

High Voltage MOSFET

N-Channel, Enhancement Mode

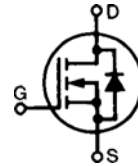
IXTU 01N80

IXTY 01N80

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

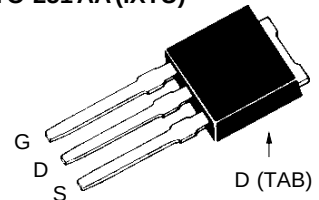
$I_{D25} = 100 \text{ mA}$

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

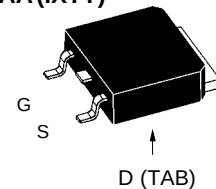


Symbol	Test Conditions	Maximum Ratings 01N100	
V_{DSS}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	800	V
V_{DGR}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GS} = 1 \text{ M}\Omega$	800	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}; T_J = 25^\circ\text{C to } 150^\circ\text{C}$	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	$^\circ\text{C}$
Weight		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}	$V_{GS} = 0 \text{ V}, I_D = 25 \text{ } \mu\text{A}$	800		V 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}	$V_{DS} = 0.8 \cdot V_{DSS}$ $V_{GS} = 0 \text{ V}$ $T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$			10 μA 200 μA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}, I_D = I_{D25}$ Pulse test, $t \leq 300 \text{ ms}$, duty cycle $d \leq 2 \%$			50 Ω

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

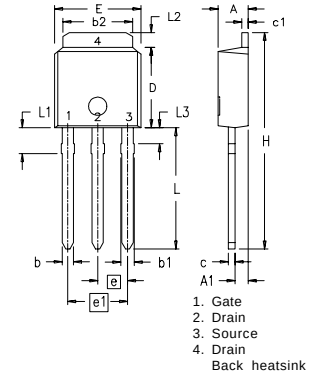
- Level shifting
- Triggers
- Solid state relays
- Current regulators

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

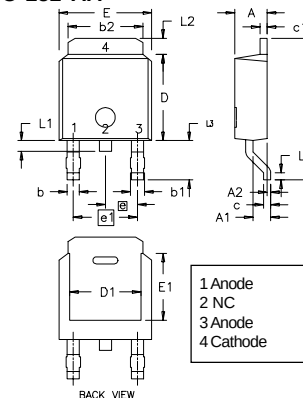
Symbol	Test Conditions	Characteristic Values ($T_j = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
V_{SD}	$I_F = 100\text{ mA}, V_{GS} = 0\text{ V}$, Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$			1.5 V
t_{rr}	$I_F = 0.75\text{ A}, -di/dt = 10\text{ A}/\mu\text{s}$,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

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.