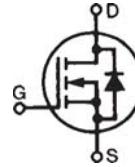


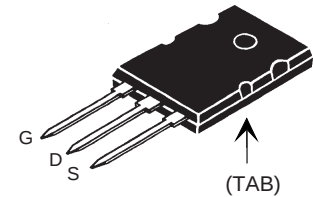
Linear Power MOSFET IXTK17N120L With Extended FBSOA IXTX17N120L

N-Channel Enhancement Mode

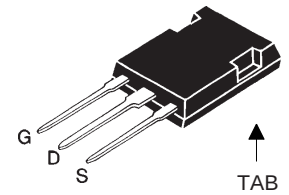


$$\begin{aligned} V_{DSS} &= 1200 \text{ V} \\ I_{D25} &= 17 \text{ A} \\ R_{DS(on)} &\leq 0.99 \text{ } \Omega \end{aligned}$$

TO-264 (IXTK)



PLUS247 (IXTX)



G = Gate
S = Source

D = Drain
TAB = Drain

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	1200	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1 \text{ M}\Omega$	1200	V
V_{GS}	Continuous	± 30	V
V_{GSM}	Transient	± 40	V
I_{D25}	$T_C = 25^\circ\text{C}$	17	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	30	A
I_{AR}	$T_C = 25^\circ\text{C}$	10	A
E_{AR}	$T_C = 25^\circ\text{C}$	60	mJ
E_{AS}		1.5	J
P_D	$T_C = 25^\circ\text{C}$	700	W
T_J		-55 to +150	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-55 to +150	$^\circ\text{C}$
T_L	1.6 mm (0.063 in) from case for 10 s	300	$^\circ\text{C}$
T_{SOLD}	Plastic body for 10 s	260	$^\circ\text{C}$
M_d	Mounting torque (TO-264)	1.13/10	Nm/lb.in.
F_c	Mounting force (PLUS247™)	20...120/4.5...27	N/lb.
Weight	PLUS247	6	g
	TO-264	10	g

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0 \text{ V}$, $I_D = 1 \text{ mA}$	1200		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250 \text{ } \mu\text{A}$	3		5 V
I_{GSS}	$V_{GS} = \pm 30 \text{ V}$, $V_{DS} = 0 \text{ V}$			$\pm 200 \text{ nA}$
I_{DSS}	$V_{DS} = V_{DSS}$, $V_{GS} = 0 \text{ V}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		50 μA 2 mA
$R_{DS(on)}$	$V_{GS} = 20 \text{ V}$, $I_D = 0.5 I_{D25}$, Note 1			0.99 Ω

Features

- Designed for linear operation
- International standard package
- Unclamped Inductive switching (UIS) rated
- Molding epoxies meet UL 94 V-0 flammability classification

Applications

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

Advantages

- Easy to mount
- Space savings
- High power density

IXYS reserves the right to change limits, test conditions, and dimensions.

Symbol	Test Conditions	Characteristic Values (T _j = 25°C, unless otherwise specified)		
		Min.	Typ.	Max.
g_{fs}	$V_{DS} = 20\text{ V}; I_D = 0.5 \cdot I_{D25}$, Note 1	3.5	5.0	7.5
C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$		8000	pF
C_{oss}			520	pF
C_{rss}			86	pF
$t_{d(on)}$	$V_{GS} = 15\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$ $R_G = 2\ \Omega$ (External),		40	ns
t_r			39	ns
$t_{d(off)}$			75	ns
t_f			63	ns
$Q_{g(on)}$	$V_{GS} = 15\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$		270	nC
Q_{gs}			70	nC
Q_{gd}			110	nC
R_{thJC}			0.18	°C/W
R_{thCS}				°C/W

Safe Operating Area Specification

Symbol	Test Conditions	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

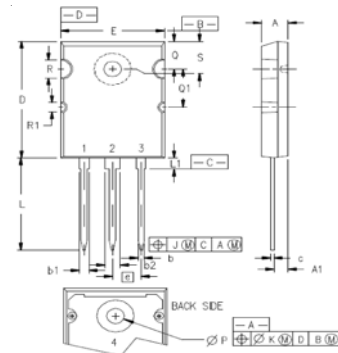
Symbol	Test Conditions	Characteristic Values (T _j = 25°C, unless otherwise specified)		
		Min.	Typ.	Max.
I_S	$V_{GS} = 0\text{ V}$			17
I_{SM}	Repetitive; pulse width limited by T _{JM}			30
V_{SD}	$I_F = I_S, V_{GS} = 0\text{ V}$, Note 1			1.5
t_{rr}	$I_F = I_S, -di/dt = 100\text{ A}/\mu\text{s}, V_R = 100\text{ V}$	1350		ns

Note 1: Pulse test, t < 300 μs, duty cycle, d ≤ 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.

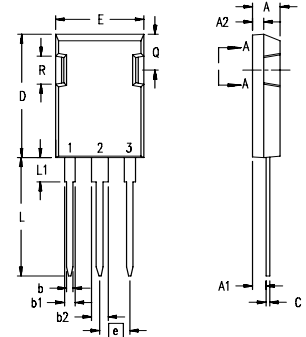
TO-264 (IXTK) Outline



- 1 - GATE
2, 4 - DRAIN (COLLECTOR)
3 - SOURCE (EMITTER)

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.185	.209	4.70	5.31
A1	.102	.118	2.59	3.00
b	.037	.055	0.94	1.40
b1	.087	.102	2.21	2.59
b2	.110	.126	2.79	3.20
c	.017	.029	0.43	0.74
D	1.007	1.047	25.58	26.59
E	.760	.799	19.30	20.29
e	.215 BSC		5.46 BSC	
J	.000	.010	0.00	0.25
K	.000	.010	0.00	0.25
L	.779	.842	19.79	21.39
L1	.087	.102	2.21	2.59
Q	.122	.138	3.10	3.51
Q1	.240	.256	6.10	6.50
Q1	.330	.346	8.38	8.79
Q1	.155	.187	3.94	4.75
Q1	.085	.093	2.16	2.36
S	.243	.253	6.17	6.43

PLUS247™ (IXTX) Outline



- Terminals: 1 - Gate
2 - Drain (Collector)
3 - Source (Emitter)
4 - Drain (Collector)

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	0.244
R	4.32	4.83	.170	.190

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	6,683,344	6,727,585	7,005,734	7,157,338
4,850,072	5,017,508	5,063,307	5,381,025	6,259,123	6,534,343	6,710,405	6,759,692	7,063,975	
4,881,106	5,034,796	5,187,117	5,486,715	6,306,728	6,583,505	6,710,463	6,771,478	7,071,537	

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