

HiPerFET™ Power MOSFET ISOPLUS264™

IXFL34N100

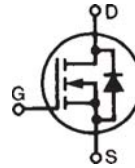
$$\begin{aligned} V_{DSS} &= 1000V \\ I_{D25} &= 30A \\ R_{DS(on)} &\leq 280m\Omega \end{aligned}$$

(Electrically Isolated Tab)

Single-Die MOSFET

N-Channel Enhancement Mode

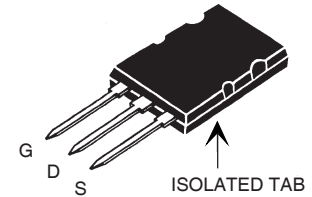
Avalanche Rated, Low Q_g , High dV/dt , Low t_{rr}



Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	1000	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C , $R_{GS} = 1M\Omega$	1000	V
V_{GSS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	30	A
I_{DM}	$T_C = 25^\circ\text{C}$, Pulse Width Limited by T_{JM}	136	A
I_A	$T_C = 25^\circ\text{C}$	34	A
E_{AS}	$T_C = 25^\circ\text{C}$	4	J
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 100 \text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$ $T_J \leq 150^\circ\text{C}$, $R_G = 2 \Omega$	5	V/ns
P_D	$T_C = 25^\circ\text{C}$	550	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 (0.063 in.) from Case for 10s	300	$^\circ\text{C}$
T_{SOLD}	Plastic body for 10s	260	$^\circ\text{C}$
F_C	Mounting Force	40..120 / 9..27	N/lb.
V_{ISOL}	50/60 Hz, RMS $t = 1 \text{ min}$ $I_{ISOL} \leq 1 \text{ mA}$ $t = 1 \text{ s}$	2500 3000	V~ V~
Weight		8	g

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0 \text{ V}$, $I_D = 3 \text{ mA}$	1000		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 8 \text{ mA}$	3.0		5.5 V
I_{GSS}	$V_{GS} = \pm 20 \text{ V}$, $V_{DS} = 0 \text{ V}$			$\pm 100 \text{ nA}$
I_{DSS}	$V_{DS} = V_{DSS}$, $V_{GS} = 0 \text{ V}$ $T_J = 125^\circ\text{C}$			100 μA 2 mA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$, $I_D = 17 \text{ A}$, Note 1			280 m Ω

ISOPLUS264



G = Gate
S = Source
D = Drain

Features

- Silicon Chip on Direct-Copper Bond (DCB) Substrate
 - High Power Dissipation
 - Isolated Mounting Surface
 - 2500V Electrical Isolation
- Low Drain to Tab Capacitance(<30pF)
- Low RDS (on) HDMOS™ Process
- Rugged Polysilicon Gate Cell Structure
- Avalanche Rated
- Fast intrinsic Rectifier

Advantages

- High Power Density
- Easy to Mount
- Space Savings

Applications:

- Switched-Mode and Resonant-Mode Power Supplies
- DC-DC Converters
- DC Choppers
- Laser Drivers
- 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.
g_{fs}	$V_{DS} = 15\text{V}$, $I_D = 17\text{A}$, Note 1	18	40	S
C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = 25\text{V}$, $f = 1\text{MHz}$		9200	pF
C_{oss}			1200	pF
C_{rss}			300	pF
$t_{d(on)}$	Resistive Switching Times $V_{GS} = 10\text{V}$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 17\text{A}$ $R_G = 1\Omega$ (External)		41	ns
t_r			65	ns
$t_{d(off)}$			110	ns
t_f			30	ns
$Q_{g(on)}$	$V_{GS} = 10\text{V}$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 17\text{A}$		380	nC
Q_{gs}			65	nC
Q_{gd}			185	nC
R_{thJC}		0.15		0.225°C/W
R_{thCS}				$^\circ\text{C/W}$

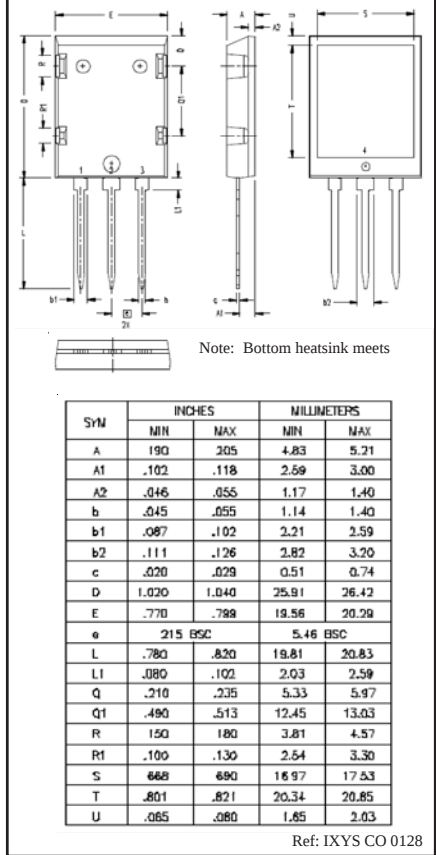
Source-Drain Diode

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
I_S	$V_{GS} = 0\text{V}$			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			1.3 V
t_{rr}	$I_F = I_S$, $V_{GS} = 0\text{V}$ $-di/dt = 100\text{A}/\mu\text{s}$ $V_R = 100\text{V}$ $T_J = 125^\circ\text{C}$		180	ns
Q_{RM}			330	ns
I_{RM}			2	μC
			8	A

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

Please see IXFN36N100 data sheet for characteristic curves.

ISOPLUS264™ (IXFL) Outline



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	4,931,844	5,049,961	5,237,481	6,162,665	6,404,065 B1	6,683,344	6,727,585	7,005,734 B2	7,157,338B2
4,850,072	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	