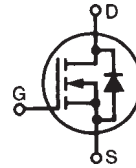


Trench™ Power MOSFET

IXUV170N075 IXUV170N075S

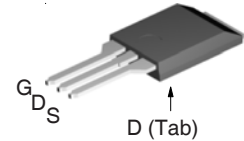
$$\begin{aligned} V_{DSS} &= 75V \\ I_{D25} &= 170A \\ R_{DS(on)} &\leq 6.5m\Omega \end{aligned}$$

N-Channel Enhancement Mode

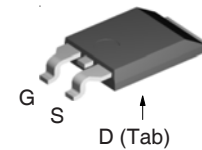


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C to } 175^\circ\text{C}$	75	V
V_{DGR}	$T_J = 25^\circ\text{C to } 175^\circ\text{C}, R_{GS} = 1M\Omega$	75	V
V_{GSS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	170	A
I_{LRMS}	Lead Current Limit, RMS	120	A
I_{DM}	$T_C = 25^\circ\text{C}$, Pulse Width Limited by T_{JM}	300	A
P_D	$T_C = 25^\circ\text{C}$	310	W
T_J		-55 ... +175	$^\circ\text{C}$
T_{JM}		175	$^\circ\text{C}$
T_{stg}		-55 ... +175	$^\circ\text{C}$
T_L	Maximum Lead Temperature for Soldering	300	$^\circ\text{C}$
T_{SOLD}	1.6 mm (0.062in.) from Case for 10s	260	$^\circ\text{C}$
F_C	Mounting force (PLUS220)	11..65 / 2.5..14.6	N/lb
Weight		4	g

PLUS220 (IXUV)



PLUS220SMD (IXUV_S)



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

Features

- International Standard Packages
- Fast Intrinsic Rectifier
- Low $R_{DS(ON)}$ and Q_G
- Low Package Inductance

Advantages

- High Power Density
- Easy to Mount
- Space Savings

Applications

- Automotive 42V & 12V Systems
 - Electronic Switches to Replace Relays and Fuses
 - Choppers to Replace Series Dropping Resistors used for Motors, Heaters, etc.
 - Inverters for AC Drives, e.g. Starter Generator
 - DC - DC Inverters
- Power Supplies
 - DC - DC Inverters
 - Solar Inverters
- Battery Powered Systems
 - Choppers or Inverters for Motor Control in Hand Tools
 - Battery Chargers

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	75		V
$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 1mA$	2.0		4.0 V
I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 200 nA
I_{DSS}	$V_{DS} = V_{DSS}, V_{GS} = 0V$ $T_J = 150^\circ\text{C}$			5 μA 500 μA
$R_{DS(on)}$	$V_{GS} = 10V, I_D = 0.5 \cdot I_{D25}$, Note 1			6.5 m Ω

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1\text{MHz}$		TBD	pF
C_{oss}			TBD	pF
C_{rss}			TBD	pF
$t_{d(on)}$	Resistive Switching Times $V_{GS} = 10V, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$ $R_G = 4.7\Omega$ (External)		50	ns
t_r			40	ns
$t_{d(off)}$			190	ns
t_f			55	ns
$Q_{g(on)}$	$V_{GS} = 10V, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$		250	nC
Q_{gs}			TBD	nC
Q_{gd}			TBD	nC
R_{thJC}			0.21	$^\circ\text{C/W}$
R_{thJC}				$^\circ\text{C/W}$

Source-Drain Diode

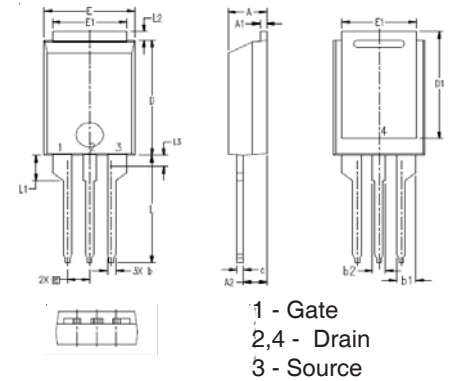
Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
I_s	$V_{GS} = 0V$			170 A
I_{SM}	Repetitive, pulse width limited by T_{JM}			680 A
V_{SD}	$I_F = 85A, V_{GS} = 0V$, Note 1			1.5 V
t_{rr}	$I_F = 85A, -di/dt = 250A/\mu s$ $V_R = 37.5V, V_{GS} = 0V$		120	ns

Note 1. Pulse test, $t \leq 300\mu s$, duty cycle, $d \leq 2\%$.

ADVANCE TECHNICAL INFORMATION

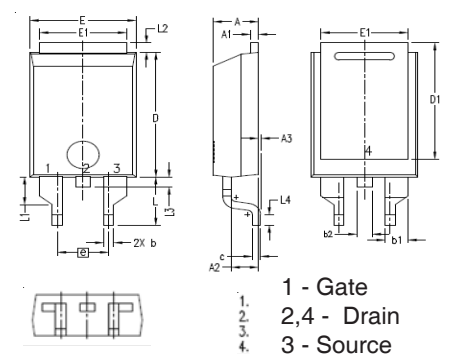
The product presented herein is under development. The Technical Specifications offered are derived from a subjective evaluation of the design, based upon prior knowledge and experience, and constitute a "considered reflection" of the anticipated result. IXYS reserves the right to change limits, test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

PLUS220 Outline



SYM	INCHES		MILLIMETER	
	MIN	MAX	MIN	MAX
A	.169	.185	4.30	4.70
A1	.028	.035	0.70	0.90
A2	.098	.118	2.50	3.00
b	.035	.047	0.90	1.20
b1	.080	.095	2.03	2.41
b2	.054	.064	1.37	1.63
c	.028	.035	0.70	0.90
D	.551	.591	14.00	15.00
D1	.512	.539	13.00	13.70
E	.394	.433	10.00	11.00
E1	.331	.346	8.40	8.80
e	.100 BSC		2.54 BSC	
L	.512	.551	13.00	14.00
L1	.118	.138	3.00	3.50
L2	.035	.051	0.90	1.30
L3	.047	.059	1.20	1.50

PLUS220SMD Outline



SYM	INCHES		MILLIMETER	
	MIN	MAX	MIN	MAX
A	.169	.185	4.30	4.70
A1	.028	.035	0.70	0.90
A2	.098	.118	2.50	3.00
A3	.000	.010	0.00	0.25
b	.035	.047	0.90	1.20
b1	.080	.095	2.03	2.41
b2	.054	.064	1.37	1.63
c	.028	.035	0.70	0.90
D	.551	.591	14.00	15.00
D1	.512	.539	13.00	13.70
E	.394	.433	10.00	11.00
E1	.331	.346	8.40	8.80
e	.200 BSC		5.08 BSC	
L	.209	.228	5.30	5.80
L1	.118	.138	3.00	3.50
L2	.035	.051	0.90	1.30
L3	.047	.059	1.20	1.50
L4	.039	.059	1.00	1.50

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	6,404,065B1	6,683,344	6,727,585	7,005,734B2	7,157,338B2
	4,860,072	5,017,508	5,063,307	5,381,025	6,259,123B1	6,534,343	6,710,405B2	6,759,692	7,063,975B2	
	4,881,106	5,034,796	5,187,117	5,486,715	6,306,728B1	6,583,505	6,710,463	6,771,478B2	7,071,537	



Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.