

NXP octal I²C bus switch PCA9848

Multichannel I²C selector switch for low-voltage level translation

Bus switches expand the I²C bus, solve system-level problems when reusing slave addresses, isolate bus sections for configuration, and aid in troubleshooting. This switch, with its ultralow-voltage operation and Fm+ speeds, connects directly to next-generation CPUs, SoCs, and ASICs, provides flexible voltage-level translation, and supports nearly any combination of peripherals.

PCA9848BS & PCA9848PW

Feature	Benefit
Select up to eight bus sections	Reuse slave address(es)
Disconnect I ² C downstream branches	Isolate bus selections to aid troubleshooting and testing
Dynamically change I ² C bus paths	Reconfigure systems in the field
Supports host-side interface voltages from 0.8 to 3.3 V	Connect directly to the latest CPU, SoC, or ASIC
Expanded device address (using HIGH, LOW, SCL, or SDA)	Use only two device pins to support up to sixteen different I ² C addresses while avoiding conflicts with downstream peripherals
High-speed I ² C signal and control path	Operates at Fm+ clock speed (as well as STD and Fast-mode)
HVQFN24 (4 x 4 x 0.89 mm), TSSOP24 (4.4 x 4.4 x 1.1 mm)	Small footprint
Two power supplies, plus support for low-voltage level translation	Mix and match almost any combination of peripherals



TARGET FUNCTION

I²C bus systems

END APPLICATION

Computing, servers, storage, industrial control

DEMO BOARD

Not available

DOCUMENTATION INFORMATION

Item	Description
PCA9848	Product datasheet

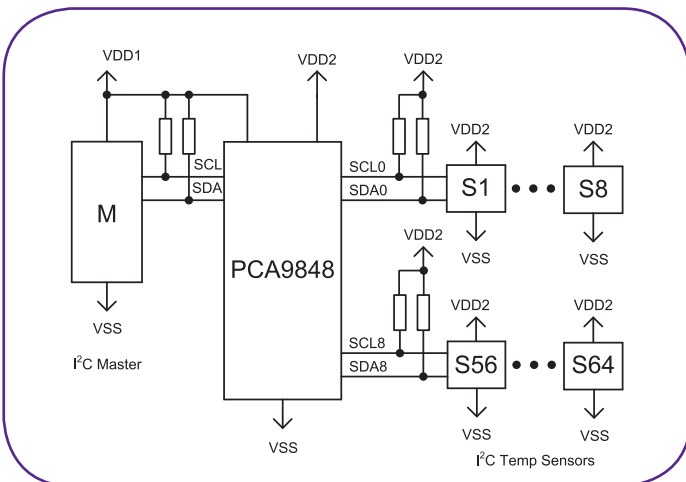
ORDERING INFORMATION

Type number	Orderable part number	Package method	Packing method	Minimum order quantity	Temperature
PCA9848BS	PCA9848BSJ	HVQFN24	Reel 13" Q1/T1 Standard mark SMD	6000	T _{amb} = -40 to +85 °C
PCA9848PW	PCA9848PWJ	TSSOP24	Reel 13" Q1/T1 Standard mark SMD	2500	T _{amb} = -40 to +85 °C

ADDITIONAL INFORMATION

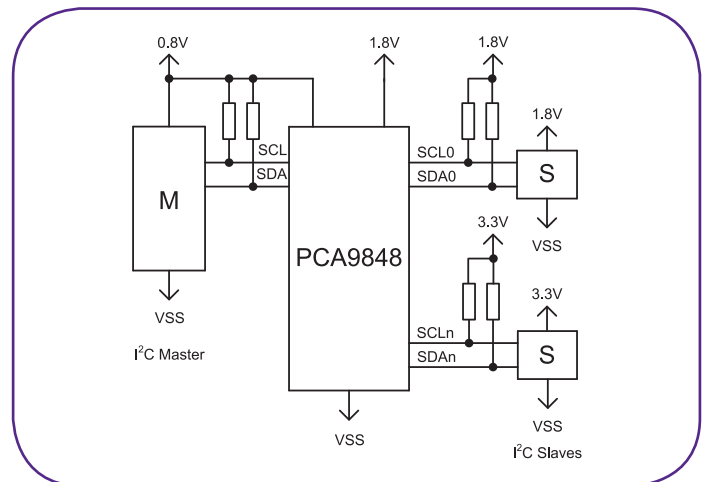
For more information, visit www.nxp.com

For questions, e-mail i2c.support@nxp.com



Slaves with limited address range

Each of the 64 temp sensors has a limit of only eight 3-bit addresses. The PCA9848 groups the sensors into eight separate bus segments, enabling unique addresses for each sensor.



Multiple voltage domains

The bus master and some of the slave devices use a different supply voltage. The PCA9848 selects each eight-bus segment and converts the bus signals to match the signal and supply-voltage requirements of each slave.



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