

# High Voltage MOSFET

N-Channel, Enhancement Mode

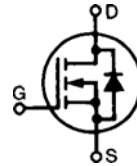
**IXTU 01N80**

**IXTY 01N80**

$V_{DSS} = 800 \text{ V}$

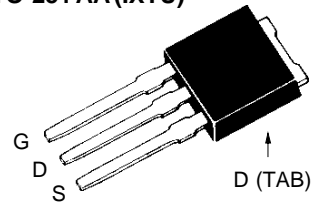
$I_{D25} = 100 \text{ mA}$

$R_{DS(on)} = 50 \ \Omega$

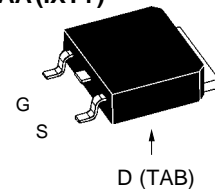


Symbol	Test Conditions	Maximum Ratings 01N100	
$V_{DSS}$	$T_J = 25^\circ\text{C}$ to $150^\circ\text{C}$	800	V
$V_{DGR}$	$T_J = 25^\circ\text{C}$ to $150^\circ\text{C}$ ; $R_{GS} = 1 \text{ M}\Omega$	800	V
$V_{GS}$	Continuous	$\pm 20$	V
$V_{GSM}$	Transient	$\pm 30$	V
$I_{D25}$	$T_C = 25^\circ\text{C}$ ; $T_J = 25^\circ\text{C}$ 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 (IXTU)



TO-252 AA (IXTY)



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

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$V_{DSS}$	$V_{GS} = 0 \text{ V}$ , $I_D = 25 \ \mu\text{A}$	800		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$ , $I_D = 25 \ \mu\text{A}$	2		V
$I_{GSS}$	$V_{GS} = \pm 20 \text{ V}_{DC}$ , $V_{DS} = 0$			$\pm 50 \text{ nA}$
$I_{DSS}$	$V_{DS} = 0.8 \cdot V_{DSS}$ , $V_{GS} = 0 \text{ V}$			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 $d \leq 2 \%$			50 $\Omega$

## 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

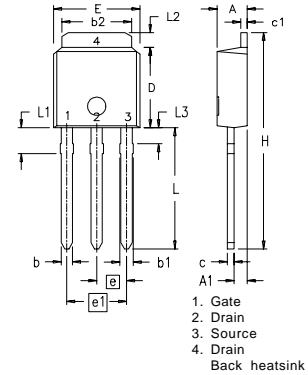
- Level shifting
- Triggers
- Solid state relays
- Current regulators

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$g_{fs}$	$V_{DS} = 10\text{ V}; I_D = 0.5 \cdot I_{D25}$ , pulse test		140	mS
$C_{iss}$	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$		60	pF
$C_{oss}$			8.0	pF
$C_{rss}$			2.0	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
$Q_{g(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 I_{D25}$		8	nC
$Q_{gs}$			1.8	nC
$Q_{gd}$			3	nC
$R_{thJC}$			3	K/W

### Source-Drain Diode

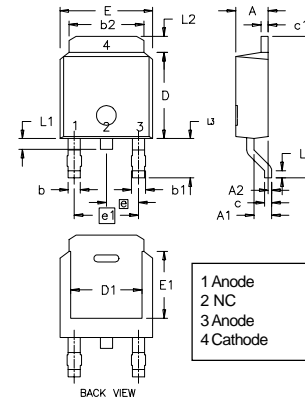
Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$V_{SD}$	$I_F = 100\text{ mA}, V_{GS} = 0\text{ V}$ , Pulse test, $t \leq 300\ \mu\text{s}$ , duty cycle $d \leq 2\%$			1.5 V
$t_{rr}$	$I_F = 0.75\text{ A}, -di/dt = 10\text{ A}/\mu\text{s}$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