

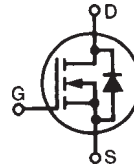
PolarHT™ Power MOSFET

(Electrically Isolated Tab)

N-Channel Enhancement Mode
Avalanche Rated

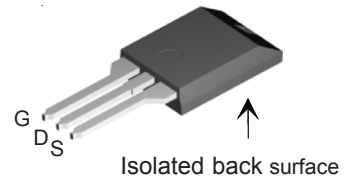
IXTC 62N15P
IXTR 62N15P

$V_{DSS} = 150 \text{ V}$
 $I_{D25} = 36 \text{ A}$
 $R_{DS(on)} \leq 45 \text{ m}\Omega$

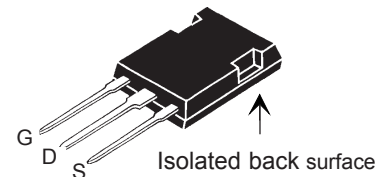


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	150	V
V_{DGR}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GS} = 1 \text{ M}\Omega$	150	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	36	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	150	A
I_{AR}	$T_C = 25^\circ\text{C}$	50	A
E_{AR}	$T_C = 25^\circ\text{C}$	30	mJ
E_{AS}	$T_C = 25^\circ\text{C}$	1.0	J
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 100 \text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$, $T_J \leq 150^\circ\text{C}$, $R_G = 10 \Omega$	10	V/ns
P_D	$T_C = 25^\circ\text{C}$	150	W
T_J		-55 ... +175	$^\circ\text{C}$
T_{JM}		150	$^\circ\text{C}$
T_{stg}		-55 ... +150	$^\circ\text{C}$
T_L	1.6 mm (0.062 in.) from case for 10 s	300	$^\circ\text{C}$
F_c	Mounting force	ISOPLUS220 11..65 / 2.5..15 ISOPLUS247 20..120 / 4.5..25	N/lb N/lb
Weight		ISOPLUS220 3 ISOPLUS247 5	g g

ISOPLUS220 (IXTC)
E153432



ISOPLUS247 (IXTR)
E153432



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

Features

- † International standard isolated packages
- † UL recognized packages
- † Silicon chip on Direct-Copper-Bond substrate
 - High power dissipation
 - Isolated mounting surface
 - 2500V electrical isolation
- † Unclamped Inductive Switching (UIS) rated
- † Low package inductance
 - easy to drive and to protect
- † Fast intrinsic diode

Advantages

- † Easy to mount
- † Space savings
- † High power density

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0 \text{ V}$, $I_D = 250 \mu\text{A}$	150		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250 \mu\text{A}$	3.0		5.0 V
I_{GSS}	$V_{GS} = \pm 20 \text{ V}_{DC}$, $V_{DS} = 0$			$\pm 100 \text{ nA}$
I_{DSS}	$V_{DS} = V_{DSS}$ $V_{GS} = 0 \text{ V}$			10 μA 200 μA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$, $I_D = 31 \text{ A}$, Note 1			45 $\text{m}\Omega$

Symbol	Test Conditions	Characteristic Values			
		(T _J = 25°C unless otherwise specified)			
		Min.	Typ.	Max.	
g_{fs}	V _{DS} = 20 V; I _D = 31 A, Note 1	14	24	S	
C_{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		2250	pF	
C_{oss}			660	pF	
C_{rss}			185	pF	
t_{d(on)}	V _{GS} = 10 V, V _{DS} = 0.5 V _{DSS} , I _D = 62 A		27	ns	
t_r			38	ns	
t_{d(off)}		R _G = 10 Ω (External)		76	ns
t_f				35	ns
Q_{g(on)}	V _{GS} = 10 V, V _{DS} = 0.5 V _{DSS} , I _D = 31 A		70	nC	
Q_{gs}			20	nC	
Q_{gd}			38	nC	
R_{thJC}				1.0 °C/W	
R_{thCS}		0.15		°C/W	

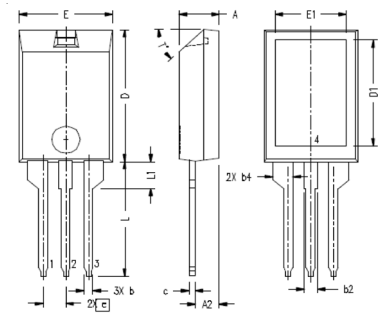
Source-Drain Diode

Symbol	Test Conditions	Characteristic Values		
		(T _J = 25°C unless otherwise specified)		
		Min.	Typ.	Max.
I_s	V _{GS} = 0 V			62 A
I_{SM}	Repetitive			150 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		150	ns
Q_{RM}		V _R = 100 V, V _{GS} = 0 V		2.0

Note 1: Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %;
 2: Test current I_T = 62 A.

PRELIMINARY TECHNICAL INFORMATION

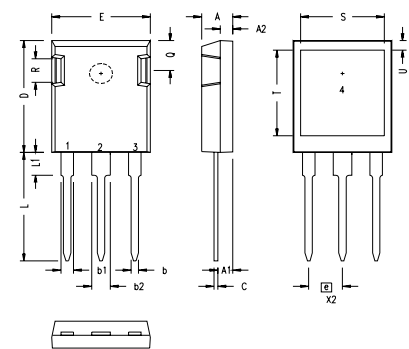
The product presented herein is under development. The Technical Specifications offered are derived from data gathered during objective characterizations of preliminary engineering lots; but also may yet contain some information supplied during a pre-production design evaluation. IXYS reserves the right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

ISOPLUS220™ (IXTC) Outline


Note:
 Bottom heatsink (Pin 4) is electrically isolated from Pin 1, 2, or 3.

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.157	.197	4.00	5.00
A2	.098	.118	2.50	3.00
b	.035	.051	0.90	1.30
b2	.049	.065	1.25	1.65
b4	.093	.100	2.35	2.55
c	.028	.039	0.70	1.00
D	.591	.630	15.00	16.00
D1	.472	.512	12.00	13.00
E	.394	.433	10.00	11.00
E1	.295	.335	7.50	8.50
e	.100 BASIC		2.55 BASIC	
L	.512	.571	13.00	14.50
L1	.118	.138	3.00	3.50
T*			42.5*	47.5*

Ref: IXYS CO 0177 R0

ISOPLUS247 (IXTR) Outline


SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.190	.205	4.83	5.21
A1	.090	.100	2.29	2.54
A2	.075	.085	1.91	2.16
b	.045	.055	1.14	1.40
b1	.075	.084	1.91	2.13
b2	.115	.123	2.92	3.12
C	.024	.031	0.61	0.80
D	.819	.840	20.80	21.34
E	.620	.635	15.75	16.13
e	.215 BSC		5.45 BSC	
L	.780	.800	19.81	20.32
L1	.150	.170	3.81	4.32
O	.220	.244	5.59	6.20
R	.170	.190	4.32	4.83
S	.520	.540	13.21	13.72
T	.620	.640	15.75	16.26
U	.065	.080	1.65	2.03

- 1 - GATE
- 2 - DRAIN (COLLECTOR)
- 3 - SOURCE (EMITTER)
- 4 - NO CONNECTION

NOTE: This drawing will meet all dimensions requirement of JEDEC outline TO-247AD except screw hole.

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IXYS MOSFETs and IGBTs are covered by	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	7,005,734B2
one or more of the following U.S. patents:	4,850,072	5,017,508	5,063,307	5,381,025	6,259,123 B1	6,534,343	6,710,405B2	6,759,692	
	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	