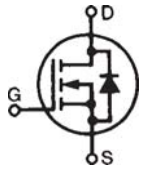
IXYS

HiPerFET™ Power MOSFET ISOPLUS264™

IXFL34N100

V_{DSS} = 1000V
I_{D25} = 30A
$R_{DS(on)}$ ≤ 280mΩ

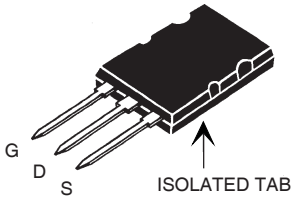


(Electrically Isolated Tab)

Single-Die MOSFET

N-Channel Enhancement Mode
Avalanche Rated, Low Q_g, High dV/dt, Low t_{rr}

ISOPLUS264



G = Gate D = Drain
S = Source

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	T_J = 25°C to 150°C	1000	V
V_{DGR}	T_J = 25°C to 150°C, R_{GS} = 1MΩ	1000	V
V_{GSS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	T_C = 25°C	30	A
I_{DM}	T_C = 25°C, Pulse Width Limited by T_{JM}	136	A
I_A	T_C = 25°C	34	A
E_{AS}	T_C = 25°C	4	J
dv/dt	$I_S \le I_{DM}$, di/dt ≤ 100 A/μs, $V_{DD} \le V_{DSS}$ $T_J \le 150°C$, R_G = 2 Ω	5	V/ns
P_D	T_C = 25°C	550	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
T_L	1.6 mm (0.063 in.) from Case for 10s	300	°C
T_{SOLD}	Plastic body for 10s	260	°C
F_C	Mounting Force	40..120 / 9..27	N/lb.
V_{ISOL}	50/60 Hz, RMS t = 1 min	2500	V~
	$I_{ISOL} \le$ 1 mA t = 1 s	3000	V~
Weight		8	g

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

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°C, Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.	
g_{fs}	V_{DS} = 15V, I_D = 17A, Note 1	18	40		S
C_{iss}	V_{GS} = 0V, V_{DS} = 25V, f = 1MHz		9200		pF
C_{oss}			1200		pF
C_{rss}			300		pF
$t_{d(on)}$	**Resistive Switching Times**		41		ns
t_r	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 17A		65		ns
$t_{d(off)}$	R_G = 1Ω (External)		110		ns
t_f			30		ns
$Q_{g(on)}$	V_{GS} = 10V, V_{DS} = 0.5 • V_{DSS}, I_D = 17A		380		nC
Q_{gs}			65		nC
Q_{gd}			185		nC
R_{thJC}				0.225	°C/W
R_{thCS}			0.15		°C/W

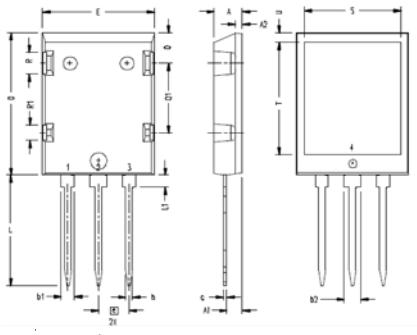
Source-Drain Diode

Symbol	Test Conditions (T_J = 25°C, Unless Otherwise Specified)	Characteristic Values Min.	Typ.	Max.	
I_S	V_{GS} = 0V			34	A
I_{SM}	Repetitive, Pulse Width Limited by T_{JM}			136	A
V_{SD}	$I_F = I_S$, V_{GS} = 0V, Note 1			1.3	V
t_{rr}	$I_F = I_S$, V_{GS} = 0V, -di/dt = 100A/µs, V_R = 100V		180	300	ns
	T_J = 125°C		330		ns
Q_{RM}			2		µC
I_{RM}			8		A

Note 1. Pulse test, t ≤ 300µs, duty cycle, d ≤ 2 %.

Please see IXFN36N100 data sheet for characteristic curves.

ISOPLUS264™ (IXFL) Outline



Note: Bottom heatsink meets

SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.190	.205	4.83	5.21
A1	.102	.118	2.59	3.00
A2	.046	.055	1.17	1.40
b	.045	.055	1.14	1.40
b1	.087	.102	2.21	2.59
b2	.111	.126	2.82	3.20
c	.020	.029	0.51	0.74
D	1.020	1.040	25.91	26.42
E	.770	.789	19.56	20.29
e	.215 BSC		5.46 BSC	
L	.780	.820	19.81	20.83
L1	.080	.102	2.03	2.59
Q	.210	.235	5.33	5.97
Q1	.490	.513	12.45	13.03
R	.150	.180	3.81	4.57
R1	.100	.130	2.54	3.30
S	.668	.690	16.97	17.53
T	.801	.821	20.34	20.85
U	.065	.080	1.65	2.03

Ref: IXYS CO 0128