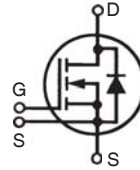


Linear Power MOSFET With Extended FBSOA

IXTN8N150L

N-Channel Enhancement Mode
Avalanche Rated



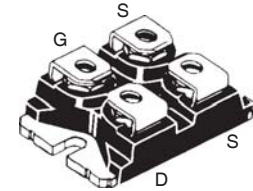
$$V_{DSS} = 1500V$$

$$I_{D25} = 8A$$

$$R_{DS(on)} = 5.0\Omega$$

miniBLOC, SOT-227 B (IXTN)

E153432



G = Gate D = Drain
S = Source S = Source

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ C$ to $150^\circ C$	1500	V
V_{DGR}	$T_J = 25^\circ C$ to $150^\circ C$, $R_{GS} = 1M\Omega$	1500	V
V_{GSS}	Continuous	± 30	V
V_{GSM}	Transient	± 40	V
I_{D25}	$T_C = 25^\circ C$	8	A
I_{AR}	$T_C = 25^\circ C$	22	A
I_{DM}	$T_C = 25^\circ C$, pulse width limited by T_{JM}	15	A
E_{AR}	$T_C = 25^\circ C$	60	mJ
E_{AS}	$T_C = 25^\circ C$	1.5	J
P_D	$T_C = 25^\circ C$	700	W
T_J		-55 to +150	$^\circ C$
T_{JM}		150	$^\circ C$
T_{stg}		-55 to +150	$^\circ C$
V_{ISOL}	50/60 Hz, RMS, $t = 1$ minute	2500	V~
	$I_{ISOL} \leq 1mA$, $t = 1s$	3000	V~
M_d	Mounting torque for Base Plate	1.5/13	Nm/lb.in.
	Terminal connection torque	1.3/11.5	Nm/lb.in.
Weight		30	g

Features

- Designed for linear operations
- International standard package
- Unclamped Inductive switching (UIS) rated
- Molding epoxies meet UL94 V-0 flammability classification
- miniBLOC with Aluminum nitride isolation
- Low $R_{DS(on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- Low package inductance

Applications

- Programmable loads
- Current regulators
- DC-DC convertors
- Battery chargers
- DC choppers
- Temperature and lighting controls

Advantages

- Easy to mount
- Space savings
- High power density

Symbol	Test Conditions ($T_J = 25^\circ C$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0V$, $I_D = 1mA$	1500		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\mu A$	3.0		V
I_{GSS}	$V_{GS} = \pm 30V$, $V_{DS} = 0V$			± 200 nA
I_{DSS}	$V_{DS} = V_{DSS}$			50 μA
	$V_{GS} = 0V$ $T_J = 125^\circ C$			5 mA
$R_{DS(on)}$	$V_{GS} = 20V$, $I_D = 0.5 \cdot I_{D25}$, Note 1			5.0 Ω

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values			
		Min.	Typ.	Max.	
g_{fs}	$V_{DS} = 50\text{V}$, $I_D = 0.5 \cdot I_{D25}$, Note 1	2.0	3.5	6.0	S
C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = 25\text{V}$, $f = 1\text{MHz}$		7900		pF
C_{oss}			420		pF
C_{rss}				72	
$t_{d(on)}$	Resistive Switching Times $V_{GS} = 15\text{V}$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 0.5 \cdot I_{D25}$ $R_G = 2\Omega$ (External)		46		ns
t_r			55		ns
$t_{d(off)}$			73		ns
t_f			75		ns
$Q_{g(on)}$	$V_{GS} = 15\text{V}$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 0.5 \cdot I_{D25}$		250		nC
Q_{gs}			60		nC
Q_{gd}			80		nC
R_{thJC}				0.18	$^\circ\text{C/W}$
R_{thCS}		0.05			$^\circ\text{C/W}$

Safe Operating Area Specification

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
SOA	$V_{DS} = 800\text{V}$, $I_D = 0.3\text{A}$, $T_C = 90^\circ\text{C}$	240		W

Source-Drain Diode

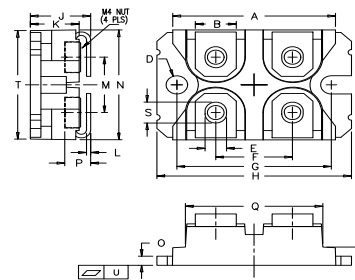
Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values			
		Min.	Typ.	Max.	
I_S	$V_{GS} = 0\text{V}$			8	A
I_{SM}	Repetitive, pulse width limited by T_{JM}			15	A
V_{SD}	$I_F = 4\text{A}$, $V_{GS} = 0\text{V}$, Note 1			5.5	V
t_{rr}	$I_F = I_S$, $-di/dt = 500\text{A}/\mu\text{s}$ $V_R = 200\text{V}$		790		ns

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

ADVANCE TECHNICAL INFORMATION

The product presented herein is under development. The Technical Specifications offered are derived from a subjective evaluation of the design, based upon prior knowledge and experience, and constitute a "considered reflection" of the anticipated result. IXYS reserves the right to change limits, test conditions, and dimensions without notice.

SOT-227B (IXTN) Outline



(M4 screws (4x) supplied)

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	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

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	