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|
|[IBIS ver]    2.1
|[File name]   iobuf_final.ibs
|[File Rev]    0.1
|[Date]       March 30, 2004
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|*****
|                               Component AT28C010
|*****

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|[Component]  AT28C010
|[Manufacturer] Atmel Inc.
|[Package]
| variable    typ          min          max
R_pkg        69.10m        48.40m        89.80m
L_pkg        4.30nH           3.00nH        5.60nH
C_pkg        1.00pF            0.70pF        1.30pF
|

```

[Pin]	signal_name	model_name	R_pin	L_pin	C_pin
A1	A11	input			
A2	A9	input			
A3	A8	input			
A4	A13	input			
A5	A14	input			
A6	NC	NC			
A7	WE/	input			
A8	VCC	POWER			
A9	NC	NC			
A10	A16	input			
B1	A15	input			
B2	A12	input			
B3	A7	input			
B4	A6	input			
B5	A5	input			
B6	A4	input			
B7	A3	input			
B8	A2	input			
B9	A1	input			
B10	A0	input			
C1	I/O0	tristate_driver			
C2	I/O1	tristate_driver			
C3	I/O2	tristate_driver			
C4	GND	GND			
C5	I/O3	tristate_driver			
C6	I/O4	tristate_driver			

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C7 I/O5 tristate_driver
C8 I/O6 tristate_driver
C9 I/O7 tristate_driver
C10 CE/ input
D1 A10 input
D2 OE/ input

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|di di tristate_driver
|dout_ dout_ input
|tri enable input
|gnd gnd GND
|vdd vdd POWER

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|*****
| Model tristate_driver
|*****

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[Model] tristate_driver
Model_type 3-state
Polarity Inverting
Enable Active-Low
Vmeas = 2.50V
Vref = 2.50V
C_comp 0.000F 0.000F 0.000F

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[Temperature Range] 25.00 85.00 -40.00
[Voltage Range] 5.00V 4.50V 5.50V
[Pulldown]

```

voltage	I(typ)	I(min)	I(max)
-5.00	-50.000mA	-20.000mA	-90.000mA
-0.60	-29.38mA	-21.24mA	-42.87mA
-0.50	-24.56mA	-17.70mA	-36.00mA
-0.40	-19.71mA	-14.16mA	-29.03mA
-0.30	-14.83mA	-10.61mA	-21.94mA
-0.20	-9.91mA	-7.06mA	-14.74mA
-0.10	-4.97mA	-3.53mA	-7.43mA
0.00	0.31nA	-0.11nA	-0.13pA
0.10	4.86mA	3.43mA	7.29mA
0.20	9.47mA	6.71mA	14.18mA
0.30	13.86mA	9.82mA	20.71mA
0.40	18.03mA	12.78mA	26.87mA
0.50	21.98mA	15.58mA	32.69mA
0.60	25.72mA	18.25mA	38.17mA
0.70	29.26mA	20.77mA	43.34mA
0.80	32.61mA	23.15mA	48.21mA
0.90	35.76mA	25.39mA	52.78mA
1.00	38.74mA	27.51mA	57.07mA
1.10	41.54mA	29.50mA	61.09mA
1.20	44.17mA	31.37mA	64.85mA
1.30	46.63mA	33.11mA	68.37mA
1.40	48.93mA	34.74mA	71.64mA
1.50	51.08mA	36.25mA	74.69mA
1.60	53.08mA	37.66mA	77.52mA
1.70	54.93mA	38.95mA	80.13mA

1.80	56.64mA	40.14mA	82.55mA
1.90	58.22mA	41.23mA	84.76mA
2.00	59.66mA	42.21mA	86.79mA
2.10	60.98mA	43.10mA	88.64mA
2.20	62.17mA	43.89mA	90.32mA
2.30	63.24mA	44.59mA	91.83mA
2.40	64.19mA	45.21mA	93.18mA
2.50	65.03mA	45.73mA	94.38mA
2.60	65.77mA	46.16mA	95.43mA
2.70	66.39mA	46.52mA	96.34mA
2.80	66.91mA	46.79mA	96.43mA
2.90	67.33mA	46.94mA	96.48mA
3.00	67.40mA	46.98mA	96.53mA
3.10	67.44mA	47.01mA	96.59mA
3.20	67.48mA	47.04mA	96.64mA
3.30	67.52mA	47.07mA	96.69mA
3.40	67.57mA	47.10mA	96.74mA
3.50	67.61mA	47.13mA	96.80mA
3.60	67.65mA	47.17mA	96.85mA
3.70	67.69mA	47.20mA	96.90mA
3.80	67.73mA	47.23mA	96.95mA
3.90	67.77mA	47.26mA	97.01mA
4.00	67.81mA	47.29mA	97.06mA
4.10	67.85mA	47.32mA	97.11mA
4.20	67.89mA	47.36mA	97.16mA
4.30	67.93mA	47.39mA	97.22mA
4.40	67.97mA	47.42mA	97.27mA
4.50	68.01mA	47.45mA	97.32mA
4.60	68.05mA	47.48mA	97.38mA
4.70	68.09mA	47.51mA	97.43mA
4.80	68.13mA	47.55mA	97.48mA
4.90	68.17mA	47.58mA	97.53mA
5.00	68.21mA	47.61mA	97.59mA
5.10	68.25mA	47.65mA	97.64mA
5.20	68.29mA	47.75mA	97.69mA
5.30	68.33mA	48.29mA	97.74mA
5.40	68.37mA	54.00mA	97.80mA
10.00	150mA	150mA	220mA

[Pullup]

voltage	I(typ)	I(min)	I(max)
-5.00	20.000mA	10.000mA	40.000mA
-0.60	10.91mA	8.06mA	15.65mA
-0.50	9.08mA	6.71mA	13.04mA
-0.40	7.26mA	5.36mA	10.43mA
-0.30	5.43mA	4.01mA	7.82mA
-0.20	3.61mA	2.66mA	5.21mA
-0.10	1.80mA	1.33mA	2.60mA
0.00	0.50nA	0.31nA	1.01nA
0.10	-1.77mA	-1.30mA	-2.56mA
0.20	-3.49mA	-2.56mA	-5.06mA
0.30	-5.17mA	-3.78mA	-7.50mA
0.40	-6.79mA	-4.96mA	-9.87mA
0.50	-8.37mA	-6.10mA	-12.17mA
0.60	-9.90mA	-7.20mA	-14.41mA

0.70	-11.38mA	-8.27mA	-16.59mA
0.80	-12.81mA	-9.29mA	-18.70mA
0.90	-14.19mA	-10.27mA	-20.74mA
1.00	-15.52mA	-11.22mA	-22.72mA
1.10	-16.81mA	-12.12mA	-24.64mA
1.20	-18.05mA	-12.99mA	-26.49mA
1.30	-19.24mA	-13.82mA	-28.28mA
1.40	-20.38mA	-14.61mA	-30.00mA
1.50	-21.47mA	-15.36mA	-31.66mA
1.60	-22.52mA	-16.08mA	-33.26mA
1.70	-23.52mA	-16.75mA	-34.79mA
1.80	-24.47mA	-17.39mA	-36.26mA
1.90	-25.38mA	-17.99mA	-37.67mA
2.00	-26.24mA	-18.55mA	-39.01mA
2.10	-27.05mA	-19.07mA	-40.29mA
2.20	-27.81mA	-19.56mA	-41.51mA
2.30	-28.53mA	-20.01mA	-42.66mA
2.40	-29.21mA	-20.42mA	-43.76mA
2.50	-29.83mA	-20.79mA	-44.79mA
2.60	-30.41mA	-21.13mA	-45.76mA
2.70	-30.95mA	-21.43mA	-46.67mA
2.80	-31.44mA	-21.69mA	-47.52mA
2.90	-31.88mA	-21.92mA	-48.31mA
3.00	-32.28mA	-22.11mA	-49.04mA
3.10	-32.64mA	-22.26mA	-49.70mA
3.20	-32.95mA	-22.37mA	-50.31mA
3.30	-33.21mA	-22.45mA	-50.86mA
3.40	-33.43mA	-22.50mA	-51.35mA
3.50	-33.61mA	-22.53mA	-51.78mA
3.60	-33.74mA	-22.56mA	-52.15mA
3.70	-33.83mA	-22.60mA	-52.47mA
3.80	-33.88mA	-22.63mA	-52.72mA
3.90	-33.94mA	-22.66mA	-52.92mA
4.00	-34.00mA	-22.70mA	-53.06mA
4.10	-34.07mA	-22.73mA	-53.17mA
4.20	-34.13mA	-22.76mA	-53.32mA
4.30	-34.19mA	-22.80mA	-53.46mA
4.40	-34.25mA	-22.83mA	-53.61mA
4.50	-34.31mA	-22.87mA	-53.75mA
4.60	-34.38mA	-22.90mA	-53.90mA
4.70	-34.44mA	-22.93mA	-54.05mA
4.80	-34.50mA	-22.97mA	-54.19mA
4.90	-34.56mA	-23.00mA	-54.34mA
5.00	-34.63mA	-23.04mA	-54.49mA
5.10	-34.69mA	-23.08mA	-54.64mA
5.20	-34.75mA	-23.19mA	-54.79mA
5.30	-34.82mA	-23.81mA	-54.94mA
5.40	-34.88mA	-32.51mA	-55.09mA
10.00	-100mA	-100mA	-100mA

[GND_clamp]

voltage	I(typ)	I(min)	I(max)
-5.00	-100mA	-100mA	-100mA
-0.80	-0.19mA	-0.67mA	-74.36uA
-0.60	-1.67uA	-7.84uA	-0.16uA

-0.40	-16.42nA	-0.16uA	-0.43nA
-0.20	-0.15nA	-3.39nA	-12.66pA
0.00	-14.98pA	-0.31nA	-11.01pA
0.20	-12.88pA	-0.24nA	-10.20pA
0.40	-11.65pA	-0.22nA	-9.40pA
0.60	-10.44pA	-0.20nA	-8.60pA
0.80	-9.26pA	-0.18nA	-7.80pA
1.00	-8.10pA	-0.16nA	-7.00pA
1.20	-6.95pA	-0.14nA	-6.20pA
1.40	-5.83pA	-0.12nA	-5.40pA
1.60	-4.72pA	-0.11nA	-4.60pA
1.80	-3.62pA	-92.10pA	-3.80pA
2.00	-2.53pA	-76.55pA	-3.00pA
2.20	-1.45pA	-61.53pA	-2.20pA
2.40	-0.38pA	-46.98pA	-1.40pA
2.60	0.68pA	-32.84pA	-0.60pA
2.80	1.74pA	-19.05pA	0.20pA
3.00	2.80pA	-5.55pA	1.00pA
3.20	3.86pA	7.69pA	1.80pA
3.40	4.92pA	20.74pA	2.60pA
3.60	5.98pA	33.63pA	3.41pA
3.80	7.04pA	46.42pA	4.21pA
4.00	8.10pA	59.16pA	5.01pA
4.20	9.18pA	71.88pA	5.81pA
4.40	10.25pA	84.63pA	6.61pA
4.60	11.34pA	0.74nA	7.41pA
4.80	12.44pA	35.73nA	8.21pA
5.00	14.13pA	1.51uA	9.01pA

[POWER_clamp]

voltage	I(typ)	I(min)	I(max)
-5.00	100mA	100mA	100mA
-0.80	0.12mA	0.59mA	17.36uA
-0.70	11.75uA	79.18uA	0.76uA
-0.60	1.13uA	9.23uA	43.81nA
-0.50	0.12uA	1.51uA	2.39nA
-0.40	12.57nA	0.24uA	0.13nA
-0.30	1.21nA	35.73nA	17.85pA
-0.20	0.12nA	4.97nA	12.06pA
-0.10	22.89pA	0.74nA	11.42pA
0.00	14.13pA	0.15nA	11.01pA

[Ramp]

variable	typ	min	max
dV/dt_r	1.00/2.55n	0.67/2.66n	1.48/2.22n
dV/dt_f	1.79/3.03n	1.33/3.81n	2.33/2.38n
R_load	= 50.00		

[Rising Waveform]

R_fixture	= 1.30k		
V_fixture	= 0.000		
V_fixture_min	= 0.000		
V_fixture_max	= 0.000		
C_fixture	= 30.00pF		
time	V(typ)	V(min)	V(max)

0.000S	0.000V	0.000V	0.000V
0.40nS	-1.33mV	-0.19mV	-4.41mV
0.80nS	-21.67mV	-11.04mV	-45.07mV
1.20nS	-22.66mV	-39.88mV	67.41mV
1.60nS	50.61mV	-45.80mV	0.34V
2.00nS	0.22V	7.35mV	0.65V
2.40nS	0.42V	94.27mV	0.97V
2.80nS	0.57V	0.18V	1.21V
3.20nS	0.77V	0.31V	1.51V
3.60nS	0.97V	0.45V	1.81V
4.00nS	1.16V	0.58V	2.11V
4.40nS	1.36V	0.71V	2.39V
4.80nS	1.55V	0.84V	2.67V
5.20nS	1.73V	0.97V	2.93V
5.60nS	1.97V	1.13V	3.24V
6.00nS	2.14V	1.26V	3.46V
6.40nS	2.27V	1.35V	3.61V
6.80nS	2.45V	1.47V	3.82V
7.20nS	2.61V	1.60V	3.99V
7.60nS	2.76V	1.72V	4.15V
8.00nS	2.91V	1.84V	4.30V
8.40nS	3.09V	1.98V	4.45V
8.80nS	3.25V	2.12V	4.60V
9.20nS	3.34V	2.20V	4.67V
9.60nS	3.43V	2.28V	4.73V
10.00nS	3.54V	2.38V	4.82V
10.40nS	3.65V	2.48V	4.88V
10.80nS	3.77V	2.60V	4.96V
11.20nS	3.88V	2.72V	5.02V
11.60nS	3.94V	2.78V	5.06V
12.00nS	3.99V	2.85V	5.09V
12.40nS	4.06V	2.93V	5.12V
12.80nS	4.13V	3.01V	5.15V
13.20nS	4.19V	3.08V	5.18V
13.60nS	4.25V	3.15V	5.20V
14.00nS	4.30V	3.22V	5.22V
14.40nS	4.34V	3.28V	5.23V
14.80nS	4.39V	3.36V	5.25V
15.20nS	4.44V	3.43V	5.27V
15.60nS	4.46V	3.47V	5.28V
16.00nS	4.49V	3.51V	5.28V
16.40nS	4.52V	3.56V	5.29V
16.80nS	4.54V	3.60V	5.30V
17.20nS	4.57V	3.64V	5.30V
17.60nS	4.59V	3.68V	5.31V
18.00nS	4.61V	3.72V	5.31V
18.40nS	4.62V	3.76V	5.32V
18.80nS	4.64V	3.79V	5.32V
19.20nS	4.66V	3.83V	5.32V
19.60nS	4.67V	3.86V	5.33V
20.00nS	4.68V	3.88V	5.33V

[Falling Waveform]

R_fixture = 1.80k

V_fixture = 5.00

V_fixture_min = 4.50
V_fixture_max = 5.50
C_fixture = 30.00pF

time	V(typ)	V(min)	V(max)
0.000S	5.00V	4.50V	5.50V
0.40nS	5.00V	4.50V	5.50V
0.80nS	5.02V	4.51V	5.54V
1.20nS	5.04V	4.53V	5.48V
1.60nS	5.01V	4.54V	5.29V
2.00nS	4.88V	4.50V	4.97V
2.40nS	4.71V	4.45V	4.59V
2.80nS	4.59V	4.38V	4.25V
3.20nS	4.34V	4.26V	3.77V
3.60nS	4.03V	4.12V	3.28V
4.00nS	3.72V	3.95V	2.79V
4.40nS	3.41V	3.76V	2.32V
4.80nS	3.07V	3.56V	1.88V
5.20nS	2.74V	3.34V	1.46V
5.60nS	2.33V	3.06V	1.07V
6.00nS	2.02V	2.83V	0.75V
6.40nS	1.80V	2.66V	0.62V
6.80nS	1.52V	2.43V	0.45V
7.20nS	1.28V	2.20V	0.30V
7.60nS	1.06V	1.98V	0.23V
8.00nS	0.86V	1.78V	0.16V
8.40nS	0.68V	1.54V	0.11V
8.80nS	0.51V	1.32V	78.88mV
9.20nS	0.44V	1.20V	68.07mV
9.60nS	0.37V	1.08V	61.65mV
10.00nS	0.30V	0.95V	53.09mV
10.40nS	0.25V	0.82V	48.92mV
10.80nS	0.19V	0.69V	45.52mV
11.20nS	0.15V	0.57V	43.50mV
11.60nS	0.13V	0.51V	42.84mV
12.00nS	0.12V	0.46V	42.17mV
12.40nS	0.10V	0.39V	41.75mV
12.80nS	90.48mV	0.34V	41.48mV
13.20nS	82.47mV	0.30V	41.26mV
13.60nS	75.90mV	0.26V	41.18mV
14.00nS	70.40mV	0.23V	41.09mV
14.40nS	67.23mV	0.20V	41.05mV
14.80nS	63.61mV	0.17V	41.02mV
15.20nS	61.45mV	0.15V	40.99mV
15.60nS	60.30mV	0.14V	40.99mV
16.00nS	59.39mV	0.13V	40.98mV
16.40nS	58.64mV	0.12V	40.97mV
16.80nS	57.91mV	0.11V	40.97mV
17.20nS	57.46mV	0.10V	40.97mV
17.60nS	57.10mV	97.89mV	40.97mV
18.00nS	56.79mV	93.49mV	40.97mV
18.40nS	56.61mV	89.29mV	40.97mV
18.80nS	56.43mV	86.08mV	40.97mV
19.20nS	56.31mV	82.87mV	40.97mV
19.60nS	56.20mV	80.17mV	40.97mV
20.00nS	56.15mV	78.88mV	40.96mV

| End [Model] tristate_driver

|*****

| Model input

|*****

| [Model] input
| Model_type Input
| C_comp 5.00pF 5.00pF 5.00pF

| [Temperature Range] 25.00 85.00 -40.00

| [Voltage Range] 5.00V 4.50V 5.50V

| [GND_clamp]

| voltage I(typ) I(min) I(max)

| -5.00 -4.00mA -10.00mA -0.000A

| -1.60 -2.65mA -5.00mA -0.000A

| -1.40 0.00mA 0.00mA 0.00mA

| 5.00 -0.000A -0.000A -0.000A

| [POWER_clamp]

| voltage I(typ) I(min) I(max)

| -5.00 -0.000A -0.000A -0.000A

| 0.00 -0.000A -0.000A -0.000A

| End [Model] input

| End [Component] AT28C010

| [End]