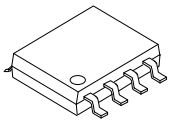
2-BIT BIDIRECTIONAL VOLTAGE-LEVEL TRANSLATOR FOR OPEN-DRAIN AND PUSH-PULL APPLICATIONS



SOP-8

■ DESCRIPTION

The UTC **UVXS0102** is a two-bit non-inverting bidirectional voltage-level translator and can be used to establish digital switching compatibility between mixed-voltage systems.

The UTC **UVXS0102** separates A ports with B ports, and both ports are configurable power-supply rails, with the A ports supporting operating voltages from 1.65V to 3.6V, and the B ports supporting operating voltages from 2.3V to 5.5V. This allows the support of both lower and higher logic signal levels while providing bidirectional translation capabilities between any of the 1.8V, 2.5V, 3.3V, and 5V voltage nodes.

All I/Os of the UTC **UVXS0102** are placed in the high-impedance state when the output-enable (OE) input is low, which significantly reduces the power-supply quiescent current consumption. So, to ensure the high-impedance state during power up or power down, OE should be tied to GND through a pull-down resistor; the minimum value of the resistor is determined by the current-sourcing capability of the driver.

■ FEATURES

* Maximum Data Rates
  24 Mbps (Push Pull)
  2 Mbps (Open Drain)
* 1.65V~3.6V on A ports and 2.3V~5.5V on B ports ($V_{CCA} \leq V_{CCB}$)
* No Direction-Control Signal Needed
* V_{CC} Isolation Feature: If either V_{CC} input is at GND, both ports are in the High-Impedance state
* No Power-Supply Sequencing Required: Either V_{CCA} or V_{CCB} can be ramped first
* I_{off} Supports Partial-Power-Down Mode Operation

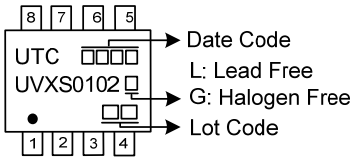
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■ ORDERING INFORMATION

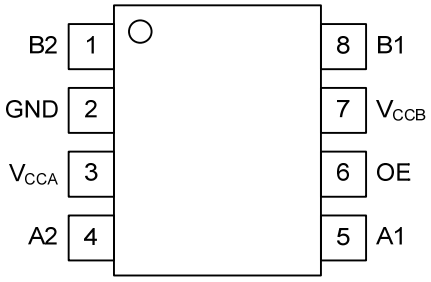
Ordering Number		Package	Packing
Lead Free	Halogen Free		
UVXS0102L-S08-R	UVXS0102G-S08-R	SOP-8	Tape Reel

UVXS0102G-S08-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) S08: SOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



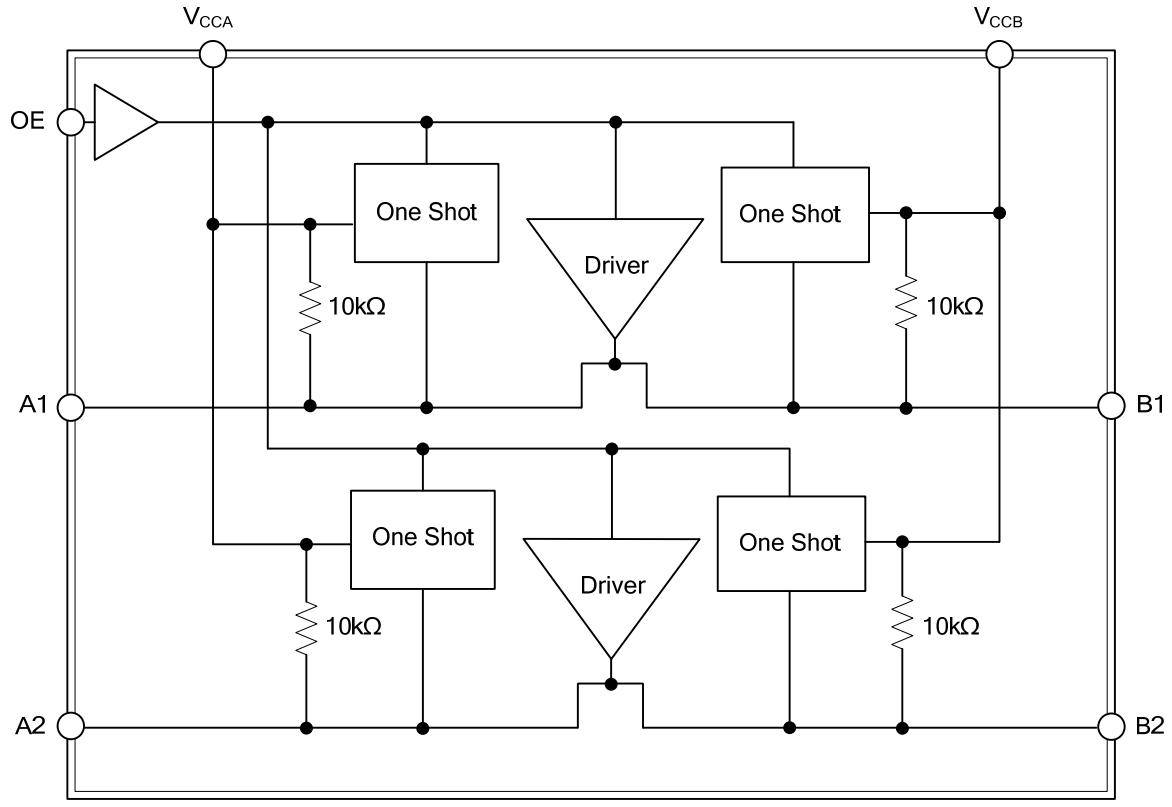
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	B2	B-port: Input/output. Referenced to V_{CCB}.
2	GND	Ground
3	V_{CCA}	Power: A-port supply voltage. 1.65V≤V_{CCA}≤3.6V
4	A2	A-port: Input/output. Referenced to V_{CCA}.
5	A1	A-port: Input/output. Referenced to V_{CCA}.
6	OE	Enable: active High, Pull OE low to place all outputs in 3-state mode. Referenced to V_{CCA}.
7	V_{CCB}	Power: B-port supply voltage. 2.3V≤V_{CCB}≤5.5V and V_{CCA}≤V_{CCB}.
8	B1	B-port: Input/output. Referenced to V_{CCB}.

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING (NOTE 1)

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage Range		V_{CCA}	-0.5 ~ 4.6	V
Supply Voltage Range		V_{CCB}	-0.5 ~ 6.5	V
Input Voltage Range (Note 2)	A port	V_I	-0.5 ~ 4.6	V
	B port		-0.5 ~ 6.5	
Voltage Range Applied To Any Output In The High-Impedance Or Power-Off State (Note 2)	A port	V_O	-0.5 ~ 4.6	V
	B port		-0.5 ~ 6.5	
Voltage Range Applied To Any Output In The High Or Low State (Note 2, 3)	A port	V_O	-0.5 ~ V_{CCA}+0.5	V
	B port		-0.5 ~ V_{CCB}+0.5	
Input Clamp Current	V_I<0	I_{IK}	-50	mA
Output Clamp Current	V_O<0	I_{OK}	-50	mA
Continuous Output Current		I_O	±50	mA
Continuous Current Through V_{CCA}, V_{CCB}, or GND			±100	mA
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-65 ~ +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. The input and output negative-voltage ratings may be exceeded if the input and output current ratings are observed.
3. The value of V_{CCA} and V_{CCB} are provided in the recommended operating conditions table.

■ RECOMMENDED OPERATING CONDITIONS

V_{CCI} is the supply voltage associated with the input port. V_{CCO} is the supply voltage associated with the output port.

PARAMETER			SYMBOL	RATINGS	UNIT
Supply Voltage (Note 1)			V_{CCA}	1.65 ~ 3.6	V
Supply Voltage			V_{CCB}	2.3 ~ 5.5	V
High-Level Input Voltage	A-Port I/Os	V_{CCA}=1.65V ~ 3.6V, V_{CCB}=2.3V ~ 5.5V	V_{IH}	V_{CCI} - 0.2 ~ V_{CCI}	V
				V_{CCI} - 0.4 ~ V_{CCI}	
	B-Port I/Os	V_{CCA}=1.65V ~ 3.6V, V_{CCB}=2.3V ~ 5.5V		V_{CCI} - 0.4 ~ V_{CCI}	
	OE Input	V_{CCA}=1.65V ~ 3.6V, V_{CCB}=2.3V ~ 5.5V		V_{CCA}×0.65 ~ 5.5	
Low-Level Input Voltage (Note 2)	A-Port I/Os	V_{CCA}=1.65V ~ 3.6V, V_{CCB}=2.3V ~ 5.5V	V_{IL}	0 ~ 0.15	V
	B-Port I/Os	V_{CCA}=1.65V ~ 3.6V, V_{CCB}=2.3V ~ 5.5V		0 ~ 0.15	
	OE Input	V_{CCA}=1.65V ~ 3.6V, V_{CCB}=2.3V ~ 5.5V		0 ~ V_{CCA}×0.30	
Input Transition Rise Or Fall Rate	A-Port I/Os Push-Pull Driving	V_{CCA}=1.65V ~ 3.6V, V_{CCB}=2.3V ~ 5.5V	Δt/Δv	10	ns/V
	B-Port I/Os Push-Pull Driving	V_{CCA}=1.65V ~ 3.6V, V_{CCB}=2.3V ~ 5.5V		10	
	Control Input	V_{CCA}=1.65V ~ 3.6V, V_{CCB}=2.3V ~ 5.5V		10	
Operating Free-Air Temperature			T_A	-40 ~ +85	°C

Notes: 1. V_{CCA} must be less than or equal to V_{CCB}, and V_{CCA} must not exceed 3.6V.
2. The maximum V_{IL} value is provided to ensure that a valid V_{OL} is maintained. The V_{OL} value is V_{IL} plus the voltage drop across the pass-gate transistor.

■ ELECTRICAL CHARACTERISTICS (Note 1, 2, 3) (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Port A Output High Voltage	V_{OHA}	I_{OH}=-20μA, V_{IB}≥V_{CCB}-0.4V V_{CCA}=1.65V~3.6V, V_{CCB}=2.3V~5.5V		V_{CCA} ×0.67			V
Port A Output Low Voltage	V_{OLA}	I_{OL}=1mA, V_{IB}≤0.15V V_{CCA}=1.65V~3.6V, V_{CCB}=2.3V~5.5V				0.6	V
Port B Output High Voltage	V_{OHB}	V_{CCA}=1.65V~3.6V, V_{CCB}=2.3V~5.5V		V_{CCB} ×0.67			V
Port B Output Low Voltage	V_{OLB}	V_{CCA}=1.65V~3.6V, V_{CCB}=2.3V~5.5V				0.6	V
Input Leakage Current	I_I	V_{CCA}=1.65V~3.6V, V_{CCB}=2.3V~5.5V				±1	μA
Partial Power Down Current	I_{off}	A port, V_{CCA}=0V				±1	μA
		B port, V_{CCA}=0V~3.6V				±1	
High-Impedance State Output Current	I_{OZ}	A or B port V_{CCA}=1.65V~3.6V, V_{CCB}=2.3V~5.5V				±1	μA
V_{CCA} Supply Current	I_{CCA}	V_I=V_O=open, I_O=0	V_{CCA}=1.65V~V_{CCB} V_{CCB}=2.3V~5.5V			2.4	μA
			V_{CCA}=3.6V V_{CCB}=0V			2.2	μA
			V_{CCA}=0V V_{CCB}=5.5V			-1	μA
V_{CCB} Supply Current	I_{CCB}	V_I=V_O=open, I_O=0	V_{CCA}=1.65V~V_{CCB} V_{CCB}=2.3V~5.5V			12	μA
			V_{CCA}=3.6V V_{CCB}=0V			-1	μA
			V_{CCA}=0V V_{CCB}=5.5V			1	μA
Combined Supply Current	I_{CCA}+I_{CCB}	V_I=V_{CCI} or GND, I_O=0	V_{CCA}=1.65V~V_{CCB} V_{CCB}=2.3V~5.5V			14.4	μA
Input Capacitance	C_I	OE	V_{CCA}=3.3V V_{CCB}=3.3V		2.5		pF
Input-to-Output Internal Capacitance	C_{io}	A or B port	V_{CCA}=3.3V V_{CCB}=3.3V		10		pF
		A port			5		pF
		B port			6		pF

Notes: 1. V_{CCI} is the V_{CC} associated with the input port.
2. V_{CCO} is the V_{CC} associated with the output port.
3. V_{CCA} must be less than or equal to V_{CCB}, and V_{CCA} must not exceed 3.6V.

■ TIMING REQUIREMENTS

V_{CCA}=1.8V±0.15V

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Push-Pull Driving	Data Rate	V_{CCB}=2.5V±0.2V			21	Mbps
		V_{CC}=3.3V±0.3V			22	Mbps
		V_{CC}=5V±0.5V			24	Mbps
Open-Drain Driving		V_{CCB}=2.5V±0.2V			2	Mbps
		V_{CC}=3.3V±0.3V			2	Mbps
		V_{CC}=5V±0.5V			2	Mbps
Push-Pull Driving (Data Inputs)	Pulse Duration	V_{CCB}=2.5V±0.2V	47			ns
		V_{CC}=3.3V±0.3V	45			ns
		V_{CC}=5V±0.5V	41			ns
Open-Drain Driving (Data Inputs)		V_{CCB}=2.5V±0.2V	500			ns
		V_{CC}=3.3V±0.3V	500			ns
		V_{CC}=5V±0.5V	500			ns

V_{CCA}=2.5V±0.2V

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Push-Pull Driving	Data Rate	V_{CCB}=2.5V±0.2V			20	Mbps
		V_{CC}=3.3V±0.3V			22	Mbps
		V_{CC}=5V±0.5V			24	Mbps
Open-Drain Driving		V_{CCB}=2.5V±0.2V			2	Mbps
		V_{CC}=3.3V±0.3V			2	Mbps
		V_{CC}=5V±0.5V			2	Mbps
Push-Pull Driving (Data Inputs)	Pulse Duration	V_{CCB}=2.5V±0.2V	50			ns
		V_{CC}=3.3V±0.3V	45			ns
		V_{CC}=5V±0.5V	41			ns
Open-Drain Driving (Data Inputs)		V_{CCB}=2.5V±0.2V	500			ns
		V_{CC}=3.3V±0.3V	500			ns
		V_{CC}=5V±0.5V	500			ns

V_{CCA}=3.3V±0.3V

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Push-Pull Driving	Data Rate	V_{CC}=3.3V±0.3V			23	Mbps
		V_{CC}=5V±0.5V			24	Mbps
Open-Drain Driving		V_{CC}=3.3V±0.3V			2	Mbps
		V_{CC}=5V±0.5V			2	Mbps
Push-Pull Driving (Data Inputs)	Pulse Duration	V_{CC}=3.3V±0.3V	43			ns
		V_{CC}=5V±0.5V	41			ns
Open-Drain Driving (Data Inputs)		V_{CC}=3.3V±0.3V	500			ns
		V_{CC}=5V±0.5V	500			ns

■ SWITCHING CHARACTERISTICS

(over operating free-air temperature range, unless otherwise specified.)

V_{CCA}=1.8V±0.15V

PARAMETER	SYMBOL	TEST CONDITIONS	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay Time High to Low Output (A to B)	t_{PHL}	Push-pull driving	V_{CCB}=2.5V±0.2V			15.3	ns
			V_{CCB}=3.3V±0.3V			15.4	ns
			V_{CCB}=5V±0.5V			16.8	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	2.3		18.8	ns
			V_{CCB}=3.3V±0.3V	2.4		19.6	ns
			V_{CCB}=5V±0.5V	2.6		20	ns
Propagation Delay Time Low to High Output (A to B)	t_{PLH}	Push-pull driving	V_{CCB}=2.5V±0.2V			16.8	ns
			V_{CCB}=3.3V±0.3V			17.1	ns
			V_{CCB}=5V±0.5V			17.5	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	45		260	ns
			V_{CCB}=3.3V±0.3V	36		208	ns
			V_{CCB}=5V±0.5V	27		198	ns
Propagation Delay Time High to Low Output (B to A)	t_{PHL}	Push-pull driving	V_{CCB}=2.5V±0.2V			14.4	ns
			V_{CCB}=3.3V±0.3V			14.5	ns
			V_{CCB}=5V±0.5V			14.7	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	1.9		15.3	ns
			V_{CCB}=3.3V±0.3V	1.1		14.4	ns
			V_{CCB}=5V±0.5V	1.2		14	ns
Propagation Delay Time Low to High Output (B to A)	t_{PLH}	Push-pull driving	V_{CCB}=2.5V±0.2V			15.3	ns
			V_{CCB}=3.3V±0.3V			14.5	ns
			V_{CCB}=5V±0.5V			10.5	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	45		175	ns
			V_{CCB}=3.3V±0.3V	36		140	ns
			V_{CCB}=5V±0.5V	27		102	ns
Enable Time	t_{en}	OE to A or B	V_{CCB}=2.5V±0.2V			200	ns
			V_{CCB}=3.3V±0.3V			200	ns
			V_{CCB}=5V±0.5V			200	ns
Disable Time	t_{dis}	OE to A or B	V_{CCB}=2.5V±0.2V			90	ns
			V_{CCB}=3.3V±0.3V			90	ns
			V_{CCB}=5V±0.5V			90	ns
Input Rise Time (A port rise time)	t_{rA}	Push-pull driving	V_{CCB}=2.5V±0.2V	3.2		19.5	ns
			V_{CCB}=3.3V±0.3V	2.3		19.3	ns
			V_{CCB}=5V±0.5V	2		17.6	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	38		165	ns
			V_{CCB}=3.3V±0.3V	30		132	ns
			V_{CCB}=5V±0.5V	22		95	ns
Input Rise Time (B port fall time)	t_{rB}	Push-pull driving	V_{CCB}=2.5V±0.2V	4		20.8	ns
			V_{CCB}=3.3V±0.3V	2.7		19.1	ns
			V_{CCB}=5V±0.5V	2.7		17.6	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	34		145	ns
			V_{CCB}=3.3V±0.3V	23		106	ns
			V_{CCB}=5V±0.5V	10		58	ns
Input Rise Time (A port rise time)	t_{rA}	Push-pull driving	V_{CCB}=2.5V±0.2V	2		15.9	ns
			V_{CCB}=3.3V±0.3V	1.9		16	ns
			V_{CCB}=5V±0.5V	1.7		16.3	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	4.4		16.9	ns
			V_{CCB}=3.3V±0.3V	4.3		16.4	ns
			V_{CCB}=5V±0.5V	4.2		16.1	ns

■ SWITCHING CHARACTERISTICS (Cont.)

PARAMETER	SYMBOL	TEST CONDITIONS	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Rise Time (B port fall time)	t_{rB}	Push-pull driving	V_{CCB}=2.5V±0.2V	2.9		21.1	ns
			V_{CCB}=3.3V±0.3V	2.8		21.6	ns
			V_{CCB}=5V±0.5V	2.8		22.2	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	6.9		21.8	ns
			V_{CCB}=3.3V±0.3V	7.5		22.2	ns
			V_{CCB}=5V±0.5V	7		22.4	ns
Skew (Time), Output	$t_{SK(O)}$	Channel -to- channel skew	V_{CCB}=2.5V±0.2V			0.7	ns
			V_{CCB}=3.3V±0.3V			0.7	ns
			V_{CCB}=5V±0.5V			0.7	ns
Maximum Data Rate	f_{MAX}	Push-pull driving	V_{CCB}=2.5V±0.2V	21			Mbps
			V_{CCB}=3.3V±0.3V	22			Mbps
			V_{CCB}=5V±0.5V	24			Mbps
		Open-drain driving	V_{CCB}=2.5V±0.2V	2			Mbps
			V_{CCB}=3.3V±0.3V	2			Mbps
			V_{CCB}=5V±0.5V	2			Mbps

V_{CCA}=2.5V±0.2V

PARAMETER	SYMBOL	TEST CONDITIONS	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay Time High to Low Output (A to B)	t_{PHL}	Push-pull driving	V_{CCB}=2.5V±0.2V			13.2	ns
			V_{CCB}=3.3V±0.3V			13.7	ns
			V_{CCB}=5V±0.5V			13.8	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	1.7		16.3	ns
			V_{CCB}=3.3V±0.3V	2		16	ns
			V_{CCB}=5V±0.5V	2.1		15.8	ns
Propagation Delay Time Low to High Output (A to B)	t_{PLH}	Push-pull driving	V_{CCB}=2.5V±0.2V			13.5	ns
			V_{CCB}=3.3V±0.3V			14.1	ns
			V_{CCB}=5V±0.5V			14.4	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	43		250	ns
			V_{CCB}=3.3V±0.3V	36		206	ns
			V_{CCB}=5V±0.5V	27		190	ns
Propagation Delay Time High to Low Output (B to A)	t_{PHL}	Push-pull driving	V_{CCB}=2.5V±0.2V			13	ns
			V_{CCB}=3.3V±0.3V			13.6	ns
			V_{CCB}=5V±0.5V			14.3	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	1.8		14.7	ns
			V_{CCB}=3.3V±0.3V	2.6		14.2	ns
			V_{CCB}=5V±0.5V	1.2		14	ns
Propagation Delay Time Low to High Output (B to A)	t_{PLH}	Push-pull driving	V_{CCB}=2.5V±0.2V			12.5	ns
			V_{CCB}=3.3V±0.3V			11.6	ns
			V_{CCB}=5V±0.5V			11	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	44		170	ns
			V_{CCB}=3.3V±0.3V	37		140	ns
			V_{CCB}=5V±0.5V	27		103	ns
Enable Time	t_{en}	OE to A or B	V_{CCB}=2.5V±0.2V			200	ns
			V_{CCB}=3.3V±0.3V			200	ns
			V_{CCB}=5V±0.5V			200	ns
Disable Time	t_{dis}	OE to A or B	V_{CCB}=2.5V±0.2V			90	ns
			V_{CCB}=3.3V±0.3V			90	ns
			V_{CCB}=5V±0.5V			90	ns

■ SWITCHING CHARACTERISTICS (Cont.)

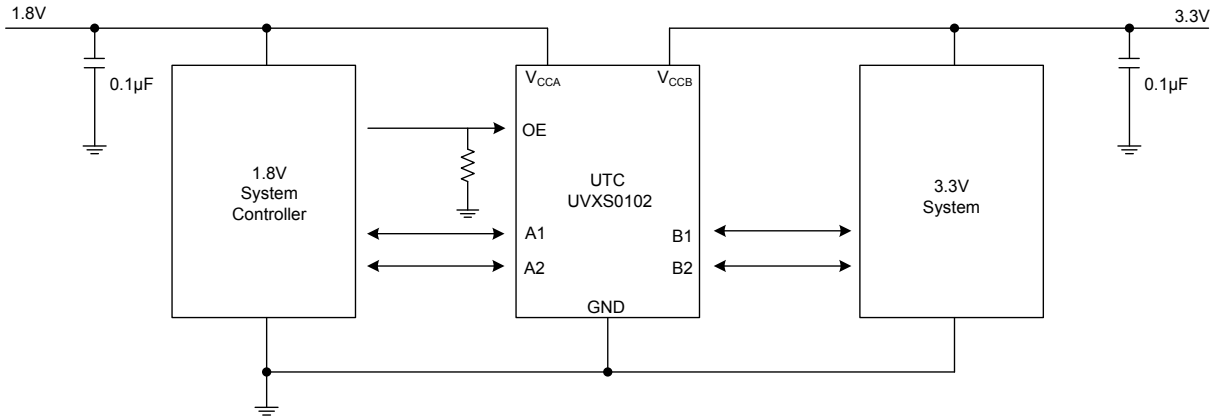
PARAMETER	SYMBOL	TEST CONDITIONS	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Rise Time (A port rise time)	t_{rA}	Push-pull driving	V_{CCB}=2.5V±0.2V	2.8		17.4	ns
			V_{CCB}=3.3V±0.3V	2.6		16.6	ns
			V_{CCB}=5V±0.5V	1.8		15.6	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	3		149	ns
			V_{CCB}=3.3V±0.3V	28		121	ns
			V_{CCB}=5V±0.5V	24		89	ns
Input Rise Time (B port fall time)	t_{rB}	Push-pull driving	V_{CCB}=2.5V±0.2V	3.2		18.3	ns
			V_{CCB}=3.3V±0.3V	2.9		17.2	ns
			V_{CCB}=5V±0.5V	2.4		16.1	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	35		151	ns
			V_{CCB}=3.3V±0.3V	24		112	ns
			V_{CCB}=5V±0.5V	12		64	ns
Input Rise Time (A port rise time)	t_{rA}	Push-pull driving	V_{CCB}=2.5V±0.2V	1.9		15.7	ns
			V_{CCB}=3.3V±0.3V	1.9		15.5	ns
			V_{CCB}=5V±0.5V	1.8		15.3	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	4.4		16.9	ns
			V_{CCB}=3.3V±0.3V	4.3		16.2	ns
			V_{CCB}=5V±0.5V	4.2		15.8	ns
Input Rise Time (B port fall time)	t_{rB}	Push-pull driving	$V_{CCB2.6}$=2.5V±0.2V	2.2		17.8	ns
			V_{CCB}=3.3V±0.3V	2.4		16.7	ns
			V_{CCB}=5V±0.5V	2.6		16.6	ns
		Open-drain driving	V_{CCB}=2.5V±0.2V	5.1		18.8	ns
			V_{CCB}=3.3V±0.3V	5.4		19.4	ns
			V_{CCB}=5V±0.5V	5.4		20.4	ns
Skew (Time), Output	$t_{SK(O)}$	Channel -to- channel skew	V_{CCB}=2.5V±0.2V			0.7	ns
			V_{CCB}=3.3V±0.3V			0.7	ns
			V_{CCB}=5V±0.5V			0.7	ns
Maximum Data Rate	f_{MAX}	Push-pull driving	V_{CCB}=2.5V±0.2V	20			Mbps
			V_{CCB}=3.3V±0.3V	22			Mbps
			V_{CCB}=5V±0.5V	24			Mbps
		Open-drain driving	V_{CCB}=2.5V±0.2V	2			Mbps
			V_{CCB}=3.3V±0.3V	2			Mbps
			V_{CCB}=5V±0.5V	2			Mbps

■ SWITCHING CHARACTERISTICS (Cont.)

V_{CCA}=3.3V±0.3V

PARAMETER	SYMBOL	TEST CONDITIONS	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Propagation Delay Time High to Low Output (A to B)	t_{PHL}	Push-pull driving	V_{CCB}=3.3V±0.3V			12.4	ns
			V_{CCB}=5V±0.5V			13.1	ns
		Open-drain driving	V_{CCB}=3.3V±0.3V	1.3		14.2	ns
			V_{CCB}=5V±0.5V	1.4		14.6	ns
Propagation Delay Time Low to High Output (A to B)	t_{PLH}	Push-pull driving	V_{CCB}=3.3V±0.3V			14.2	ns
			V_{CCB}=5V±0.5V			14.4	ns
		Open-drain driving	V_{CCB}=3.3V±0.3V	36		204	ns
			V_{CCB}=5V±0.5V	28		165	ns
Propagation Delay Time High to Low Output (B to A)	t_{PHL}	Push-pull driving	V_{CCB}=3.3V±0.3V			12.5	ns
			V_{CCB}=5V±0.5V			13.3	ns
		Open-drain driving	V_{CCB}=3.3V±0.3V	1		124	ns
			V_{CCB}=5V±0.5V	1		97	ns
Propagation Delay Time Low to High Output (B to A)	t_{PLH}	Push-pull driving	V_{CCB}=3.3V±0.3V			12.5	ns
			V_{CCB}=5V±0.5V	3		12.6	ns
		Open-drain driving	V_{CCB}=3.3V±0.3V	3		139	ns
			V_{CCB}=5V±0.5V			105	ns
Enable Time	t_{en}	OE to A or B	V_{CCB}=3.3V±0.3V			200	ns
			V_{CCB}=5V±0.5V			200	ns
Disable Time	t_{dis}	OE to A or B	V_{CCB}=3.3V±0.3V			90	ns
			V_{CCB}=5V±0.5V			90	ns
Input Rise Time (A port rise time)	t_{rA}	Push-pull driving	V_{CCB}=3.3V±0.3V	2.3		15.6	ns
			V_{CCB}=5V±0.5V	1.9		14.8	ns
		Open-drain driving	V_{CCB}=3.3V±0.3V	25		116	ns
			V_{CCB}=5V±0.5V	19		85	ns
Input Rise Time (B port fall time)	t_{rB}	Push-pull driving	V_{CCB}=3.3V±0.3V	2.5		16.4	ns
			V_{CCB}=5V±0.5V	2.1		17.4	ns
		Open-drain driving	V_{CCB}=3.3V±0.3V	26		116	ns
			V_{CCB}=5V±0.5V	14		72	ns
Input Rise Time (A port rise time)	t_{rA}	Push-pull driving	V_{CCB}=3.3V±0.3V	2		15.4	ns
			V_{CCB}=5V±0.5V	1.9		15	ns
		Open-drain driving	V_{CCB}=3.3V±0.3V	4.3		16.1	ns
			V_{CCB}=5V±0.5V	4.2		15.7	ns
Input Rise Time (B port fall time)	t_{rB}	Push-pull driving	V_{CCB}=3.3V±0.3V	2.3		17.4	ns
			V_{CCB}=5V±0.5V	2.4		17.6	ns
		Open-drain driving	V_{CCB}=3.3V±0.3V	5		17.6	ns
			V_{CCB}=5V±0.5V	4.8		18.3	ns
Skew (Time), Output	$t_{SK(O)}$	Channel -to- channel skew	V_{CCB}=3.3V±0.3V			0.7	ns
			V_{CCB}=5V±0.5V			0.7	ns
Maximum Data Rate	f_{MAX}	Push-pull driving	V_{CCB}=3.3V±0.3V	23			Mbps
			V_{CCB}=5V±0.5V	24			Mbps
		Open-drain driving	V_{CCB}=3.3V±0.3V	2			Mbps
			V_{CCB}=5V±0.5V	2			Mbps

■ TYPICAL APPLICATION CIRCUIT



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