Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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IXYS

Preliminary Technical Information

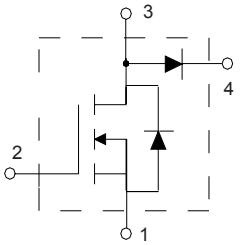
PolarHV™ HiPerFET Power MOSFET

Boost Configuration for PFC Circuits

IXFN 64N50PD2

V_{DSS} = 500 V
I_{D25} = 52 A
$R_{DS(on)}$ ≤ 85 mΩ
t_{rr} ≤ 200 ns

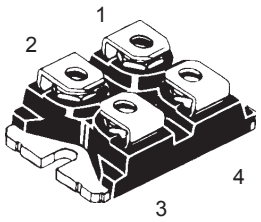
N-Channel Enhancement Mode
Avalanche Rated
Fast Intrinsic Diode



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	± 30	V
V_{GSM}	Transient	± 40	V
I_{D25}	T_C = 25°C	52	A
I_{DM}	T_C = 25°C, pulse width limited by T_{JM}	200	A
I_{AR}	T_C = 25°C	36	A
E_{AR}	T_C = 25°C	50	mJ
E_{AS}	T_C = 25°C	1.5	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	10	V/ns
P_D	T_C = 25°C	625	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
M_D	Mounting Ttorque	1.5 / 13	Nm/lb-in
	Terminal connection torque	5 / 13	Nm/lb-in
Weight		30	g

Symbol	Test Conditions (T_J = 25°C unless otherwise specified)	Characteristic Values Min.	Typ.	Max.	
BV_{DSS}	V_{GS} = 0 V, I_D = 500 µA	500			V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, I_D = 8 mA	3.0		5.0	V
I_{GSS}	V_{GS} = ± 30 V, V_{DS} = 0			± 200	nA
I_{DSS}	$V_{DS} = V_{DSS}$			50	µA
	V_{GS} = 0 V, T_J = 125°C			1	mA
$R_{DS(on)}$	V_{GS} = 10 V, I_D = 32 A, Note 1			85	mΩ

miniBLOC, SOT-227 B (IXFN)
E153432



1 = Source
2 = Gate
3 = Drain / Diode anode
4 = Diode / Diode cathode

Features

- Fast intrinsic diode in boost configuration
- International standard package
- Encapsulating epoxy meets UL 94 V-0, flammability classification
- miniBLOC with Aluminium nitride isolation
- Unclamped Inductive Switching (UIS) rated
- Low package inductance
  - easy to drive and to protect

Advantages

- Easy to mount
- Space savings
- Tightly coupled FRED diode
- High power density

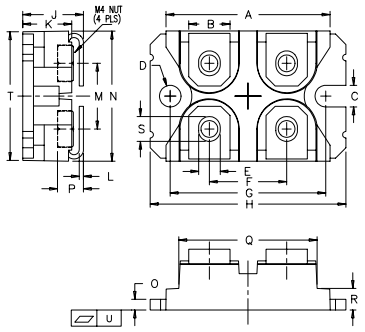
Symbol	Test Conditions (T_J = 25°C unless otherwise specified)	Characteristic Values Min.	Typ.	Max.	
g_{fs}	V_{DS}= 20 V; I_D = 32 A, Note 1	65	72		S
C_{iss}	V_{GS} = 0 V, V_{DS} = 25 V, f = 1 MHz		11		nF
C_{oss}			1020		pF
C_{rss}			80		pF
$t_{d(on)}$	V_{GS} = 10 V, V_{DS} = 0.5 V_{DSS}, I_D = 64 A R_G = 2 Ω (External)		28		ns
t_r			32		ns
$t_{d(off)}$			110		ns
t_f			30		ns
$Q_{g(on)}$	V_{GS}= 10 V, V_{DS} = 0.5 V_{DSS}, I_D = 32 A		186		nC
Q_{gs}			60		nC
Q_{gd}			62		nC
R_{thJC}				0.2	°C/W
R_{thCS}			0.05		°C/W

Source-Drain Diode

Symbol	Test Conditions (T_J = 25°C unless otherwise specified)	Characteristic Values Min.	Typ.	Max.	
I_S	V_{GS} = 0 V			64	A
I_{SM}	Repetitive			200	A
V_{SD}	I_F = I_S, V_{GS} = 0 V, Note 1			1.5	V
t_{rr}	I_F = 25 A, -di/dt = 100 A/µs			200	ns
Q_{RM}	V_R = 100 V, V_{GS} = 0 V		0.8		µC
I_{RM}			8		A

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

SOT-227B (IXFN) Outline



(M4 screws (4x) supplied)

SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	1.240	1.255	31.50	31.88
B	.307	.323	7.80	8.20
C	.161	.169	4.09	4.29
D	.161	.169	4.09	4.29
E	.161	.169	4.09	4.29
F	.587	.595	14.91	15.11
G	1.186	1.193	30.12	30.30
H	1.496	1.505	38.00	38.23
J	.460	.481	11.68	12.22
K	.351	.378	8.92	9.60
L	.030	.033	0.76	0.84
M	.496	.506	12.60	12.85
N	.990	1.001	25.15	25.42
O	.078	.084	1.98	2.13
P	.195	.235	4.95	5.97
Q	1.045	1.059	26.54	26.90
R	.155	.174	3.94	4.42
S	.186	.191	4.72	4.85
T	.968	.987	24.59	25.07
U	-.002	.004	-0.05	0.1

PRELIMINARY TECHNICAL INFORMATION

The product presented herein is under development. The Technical Specifications offered are derived from data gathered during objective characterizations of preliminary engineering lots; but also may yet contain some information supplied during a pre-production design evaluation. IXYS reserves the right to change limits, test conditions, and dimensions without notice.