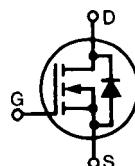


# High Voltage MOSFET

N-Channel, Enhancement Mode

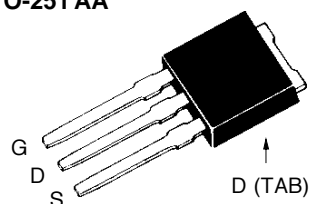
**IXTU 01N100**  
**IXTY 01N100**

$V_{DSS} = 1000 \text{ V}$   
 $I_{D25} = 100 \text{ mA}$   
 $R_{DS(on)} = 80 \text{ } \Omega$

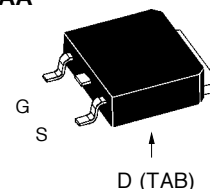


Symbol	Test Conditions	Maximum Ratings 01N100	
$V_{DSS}$	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	1000	V
$V_{DGR}$	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GS} = 1 \text{ M}\Omega$	1000	V
$V_{GS}$	Continuous	$\pm 20$	V
$V_{GSM}$	Transient	$\pm 30$	V
$I_{D25}$	$T_C = 25^\circ\text{C}; T_J = 25^\circ\text{C to } 150^\circ\text{C}$	100	mA
$I_{DM}$	$T_C = 25^\circ\text{C}$ , pulse width limited by max. $T_J$	400	mA
$P_D$	$T_C = 25^\circ\text{C}$	25	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 5 s	300	$^\circ\text{C}$
<b>Weight</b>		0.8	g

TO-251 AA



TO-252 AA



G = Gate, D = Drain,  
S = Source, TAB = Drain

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$V_{DSS}$	$V_{GS} = 0 \text{ V}, I_D = 25 \text{ } \mu\text{A}$	1000		V
$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 25 \text{ } \mu\text{A}$	2		4.5 V
$I_{GSS}$	$V_{GS} = \pm 20 \text{ V}_{DC}, V_{DS} = 0$			$\pm 50 \text{ nA}$
$I_{DSS}$	$V_{DS} = 0.8 V_{DSS}, T_J = 25^\circ\text{C}$ $V_{GS} = 0 \text{ V}, T_J = 125^\circ\text{C}$			10 $\mu\text{A}$ 200 $\mu\text{A}$
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}, I_D = I_{D25}$ Pulse test, $t \leq 300 \text{ ms}$ , duty cycle $d \leq 2 \%$	60	80	$\Omega$

## Features

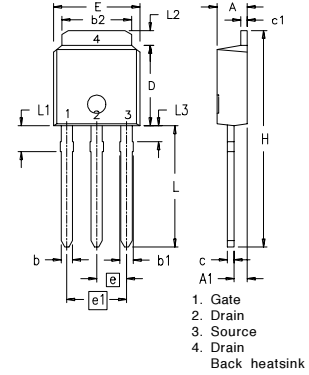
- International standard packages JEDEC TO-251 AA, TO-252 AA
- Low  $R_{DS(on)}$  HDMOS™ process
- Rugged polysilicon gate cell structure
- Fast switching times

## Applications

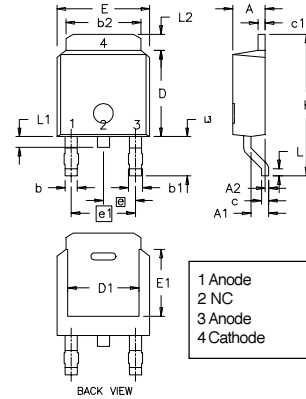
- Level shifting
- Triggers
- Solid state relays
- Current regulators

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$g_{fs}$	$V_{DS} = 10\text{ V}; I_D = 0.5 I_{D25}$ , pulse test		140	mS
$C_{iss}$	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$		60	pF
$C_{oss}$			7.5	pF
$C_{rss}$			1.8	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 500\text{ V}, I_D = I_{D25}$ $R_G = 50\ \Omega$ (External)		12	ns
$t_r$			12	ns
$t_{d(off)}$			28	ns
$t_f$			28	ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = 0.5 I_{D25}$		8	nC
$Q_{gs}$			1.8	nC
$Q_{gd}$			3	nC
$R_{thJC}$			3	K/W

Source-Drain Diode		Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
Symbol	Test Conditions	min.	typ.	max.
$V_{SD}$	$I_F = 100\text{ mA}, V_{GS} = 0\text{ V}$ , Pulse test, $t \leq 300\ \mu\text{s}$ , duty cycle $d \leq 2\%$			1.8 V
$t_{rr}$	$I_F = 0.75\text{ A}, -di/dt = 10\text{ A}/\mu\text{s}$ , $V_{DS} = 25\text{ V}$			1.5 $\mu\text{s}$

**TO-251 AA Outline**


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
e	2.28	BSC	.090	BSC
e1	4.57	BSC	.180	BSC
H	17.02	17.78	.670	.700
L	8.89	9.65	.350	.380
L1	1.91	2.28	.075	.090
L2	0.89	1.27	.035	.050
L3	1.15	1.52	.045	.060

**TO-252 AA**


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 4,881,106 5,017,508 5,049,961 5,187,117 5,486,715  
 4,850,072 4,931,844 5,034,796 5,063,307 5,237,481 5,381,025