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Component AT29BV020-TI  
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[Component] AT29BV020-TI  
[Manufacturer] Atmel Inc.  
[Package]

variable	typ	min	max
R_pkg	92.80m	85.30m	0.10
L_pkg	3.22nH	2.91nH	3.53nH
C_pkg	0.42pF	0.42pF	0.42pF

[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	A17	input			
A7	WE/	input			
A8	VCC	POWER			
A9	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/00	tristate_driver			
C2	I/01	tristate_driver			
C3	I/02	tristate_driver			
C4	GND	GND			
C5	I/03	tristate_driver			
C6	I/04	tristate_driver			
C7	I/05	tristate_driver			
C8	I/06	tristate_driver			
C9	I/07	tristate_driver			
C10	CE/	input			
D1	A10	input			
D2	OE/	input			

\*\*\*\*\*  
Model tristate\_driver  
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[Model]          tristate_driver
Model_type       3-state
Polarity         Inverting
Enable          Active-Low

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Vmeas = 1.50V

Vref = 1.50V

C\_comp            0.000F                    0.000F                    0.000F

[Temperature Range]            25.00                    85.00                    -40.00

[Voltage Range]                3.0V                    2.7V                    3.60V

[Pulldown]

voltage	I(typ)	I(min)	I(max)
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-3.00	-50mA	-20mA	-90mA
-0.60	-5.11mA	-3.16mA	-9.09mA
-0.50	-4.25mA	-2.61mA	-7.63mA
-0.40	-3.38mA	-2.06mA	-6.13mA
-0.30	-2.51mA	-1.52mA	-4.60mA
-0.20	-1.66mA	-0.99mA	-3.07mA
-0.10	-0.82mA	-0.48mA	-1.53mA
0.00	0.000A	0.000A	0.000A
0.10	0.77mA	0.45mA	1.48mA
0.20	1.49mA	0.87mA	2.86mA
0.30	2.15mA	1.24mA	4.14mA
0.40	2.75mA	1.59mA	5.34mA
0.50	3.30mA	1.90mA	6.44mA
0.60	3.80mA	2.17mA	7.46mA
0.70	4.25mA	2.41mA	8.40mA
0.80	4.65mA	2.62mA	9.26mA
0.90	5.00mA	2.79mA	10.04mA
1.00	5.31mA	2.94mA	10.74mA
1.10	5.57mA	3.06mA	11.37mA
1.20	5.78mA	3.15mA	11.92mA
1.30	5.96mA	3.22mA	12.41mA
1.40	6.09mA	3.27mA	12.82mA
1.50	6.20mA	3.31mA	13.16mA
1.60	6.28mA	3.33mA	13.43mA
1.70	6.33mA	3.35mA	13.65mA
1.80	6.38mA	3.37mA	13.81mA
1.90	6.41mA	3.38mA	13.93mA
2.00	6.44mA	3.40mA	14.02mA
2.10	6.46mA	3.40mA	14.10mA
2.20	6.48mA	3.41mA	14.15mA
2.30	6.50mA	3.42mA	14.20mA
2.40	6.51mA	3.43mA	14.23mA
2.50	6.52mA	3.43mA	14.26mA
2.60	6.53mA	3.44mA	14.29mA
2.70	6.54mA	3.44mA	14.31mA
2.80	6.55mA	3.45mA	14.33mA
2.90	6.56mA	3.45mA	14.35mA
3.00	6.56mA	3.46mA	14.37mA
3.10	6.57mA	3.46mA	14.38mA
3.20	6.58mA	3.47mA	14.39mA
3.30	6.58mA	3.47mA	14.41mA
3.40	6.59mA	3.49mA	14.42mA
3.50	6.60mA	3.51mA	14.43mA
3.60	6.61mA	3.57mA	14.44mA
3.70	6.63mA	3.69mA	14.45mA
3.80	6.68mA	3.89mA	14.46mA
3.90	6.80mA	4.18mA	14.47mA
4.00	7.04mA	4.56mA	14.48mA
4.10	7.42mA	5.06mA	14.48mA
4.20	7.94mA	5.72mA	14.50mA
6.0	150mA	100mA	220mA

[Pullup] voltage	I(typ)	I(min)	I(max)
-3.0	20mA	10mA	40mA
-1.10	8.35mA	6.33mA	11.59mA
-0.90	7.48mA	5.61mA	10.45mA
-0.90	7.48mA	5.61mA	10.45mA
-0.80	6.99mA	5.19mA	9.82mA
-0.70	6.44mA	4.74mA	9.13mA
-0.60	5.84mA	4.26mA	8.36mA
-0.50	5.20mA	3.76mA	7.51mA
-0.40	4.53mA	3.26mA	6.58mA
-0.30	3.85mA	2.76mA	5.62mA
-0.20	3.18mA	2.27mA	4.67mA
-0.10	2.51mA	1.79mA	3.71mA
0.00	1.86mA	1.31mA	2.77mA
0.10	1.22mA	0.86mA	1.83mA
0.20	0.60mA	0.42mA	0.91mA
0.30	98.77pA	0.11nA	0.12nA
0.40	-0.58mA	-0.40mA	-0.89mA
0.50	-1.13mA	-0.78mA	-1.74mA
0.60	-1.65mA	-1.13mA	-2.57mA
0.70	-2.15mA	-1.46mA	-3.36mA
0.80	-2.63mA	-1.78mA	-4.13mA
0.90	-3.07mA	-2.07mA	-4.87mA
1.00	-3.49mA	-2.33mA	-5.58mA
1.10	-3.89mA	-2.58mA	-6.25mA
1.20	-4.25mA	-2.81mA	-6.90mA
1.30	-4.59mA	-3.01mA	-7.51mA
1.40	-4.91mA	-3.19mA	-8.10mA
1.50	-5.19mA	-3.35mA	-8.65mA
1.60	-5.45mA	-3.49mA	-9.18mA
1.70	-5.69mA	-3.61mA	-9.67mA
1.80	-5.89mA	-3.71mA	-10.13mA
1.90	-6.07mA	-3.78mA	-10.55mA
2.00	-6.23mA	-3.84mA	-10.95mA
2.10	-6.35mA	-3.88mA	-11.31mA
2.20	-6.45mA	-3.92mA	-11.65mA
2.30	-6.54mA	-3.96mA	-11.95mA
2.40	-6.61mA	-3.99mA	-12.21mA
2.50	-6.67mA	-4.02mA	-12.45mA
2.60	-6.73mA	-4.05mA	-12.65mA
2.70	-6.79mA	-4.08mA	-12.83mA
2.80	-6.84mA	-4.10mA	-12.98mA
2.90	-6.89mA	-4.13mA	-13.12mA
3.00	-6.93mA	-4.15mA	-13.24mA
3.10	-6.98mA	-4.17mA	-13.36mA
3.20	-7.02mA	-4.20mA	-13.46mA
3.30	-7.05mA	-4.22mA	-13.56mA
3.40	-7.09mA	-4.24mA	-13.65mA
3.50	-7.13mA	-4.26mA	-13.73mA
3.60	-7.16mA	-4.30mA	-13.81mA
3.70	-7.19mA	-4.41mA	-13.88mA
3.80	-7.23mA	-4.65mA	-13.95mA
3.90	-7.31mA	-5.05mA	-14.01mA
4.00	-7.54mA	-5.59mA	-14.07mA
4.10	-8.00mA	-6.25mA	-14.13mA
4.20	-8.70mA	-7.01mA	-14.18mA
6.0	-100mA	-100mA	-100mA

[GND_clamp] voltage	I(typ)	I(min)	I(max)
-3.0	-100mA	-100mA	-100mA

0.00	-0.93nA	-6.28nA	-0.14nA
0.10	-0.90nA	-6.17nA	-0.13nA
0.20	-0.88nA	-6.08nA	-0.13nA
0.30	-0.86nA	-5.99nA	-0.12nA
0.40	-0.85nA	-5.90nA	-0.11nA
0.50	-0.83nA	-5.82nA	-0.11nA
0.60	-0.81nA	-5.73nA	-99.24pA
0.70	-0.79nA	-5.64nA	-92.36pA
0.80	-0.77nA	-5.55nA	-85.49pA
0.90	-0.75nA	-5.47nA	-78.63pA
1.00	-0.73nA	-5.38nA	-71.77pA
1.10	-0.71nA	-5.29nA	-64.93pA
1.20	-0.69nA	-5.21nA	-58.09pA
1.30	-0.68nA	-5.12nA	-51.26pA
1.40	-0.66nA	-5.03nA	-44.43pA
1.50	-0.64nA	-4.94nA	-37.61pA
1.60	-0.62nA	-4.86nA	-30.80pA
1.70	-0.60nA	-4.77nA	-24.00pA
1.80	-0.58nA	-4.68nA	-17.20pA
1.90	-0.57nA	-4.59nA	-10.40pA
2.00	-0.55nA	-4.50nA	-3.61pA
2.10	-0.53nA	-4.41nA	3.17pA
2.20	-0.51nA	-4.32nA	9.95pA
2.30	-0.49nA	-4.22nA	16.73pA
2.40	-0.47nA	-4.13nA	23.50pA
2.50	-0.45nA	-4.03nA	30.27pA
2.60	-0.44nA	-3.90nA	37.04pA
2.70	-0.42nA	0.11nA	43.81pA
2.80	-0.40nA	15.84nA	50.57pA
2.90	-0.37nA	58.48nA	57.34pA
3.00	98.77pA	0.20uA	64.12pA

[POWER_clamp]			
voltage	I(typ)	I(min)	I(max)
-3.00	25mA	20mA	30mA
-0.70	18.82uA	14.64uA	25.55uA
-0.60	5.07uA	5.26uA	4.32uA
-0.50	1.33uA	1.84uA	0.69uA
-0.40	0.33uA	0.62uA	99.55nA
-0.30	74.27nA	0.20uA	12.53nA
-0.20	15.20nA	58.48nA	1.47nA
-0.10	2.85nA	15.84nA	0.25nA
0.00	98.77pA	0.11nA	0.12nA

[Ramp]			
variable	typ	min	max
dV/dt_r	0.21/2.55n	0.12/2.70n	0.40/2.49n
dV/dt_f	0.20/2.86n	0.10/2.88n	0.43/2.69n

R\_load = 50.00

[Rising Waveform]

R\_fixture = 1.80k

V\_fixture = 0.000

V\_fixture\_min = 0.000

V\_fixture\_max = 0.000

time	V(typ)	V(min)	V(max)
0.000S	0.000V	1.11uV	0.000V
0.80nS	-4.61mV	-4.17mV	-4.59mV
1.60nS	-8.76mV	-9.42mV	17.36mV
2.40nS	0.11V	3.17mV	0.20V
3.20nS	0.29V	58.19mV	0.37V
4.00nS	0.47V	0.17V	0.53V
4.80nS	0.65V	0.30V	0.69V

5.60nS	0.78V	0.40V	0.81V
6.40nS	0.95V	0.53V	0.96V
7.20nS	1.11V	0.65V	1.11V
8.00nS	1.27V	0.77V	1.26V
8.80nS	1.43V	0.89V	1.40V
9.60nS	1.57V	1.00V	1.54V
10.40nS	1.71V	1.11V	1.67V
11.20nS	1.87V	1.24V	1.83V
12.00nS	1.99V	1.35V	1.95V
12.80nS	2.07V	1.42V	2.04V
13.60nS	2.17V	1.52V	2.14V
14.40nS	2.27V	1.61V	2.25V
15.20nS	2.35V	1.69V	2.34V
16.00nS	2.43V	1.77V	2.43V
16.80nS	2.51V	1.86V	2.54V
17.60nS	2.59V	1.95V	2.63V
18.40nS	2.63V	2.00V	2.68V
19.20nS	2.66V	2.04V	2.73V
20.00nS	2.71V	2.10V	2.79V
20.80nS	2.75V	2.15V	2.85V
21.60nS	2.79V	2.21V	2.91V
22.40nS	2.82V	2.26V	2.96V
23.20nS	2.84V	2.29V	2.99V
24.00nS	2.86V	2.32V	3.02V
24.80nS	2.88V	2.35V	3.06V
25.60nS	2.90V	2.38V	3.09V
26.40nS	2.91V	2.41V	3.12V
27.20nS	2.93V	2.43V	3.14V
28.00nS	2.94V	2.45V	3.17V
28.80nS	2.95V	2.47V	3.19V
29.60nS	2.96V	2.49V	3.21V
30.40nS	2.97V	2.51V	3.23V
31.20nS	2.98V	2.52V	3.25V
32.00nS	2.98V	2.53V	3.26V
32.80nS	2.99V	2.55V	3.27V
33.60nS	2.99V	2.56V	3.28V
34.40nS	3.00V	2.57V	3.29V
35.20nS	3.00V	2.57V	3.30V
36.00nS	3.00V	2.58V	3.31V
36.80nS	3.00V	2.59V	3.32V
37.60nS	3.01V	2.60V	3.32V
38.40nS	3.01V	2.60V	3.33V
39.20nS	3.01V	2.61V	3.34V
40.00nS	3.01V	2.61V	3.34V

[Falling Waveform]  
R\_fixture = 1.30k  
V\_fixture = 3.00  
V\_fixture\_min = 2.70  
V\_fixture\_max = 3.60  
C\_fixture = 10.00pF

time	V(typ)	V(min)	V(max)
0.000S	2.96V	2.70V	3.60V
0.80nS	2.97V	2.70V	3.61V
1.60nS	2.97V	2.71V	3.60V
2.40nS	2.95V	2.71V	3.43V
3.20nS	2.89V	2.71V	3.26V
4.00nS	2.81V	2.69V	3.09V
4.80nS	2.73V	2.65V	2.92V
5.60nS	2.67V	2.60V	2.79V
6.40nS	2.60V	2.53V	2.63V
7.20nS	2.52V	2.47V	2.47V
8.00nS	2.44V	2.41V	2.30V
8.80nS	2.36V	2.35V	2.15V

9.60nS	2.29V	2.29V	1.99V
10.40nS	2.22V	2.23V	1.84V
11.20nS	2.12V	2.15V	1.65V
12.00nS	2.05V	2.10V	1.51V
12.80nS	2.00V	2.05V	1.41V
13.60nS	1.93V	2.00V	1.28V
14.40nS	1.86V	1.94V	1.16V
15.20nS	1.79V	1.89V	1.04V
16.00nS	1.72V	1.83V	0.94V
16.80nS	1.63V	1.77V	0.82V
17.60nS	1.55V	1.71V	0.72V
18.40nS	1.50V	1.67V	0.67V
19.20nS	1.46V	1.63V	0.61V
20.00nS	1.40V	1.58V	0.55V
20.80nS	1.33V	1.53V	0.50V
21.60nS	1.26V	1.48V	0.44V
22.40nS	1.19V	1.42V	0.40V
23.20nS	1.15V	1.39V	0.37V
24.00nS	1.11V	1.35V	0.35V
24.80nS	1.06V	1.31V	0.33V
25.60nS	1.01V	1.27V	0.30V
26.40nS	0.96V	1.23V	0.28V
27.20nS	0.91V	1.19V	0.27V
28.00nS	0.87V	1.15V	0.25V
28.80nS	0.83V	1.12V	0.24V
29.60nS	0.78V	1.07V	0.23V
30.40nS	0.74V	1.03V	0.22V
31.20nS	0.71V	1.01V	0.22V
32.00nS	0.69V	0.98V	0.21V
32.80nS	0.66V	0.95V	0.21V
33.60nS	0.63V	0.92V	0.20V
34.40nS	0.60V	0.90V	0.20V
35.20nS	0.57V	0.87V	0.20V
36.00nS	0.55V	0.84V	0.20V
36.80nS	0.53V	0.82V	0.19V
37.60nS	0.51V	0.80V	0.19V
38.40nS	0.48V	0.77V	0.19V
39.20nS	0.46V	0.74V	0.19V
40.00nS	0.45V	0.73V	0.19V

End [Model] tristate\_driver

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

```
[Temperature Range] 25.00           85.00           -40.00
[Voltage Range]     3.0V           2.7V           3.60V
```

```
[GND_clamp]
voltage          I(typ)           I(min)           I(max)
-1.80            -4mA             -10mA            -7uA
-0.60            -2.65mA          -5.06mA          -32.18nA
-0.50            -56.57uA         -0.21mA          -32.18nA
-0.40            -1.15uA          -0.21mA          -0.22nA
-0.30            -23.56nA         -0.33uA          -2.13pA
-0.20            -0.48nA          -0.33uA          -0.41pA
-0.10            -9.80pA          -12.30nA         -0.20pA
0.00             0.000A           0.000A           0.000A
0.00             0.000A           0.000A           0.000A
```

0.10	0.22pA	50.33pA	0.20pA
0.20	0.44pA	0.10nA	0.40pA
0.30	0.66pA	0.15nA	0.60pA
0.40	0.88pA	0.20nA	0.80pA
0.50	1.10pA	0.25nA	1.00pA
0.60	1.32pA	0.30nA	1.20pA
0.70	1.54pA	0.35nA	1.40pA
0.80	1.76pA	0.40nA	1.60pA
0.90	1.98pA	0.45nA	1.80pA
1.00	2.20pA	0.50nA	2.00pA
1.10	2.42pA	0.55nA	2.20pA
1.20	2.64pA	0.60nA	2.40pA
1.30	2.86pA	0.65nA	2.60pA
1.40	3.08pA	0.70nA	2.80pA
1.50	3.30pA	0.75nA	3.00pA
1.60	3.52pA	0.81nA	3.20pA
1.70	3.74pA	0.86nA	3.40pA
1.80	3.96pA	0.91nA	3.60pA

[POWER\_clamp]

voltage	I (typ)	I (min)	I (max)
-3.30	13.20pA	12.60pA	13.80pA
-3.20	13.00pA	12.40pA	13.60pA
-3.10	12.80pA	12.20pA	13.40pA
-3.00	12.60pA	12.00pA	13.20pA
-2.90	12.40pA	11.80pA	13.00pA
-2.80	12.20pA	11.60pA	12.80pA
-2.70	12.00pA	11.40pA	12.60pA
-2.60	11.80pA	11.20pA	12.40pA
-2.50	11.60pA	11.00pA	12.20pA
-2.40	11.40pA	10.80pA	12.00pA
-2.30	11.20pA	10.60pA	11.80pA
-2.20	11.00pA	10.40pA	11.60pA
-2.10	10.80pA	10.20pA	11.40pA
-2.00	10.60pA	10.00pA	11.20pA
-1.90	10.40pA	9.80pA	11.00pA
-1.80	10.20pA	9.60pA	10.80pA
-1.70	10.00pA	9.40pA	10.60pA
-1.60	9.80pA	9.20pA	10.40pA
-1.50	9.60pA	9.00pA	10.20pA
-1.40	9.40pA	8.80pA	10.00pA
-1.30	9.20pA	8.60pA	9.80pA
-1.20	9.00pA	8.40pA	9.60pA
-1.10	8.80pA	8.20pA	9.40pA
-1.00	8.60pA	8.00pA	9.20pA
-0.90	8.40pA	7.80pA	9.00pA
-0.80	8.20pA	7.60pA	8.80pA
-0.70	8.00pA	7.40pA	8.60pA
-0.60	7.80pA	7.20pA	8.40pA
-0.50	7.60pA	7.00pA	8.20pA
-0.40	7.40pA	6.80pA	8.00pA
-0.30	7.20pA	6.60pA	7.80pA
-0.20	7.00pA	6.40pA	7.60pA
-0.10	6.80pA	6.20pA	7.40pA
0.00	6.60pA	6.00pA	7.20pA

End [Model] input

End [Component] AT29BV020-TI

[End]