

SENSYLINK Microelectronics

(CAG94104S)

4-bit Bidirectional Voltage Level Translator

***CAG94104S is a 4-bit bidirectional voltage level translator for open drain and push pull applications.
It is ideally used in industrial, personal electronics and telecom.***

4-bit Bidirectional Voltage Level Translator

1. Description

CAG94104S is a 4-bit bidirectional voltage level translator, which uses two separate configurable power supply rails.

Port A tracks VCCA. VCCA accepts supply voltage from 1.65V to 3.6V. VCCA must be not higher than VCCB. Port B tracks VCCB. VCCB accepts supply voltage from 2.3V to 5.5V. This allows for bidirectional translation between any of the 1.8 V, 2.5V, 3.3V, and 5V voltage nodes.

When the output enable (OE) input is low, all outputs are high-Z. OE is referenced to VCCA. To ensure the high-Z state during power up or power down, OE should be tied to GND through a pull-down resistor.

Available Package:

- TSSOP-14
- QFN3.5x3.5-14
- QFN2x1.7-12

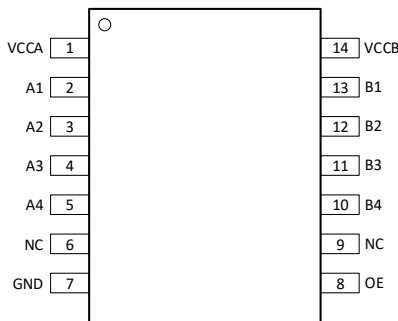
2. Features

- VCCA operation voltage: 1.65V to 3.6V
- VCCB operation voltage: 2.3V to 5.5V
- VCCA voltage must be not higher than VCCB
- Low power consumption
- Auto direction control
- Maximum Data Rates
 - 40 Mbps (Push pull)
 - 2 Mbps (Open drain)
- No power supply sequencing required: either VCCA or VCCB can be ramped first
- OE input circuit referenced to VCCA
- Temperature Range: -40°C to 85°C

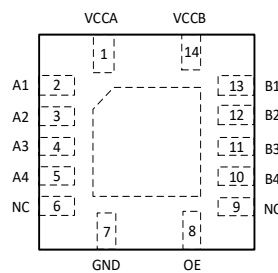
3. Applications

- Industrial
- Telecom
- Data Center
- PC

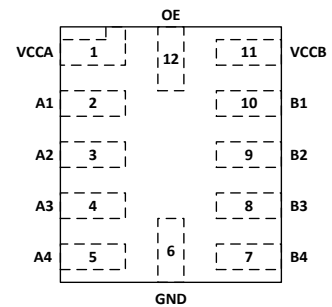
4. Pin Configurations



TSSOP-14
(Package Code MT)



QFN3.5x3.5-14
(Package Code QN)



QFN2x1.7-12
(Package Code QNA)

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5. Typical Application

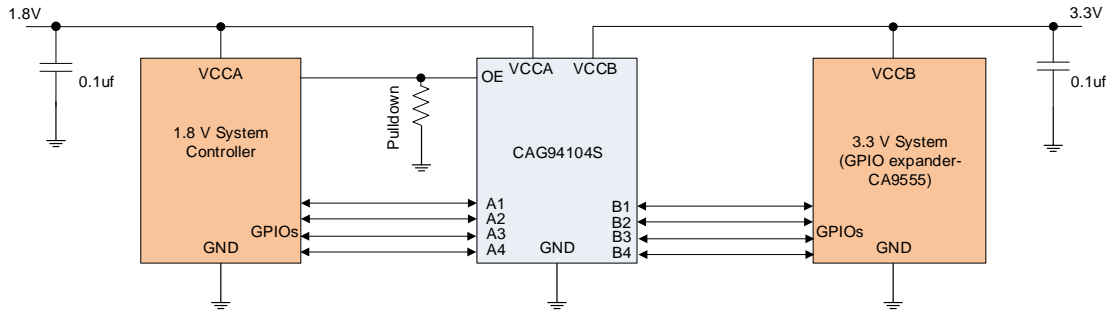


Figure 1 Typical Application of CAG94104S

6. Pin Description

Pin Name	Pin No.		Description
	TSSOP-14 QFN3.5x3.5-14	QFN2x1.7-12	
VCCA	1	1	A port supply voltage. Power
A1	2	2	Input/output A1. Referenced to VCCA. IO
A2	3	3	Input/output A2. Referenced to VCCA. IO
A3	4	4	Input/output A3. Referenced to VCCA. IO
A4	5	5	Input/output A4. Referenced to VCCA. IO
NC	6, 9		Not connected.
GND	7	6	Ground. GND
OE	8	12	3-state output-mode enable. Referenced to VCCA. Pull OE low to place all outputs in 3-state mode. Input
B4	10	7	Input/output B4. Referenced to VCCB. IO
B3	11	8	Input/output B3. Referenced to VCCB. IO
B2	12	9	Input/output B2. Referenced to VCCB. IO
B1	13	10	Input/output B1. Referenced to VCCB. IO
VCCB	14	11	B port supply voltage. Power
Thermal Pad ⁽¹⁾			Connect to GND. GND

Notes:

(1) Only QFN-14 package has this thermal pad

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7. Function Block

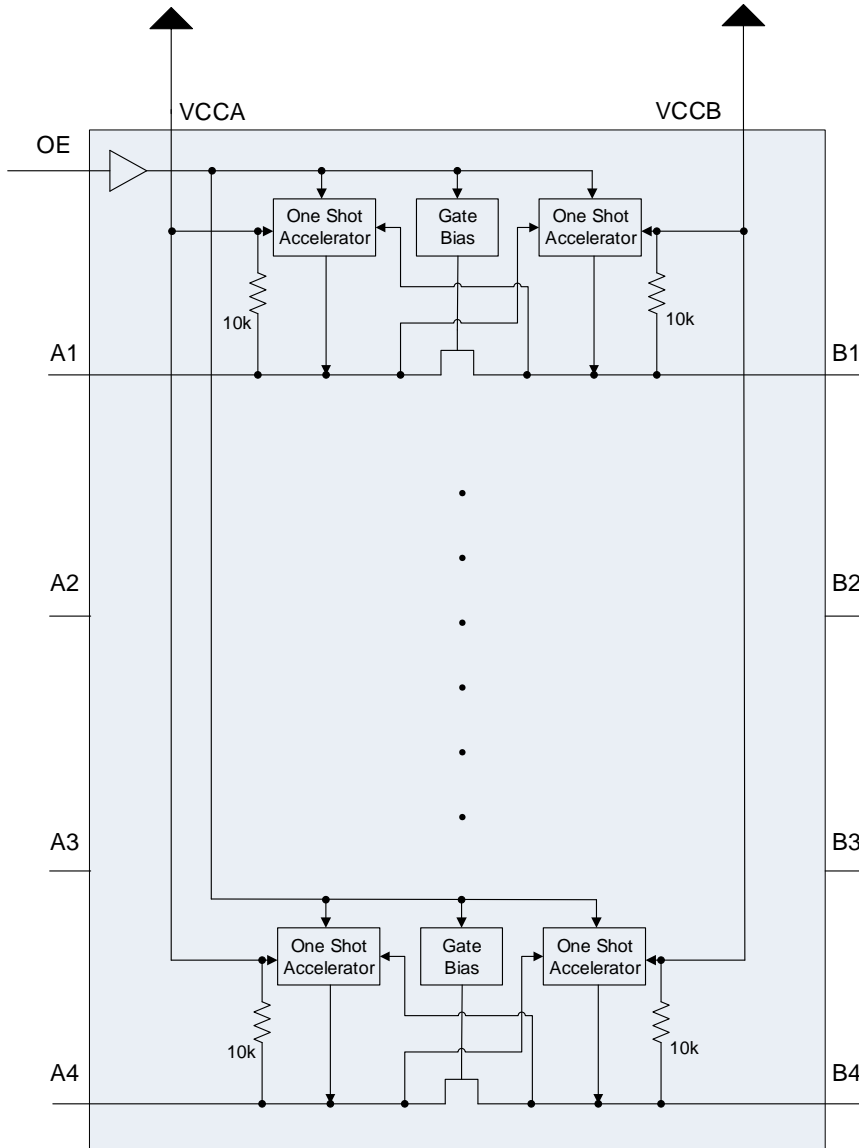
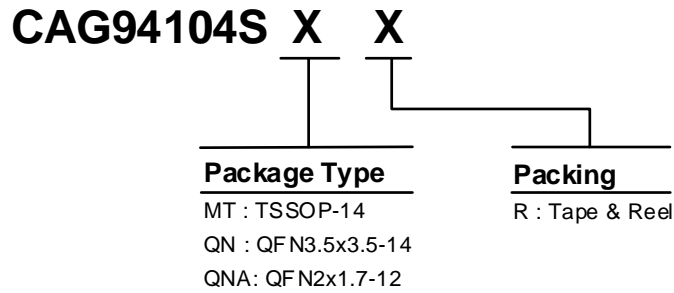


Figure 2 CAG94104S Function Block

4-bit Bidirectional Voltage Level Translator
8. Ordering Information


Order PN	Green ⁽¹⁾	Package	Marking ID ⁽²⁾	Packing	MPQ	Operation Temperature
CAG94104SMTR	Halogen free	TSSOP-14	94104S YWWAXX	Tape & Reel	4,000	-40°C to 85°C
CAG94104SQNR	Halogen free	QFN3.5x3.5-14	94104S YWWAXX	Tape & Reel	5,000	-40°C to 85°C
CAG94104SQNAR	Halogen free	QFN2x1.7-12	LJ YWXA	Tape & Reel	4,000	-40°C to 85°C

Note:

- (1) Sensylink can meet RoHS 2.0/REACH requirement. So most package types Sensylink offers only states halogen free, instead of lead free.
- (2) Marking ID includes 2 rows of characters. In general, the 1st row of characters are part number, and the 2nd row of characters are date code plus production information.

***SENSYLINK Microelectronics Inc.***

www.sensylink.com

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