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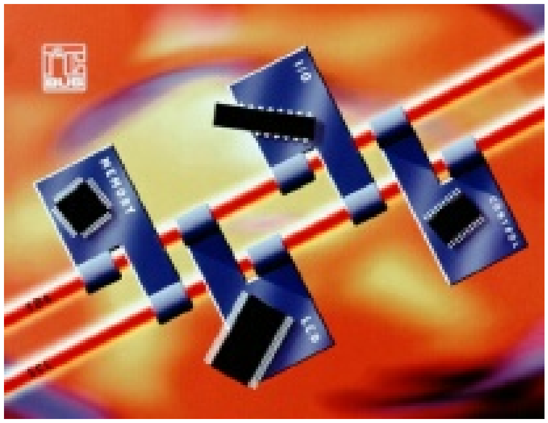

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- 1997-12-02: New bus enhancement from Philips Semiconductors reduces costs in mixed voltage system design

I^{2}C-bus: the worldwide standard for IC communication

Philips was the inventor of the Inter-IC or I^{2}C-bus nearly 20 years ago, and it is now firmly established as the worldwide de-facto solution for embedded applications. It is used extensively in a variety of microcontroller-based professional, consumer and telecommunications applications as a control, diagnostic and power management bus. As a two-wire serial bus, its inherently simple operation was crucial to its emergence as the worldwide de-facto standard. This simplicity has been retained in the enhancements to the original specification:

Level-shifting operation solution for mixed voltage environments; Fast mode offering speeds up to 400 kbits/s; and High-speed mode

Philips offers more than 150 products with an I^{2}C interface and it has been adopted by about 50 licensees, with over 1000 I^{2}C compatible devices in total.

For more background information, check out the Facts & figures page.

Apply for a license today!

Purchase of Philips I^{2}C components conveys a license under the Philips I^{2}C patent to use the components of the I^{2}C system, provided the system conforms to the I^{2}C specifications defined by Philips. For I^{2}C licensing information please contact the Philips Corporate Intellectual Property department.

1998-03-23 , *S/IC-2015/24*
Product News From Philips Semiconductors

Philips Semiconductors develops I^2C-bus peripheral chip for software configuration of Pentium ® II - processor type motherboards

The price of upgradeability on PC motherboards has been the need to open up the computer case and alter dip switch or jumper link settings. A new I^2C-bus peripheral chip from Philips Semiconductors makes this risky, time-consuming process a thing of the past

Designed to support Intel's Pentium II processor chip-sets, the PCA8550 multiplexer IC from Philips Semiconductors replaces mechanical dip switches and jumper links by software-controlled configuration settings. Using this innovative single-chip solution to 'jumperless' board design, manufacturers of PC motherboards and add-in cards can now offer users a much greater level of plug-and-play compatibility - eliminating any need for users to open up their PCs in order to reconfigure the hardware.

The PDF PCA8550 is a 4-bit 1-of-2 multiplexer that selects between data applied to four of its input pins and the data stored in an on-chip non-volatile data register. Read/write access to the non-volatile register via the I^2C-bus (System Management bus*) allows boards to be intelligently configured to suit different hardware and software requirements, either at power-up or 'on-the-fly' as programs run. Hardwired logic levels applied to the four multiplexer input pins provide the board with a set of 'fail-safe' default settings. The PCA8550's non-volatile register also contains a fifth 'latched' control bit that is available on a dedicated output pin and is guaranteed to be glitch-free during register read/write operations. The PCA8550 also features an override input that forces all the register outputs to zero, and a write-protect pin to enable/disable modification of the non-volatile register contents.

In addition to configuring motherboards for settings such as clock speed, clock multiplier and memory type, the PCA8550 can be used to provide intelligent reconfiguring of add-in cards. Manufacturers of networking, video and sound cards, which frequently require the changing of board settings to suit different hardware and software environments, will find the PCA8550 particularly useful in differentiating their cards from the competition.

Use of the PCA8550 not only benefits PC end-users. It also means that motherboard and add-in card manufacturers will be able to fully automate the testing of their boards, without the need for manual intervention or electro-mechanical devices to change jumper/dip-switch settings.

"Philips Semiconductors is proud to be the first company to provide a single-chip solution to jumperless board configuration," said Catherine de Villaneuve, general marketing manager for Philips Semiconductors' Logic Products Business Line. "As a key supplier to the PC marketplace, Philips is committed to advancing the scope of PC products and our close relationships with circuit board designers provide many opportunities to share product concepts and specifications. This co-mingling of expertise will produce many unique, high calibre products both in the near and longer-term future," she added.

Commenting on this new product introduction, Dataquest senior industry analyst Geoff Ballew said, "The PCA8550 represents a new level of integration in motherboard and peripheral board control. Just as Intel is doing, other manufacturers and value added resellers of desktop and notebook PCs will want to incorporate Philips' software mux. In addition to addressing an outstanding hardware configuration issue with a simple software solution, the PCA8550 suggests more flexibility for remote systems management."

The PCA8550, packaged in an ultra-small 16-lead TSSOP (Thin Shrink Small Outline Package) is available now in high volume. It costs in the region of US$ 0.80 in quantities of 10k or more pieces.

Philips Semiconductors, a division of Philips Electronics NV, headquartered in Eindhoven, The Netherlands, is the ninth largest semiconductor supplier in the world and the fourth largest supplier of discretes in the world. Philips Semiconductors' innovations in digital audio, video, and mobile technology position the company as a leader in the consumer, multimedia and wireless communications markets. Sales offices are located in all major markets around the world and are supported by systems labs.

*Philips Semiconductors, the largest European semiconductor manufacturer, invented the 2-wire I²C-bus in 1979 as a low-cost, easy to implement way of communicating between integrated circuits. Already widely adopted, it has come to be known in the PC industry as the System Management (SM) bus.

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1997-12-02 , *ESC-9727*
Technology News From Philips Semiconductors

New bus enhancement from Philips Semiconductors reduces costs in mixed voltage system design

Philips Semiconductors announced today a simple enhancement to its I^2C-bus, the de-facto standard for communication between ICs. It provides a straightforward solution to the problem of allowing ICs with different supply voltages to communicate and be controlled, for almost no additional design-in effort or cost.

The two-wire I^2C-bus is used in a wide range of microcontroller-based consumer and telecommunications products. Having been adopted by about 50 licensees, and with over 1000 different IC devices available today which include an I^2C-bus interface, simplicity was crucial to its emergence as the worldwide de-facto serial bus standard. This latest enhancement, involving the addition of just two low-cost transistors, retains its essential simplicity while answering all communication needs in a complete multi-supply voltage system design. Manufacturers can thus easily integrate new 3.3-volt ICs into existing designs, to raise product performance or reduce power consumption, for almost no extra cost.

Although technically simple, this enhancement directly addresses an issue of growing importance in the electronics world: mixing ICs with different supply voltages in one design. This has come about because of the trend towards lower power consumption and the use of very fine line-widths on the latest VLSI and ULSI devices, which necessitates a reduction in supply voltage for new ICs. These have to operate with the vast array of existing 5 V designs and the level shifting solution allows simple integration, without having to re-design the complete system to operate at 3.3 V and ensuring 100% compatibility between all I^2C ICs, regardless of supply voltage.

"This new capability of shifting between voltage levels for the I^2C-bus gives designers and manufacturers a simple, effective solution for mixed voltage designs in terms of performance and cost, while maintaining the versatility and simplicity of the I^2C-bus", said Theo Claasen, Philips Semiconductors' chief technology officer. "At the same time, the I^2C-bus specification has been extended to cover devices operating below 2.7 V, ensuring that the I^2C-bus will remain the serial bus of choice for future systems into the next century."

Philips Semiconductors, a division of Philips Electronics NV, headquartered in Eindhoven, The Netherlands, is the ninth largest semiconductor supplier in the world. Philips Semiconductors' innovations in digital audio, video, and mobile technology position the company as a leader in the consumer, multimedia and wireless communications markets. Sales offices are located in all major markets around the world and are supported by systems labs.

See also Technology Backgrounder

1997-12-09, *ESC-9727 Backgrounder*
Technical Backgrounder From Philips Semiconductors

Level-shifting I²C specification simplifies mixed voltage designs

There is a strong drive worldwide to reduce supply voltages below 5 V for new IC devices. Already, 3.3 V is used widely and even lower voltages will be employed in the future. However, 5 V devices are still very common today and will continue to be used for some time yet, because of the sheer number and variety of 5 V devices available, as well as the increasing need to incorporate 'higher voltage' analog and power I/O into systems. This need to mix supply voltages can complicate the design of new systems significantly.

When mixing devices with different supply voltages within one design, a standard solution is to use level-shifters. However, in the case of the I²C-bus standard level-shifters cannot be used, because signals are bi-directional and there is no 'direction' indication signal on the bus. But in designing a level-shifting solution for the I²C-bus, Philips wanted to preserve the elegance and simplicity that made the I²C-bus the de-facto standard it is today.

The bi-directional level-shifter consists of an N-channel enhancement MOSFET which interconnects two sections of an I²C-bus system, each section with a different supply voltage and different logic levels. Referring to figure 1, three states have to be considered:

1. No device is pulling down the bus line; the bus line of the 'lower voltage' section is pulled up by its pull-up resistors to 3.3 V and the bus line of the 'higher voltage' section is pulled up to 5 V. The MOSFET is not conducting.
2. A 3.3 V device pulls down the bus line to a LOW level; the MOSFET becomes conducting and the bus line of the 'higher voltage' section is also pulled down.
3. A 5 V device pulls down the bus line to a LOW level; in first instance the diode and then the MOSFET become conducting and the bus line of the 'lower voltage' section is also pulled down.

In each case, a simple analysis of the circuit shows that the logic levels are transferred in both directions of the bus system, independent of the driving section.

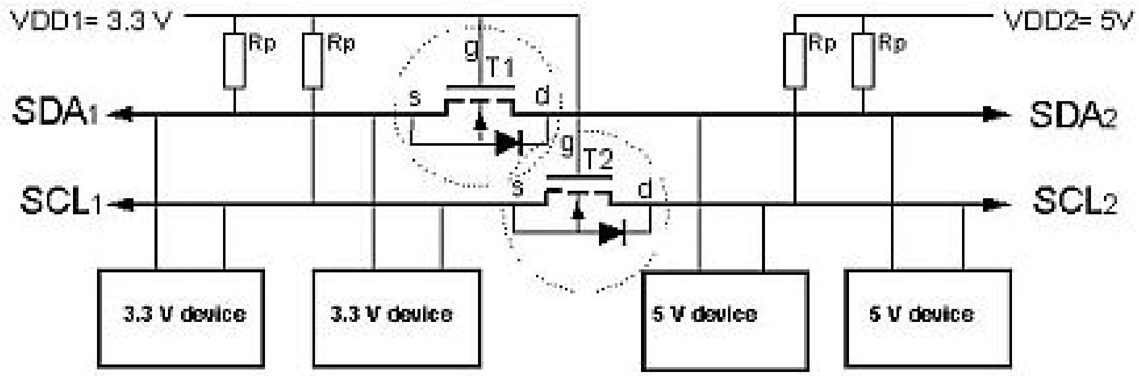


Figure 1. Bi-directional level-shifter circuit connects two different voltage sections of an I2C-bus system.

Depending on the MOSFET parameters, the level-shifter can cover a wide range of supply voltages - from as low as 2 V and higher than 5 V if desired. The values of pull-up resistors (and possible series resistors between I/O pins and bus lines) depend on worst case values of the supply voltages and logic levels, the length and load of the bus lines, and rise and fall time requirements. These have to be calculated for each bus system separately. Their values must be chosen in such a way that there is sufficient noise margin at both HIGH and LOW levels.

This approach not only provides a level-shifting function for the I2C-bus for all voltage and logic levels, it also provides two additional functions. First, the 'lower voltage' section can be powered-down, effectively removing it from the bus system and allowing the powered 'higher voltage' section to operate normally. Second, it provides a high level of protection to the 'lower voltage' section against voltage spikes produced at the 'higher voltage' section, as long as the MOSFET itself can withstand these spikes.

By simply adding another MOSFET on each bus line (see figure 2), an extended power- down structure is achieved. Additional sections with a higher, lower or similar supply voltage can be added by simply connecting them via additional MOSFETs to the common drain terminals. Each individual section can be isolated from the rest of the bus system when its supply voltage is switched off, while level-shifting between all other sections remains operational. VDD3 and the dotted pull-up resistors, which establish a defined level at the common drain connections, are optional.

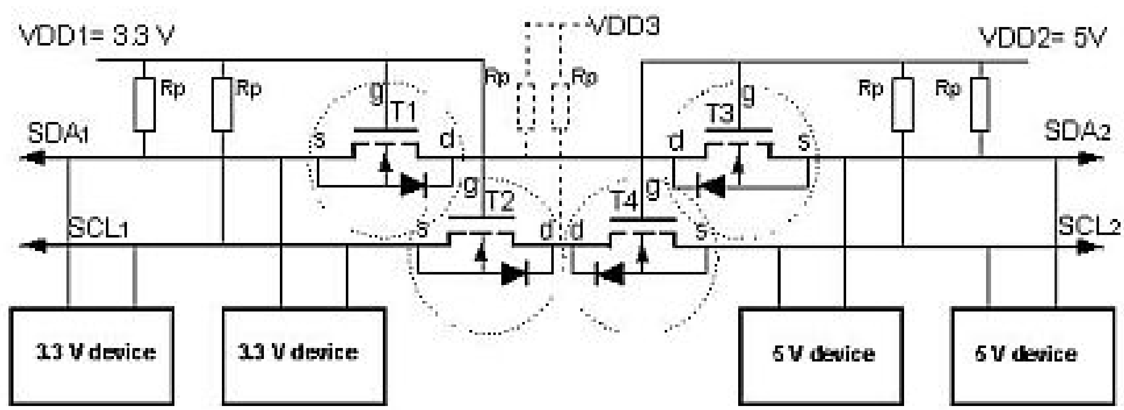


Figure 2. I2C-bus system in which the 'higher voltage' section is isolated at power-off.

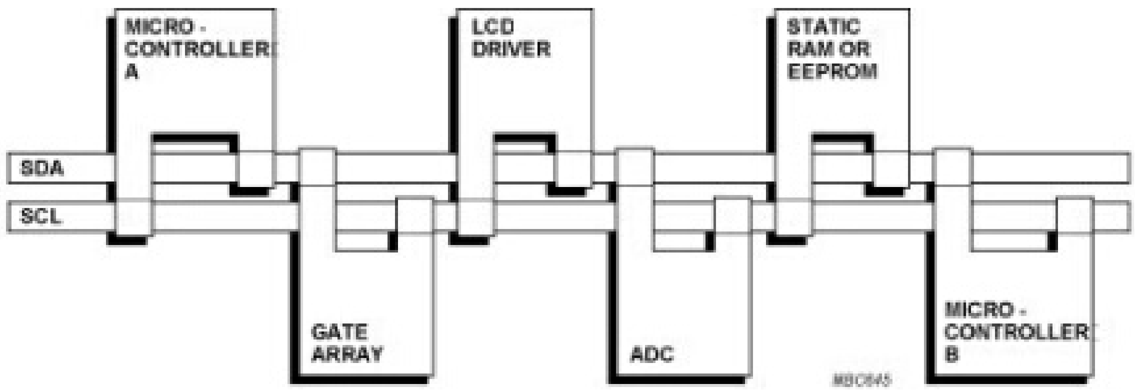
In addition, the present I2C-bus specification has been extended to cover lower supply voltages and the I2C-bus can now be used for all new devices operating below 2.7 V. Using the low-cost level-shifting solution, these new devices can be kept 100% compatible with devices working at different supply voltages. In fact, in systems relying only on the I2C-bus for inter-IC communication, only two transistors are needed for each separate supply to keep wiring to the absolute minimum (two wires per device). This further enhances the advantage of the I2C-bus over solutions with more signals or random direct connections, because not only is the wiring itself less complex but also substantially fewer level-shifting components are needed. This ensures that I2C-bus applications will continue to expand into the next century.

Philips INFO BSN10, INFO BSN20 and INFO BSS83 MOSFETs are all suitable for this level-shifting function.

PDF I2C-bus specification

About the I²C-bus

What is the I²C-bus?



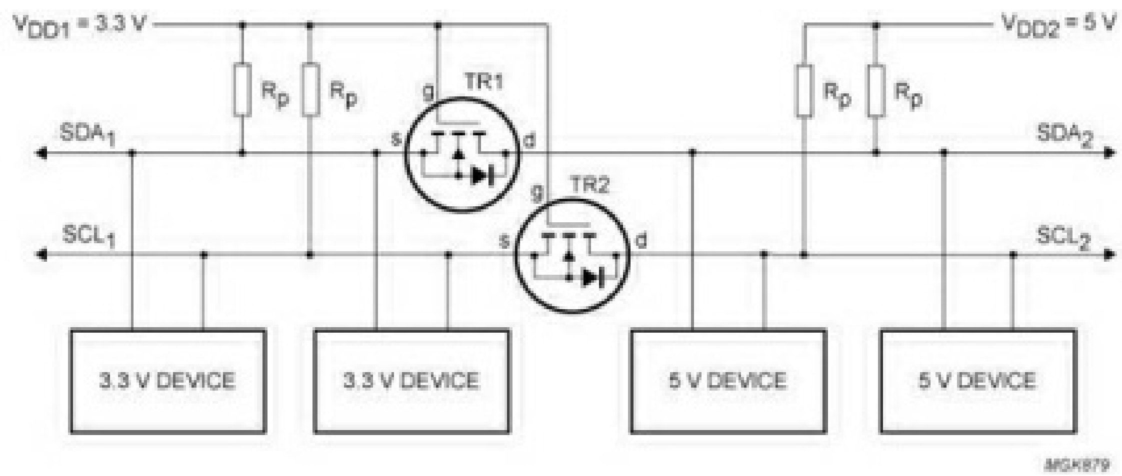
In modern electronic systems there are a number of peripheral ICs that have to communicate with each other and the outside world. To maximize hardware efficiency and simplify circuit design, Philips developed a simple bi-directional 2-wire, serial data (SDA) and serial clock (SCL) bus for inter-IC control. This I²C-bus supports any IC fabrication process and, with the extremely broad range of I²C-compatible chips from Philips and other suppliers, it has become the worldwide industry standard proprietary control bus.

Each device is recognized by a unique address and can operate as either a receiver-only device (e.g. an LCD driver or a transmitter with the capability to both receive and send information (such as memory). Transmitters and/or receivers can operate in either master or slave mode, depending on whether the chip has to initiate a data transfer or is only addressed. I²C is a multi-master bus, i.e. it can be controlled by more than one IC connected to it.

The basic I²C-bus, with a data transfer rate up to 100 kbits/s and 7-bit addressing, was originally introduced nearly 20 years ago. But, as data transfer rates and application functionality rapidly increased, the I²C-bus specification was enhanced to include Fast-mode and 10-bit addressing, meeting the demand for higher speeds and more address space.

The I²C-bus continues to keep pace with advancing technology while retaining its backwards compatibility. Mixed designs incorporating new low voltage devices are supported via the I²C-bus' level shifting capability. And, most recently, High-speed mode has been added; with speeds of up to 3.4 Mbits/s it ensures the capacity of the I2C-bus to support existing and future high speed serial transfer rates for applications such as EEPROM and Flash memory.

Level-shifting I2C

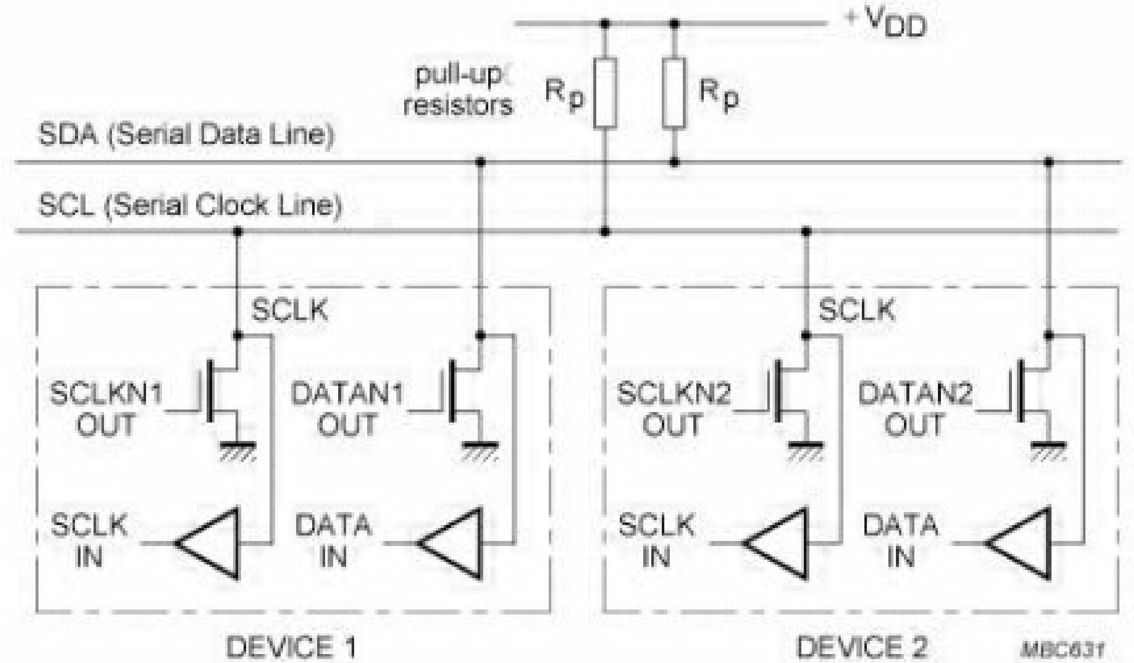


Philips Semiconductors has developed a simple 'level-shifting' enhancement to the standard I2C-bus, offering fully bi-directional data transfer between I2C-devices operating from different supply voltages. It provides an elegant solution for allowing ICs with different supply voltages to communicate and be controlled, for almost no additional design-in effort or cost.

The simple addition of two low-cost transistors, placed between the different voltage level sections of the I2C-bus, separates and transfers the logic voltage levels of the bus lines on either side of the level-shifter. In fact, with the addition of these transistors, the I2C-bus answers all level-shifting needs for a complete multi-supply voltage system design. This set-up also allows the level-shifter to be used to isolate a section of powered-down devices from the bus, allowing powered I2C devices to operate normally.

At the same time, the I2C-bus specification has been extended for devices operating below 2.7 V. This extension, together with compatibility of lower and higher voltage devices provided by the bi-directional level-shifter, ensures the I2C-bus will remain the serial bus of choice for future systems into the next century.

Fast-mode I2C



Until 1992, the I²C-bus was mainly used for the transfer of control and status information and its originally defined bit rate of 100 kbits/s remained sufficient for this purpose. As it became a de-facto standard, it began to be used for text and data transfer and to meet these needs, in 1992 the specification was upgraded with a Fast-mode, supporting bit rates up to 400 kbits/s. Compatible with Standard-mode devices, all Philips Semiconductors devices developed since 1992 have included a Fast-mode I²C-bus interface. Support for even higher data transfer speeds is now available through High-speed mode (which also offers the level-shifting enhancement).

High-speed mode I²C-Bus

Developments in high-speed serial RAMs and mixed technology telecom systems have created a demand for buses capable of operating at high speeds and with a variety of supply voltages. I²C's High-speed mode meets these needs without sacrificing its compatibility with existing Standard and Fast-mode devices or its low-cost simplicity - no special logic levels, timing or drive capability are needed.

A purpose-designed bridge in a High-speed mode master allows for bi-directional communications between Fast- and Standard-mode devices within a single I²C-bus system and, if required, this master can also perform bi-directional level shifting, supporting a variety of different voltage devices.

As a true multi-master bus, I²C's High-speed mode requires no additional wires or pins for slave devices. Also, there are two additional pins on a High-speed master which, if they are not used (because there is no system bridge or only Fast/Standard-mode are in use), then other I/O functions can be assigned to these pins, making I²C an extremely flexible solution.

10-bit I²C addressing

10-bit addressing allows the use of up to 1024 additional addresses to prevent problems with the allocation of slave addresses as the number of I²C devices rapidly expands. It does not change the format for addresses defined in the I²C-bus specification, using addresses reserved in the existing specification.

10-bit addressing does not affect the existing 7-bit addressing, allowing devices with 7-bit or 10-bit addresses to be connected to the same I²C-bus, and both types of devices can be used in Standard-, Fast- or High-speed mode systems.

I^{2}C-bus specification

The latest update to the I^{2}C-bus specification, version 2.0, includes full details of the standard I^{2}C-bus interface plus specifications for all the enhancements including Fast-mode, High-speed mode, 10-bit addressing and details on the bi-directional level shifter.

PDF I2C-bus specification

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          - INFO SAA7705H: Car radio Digital Signal Processor (DSP)
          - INFO SAA8112HL: Digital camera signal processor and microcontroller
          - INFO TDA4671: Picture Signal Improvement (PSI) circuit
          - INFO TDA4687: Video processor with automatic cut-off control
          - INFO TDA4841PS: I²C-bus autosync deflection controller for PC monitors
          - INFO TDA8044; TDA8044A: Satellite demodulator and decoder
          - INFO TDA8083: Satellite Demodulator and Decoder (SDD3)
          - INFO TDA8415: TV and VTR stereo/dual sound processor with integrated filters and I²C-bus control
          - INFO TDA8416: TV and VTR stereo/dual sound processor with integrated filters and I²C-bus control
          - INFO TDA8417: TV and VTR stereo/dual sound processor with integrated filters and I²C-bus control
          - INFO TDA8425: Hi-fi stereo audio processor; ²C-bus
          - INFO TDA8433: Deflection processor for computer controlled TV receivers
          - INFO TDA8443A: I²C-bus controlled YUV/RGB switch
          - INFO TDA8540: 4 x 4 video switch matrix
          - INFO TDA8960: ATSC 8-VSB demodulator and decoder
          - INFO TDA9860: Universal HiFi audio processor for TV
          - INFO TEA6100: FM/IF system and microcomputer-based tuning interface
          - INFO TEA6320: Sound fader control circuit
          - INFO TSA5059: 2.7 GHz I2C-bus controlled low phase noise frequency synthesizer
          - INFO TSA5511: 1.3 GHz Bidirectional I²C-bus controlled synthesizer
          - INFO TSA5512: 1.3 GHz Bidirectional I²C-bus controlled synthesizer

INFO TSA5522: 1.4 GHz I²C-bus controlled synthesizer

Catalog tree

- IC's
  - General-purpose / Linear
    - **IC12** I2C Peripherals
      - Clock/calendar circuits (4)
        - INFO PCF8563: Real-time clock/calendar
        - INFO PCF8573: Clock/calendar with Power Fail Detector
        - INFO PCF8583: Clock/calendar with 240 x 8-bit RAM
        - INFO PCF8593: Low power clock/calendar

Catalog tree
- IC's
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    - **IC12** I2C Peripherals
      - DTMF/tone generators (1)
        - INFO PCD3311C; PCD3312C: DTMF/modem/musical-tone generators

Catalog tree
- IC's
  - General-purpose / Linear
    - **IC12** I2C Peripherals
      - Data converters (3)
        - INFO PCF8591: 8-bit A/D and D/A converter
        - INFO TDA8444; TDA8444T; TDA8444AT: Octuple 6-bit DACs with I²C-bus
        - INFO TDA8752: Triple high speed Analog-to-Digital Converter (ADC)

Catalog tree
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IC12 I2C Peripherals
Input/output ports (8)

- 82B715: I²C bus extender
- PCA8550: 4-bit multiplexed/1-bit latched 5-bit I²C-bus EEPROM
- PCA9556: Octal SMBus Registered Interface
- PCF8574: Remote 8-bit I/O expander for I²C-bus
- PCF8575: Remote 16-bit I/O expander for I²C-bus
- PCF8584: I2C-bus controller
- SAA1064: 4-digit LED-driver with I²C-bus interface
- TDA8540: 4 x 4 video switch matrix

Catalog tree
- IC's
  - General-purpose / Linear
    - **IC12** I2C Peripherals
      - LCD drivers (22)
        - INFO OM4068: LCD driver for low multiplex rates
        - INFO OM4085: Universal LCD driver for low multiplex rates
        - INFO PCD8544: 48 x 84 pixels matrix LCD controller/driver
        - INFO PCF2103 family: LCD controllers/drivers
        - INFO PCF2104x: LCD controller/driver
        - INFO PCF2105: LCD controller/driver
        - INFO PCF2113x: LCD controller/driver
        - INFO PCF2116 family: LCD controller/drivers
        - INFO PCF2119x: LCD controllers/drivers
        - INFO PCF21xxC family: LCD drivers
        - INFO PCF8531: 34 x 128 pixel matrix driver
        - INFO PCF8533: Universal LCD driver for low multiplex rates
        - INFO PCF8535: 65 x 133 pixel matrix driver
        - INFO PCF8548: 65 x 102 pixels matrix LCD driver
        - INFO PCF8549: 65 x 102 pixels matrix LCD driver
        - INFO PCF8558: Universal LCD driver for small graphic panels
        - INFO PCF8566: Universal LCD driver for low multiplex rates
        - INFO PCF8576: Universal LCD driver for low multiplex rates
        - INFO PCF8576C: Universal LCD driver for low multiplex rates
        - INFO PCF8577C: LCD direct/duplex driver with I²C-bus interface
        - INFO PCF8578: LCD row/column driver for dot matrix graphic displays
        - INFO PCF8579: LCD column driver for dot matrix graphic displays

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    - **IC12** I2C Peripherals
      - Memories (6)
        - INFO PCA8581;PCA8581C: 128 x 8-bit EEPROM with I2C-bus interface
        - INFO PCA9559: 5-bit multiplexed/1-bit latched 6-bit I2C EEPROM
        - INFO PCF85116-3: 2048 x 8-bit CMOS EEPROM with I2C-bus interface
        - INFO PCF8570: 256 x 8-bit static low-voltage RAM with I²C-bus interface
        - INFO PCF8583: Clock/calendar with 240 x 8-bit RAM
        - INFO PCF85xxC-2 family: 256 to 1024 x 8-bit CMOS EEPROMs with I2C-bus interface

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Miscellaneous (2)

INFO PCD3316: Caller-ID on Call Waiting (CIDCW) receiver

INFO TDA8003TS: I^{2}C-bus SIM card interface

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    - **IC12** I2C Peripherals
      - PC/Motherboard (7)
        - INFO NE1617: Temperature monitor for microprocessor systems
        - INFO PCA8550: 4-bit multiplexed/1-bit latched 5-bit I²C-bus EEPROM
        - INFO PCA9542: 2-channel I2C multiplexer and interrupt controller
        - INFO PCA9544: 4-channel I2C multiplexer and interrupt controller
        - INFO PCA9556: Octal SMBus Registered Interface
        - INFO PCK2001: 14.318-150 MHz I²C 1:18 Clock Buffer
        - INFO PCK2001M: 14.318-150 MHz I²C 1:10 Clock Buffer

Catalog tree

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IC12a I2C Peripheral selection guide

Application notes

PDF AN97085: Digital Video Decoder/Encoder Module System: 7128MOD2

PDF AN97086: Digital Video Decoder/Encoder Module System: 7120/21MOD2

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- MORE BSN10; BSN10A
- PDF BSN10; BSN10A

PRODUCT INFORMATION

BSN10; BSN10A; N-channel enhancement mode vertical D-MOS transistors

- Description
- Features
- Datasheet
- Products, packages, availability and ordering
- Find similar products

Check device status and availability before design in!

Please check with your nearest sales or distributor office status and availability of devices listed on this page.

Description

N-channel enhancement mode vertical D-MOS transistor in a TO-92 envelope, intended for use in general purpose fast switching applications.

Features

- Direct interface to C-MOS, TTL, etc.
- High-speed switching
- No secondary breakdown.

Datasheet

Type nr.	Title	Publication release date	Datasheet status	Page count	File size (kB)	Datasheet
BSN10; BSN10A	N-channel enhancement mode vertical D-MOS transistors	01-Apr-95	Product Specification	8	100	PDF Download

Products, packages, availability and ordering

Partnumber	Order code (12nc)	marking/packing	package	device status	buy online
BSN10	934012480116	Standard marking * reel pack, radial	SOT54	WIT	-
BSN10	934012480126	Standard marking * ammopack, radial	SOT54	WIT	-
BSN10A	934012490112	Standard marking * bulk pack	SOT54	DOD	-
BSN10A	934012490116	Standard marking * reel pack, radial	SOT54	DOD	-
BSN10A	934012490126	Standard marking * ammopack, radial	SOT54	DOD	-

Detailed discontinuation information

Please note, devices listed in the "Products, packages, availability and ordering" table marked with "WIT" are discontinued. Devices marked with "DOD" will be in the near future.
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MORE BSN10; BSN10A links to the similar products page containing an overview of products that are similar in function or related to the part number(s) as listed on this page. The similar products page includes products from the same catalog tree(s) , relevant selection guides and products from the same functional category.

PRODUCT INFORMATION

BSN20; N-channel enhancement mode vertical D-MOS transistor

Description

N-channel enhancement mode vertical D-MOS transistor in a SOT23 SMD package.

Features

- Direct interface to C-MOS, TTL, etc.
- High-speed switching
- No secondary breakdown.

Applications

- Thin and thick film circuits
- General purpose fast switching applications.

Datasheet

Type nr.	Title	Publication release date	Datasheet status	Page count	File size (kB)	Datasheet
BSN20	N-channel enhancement mode vertical D-MOS transistor	18-Jun-97	Product Specification	8	101	PDF Download

Products, packages, availability and ordering

Partnumber	Order code (12nc)	marking/packing	package	device status	buy online
BSN20	934012500215	Standard marking * reel pack SMD, low profile, 7"	SOT23	RFS	BUY ONLINE
BSN20	934012500235	Standard marking * reel pack SMD, low profile, large	SOT23	RFS	-

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PRODUCT INFORMATION

BSS83; MOSFET N-channel enhancement switching transistor

- Description
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Description

Symmetrical insulated-gate silicon MOS field-effect transistor of the N-channel enhancement mode type. The transistor is sealed in a SOT143 envelope and features a low ON resistance and low capacitances. The transistor is protected against excessive input voltages by integrated back-to-back diodes between gate and substrate.

Applications

- analog and/or digital switch
- switch driver

Datasheet

Type nr.	Title	Publication release date	Datasheet status	Page count	File size (kB)	Datasheet
BSS83	MOSFET N-channel enhancement switching transistor	01-Apr-91	Product Specification	8	48	PDF Download

Products, packages, availability and ordering

Partnumber	Order code (12nc)	marking/packing	package	device status	buy online
BSS83	933418060215	Standard marking * reel pack SMD, low profile, 7"	SOT143	RFS	BUY ONLINE
BSS83	933418060235	Standard marking * reel pack SMD, low profile, large	SOT143	RFS	-

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Support & tools

Spice model of BSS83