

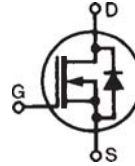
High Voltage MOSFET

N-Channel, Depletion Mode

IXTP 01N100D
IXTU 01N100D
IXTY 01N100D

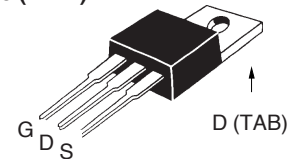
$V_{DSS} = 1000 \text{ V}$
 $I_{D25} = 100 \text{ mA}$
 $R_{DS(on)} = 110 \text{ } \Omega$

Preliminary Data Sheet

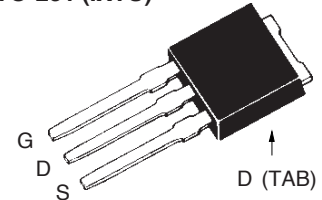


Symbol	Test Conditions	Maximum Ratings		
V_{DSX}	$T_J = 25^\circ\text{C}$ to 150°C	1000	V	
V_{DGX}	$T_J = 25^\circ\text{C}$ to 150°C	1000	V	
V_{GS}	Continuous	± 20	V	
V_{GSM}	Transient	± 30	V	
I_{DSS}	$T_C = 25^\circ\text{C}$; $T_J = 25^\circ\text{C}$ to 150°C	100	mA	
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_J	400	mA	
P_D	$T_C = 25^\circ\text{C}$	25	W	
	$T_A = 25^\circ\text{C}$	1.1	W	
T_J		-55 ... +150	$^\circ\text{C}$	
T_{JM}		150	$^\circ\text{C}$	
T_{stg}		-55 ... +150	$^\circ\text{C}$	
T_L	1.6 mm (0.063 in.) from case for 10 s	300	$^\circ\text{C}$	
T_{ISOL}	Plastic case for 10 s (IXTU)	300	$^\circ\text{C}$	
M_d	Mounting torque	TO-220	1.3 / 10	Nm/lb.
		TO-251	4	g
		TO-252	0.8	g
Weight	TO-220	4	g	
	TO-251	0.8	g	
	TO-252	0.8	g	

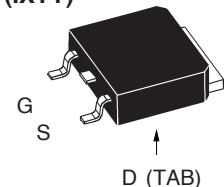
TO-220 (IXTP)



TO-251 (IXTU)



TO-252 (IXTY)



Pins: 1 - Gate 2 - Drain
 3 - Source TAB - Drain

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values		
		min.	typ.	max.
V_{DSX}	$V_{GS} = -10 \text{ V}$, $I_D = 25 \text{ } \mu\text{A}$	1000		V
$V_{GS(off)}$	$V_{DS} = 25 \text{ V}$, $I_D = 25 \text{ } \mu\text{A}$	-2.5		V
I_{GSS}	$V_{GS} = \pm 20 \text{ V}_{DC}$, $V_{DS} = 0$			$\pm 100 \text{ nA}$
$I_{DSX(off)}$	$V_{DS} = V_{DSX}$, $V_{GS} = -10 \text{ V}$ $T_J = 125^\circ\text{C}$			10 μA
				250 μA
$R_{DS(on)}$	$V_{GS} = 0 \text{ V}$, $I_D = 50 \text{ mA}$ Note 1	90		Ω
$I_{D(on)}$	$V_{GS} = 0 \text{ V}$, $V_{DS} = 25 \text{ V}$ Note 1	100		mA

Features

- Normally ON mode
- Low $R_{DS(on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- Fast switching speed

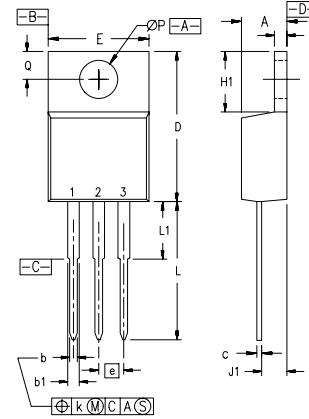
Applications

- Level shifting
- Triggers
- Solid state relays
- Current regulators

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)			Units
		min.	typ.	max.	
g_{fs}	$V_{DS} = 50\text{ V}; I_D = 100\text{ mA}$ Note1	100	150		mS
C_{iss}	$V_{GS} = -10\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$		120		pF
C_{oss}			25		pF
C_{rss}			5		pF
$t_{d(on)}$	$V_{DS} = 100\text{ V}, I_D = 50\text{ mA}$		8		ns
t_r	$V_{GS} = 0\text{ V to } -10$		6		ns
$t_{d(off)}$	$R_G = 30\Omega$ (External)		30		ns
t_f			51		ns
R_{thJC}				5	K/W
R_{thCS}	TO-220	0.25			K/W

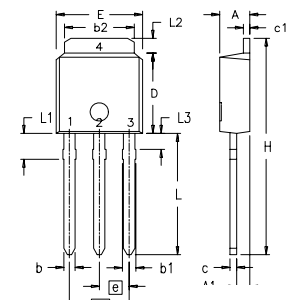
Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)			Units
		min.	typ.	max.	
V_{SD}	$V_{GS} = -10\text{ V}, I_F = 100\text{ mA}$ Note1		1.0	1.5	V
t_{rr}	$I_F = 0.75\text{ A}, -di/dt = 10\text{ A}/\mu\text{s},$ $V_{DS} = 25\text{ V}, V_{GS} = -10\text{ V}$			1.5	μs

Note1: Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$

TO-220 AD Outline


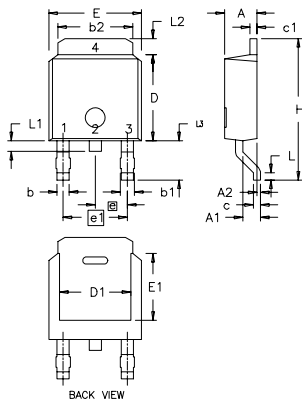
Pins: 1 - Gate
3 - Source
2 - Drain
TAB - Drain

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.170	.190	4.32	4.83
b	.025	.040	0.64	1.02
b1	.045	.065	1.15	1.65
c	.014	.022	0.35	0.56
D	.580	.630	14.73	16.00
E	.390	.420	9.91	10.66
e	.100 BSC		2.54 BSC	
F	.045	.055	1.14	1.40
H1	.230	.270	5.85	6.85
J1	.090	.110	2.29	2.79
k	0	.015	0	0.38
L	.500	.550	12.70	13.97
L1	.110	.230	2.79	5.84
ØP	.139	.161	3.53	4.08
Q	.100	.125	2.54	3.18

TO-251 AA Outline


Pins: 1 - Gate
3 - Source
2 - Drain
TAB - Drain

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.19	2.38	.086	.094
A1	0.89	1.14	0.35	.045
b	0.64	0.89	.025	.035
b1	0.76	1.14	.030	.045
b2	5.21	5.46	.205	.215
c	0.46	0.58	.018	.023
c1	0.46	0.58	.018	.023
D	5.97	6.22	.235	.245
E	6.35	6.73	.250	.265
E1	4.32	5.21	.170	.205
e	2.28 BSC		.090 BSC	
e1	4.57 BSC		.180 BSC	
H	9.40	10.42	.370	.410
L	0.51	1.02	.020	.040
L1	0.64	1.02	0.025	0.040
L2	0.89	1.27	0.035	0.050
L3	1.15	1.52	.045	.060

TO-252 AA Outline


Pins: 1 - Gate
3 - Source
2 - Drain
TAB - Drain

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.19	2.38	0.086	0.094
A1	0.89	1.14	0.035	0.045
A2	0	0.13	0	0.005
b	0.64	0.89	0.025	0.035
b1	0.76	1.14	0.030	0.045
b2	5.21	5.46	0.205	0.215
c	0.46	0.58	0.018	0.023
c1	0.46	0.58	0.018	0.023
D	5.97	6.22	0.235	0.245
D1	4.32	5.21	0.170	0.205
E	6.35	6.73	0.250	0.265
E1	4.32	5.21	0.170	0.205
e	2.28 BSC		0.090 BSC	
e1	4.57 BSC		0.180 BSC	
H	9.40	10.42	0.370	0.410
L	0.51	1.02	0.020	0.040
L1	0.64	1.02	0.025	0.040
L2	0.89	1.27	0.035	0.050
L3	2.54	2.92	0.100	0.115

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 B1
4,850,072	5,017,508	5,063,307	5,381,025	6,259,123 B1	6,534,343
4,881,106	5,034,796	5,187,117	5,486,715	6,306,728 B1	6,583,505

6,683,344	6,727,585
6,710,405 B2	6,759,692
6,710,463	