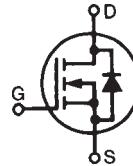


TrenchMV™
Power MOSFET
(Electrically Isolated Back Surface)

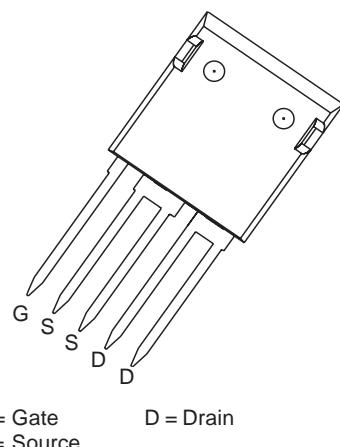
IXTF230N085T

V_{DSS} = 85 V
 I_{D25} = 130 A
 $R_{DS(on)}$ \leq 5.3 mΩ

N-Channel Enhancement Mode
Avalanche Rated



ISOPLUS i4-Pak™ (5-lead) (IXTF)



G = Gate
S = Source

D = Drain

Symbol	Test Conditions	Maximum Ratings		
V_{DSS}	$T_J = 25^\circ\text{C}$ to 175°C	85		V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 175°C ; $R_{GS} = 1\text{ M}\Omega$	55		V
V_{GSM}	Transient	± 20		V
I_{D25}	$T_c = 25^\circ\text{C}$	130		A
I_L	Package Current Limit, RMS (75 A per lead)	150		A
I_{DM}	$T_c = 25^\circ\text{C}$, pulse width limited by T_{JM}	520		A
I_{AR}	$T_c = 25^\circ\text{C}$	40		A
E_{AS}	$T_c = 25^\circ\text{C}$	1.5		J
dv/dt	$I_s \leq I_{DM}$, $dv/dt \leq 100\text{ A/ms}$, $V_{DD} \leq V_{DSS}$ $T_J \leq 175^\circ\text{C}$, $R_G = 3.3\text{ }\Omega$	3		V/ns
P_D	$T_c = 25^\circ\text{C}$	200		W
T_J		-55 ... +175		°C
T_{JM}		175		°C
T_{stg}		-55 ... +175		°C
T_L	1.6 mm (0.062 in.) from case for 10 s	300		°C
T_{SOLD}	Plastic body for 10 seconds	260		°C
V_{ISOL}	50/60 Hz, $t = 1$ minute, $I_{ISOL} < 1\text{ mA}$, RMS 2500		V	
F_c	Mounting force	20..120/4.5..25		N/lb.
Weight		6		g

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0\text{ V}$, $I_D = 250\text{ mA}$	85		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\text{ mA}$	2.0		V
I_{GSS}	$V_{GS} = \pm 20\text{ V}$, $V_{DS} = 0\text{ V}$		± 200	nA
I_{DSS}	$V_{DS} = V_{DSS}$ $V_{GS} = 0\text{ V}$			$5\text{ }\mu\text{A}$
				$250\text{ }\mu\text{A}$
$R_{DS(on)}$	$V_{GS} = 10\text{ V}$, $I_D = 50\text{ A}$, Notes 1, 2			5.3 mΩ

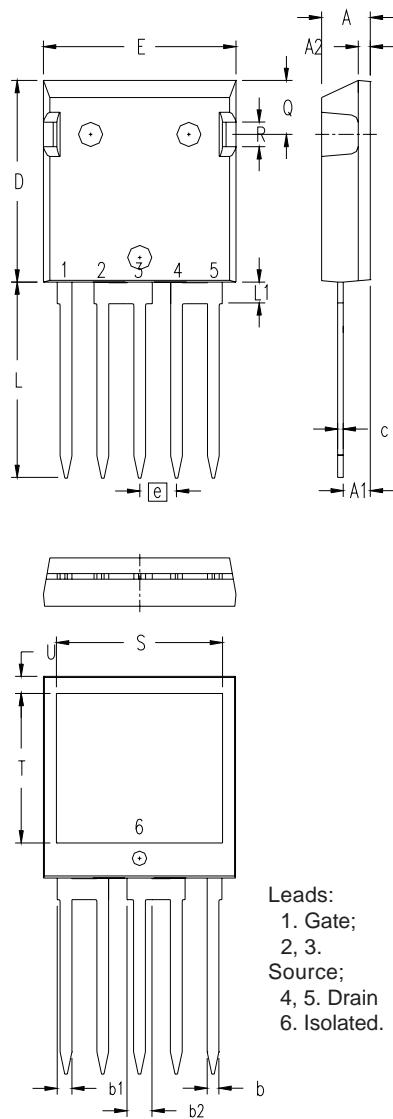
Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$V_{DS} = 10$ V; $I_D = 60$ A, Note 1	75	125	S
C_{iss}		9900		pF
C_{oss}	$V_{GS} = 0$ V, $V_{DS} = 25$ V, $f = 1$ MHz	1230		pF
C_{rss}		286		pF
$t_{d(on)}$		32		ns
t_r	$V_{GS} = 10$ V, $V_{DS} = 0.5$ V_{DSS} , $I_D = 50$ A	49		ns
$t_{d(off)}$	$R_G = 3.3 \Omega$ (External)	56		ns
t_i		39		ns
$Q_{g(on)}$		187		nC
Q_{gs}	$V_{GS} = 10$ V, $V_{DS} = 0.5$ V_{DSS} , $I_D = 25$ A	51		nC
Q_{gd}		55		nC
R_{thJC}			0.75	°C/W
R_{thCH}		0.15		°C/W

Source-Drain Diode

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
I_s	$V_{GS} = 0$ V		150	A
I_{SM}	Pulse width limited by T_{JM}		520	A
V_{SD}	$I_F = 50$ A, $V_{GS} = 0$ V, Note 1		1.0	V
t_{rr}	$I_F = 25$ A, $-di/dt = 100$ A/ μ s $V_R = 50$ V, $V_{GS} = 0$ V	60		ns

Notes: 1. Pulse test: $t \leq 300$ μ s, duty cycled ≤ 2 %;
 2. Drain and Source Kelvin contacts must be located less than 5 mm from the plastic body.

ISOPLUS i4-Pak™ (5-Lead) (IXTF) Outline



SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.190	.205	4.83	5.21
A1	.102	.118	2.59	3.00
A2	.046	.085	1.17	2.16
b	.045	.055	1.14	1.40
b1	.058	.068	1.47	1.73
b2	.100	.110	2.54	2.79
C	.020	.029	0.51	0.74
D	.819	.840	20.80	21.34
E	.770	.799	19.56	20.29
e	.150 BSC		3.81 BSC	
L	.780	.840	19.81	21.34
L1	.083	.102	2.11	2.59
Q	.210	.244	5.33	6.20
R	.100	.180	2.54	4.57
S	.660	.690	16.76	17.53
T	.590	.620	14.99	15.75
U	.065	.080	1.65	2.03

All leads and tab are tin plated.

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.

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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, 6,404,065B1, 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, 6,259,123B1, 6,534,343, 6,710,405B2, 6,759,692, 7,063,975B2, 4,881,106, 5,034,796, 5,187,117, 5,486,715, 6,306,728 B1, 6,583,505, 6,710,463, 6,771,478 B2, 7,071,537