

SENSYLINK Microelectronics

(CA9548)

Low Voltage 8-Channel I²C/SMBus
Switch With Reset

CA9548 is an 8-channel bidirectional translating switch with reset input controlled by I²C/SMBus. It supports one master can access one pair or any combinations of 8 pairs of slave devices via the I²C or SMBus interface.

It is ideally used in Servers and Telecom equipment.

Low Voltage 8-Channel I²C/SMBus Switch with Reset

Description

The chip is an 8-channel bidirectional translating switch with reset input controlled by I²C/SMBus. The upstream pair (SCL/SDA from the master) fans out to 8 downstream pairs (SCL0-7/SDA0-7 from the slaves). The CA9548 has 8-bit control register, which allows selecting any channel or any combinations of channel 0-7.

The reset input pin with active low allows the chip to recover from stuck situation from any downstream pair. It can reset the I²C bus state machine, and all channels will be deselected once forcing low voltage at RESET pin.

The chip allows using different bus voltage on each pair, like 1.8V, 2.5V or 3.3V, which can communicate with 5.0V parts by connecting external pull-up resistors to desired voltage.

Available Package: TSSOP-24, QFN4x4-24 package.

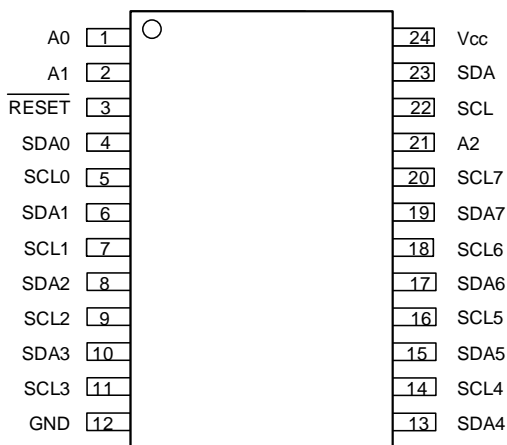
Features

- Operation Voltage Vcc: 1.65V to 5.5V
- Standby Current: 1.5uA (Max.)
- 1-of-8 bidirectional translating switches between 1.8V, 2.5V, 3.3V and 5.0V
- Compatible with SMBus and I²C interface
- I²C Speed up to 1MHz(Fast mode Plus)
- Up to 8 slave addresses
- RESET input with active low
- 5.5V tolerant inputs
- Channel0-7 or any combination selection by Control Register
- Supports hot insertion
- No Glitch during Power-up
- Noise Filter on SCL/SDA inputs
- Temperature Range: -40°C to 85°C

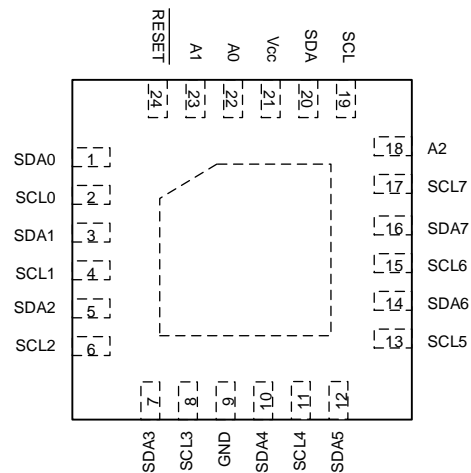
Applications

- Servers
- Telecom equipment

PIN Configurations (Top View)



TSSOP-24(Package code MT)



QFN4x4-24(Package code QN)

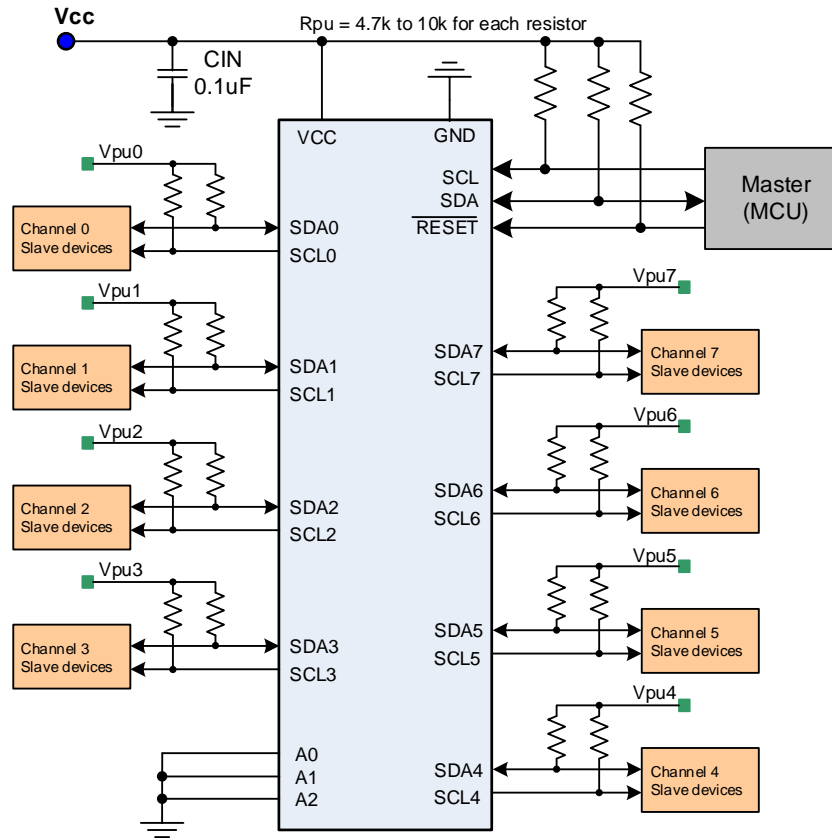
Typical Application


Figure 1 Typical application of CA9548

Low Voltage 8-Channel I²C/SMBus Switch with Reset

Pin Description

PIN Name	PIN No.		Description
	TSSOP-24	QFN4x4-24	
A0	1	22	Slave addresses setup pin input 0 , Connect directly to Vcc or ground
A1	2	23	Slave addresses setup pin input 1 , Connect directly to Vcc or ground
$\overline{\text{RESET}}$	3	24	Reset input with active low.
SDA0	4	1	Serial data of channel 0, connect to Vpu0 ⁽¹⁾ via a pull-up resistor.
SCL0	5	2	Serial clock of channel 0, connect to Vpu0 ⁽¹⁾ via a pull-up resistor.
SDA1	6	3	Serial data of channel 1, connect to Vpu1 ⁽¹⁾ via a pull-up resistor.
SCL1	7	4	Serial clock of channel 1, connect to Vpu1 ⁽¹⁾ via a pull-up resistor.
SDA2	8	5	Serial data of channel 2, connect to Vpu2 ⁽¹⁾ via a pull-up resistor.
SCL2	9	6	Serial clock of channel 2, connect to Vpu2 ⁽¹⁾ via a pull-up resistor.
SDA3	10	7	Serial data of channel 3, connect to Vpu3 ⁽¹⁾ via a pull-up resistor.
SCL3	11	8	Serial clock of channel 3, connect to Vpu3 ⁽¹⁾ via a pull-up resistor.
GND	12	9	Ground pin.
SDA4	13	10	Serial data of channel 4, connect to Vpu4 ⁽¹⁾ via a pull-up resistor.
SCL4	14	11	Serial clock of channel 4, connect to Vpu4 ⁽¹⁾ via a pull-up resistor.
SDA5	15	12	Serial data of channel 5, connect to Vpu5 ⁽¹⁾ via a pull-up resistor.
SCL5	16	13	Serial clock of channel 5, connect to Vpu5 ⁽¹⁾ via a pull-up resistor.
SDA6	17	14	Serial data of channel 6, connect to Vpu6 ⁽¹⁾ via a pull-up resistor.
SCL6	18	15	Serial clock of channel 6, connect to Vpu6 ⁽¹⁾ via a pull-up resistor.
SDA7	19	16	Serial data of channel 7, connect to Vpu7 ⁽¹⁾ via a pull-up resistor.
SCL7	20	17	Serial clock of channel 7, connect to Vpu7 ⁽¹⁾ via a pull-up resistor.
A2	13	18	Slave addresses setup pin input 2 , Connect directly to Vcc or ground
SCL	22	19	Digital interface clock input pin, need a pull-up resistor to Vcc.
SDA	23	20	Digital interface data input or output pin, need a pull-up resistor to Vcc.
Vcc	24	21	Power supply input pin, using 0.1uF low ESR ceramic capacitor(Cin) to ground

[1] Vpu0-Vpu7 are the pull-up reference voltage for the associated data line.

Low Voltage 8-Channel I²C/SMBus Switch with Reset

Function Block

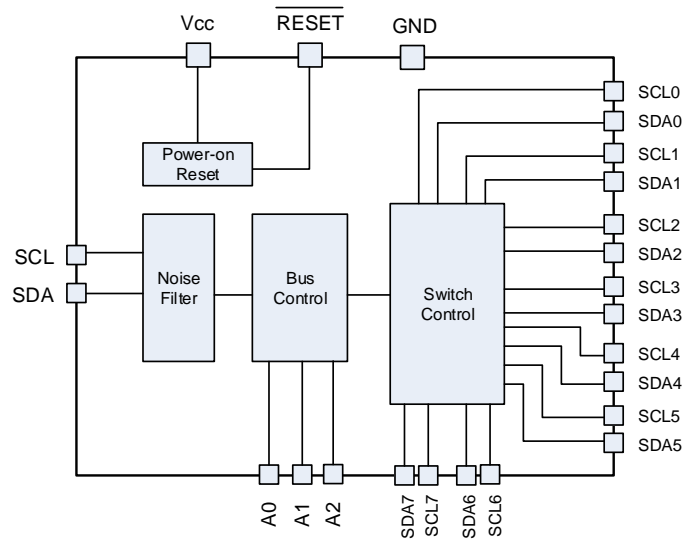
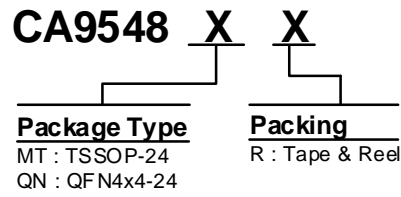


Figure 2 CA9548 function block

Low Voltage 8-Channel I²C/SMBus Switch with Reset

Ordering Information



Order PN	Green ¹	Package	Marking ID ²	Packing	MPQ	Operation Temperature
CA9548MTR	Halogen free	TSSOP-24	9548 YWWAXX	Tape & Reel	4,000	-40°C ~ +85°C
CA9548QNR	Halogen free	QFN4x4-24	9548 YWWAXX	Tape & Reel	5,000	-40°C ~ +85°C

Notes

1. Based on ROHS Y2012 spec, Halogen free covers lead free. 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.