IXYS

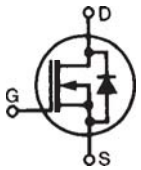
High Voltage MOSFET

N-Channel, Depletion Mode

IXTP 01N100D
IXTU 01N100D
IXTY 01N100D

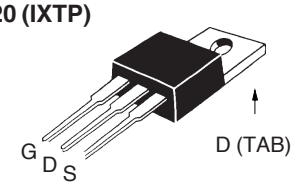
V_{DSS} = 1000 V
I_{D25} = 100 mA
$R_{DS(on)}$ = 110 Ω

Preliminary Data Sheet

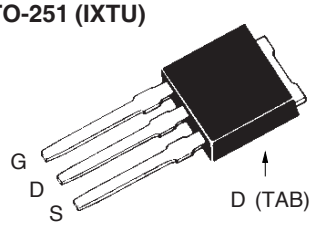


Symbol	Test Conditions		Maximum Ratings	
V_{DSX}	T_J = 25°C to 150°C		1000	V
V_{DGX}	T_J = 25°C to 150°C		1000	V
V_{GS}	Continuous		± 20	V
V_{GSM}	Transient		± 30	V
I_{DSS}	T_C = 25°C; T_J = 25°C to 150°C		100	mA
I_{DM}	T_C = 25°C, pulse width limited by T_J		400	mA
P_D	T_C = 25°C T_A = 25°C		25 1.1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

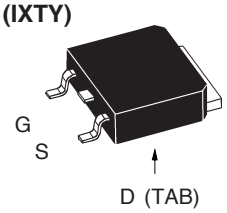
TO-220 (IXTP)



TO-251 (IXTU)



TO-252 (IXTY)



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

Symbol	Test Conditions (T_J = 25°C, unless otherwise specified)		Characteristic Values min.	typ.	max.	
V_{DSX}	V_{GS} = -10 V, I_D = 25 μA		1000			V
$V_{GS(off)}$	V_{DS} = 25V, I_D = 25 μA		-2.5		-5	V
I_{GSS}	V_{GS} = ± 20 V_{DC}, V_{DS} = 0				±100	nA
$I_{DSX(off)}$	V_{DS} = V_{DSX}, V_{GS} = -10 V				10	μA
		T_J = 125°C			250	μA
$R_{DS(on)}$	V_{GS} = 0 V, I_D = 50 mA	Note 1		90	110	Ω
$I_{D(on)}$	V_{GS} = 0 V, V_{DS} = 25V	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

© 2006 IXYS All rights reserved

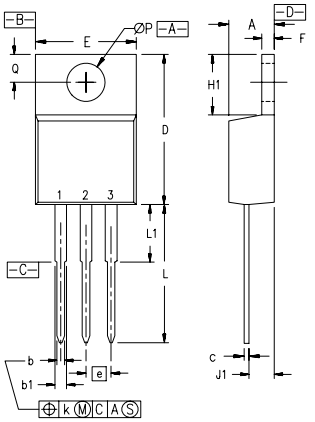
Symbol	Test Conditions		Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
g_{fs}	V_{DS} = 50 V; I_D = 100 mA	Note1	100	150		mS
C_{iss}	V_{GS} = -10 V, V_{DS} = 25 V, f = 1 MHz			120		pF
C_{oss}				25		pF
C_{rss}				5		pF
$t_{d(on)}$	V_{DS} = 100 V V, I_D = 50 mA			8		ns
t_r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

Source-Drain Diode

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

Note1: Pulse test, t ≤ 300 µs, duty cycle d ≤ 2 %

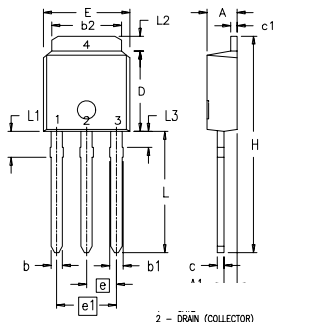
TO-220 AD Outline



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

SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS 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

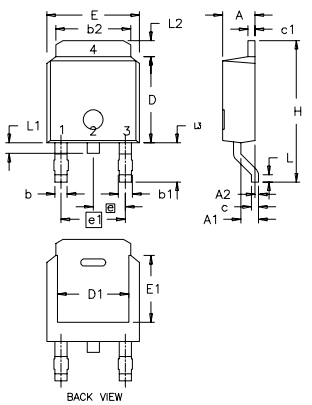
TO-251 AA Outline



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

Dim.	Millimeter Min.	Millimeter Max.	Inches Min.	Inches Max.
A	2.19	2.38	.086	.094
A1	0.89	1.14	.035	.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
D1	4.32	5.21	.170	.205
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	.025	.040
L2	0.89	1.27	.035	.050
L3	2.54	2.92	.100	.115

TO-252 AA Outline



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

Dim.	Millimeter Min.	Millimeter Max.	Inches Min.	Inches 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 4,850,072 4,881,106 4,931,844 5,017,508 5,034,796 5,049,961 5,063,307 5,187,117 5,237,481 5,381,025 5,486,715 6,162,665 6,259,123 B1 6,306,728 B1 6,404,065 B1 6,534,343 6,583,505 6,683,344 6,710,405 B2 6,710,463 6,727,585 6,759,692