



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!



Contact us

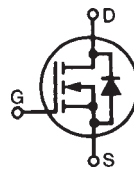
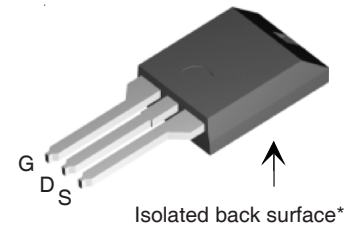
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Trench Power MOSFET **IXUC160N075** ISOPLUS220™

Electrically Isolated Back Surface
 $V_{DSS} = 75 \text{ V}$
 $I_{D25} = 160 \text{ A}$
 $R_{DS(on)} = 6.5 \text{ m}\Omega$

ISOPLUS 220™


G = Gate, D = Drain,
S = Source

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	75	V
V_{GS}	Continuous	± 20	V
I_{D25}	$T_C = 25^\circ\text{C}$; Note 1	160	A
I_{D90}	$T_C = 90^\circ\text{C}$; Note 1	130	A
I_{S25}	$T_C = 25^\circ\text{C}$; Note 1, 2	160	A
I_{S90}	$T_C = 90^\circ\text{C}$; Note 1, 2	120	A
$I_{D(RMS)}$	Package lead current limit	50	A
E_{AS}	$T_C = 25^\circ\text{C}$	tbd	mJ
P_D	$T_C = 25^\circ\text{C}$	300	W
T_J		-55 ... +175	$^\circ\text{C}$
T_{JM}		175	$^\circ\text{C}$
T_{stg}		-55 ... +150	$^\circ\text{C}$
T_L	1.6 mm (0.062 in.) from case for 10 s	300	$^\circ\text{C}$
V_{ISOL}	RMS leads-to-tab, 50/60 Hz, $t = 1$ minute	2500	V~
F_c	Mounting force	11 ... 65 / 2.4 ... 11	N/lb
Weight		2	g

Features

- Silicon chip on Direct-Copper-Bond substrate
 - High power dissipation
 - Isolated mounting surface
 - 2500V electrical isolation
- Trench MOSFET
 - very low $R_{DS(on)}$
 - fast switching
 - usable intrinsic reverse diode
- Low drain to tab capacitance (<15pF)
- Unclamped Inductive Switching (UIS) rated

Applications

- Automotive 42V and 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 converters, e.g. 12V to 42V, etc.
- Power supplies
 - DC - DC converters
 - Solar inverters
- Battery powered systems
 - choppers or inverters for motor control in hand tools
 - battery chargers

Advantages

- Easy assembly: no screws or isolation foils required
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}, I_D = 100 \text{ A}$, Note 3 $V_{GS} = 10 \text{ V}, I_D = I_{D90}$, Note 3		10.2	6.5 m Ω m Ω
$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 2 \text{ mA}$	2		4 V
I_{DSS}	$V_{DS} = V_{DSS}$ $V_{GS} = 0 \text{ V}$		1	20 μA mA
I_{GSS}	$V_{GS} = \pm 20 \text{ V}_{DC}, V_{DS} = 0$			± 200 nA

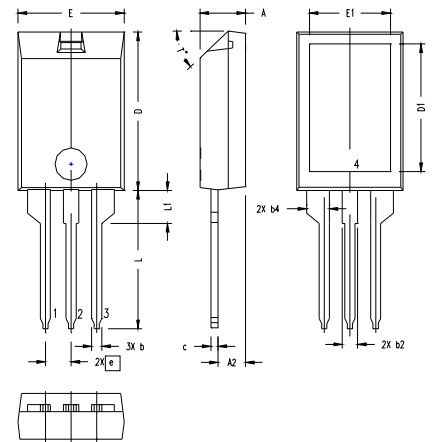
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
$Q_{g(\text{on})}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = 100\text{ A}$		250	nC
Q_{gs}			tbd	nC
Q_{gd}			tbd	nC
$t_{d(\text{on})}$	$V_{GS} = 10\text{ V}, V_{DS} = 40\text{ V},$ $I_D = 90\text{ A}, R_G = 4.7\ \Omega$		50	ns
t_r			40	ns
$t_{d(\text{off})}$			190	ns
t_f			55	ns
R_{thJC}			0.5	K/W
R_{thCH}		0.30		K/W

Source-Drain Diode

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_{SD}	$I_F = 80\text{ A}, V_{GS} = 0\text{ V}$ Note 3		1.1	1.5 V
t_{rr}	$I_F = 90\text{ A}, di/dt = -250\text{ A}/\mu\text{s}, V_{DS} = 0.5 V_{DSS}$		120	ns

- Note: 1. MOSFET chip capability
 2. Intrinsic diode capability
 3. Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$

ISOPLUS220 Outline



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*

- NOTE:
 1. Bottom heatsink (Pin 4) is electrically isolated from Pin 1, 2, or 3.
 2. This drawing will meet dimensional requirement of JEDEC SS Product Outline TO-273 except D and D1 dimension.

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	4,881,106	5,017,508	5,049,961	5,187,117	5,486,715	6,306,728B1	6,259,123B1	6,306,728B1
	4,850,072	4,931,844	5,034,796	5,063,307	5,237,481	5,381,025	6,404,065B1	6,162,665	6,534,343