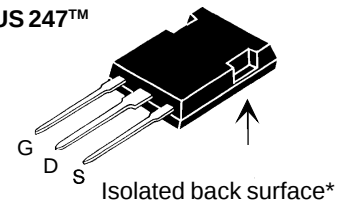


V_{DSS}	I_{D25}	$R_{DS(on)}$
500 V	24 A	0.20 Ω
500 V	22 A	0.23 Ω

$t_{rr} \leq 250$ ns

Symbol	Test Conditions	Maximum Ratings		
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	500	V	
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1$ M Ω	500	V	
V_{GS}	Continuous	± 20	V	
V_{GSM}	Transient	± 30	V	
I_{D25}	$T_C = 25^\circ\text{C}$	26N50 24N50	26 24	A
I_{DM}	$T_C = 25^\circ\text{C}$, Pulse width limited by T_{JM}	26N50 24N50	104 96	A
I_{AR}	$T_C = 25^\circ\text{C}$	26N50 24N50	26 24	A
E_{AR}	$T_C = 25^\circ\text{C}$	30	mJ	
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 100$ A/ μs , $V_{DD} \leq V_{DSS}$ $T_J \leq 150^\circ\text{C}$, $R_G = 2$ Ω	5	V/ns	
P_D	$T_C = 25^\circ\text{C}$	250	W	
T_J		-55 ... +150	$^\circ\text{C}$	
T_{JM}		150	$^\circ\text{C}$	
T_{stg}		-55 ... +150	$^\circ\text{C}$	
T_L	1.6 mm (0.062 in.) from case for 10 s	300	$^\circ\text{C}$	
V_{ISOL}	50/60 Hz, RMS $t = 1$ minute leads-to-tab	2500	V~	
Weight		6	g	

ISOPLUS 247™



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(<50pF)
- 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
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_{DSS}	$V_{GS} = 0$ V, $I_D = 250$ μA	500		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 4$ mA	2		V
I_{GSS}	$V_{GS} = \pm 20$ V _{DC} , $V_{DS} = 0$			± 100 nA
I_{DSS}	$V_{DS} = 0.8 \cdot V_{DSS}$ $V_{GS} = 0$ V	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		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

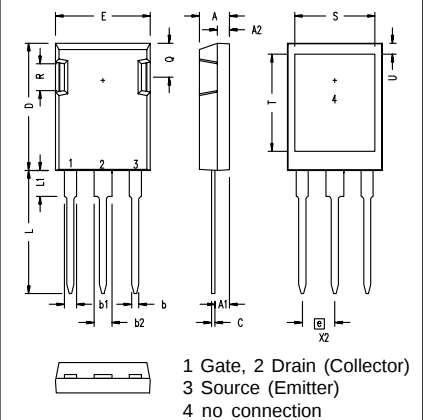
Symbol	Test Conditions		Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
			min.	typ.	max.
g_{fs}	$V_{DS} = 15\text{ V}; I_D = I_T$	Note 1	11	21	S
C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$			4200	pF
C_{oss}				450	pF
C_{rss}				135	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = I_T$ $R_G = 1\ \Omega$ (External),			16	25 ns
t_r				33	45 ns
$t_{d(off)}$				65	80 ns
t_f				30	40 ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = I_T$			135	160 nC
Q_{gs}				28	40 nC
Q_{gd}				62	85 nC
R_{thJC}					0.50 K/W
R_{thCK}				0.15	K/W

Source-Drain Diode

Source-Drain Diode		Characteristic Values (T _j = 25°C, unless otherwise specified)			
Symbol	Test Conditions	min.	typ.	max.	
I _S	V _{GS} = 0 V			26	A
I _{SM}	Repetitive; pulse width limited by T _{JM}			104	A
V _{SD}	I _F = I _S , V _{GS} = 0 V, Note 1			1.5	V
t _{rr}	I_F = I_S, -di/dt = 100 A/μs, V_R = 100 V	T _j = 25°C	1	250	ns
		T _j = 125°C		400	ns
Q _{RM}		T _j = 25°C		1.5	μC
		T _j = 125°C			
I _{RM}	T _j = 25°C	10	A		
	T _j = 125°C	15	A		

Note: 1. Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$
 2. I_T test current: IXFR26N50 $I_T = 13\text{ A}$
 IXFR24N50 $I_T = 12\text{ A}$
 3. See IXFR26N50 data sheet for characteristic curves.

ISOPLUS 247 (IXFR) 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
S	13.21	13.72	.520	.540
T	15.75	16.26	.620	.640
U	1.65	3.03	.065	.080



Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.