



Interface Products



• Analog/Digital Converters

It is frequently required to record analog information, such as temperature, pressure, battery level, signal strength, etc. The analog voltage information from the diode, pressure sensor, transducer, etc., needs to be converted to digital 1s and 0s (ADC) so that the information can be processed by a microcontroller and subsequently displayed, used to control contracts, switches, relay, etc. Conversion from digital 1s and 0s to analog voltages (DAC) is also useful for applications like LCD contrast control. I²C/SMBus ADC and DAC devices provide an easy way to convert between digital and analog signals and send the information via the I²C/SMBus.

• Bus Controllers

The bus controller serves as an interface between most standard parallel-bus microcontrollers/microprocessors and the serial I²C bus, and allows the parallel bus system to communicate bi-directionally with the I²C bus. This is commonly referred to as the bus master. Communication with the I²C bus is carried out on a byte-wise basis using interrupt or polled handshake and controls all of the I²C bus specific sequences, protocol, arbitration, and timing.

• Hardware Monitors

Temperature measurement is a vital part of several industrial and automotive applications. Thermal monitoring and controlling are important for high-speed microprocessors as well. Philips Semiconductors designs, manufactures, and markets a wide number of temperature sensors that support a variety of applications in the consumer, industrial, and PC markets. Our temperature sensors are subdivided into two major groups: general and PC applications. The choice of temperature sensor depends on the temperature range and other selection criteria to match the device to the particular system needs.

• LED Blinkers

The LED Blinkers blink LEDs in I²C and SMBus applications where it is necessary to limit bus traffic or free up the I²C Master (MCU, MPU, DSP, chipset, etc.) timer. The uniqueness of these devices is the internal oscillator accurate to $\pm 10\%$ with two programmable blink rates adjustable between 40 Hz and 6.4 seconds.

To blink LEDs using normal I/O Expanders like the PCF8574 or PCA9554, the bus master must send repeated commands to turn the LED on and off. This greatly increases the amount of traffic on the I²C bus and uses up one of the master's timers. The PCA9550, PCA9551, PCA9552, and PCA9553 LED Blinkers instead require only the initial set up command to program the frequency and duty cycle (i.e., blink rate) for each individual port BLINK RATE 1 and BLINK RATE 2. From then on, it only requires one command from the bus master to turn the individual LEDs ON, OFF, or to blink at BLINK RATE 1 or BLINK RATE 2.

The LED Blinkers can also be used to dim LEDs (e.g., for backlights) by running at the maximum blink rate and then varying duty cycle between 1 and 100%.

Any bits not used for controlling the LEDs can be used for General Purpose Parallel Input/Output (GPIO) expansion. I/O expansion provides a simple solution when additional I/O is needed for ACPI power switches, sensors, pushbuttons, alarm monitoring, fans, etc.

• Dip Switches

I²C commands and/or hardware pins are used to select between the default values or the setting programmed from the I²C bus and stored in the onboard I²C EEPROM register. These onboard values can be changed at any time via the I²C bus. The non-volatile I²C EEPROM register values stay resident even when the device is powered down. The device powers up with either the hardware pin inputs or the EEPROM retained value on the hardware output pins depending on the position (H or L) of the MUX select pins. The EEPROMs have 10-year memory retention and are rated for 3000 write cycles in the data sheet but have been tested to 50,000 cycles with no failures.

• Repeaters/Hubs/Expanders

New bus buffers from Philips Semiconductors overcome the previous system capacitance limitation of 400pF. These new bus buffers allow designers more freedom in their design to expand the use of the I²C or SMBus:

- More I²C devices than the 400pF maximum allowed by the I²C specification
- Long bus wiring in point-to-point or multi-point applications
- Different operating supply voltages or logic voltage levels within one system
- Opto-isolation for safety or due to difference in ground plane
- Isolating a section of a system that has lost its power supply
- Insertion of unpowered cards into an active I²C bus on multi-point backplanes like those found in CompactPCI, VME, or AdvancedTCA systems

• Multiplexers/Switches

Our Philips multiplexers and switches are bi-directional translating switches that are controlled by an I²C or SMBus. They fan-out an upstream SCL/SDA pair to either 2, 4, or 8 downstream channels of SCx/SDx pairs.

The multiplexers allow only one downstream channel to be selected at a time while the switches allow any individual downstream channel or combination of downstream channels to be selected.

The selection depends on the contents of a programmable control register. Once one or several channels have been selected, the device acts as a wire, allowing the master on the upstream channel to send commands to devices on all the active downstream channels. Devices on the active downstream channels can communicate with each other and the master. External pull-up resistors are used to pull each individual channel up to the desired voltage level.

• Serial EEPROMs

Small size serial memories (RAM and EEPROM) are fairly common and widely used in many different applications. EEPROMs are particularly useful in applications where data retention during power-off is essential. Such applications include, but are not limited to, meter readings, electronic key, product identification number, and Serial Presence Detect (SPD) on DIMMs. A common pinning is used for these serial memories because their functionality is very similar. The common pinout was selected to allow interchangeability. EEPROMs store data (2Kbits organized in 256 X 8 in the PCF8582C-2 for example), such as set points, temperature, alarms, and DIMM information for a guaranteed minimum storage time of ten years in the absence of power. EEPROMs can change values up to 1,000,000 times and have an infinite number of read cycles, while consuming only 10 micro amperes of current.

Device Type	Supply voltage V	f _{MAX} MHz	Inputs number x type	Outputs number x type	Skew output-output ps	Skew part-part ps	Rise/fall time ps	Operating temperature °C	Other features	Packages	Intended application
PCK111	2.5, 3.3	1500	2:1 Differential PECL	10 x Differential PECL	20	85	100	-40~+85		LQFP-32 HVQFN-32	high-performance PECL clock distribution
PCKEL14	2.5, 3.3	1500	1 x Differential PECL, 1 x Single-ended PECL	5 x Differential PECL	50	200	300	-40~+85	synchronous output enable	SO-20 TSSOP-20	high-performance PECL clock distribution
PCKEP14	2.5, 3.3	1500	2:1 Differential PECL	5 x Differential PECL	25	100	200	-40~+85	synchronous output enable; LVDS input compatible	SO-20 TSSOP-20	high-performance PECL clock distribution
PCK210	2.5, 3.3	1500	2 x Differential PECL	2 x 5 Differential PECL	20	110	100	-40~+85		LQFP-32 HVQFN-32	high-performance PECL clock distribution
PCK2111	2.5	800	2:1 LVDS	10 x LVDS	35	100	460	-40~+85	individual output enable; LVPECL input compatible	LQFP-32	high-performance LVDS clock distribution
PCK351	3.3	125	1 x LVTTTL	10 x LVTTTL	300	1000	1500	-40~+85	output enable	SO-24 SSOP-24	LVTTTL clock distribution
PCK3807A	2.5, 3.3	150	1 x LVTTTL	10 x LVTTTL	120	600	1000	-40~+85		SO-20 SSOP-20 TSSOP-20 QSOP-20	LVTTTL clock distribution
PCKEP220	2.5, 3.3	1000	2 x Differential PECL/HSTL	2 x 10 Differential PECL	50	270	300	-40~+85		LQFP-52	high-performance PECL clock distribution
PCKEP221	2.5, 3.3	1000	2:1 Differential PECL/HSTL	20 x Differential PECL	50	270	300	-40~+85		LQFP-52	high-performance PECL clock distribution
PCKEP222	2.5, 3.3	1000	2:1 Differential PECL	15 x Differential PECL	120	300	300	-40~+85	frequency divide-by-two mode	LQFP-52	high-performance PECL clock distribution
PCKEP223	3.3	250	2:1 Differential PECL/HSTL	22 x HSTL	50	200	450	-40~+85	synchronous output enable	LQFP-64	HSTL clock distribution
PCK2001	3.3	133	1 x LVTTTL	18 x LVTTTL	150	250	1000	0~+70	I ² C individual output enable	SSOP-48	PC clock distribution
PCK2001M	3.3	133	1 x LVTTTL	10 x LVTTTL	150	250	1000	0~+70	I ² C individual output enable	SSOP-28	PC clock distribution
PCK2001R	3.3	133	1 x LVTTTL	6 x LVTTTL	150	500	1000	0~+70	I ² C individual output enable	SSOP-28	PC clock distribution
PCK2002	3.3	300	1 x LVTTTL	18 x LVTTTL	150	500	1000	0~+70	I ² C individual output enable	SSOP-48 TSSOP-48	PC clock distribution
PCK2002M	3.3	300	1 x LVTTTL	10 x LVTTTL	150	500	1000	0~+70	I ² C individual output enable	SSOP-28 TSSOP-28	PC clock distribution
PCK2002P	3.3	400	1 x LVTTTL	4 x LVTTTL	200	500	800	-40~+85	PCI-X bus buffer	SO-8 TSSOP-8	PC clock distribution
PCK2002PL	3.3	400	1 x LVTTTL	4 x LVTTTL	200	500	450	-40~+85	PCI-X bus buffer	TSSOP-8	PC clock distribution

types in **bold red** represent new products

Device Name	Supply voltage V	Output frequency range MHz	Input type	Outputs number x type	Jitter pk-pk ps	Output skew	Phase offset	Programmability	Operating temperature °C	Other features	Packages	Intended application
PCK857	2.5; 3.3	66~167	SSTL-2	11 x SSTL-2	100	100	150		0~+85	output enable	TSSOP-48	DDR zero-delay clock distribution, DIMMs
PCKV857	2.5	60~190	SSTL-2	11 x SSTL-2	100	100	150		0~+70	power-down; input frequency detection	TSSOP-48 TVSOP-48 VFBGA-56	DDR200 - DDR266 zero-delay clock distribution, DIMMs
PCKV857A	2.5	100~250	SSTL-2	11 x SSTL-2	75	75	50		0~+70	power-down; input frequency detection	TSSOP-48 TVSOP-48 VFBGA-56	DDR200 - DDR333 zero-delay clock distribution, DIMMs
PCK953	3.3	50~125	Differential PECL	9 x LVCMOS	55	100	60	Pin select	0~+70	output disable, bypass, 1:18 effective fan-out	LQFP-32	High-performance clock tree design, NG-DIMMs
PCK2057	2.5	70~190	SSTL-2	11 x SSTL-2	75	75	270	I ² C	0~+70	individual output disable, bypass	TSSOP-48	DDR zero-delay clock distribution
PCK2509SA	3.3	50~150	LVTTTL	10 x LVTTTL	80	200	125	Pin select	0~+70	bank output enable, feedback always enabled, bypass	TSSOP-24	PC100/PC133 zero-delay SDRAM clock distribution (JEDEC compliant DIMMs)
PCK2509SL	3.3	50~150	LVTTTL	10 x LVTTTL	80	200	125	Pin select	0~+70	bank output enable, bypass, low-power mode	TSSOP-24	PC100/PC133 zero-delay SDRAM clock distribution
PCK2510SA	3.3	50~150	LVTTTL	10 x LVTTTL	80	200	125	Pin select	0~+70	output enable, feedback always enabled, bypass	TSSOP-24	PC100/PC133 zero-delay SDRAM clock distribution (JEDEC compliant DIMMs)
PCK2510SL	3.3	50~150	LVTTTL	10 x LVTTTL	80	200	125	Pin select	0~+70	output enable, bypass, low-power mode	TSSOP-24	PC100/PC133 zero-delay SDRAM clock distribution
PCK2059B	2.5	100~185	SSTL-2	13 x SSTL-2	75	75	75	I ² C	0~+70	individual output disable, bypass	TFBGA-72	DDR200 - DDR333 zero-delay clock distribution, DIMMs
PCK2159B	2.5	100~225	SSTL-2	13 x SSTL-2	75	75	75	I ² C	0~+70	individual output disable, bypass	TFBGA-72	DDR200 - DDR400 zero-delay clock distribution, DIMMs
PCKU877	1.8	125~270	Differential Clock	11 x differential	40	40	50	Pin select	0~+70	power-down; selective disable, bypass	VFBGA-52 HVQFN-40	DDR2 400 - 533 zero delay clock distribution, DIMMs
PCKU878	1.8	125~270	Differential Clock	11 x differential	40	40	50	Pin select	0~+70	power-down; selective disable, bypass, fast lock time	VFBGA-52 HVQFN-40	DDR2 400 - 533 zero delay clock distribution, DIMMs
PCKVF2057	2.5	60~225	SSTL-2	11 x SSTL-2	35	75	50	I ² C	0~+70	individual output disable, bypass	TSSOP-48	DDR200 - DDR400 zero-delay clock distribution
PCKVF857	2.5	60~225	SSTL-2	11 x SSTL-2	35	75	50	Pin select	0~+70	power-down; input frequency detection	TSSOP-48 TVSOP-48 VFBGA-56	DDR200 - DDR400 zero-delay clock distribution, DIMMs

Device Type	Supply voltage V	Output frequency range MHz	Outputs number x type	Jitter pk-pk ps	Output skew ps		Output rise/fall time ps	Programmability	Operating temperature °C	Other features	Packages	Intended application
PCK12429	3.3	25~400	1 x Differential PECL	25	-		400	Serial, parallel	0~+70	synchronous output enable, frequency programmable (1MHz increments)	SO-28 LQFP-32 PLCC-28	High-performance PECL clock generation
PCK2000M	2.5; 3.3	14.318; 33; 66; 100	9 x LVTTTL	175	175		1600	Pin select	0~+70	synchronous individual output power-down	SSOP-28	CPU clock synthesis & driver for mobile 66/100MHz applications (CK97)
PCK2010RA	2.5; 3.3	14.318; 16.67; 33; 48; 50; 66; 100; 133	24 x LVTTTL	250	175		1600	Pin select	0~+70	spread spectrum; synchronous individual output power-down	SSOP-56	CPU clock synthesis & driver for 100/133MHz Pentium II applications (CK98)
PCK2014A	2.5; 3.3	14.318; 16.67; 33; 48; 50; 66; 100; 133	20 x LVTTTL	150	175		1600	Pin select	0~+70	spread spectrum; synchronous individual output power-down	SSOP-56	CPU clock synthesis & driver for 100/133MHz Pentium III applications (CK98)
PCK2020	3.3	14.318; 16.67; 33; 48; 50; 66; 100; 126.7; 133; 200	12 x LVTTTL; 1 x differential host clock output	200	150		700	Pin select	0~+70	spread spectrum; synchronous individual output power-down	SSOP-56	CPU clock synthesis & driver for 100/133MHz Pentium III applications (CK00)
PCK2021	3.3	14.318; 33; 48; 66; 100; 133; 200	5 x LVTTTL; 6 x differential host clock output	200	150		700	Pin select	0~+70	spread spectrum; synchronous individual output power-down	SSOP-48 TSSOP-48	CPU clock synthesis & driver for 100/133MHz multi-processor Pentium III applications (CK00)
PCK2023	3.3	14.318; 33; 48; 66; 100; 133; 200	19 x LVTTTL; 3 x differential host clock output	200	150		467	Pin select, I ² C	0~+70	spread spectrum; synchronous individual output power-down	SSOP-56 TSSOP-56	CPU clock synthesis & driver for 100/133MHz multi-processor Pentium IV applications (CK408)

types in **bold red** represent new products

Device Type	Supply voltage V	f _{MAX} MHz	Inputs number x type	Outputs number x type	Propagation delay CLK-Q ns	Set-up time DATA-CLK ns	Hold time CLK-DATA ns	Operating temperature °C	Other features	Packages	Intended application
SSTL16857	2.5; 3.3	200	14 x SSTL-2	14 x SSTL-2	1.8	0.8	0.5	0~+70	master reset	TSSOP-48	DDR SDRAM register
SSTL16877	2.5	200	14 x SSTL-2	14 x SSTL-2	2.4	0.2	1.2	0~+70	master reset	TSSOP-48	DDR SDRAM register
SSTV16857	2.5	200	14 x SSTL-2	14 x SSTL-2	2.4	0.2	0.75	0~+70	master reset	TSSOP-48 TVSOP-48 VFBGA-56	DDR SDRAM register
SSTV16857A	2.5	200	14 x SSTL-2	14 x SSTL-2	2.4	0.2	0.75	0~+70	master reset	TSSOP-48 TVSOP-48 VFBGA-56	DDR SDRAM register
SSTV16859	2.5	200	13 x SSTL-2	26 x SSTL-2	2.4	0.75	0.75	0~+70	master reset	TSSOP-64 LFBGA-96 HVQFN-56	DDR stacked SDRAM register
SSTU32864	1.8	450	14 or 25 x SSTL_18	28 or 25 x SSTL_18	1.8	0.5	0.5	0~+70	basic DDR2 register	LFBGA-96	DDR2 400 - 667 Registered DIMMs
SSTU32865	1.8	450	28 x SSTL_18	56 x SSTL_18	1.8	0.5	0.5	0~+70	parity function	TFBGA-160	DDR2 400 - 667 2 rank x4 Registered DIMMs
SSTU32866	1.8	450	14 or 25 x SSTL_18	28 or 25 x SSTL_18	1.8	0.5	0.5	0~+70	parity function	LFBGA-96	DDR2 400 - 667 Registered DIMMs
SSTUH32864	1.8	450	14 or 25 x SSTL_18	28 or 25 x SSTL_18	1.8	0.5	0.5	0~+70	high output drive	LFBGA-96	DDR2 400 - 667 Registered DIMMs, stacked or dual density
SSTUH32865	1.8	450	28 x SSTL_18	56 x SSTL_18	1.8	0.5	0.5	0~+70	parity function, high output drive	TFBGA-160	DDR2 400 - 667 2 rank x4 Registered DIMMs, stacked or dual density
SSTUH32866	1.8	450	14 or 25 x SSTL_18	28 or 25 x SSTL_18	1.8	0.5	0.5	0~+70	parity function, high output drive	LFBGA-96	DDR2 400 - 667 Registered DIMMs, stacked or dual density
SSTVF16857	2.5	210	14 x SSTL-2	14 x SSTL-2	2.6	0.2	0.75	0~+70	reset	TSSOP-48 TVSOP-48 VFBGA-56	DDR SDRAM register
SSTVF16859	2.5	210	13 x SSTL-2	26 x SSTL-2	2.5	0.65	0.65	0~+70	master reset	TSSOP-64 LFBGA-96 HVQFN-56	DDR stacked SDRAM register
SSTVN16859	2.5	210	13 x SSTL-2	26 x SSTL-2	2.5	0.65	0.65	0~+70	master reset	HVQFN-56	DDR stacked SDRAM register

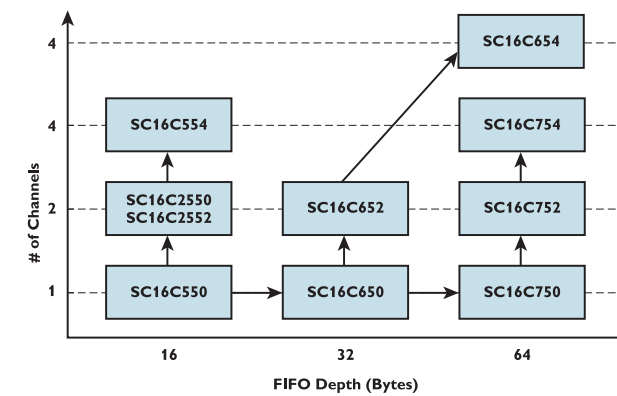
Device Type	Supply voltage V	f _{MAX} MHz	Inputs	Outputs	Propagation delay A-Y ns	Termination resistor ohms	Output driver type	Operating temperature °C	Other features	Packages	Intended application
74ALVC16334A	1.2~3.6	350	16	16	2.3	-	3-state	-40~+85	inverted register enable	TSSOP-48	PC100 DIMM address/-control distribution
74ALVC162334A	1.2~3.6	240	16	16	2.9	30	3-state	-40~+85	inverted register enable	TSSOP-48	PC100 DIMM address/-control distribution
74ALVC16834A	1.2~3.6	350	18	18	2.3	-	3-state	-40~+85	inverted register enable	TSSOP-56	PC100 DIMM address/-control distribution
74ALVC162834A	1.2~3.6	240	18	18	2.9	30	3-state	-40~+85	inverted register enable	TSSOP-56	PC100 DIMM address/-control distribution
74ALVC16835A	1.2~3.6	350	18	18	2.3	-	3-state	-40~+85	-	TSSOP-56	PC100 DIMM address/-control distribution
74ALVC162835A	1.2~3.6	240	18	18	2.9	30	3-state	-40~+85	-	TSSOP-56	PC100 DIMM address/-control distribution
74ALVC16836A	1.2~3.6	350	20	20	2.3	-	3-state	-40~+85	inverted register enable	TSSOP-56	PC100 DIMM address/-control distribution
74ALVC162836A	1.2~3.6	240	20	20	2.9	30	3-state	-40~+85	inverted register enable	TSSOP-56	PC100 DIMM address/-control distribution
74AVCM162834	1.2~3.6	500	18	18	2	15	3-state	-40~+85	inverted register enable	TSSOP-56	PC133 DIMM address/-control distribution
74AVCM162835	1.2~3.6	500	18	18	2	15	3-state	-40~+85	-	TSSOP-56	PC133 DIMM address/-control distribution
74AVCM162836	1.2~3.6	500	20	20	2	15	3-state	-40~+85	inverted register enable	TSSOP-56	PC133 DIMM address/-control distribution
74AVC16334A	1.2~3.6	500	16	16	1.7	-	Dynamic Controlled Outputs, 3-state	-40~+85	inverted register enable	TSSOP-48	PC133 DIMM address/-control distribution
74AVC16834A	1.2~3.6	500	18	18	1.7	-	Dynamic Controlled Outputs, 3-state	-40~+85	inverted register enable	TSSOP-56 TVSOP-56	PC133 DIMM address/-control distribution
74AVC16835A	1.2~3.6	500	18	18	1.7	-	Dynamic Controlled Outputs, 3-state	-40~+85	-	TSSOP-56 TVSOP-56	PC133 DIMM address/-control distribution
74AVC16836A	1.2~3.6	500	20	20	1.7	-	Dynamic Controlled Outputs, 3-state	-40~+85	inverted register enable	TSSOP-56 TVSOP-56	PC133 DIMM address/-control distribution
74ALVCHS16830	2.3~3.6	500	18	36	2	-	3-state	-40~+85	bus hold on inputs	TVSOP-80	NG-DIMM registered drivers
74ALVCHS162830	2.3~3.6	500	18	36	2	26	3-state	-40~+85	bus hold on inputs	TVSOP-80	NG-DIMM registered drivers
74ALVCH16832	2.3~3.6	150	7	28	2.5	-	3-state	-40~+85	bus hold on inputs; select register/buffer mode	TSSOP-64	registered memory driver
74ALVCHT16835	2.3~3.6	150	18	18	2.3	-	3-state	-40~+85	bus hold on inputs	TVSOP-56	registered memory driver

Device Type	Channel	V _{CC} (+/- 10%)	Data Rate at 5V/3.3V/2.5V (Mbps)	Rx & Tx FIFO Bytes	IrDA	I/O PINS	Rx/Tx FIFO INT Trigger	RTS/CTS Flow Control	S/W Flow Control	Intel or Motorola Data Bus Interface	Power Down Mode	Package	Part Number Temp Range -40 to 85°C
SC16C550B	1	2.5V-5.5V	3.0/2.0/1.0	16	No	8 (note 1)	4 levels/none	Yes	No	Intel	No	PLCC44 LQFP48 DIP40	SC16C550BIA44 SC16C550BIB48 SC16C550BIN40
SC16C650B	1	2.5V-5.5V	3.0/2.0/1.0	32	Yes	8 (note 1)	4 levels/4 levels	Yes	Yes	Intel	Yes	PLCC44 LQFP48 HVQFN32 DIP40	SC16C650BIA44 SC16C650BIB48 SC16C650BIBS SC16C650BIN40
SC16C750B	1	2.5V-5.5V	3.0/2.0/1.0	16 or 64	No	8 (note 1)	4 levels/none	Yes	No	Intel	Yes	PLCC44 LQFP64 HVQFN32	SC16C750BIA44 SC16C750BIB64 SC16C750BIBS
SC16C2550B	2	2.5V-5.5V	5.0/5.0/3.0	16	No	14 (note 2)	4 levels/none	No	No	Intel	No	PLCC44 LQFP48 DIP40	SC16C2550BIA44 SC16C2550BIB48 SC16C2550BIN40
SC16C2552B	2	2.5V-5.5V	5.0/5.0/3.0	16	No	14 (note 2)	4 levels/none	No	No	Intel	No	PLCC44	SC16C2552BIA44
SC16C652B	2	2.5V-5.5V	5.0/5.0/3.0	32	Yes	14 (note 2)	4 levels/4 levels	Yes	Yes	Intel	Yes	LQFP48 HVQFN32	SC16C652BIB48 SC16C652BIBS
SC16C752B	2	2.5V-5.5V	5.0/5.0/3.0	64	No	14 (note 2)	Programmable	Yes	Yes	Intel	Yes	LQFP48 HVQFN32	SC16C752BIB48 SC16C752BIBS
SC16C554B	4	2.5V-5.5V	5.0/5.0/3.0	16	No	24 (note 3)	4 levels/none	Yes	No	Intel or Motorola (68-pin PLCC only)	No	PLCC68 LQFP64 LQFP64 LQFP80	SC16C554DBIA68 SC16C554DBIB64 SC16C554BIB64 SC16C554BIB80
SC16C654B	4	2.5V-5.5V	5.0/5.0/3.0	64	Yes	24 (note 3)	4 levels/4 levels	Yes	Yes	Intel or Motorola (68-pin PLCC only)	Yes	LQFP64 PLCC68 LQFP64	SC16C654DBIB64 SC16C654BIA68 SC16C654BIB64
SC16C754B	4	2.5V-5.5V	5.0/5.0/3.0	64	No	24 (note 3)	Programmable	Yes	Yes	Intel	Yes	PLCC68 LQFP80	SC16C754BIA68 SC16C754BIB80

Note 1: 6 of these pins might be used for control signal such as: RTS, DTR, CTS, DSR, RI, CD. HVQFN package only has 5 I/O pins
 Note 2: 12 of these pins might be used for control signal such as: RTS, DTR, CTS, DSR, RI, CD. HVQFN package only has 6 I/O pins
 Note 3: all of these pins might be used for control signal such as RTS, DTR, CTS, DSR, RI, CD

Related literature		Order code
Title		
16C and Industrial Competitive Cross Reference Flyer		9397 750 09893
28L202 Leaflet		9397 750 12777
16CxxxB Leaflet		9397 750 12787
UARTs Sell Sheet		9397 750 11977
Innovative UART Solutions Brochure		9397 750 10337

16Cxxx UARTs Product Overview



Why choose Philips Semiconductors?

- Features**
- * Broad portfolio of single, dual and quad UARTs
 - * All devices operate at 2.5V, 3.3V and 5V and are specified at industrial temperature range (-40 to +85°C)
 - * Fastest bus cycle times in the industry
 - * Power down mode
 - * Supports IRDA feature
 - * Shareware for programming readily available
 - * Automatic hardware and software flow control
 - * Supports DMA mode and includes a wide variety of FIFO depth
 - * Pin to pin compatible with existing 16C devices
- Benefits**
- * One stop shopping for various applications
 - * One part fits multiple needs/applications (lowers the cost of inventory, compared to competitor solutions)
 - * Shortens design cycle
 - * DMA and deep FIFOs reduce CPU overhead
 - * Compatibility with high speed processors
 - * Ideal for battery operated systems
 - * Allows wireless short range applications
 - * Alternate source to other manufacturers

Device Type	Comment	Channel	V _{CC} (+/- 10%)	Data Rate at V _{CC}	Rx/Tx FIFO Bytes	Arbitrating Interrupt	I/O PINS	16-bit Counter/Timer	Rx & Tx FIFO Counters	Rx/Tx FIFO INT Trigger	S/W Flow Control	Intel or Motorola Data Bus Interface	Power Down Mode	Package	Part Number Temp Range 0 to 70°C	Part Number Temp Range -40 to 85°C
SCC2691	Single Channel version of SCC2692	1	5V	125 Kbps	3/1	Normal	2	1	no	3/1 LEVEL	No	Intel	Yes	DIL24 SOL24 PLCC28	SCC2691AC1N24 SCC2691AC1D24 SCC2691AC1A28	SCC2691AE1N24 SCC2691AE1A28
SC28L91	Low power Single Channel version of SC28L92	1	3.3V- 5V	1000 Kbps	16/16 or 8/8	Normal Multi level Vectored IACK/DACK	15	1	yes	ALL	No	Intel/Motorola (Pin select)	Yes	PLCC44 QFP44		SC28L91A1A SC28L91A1B
SC28L201	Single channel version of SC28L202	1	3.3V- 5V	3125 Kbps	256/256	Normal Multi level IACK/DACK I2A	16	2	yes	ALL	Auto	Intel/Motorola (Pin select)	Yes	TSSOP48		SC28L201A1DGG
SCC2681	CMOS Version of SCN2681	2	5V	125 Kbps	3/1	Normal	15	1	no	3/1 LEVEL	No	Intel	No	DIL28 DIL40 PLCC44	SCC2681AC1N28 SCC2681AC1N40 SCC2681AC1A44	SCC2681AE1N28 SCC2681AE1N40 SCC2681AE1A44
SCC68681	CMOS Version of SCN68681	2	5V	125 Kbps	3/1	Normal Vectored	14	1	no	3/1 LEVEL	No	Motorola	No	DIL40 PLCC44	SCC68681AC1N40 SCC68681AC1A44	SCC68681AE1N40 SCC68681AE1A44
SCC2681T	CMOS Version of SCN2681T	2	5V	500 Kbps	3/1	Normal	15	1	no	3/1 LEVEL	No	Intel	Yes	PLCC84	SCC2681TC1A44	
SCC2692	Lower Speed Version of SC26C92	2	5V	125 Kbps	3/1	Normal	15	1	no	3/1 LEVEL	No	Intel	Yes	DIL28 DIL40 PLCC44 QFP44	SCC2692AC1N28 SCC2692AC1N40 SCC2692AC1A44 SCC2692AC1B44	SCC2692AE1N28 SCC2692AE1N40 SCC2692AE1A44 SCC2692AE1B44
SCC68692	Lower Speed Version of SCC26C92	2	5V	125 Kbps	3/1	Normal Vectored IACK/DACK	14	1	no	3/1 LEVEL	No	Motorola	Yes	DIL40 PLCC44	SCC68692AC1N40 SCC68692AC1A44	SCC68692AE1N40 SCC68692AE1A44
SC26C92	High Speed Version of SC26C92	2	5V	1000 Kbps	8/8	Normal Multi level	15	1	yes	ALL	No	Intel	Yes	DIL40 PLCC44 QFP44		SCC2692A1N SCC2692A1A SCC2692A1B
SC28L92	Low Power, Faster Version of SC26C92	2	3.3V- 5V	1000 Kbps	16/6 or 8/8	Normal Multi level Vectored IACK/DACK	15	1	yes	ALL	No	Intel/Motorola	Yes	PLCC44 QFP44		SC28L92A1A SC28L92A1B
SC28L202	Enhanced faster version of SC28L92	2	3.3V- 5V	3125 Kbps	256/256	Normal Multi level IACK/DACK I2A	16	2	yes	ALL	Auto	Intel/Motorola (Pin select)	Yes	TSSOP56		SC28L202A1DGG
SC28C94	Enhanced Quad version of SC26C92	4	5V	1000 Kbps	8/8	Normal Multi level IACK/DACK I2A	16	2	yes	ALL	No	Intel/Motorola	Yes	PLCC52		SC28C94A1A
SC28L194	Enhanced version of SC28C94	4	3.3V- 5V	1000 Kbps	16/16	Normal Multi level IACK/DACK I2A	16	2	yes	ALL	Auto	Intel/Motorola	Yes	PLCC68 LQFP80		SC28L194A1N SC28L194A1A
SCC2698B	Quad version of SCC2692	8	5V	125 Kbps	3/1	Normal	32	4	no	3/1 LEVEL	No	Intel	Yes	PLCC84	SCC2698BC1A84	SCC2698BE1A84
SC28L198	Enhanced version of SCC2698B	8	3.3V- 5V	1000 Kbps	16/16	Normal Multi level IACK/DACK I2A	32	2	yes	ALL	Auto	Intel/Motorola	Yes	PLCC84 LQFP100		SC28L198A1A SC28L198A1BE



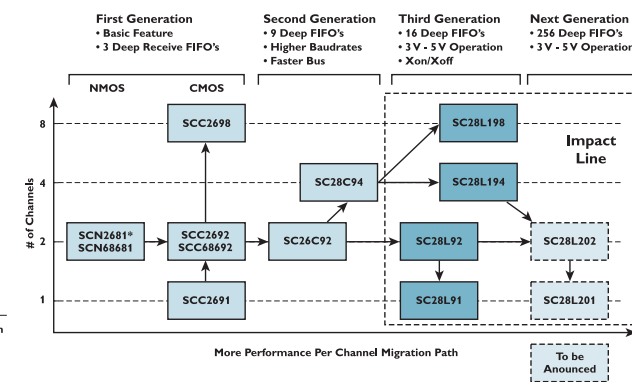
Related literature

- Title**
- 16C and Industrial Competitive Cross Reference Flyer
 - 28L202 Leaflet
 - 16CxxxB Leaflet
 - UARTs Sell Sheet
 - Innovative UART Solutions Brochure

- Order code**
- 9397 750 09893
 - 9397 750 12777
 - 9397 750 12787
 - 9397 750 11977
 - 9397 750 10337

- Performance Indicators**
- Baud Rate
 - Error Handling
 - FIFO Depth
 - Character Recognition
 - Interrupt System
 - Host Bus Cycle Time
- *Not recommended for new designs

Industrial UARTs Product Overview



Why choose Philips Semiconductors?

Features

- * Broad line of UARTs from single to octals
- * Power down mode
- * Extensive interrupt support
- * Hardware RS485/Multidrop support
- * Automatic outband flow control
- * All receivers and transmitters are fully independent with respect to speed and clock frequency
- * Flexible and programmable I/O structure

Benefits

- * Many choices for various applications
- * Ideal for low power consumption
- * Reduced software overhead
- * Reduction of CPU overhead
- * Avoids loss of data
- * Transmit and receive channel can operate at different baud rates
- * Allows usage of I/O pins for general purposes

Type Number	Package	Application	Function	Operating Temperature Range °C	# of Pins	Converter Type	V _{DD} (max.)	# of bits	Operating Supply Voltage
PCF8591	SOT38-4 (DIP16) SOT162-1 (SO16)	Radio, Audio and CD/DVD Systems	Converters	-40 to +85	16	Analog to Digital	16	8	8

I²C Bus Controllers

Type Number	Package	Interrupt	Hardware Reset	Operating Temperature Range °C	I ² C Bus (kHz)	Operating Voltage	# of Addresses
PCA9564	SOT662-1 (HVQFN20) SOT163-1 (SO20) SOT360-1 (TSSOP20)	0-1	Yes	-40 to +85	400	2.3-3.6 tolerant to 5.5	128
PCF8584	SOT146-1 (DIP20) SOT163-1 (SO20)	0-1	Yes	-40 to +85	100	4.5-5.5	128

I²C Temperature Sensors

Type Number	Package	Operating Temperature °C	Operating Voltage Range V _{DC}	Standby Current mA	Over-Temp Alert	Under-Temp Alert	Internal Temp Monitor	Remote Temp Monitor	Accuracy on-chip +/- °C	Accuracy Remote +/- °C	SMBus Clock (max.) kHz	I ² C-Bus Controlled	Assignable Addresses
LM75A	SO8 TSSOP(MSOP)8	-55 to +125	2.8 - 5.5	00.35	Y	N	Y	N	2 at -25 - +100 3 at -55 - +125	NA	400	Y	8
NE1617A	SSOP(QSOP)16	0 to +120	3.0 - 5.5	10	Y	Y	Y	Y	2 at +60 - +100 3 at 0 - +125	3 at +60 - +100 5 at 0 - +125	100	Y	9
NE1618	SSOP(QSOP)16	0 to +120	3.0 - 3.6	3	Y	Y	Y	Y	1.5 at +60 - +100 3 at 0 - +120	3 at +60 - +100 5 at 0 - +120	100	Y	9
NE1619	SSOP(QSOP)16	0 to +120	2.8 - 5.5	100	N	Y	Y	Y	2 at +25 3 at 0 - +120	3 at +25 5 at 0 - +120	400	Y	2
SA56004	SO8 TSSOP(MSOP)8	0 to +125	3.0 - 3.6	10	Y	Y	Y	Y	2 at +60 - +100 3 at 0 - +125	1 at +60 - +100 3 at 0 - +125	400	Y	8
SE95	SO8 TSSOP(MSOP)8	-55 to +125	2.8 - 5.5	3.5	Y	N	Y	N	1.5 at -25 - +100 3 at -55 - +125	NA	400	Y	8

Type Number	Package	# of bits	Hardware reset	Operating Temperature °C	Max. source current per bit (mA)	Max Sink Current per bit (mA)	Max. output current per device (mA)	I ² C bus (kHz)	Operating Voltage	# of addresses	Weak pull-up current source PWMs	Interrupt Output	Memory Size
PCA9500	SOT616-1 (HVQFN24) SOT162-1 (SO16) SOT403-1 (TSSOP16)	8	No	-40 to +85	0.1	25	100.0	400	2.5 - 3.6	8	Yes	No	2
PCA9501	SOT662-1 (HVQFN20) SOT163-1 (SO20) SOT360-1 (TSSOP20)	8	No	-40 to +85	0.1	25	100.0	400	2.5 - 3.6	64	Yes	Yes	2
PCA9534	SOT629-1 (HVQFN16) SOT162-1 (SO16) SOT403-1 (TSSOP16)	8	No	-40 to +85	10.0	25	100.0	400	2.3 - 3.6	8	No	Yes	
PCA9535	SOT616-1 (HVQFN24) SOT137-1 (SO24) SOT355-1 (TSSOP24)	16	No	-40 to +85	10.0	25	200.0	400	2.3 - 3.6	8	No	Yes	
PCA9536	SOT96-1 (SO8) SOT505-1 (TSSOP8)	4	No	-40 to +85	10.0	25	100.0	400	2.3 - 3.6	1	Yes	No	
PCA9537	SOT552-1 (TSSOP10)	4	Yes	-40 to +85	10.0	25	100.0	400	2.3 - 3.6	1	No	Yes	
PCA9538	SOT629-1 (HVQFN16) SOT162-1 (SO16) SOT403-1 (TSSOP16)	8	Yes	-40 to +85	10.0	25	100.0	400	2.3 - 3.6	4	No	Yes	
PCA9539	SOT616-1 (HVQFN24) SOT137-1 (SO24) SOT355-1 (TSSOP24)	16	Yes	-40 to +85	10.0	25	200.0	400	2.3 - 3.6	4	No	Yes	
PCA9554	SOT38-4 (DIP16) SOT629-1 (HVQFN16) SOT162-1 (SO16) SOT338-1 (SSOP16) SOT403-1 (TSSOP16)	8	No	-40 to +85	10.0	25	100.0	400	2.3 - 3.6	8	Yes	Yes	
PCA9554A	SOT38-4 (DIP16) SOT629-1 (HVQFN16) SOT162-1 (SO16) SOT338-1 (SSOP16) SOT403-1 (TSSOP16)	8	No	-40 to +85	10.0	25	100.0	400	2.3 - 3.6	8	Yes	Yes	
PCA9555	SOT101-1 (DIP16) SOT616-1 (HVQFN24) SOT137-1 (SO24) SOT340-1 (SSOP24) SOT355-1 (TSSOP24)	16	No	-40 to +85	10.0	25	200.0	400	2.3 - 3.6	8	Yes	Yes	
PCA9556	SOT403-1 (TSSOP16)	8	Yes	-40 to +85	10.0	20	80.0	100	3.0 - 5.5	8	No	No	
PCA9557	SOT629-1 (HVQFN16) SOT109-1 (SO16) SOT403-1 (TSSOP16)	8	Yes	-40 to +85	10.0	25	100.0	400	2.3 - 3.6	8	No	No	
PCA9558	SOT360-1 (TSSOP20)	8	No	-40 to +85	0.1	25	100.0	400	3.0 - 3.6	2	No	No	2
PCF8574	SOT38-4 (DIP16) SOT162-1 (SO16)	8	No	-40 to +85	0.1	20	100.0	100	2.5 - 6.0	8	Yes	Yes	
PCF8574A	SOT38-4 (DIP16) SOT162-1 (SO16) SOT266-1 (SSOP20)	8	No	-40 to +85	0.1	20	100.0	100	2.5 - 6.0	8	Yes	Yes	
PCF8575	SOT340-1 (SSOP24)	16	No	-40 to +85	0.1	20	100.0	400	2.5 - 6.0	8	Yes	Yes	
PCF8575CF	SOT340-1 (SSOP24)	16	No	-40 to +85	0	20	100.0	400	2.5 - 6.0	8	No	Yes	

Type Number	Package	# of bits	Hardware reset	Operating Temperature °C	Max Sink Current per bit (mA)	Max. output current per device (mA)	I ² C bus (kHz)	Operating Voltage	# of addresses	Weak pull-up current source PWMs	PWMs	Interrupt Output
PCA9530	SOT96-1 (SO8) SOT505-1 (TSSOP8)	2	Yes	-40 to +85	25	50.0	400	2.3 - 3.6	2	No	2 (152 Hz to 1.69 sec)	No
PCA9531	SOT629-1 (HVQFN16) SOT109-1 (SO16) SOT403-1 (TSSOP16)	8	Yes	-40 to +85	25	100.0	400	2.3 - 3.6	8	No	2 (152 Hz to 1.69 sec)	No
PCA9532	SOT616-1 (HVQFN24) SOT137-1 (SO24) SOT355-1 (TSSOP24)	16	Yes	-40 to +85	25	200.0	400	2.3 - 3.6	8	No	2 (152 Hz to 1.69 sec)	No
PCA9533	SOT96-1 (SO8) SOT505-1 (TSSOP8)	4	No	-40 to +85	25	100.0	400	2.3 - 3.6	1	No	2 (152 Hz to 1.69 sec)	No
PCA9550	SOT96-1 (SO8) SOT505-1 (TSSOP8)	2	Yes	-40 to +85	25	50.0	400	2.3 - 3.6	2	No	2 (44 Hz to 5.8 sec)	No
PCA9551	SOT629-1 (HVQFN16) SOT109-1 (SO16) SOT403-1 (TSSOP16)	8	Yes	-40 to +85	25	100.0	400	2.3 - 3.6	8	No	2 (38 Hz to 6.7 sec)	No
PCA9552	SOT616-1 (HVQFN24) SOT137-1 (SO24) SOT355-1 (TSSOP24)	16	Yes	-40 to +85	25	200.0	400	2.3 - 3.6	8	No	2 (44 Hz to 5.8 sec)	No
PCA9553	SOT96-1 (SO8) SOT505-1 (TSSOP8)	4	No	-40 to +85	25	100.0	400	2.3 - 3.6	1	No	2 (44 Hz to 5.8 sec)	No

I²C DIP Switches

Type Number	Package	# of Outputs/Latched Outputs/Internal EEPROM Registers	Operating Temperature Range °C	Max Sink Current per bit (mA)	Max. output current per device (mA)	I ² C bus (kHz)	Operating Voltage	# of addresses
PCA8550	SOT109 (SO16) SOT338-1 (SSOP16) SOT403-1 (TSSOP16)	4 1 1	0 - 70			400	3.0 - 3.6	1
PCA9558	SOT361-1 (TSSOP28)	5 1 1	0 - 70	25	100.0	400	3.0 - 3.6	2
PCA9559	SOT360-1 (TSSOP16)	5 1 1	0 - 70	20	80.0	400	3.0 - 3.6	4
PCA9560	SOT163-1 (SO20) SOT360-1 (TSSOP20)	5 1 2	-40 to +85	25	100.0	400	3.0 - 3.6	4
PCA9561	SOT163-1 (SO20) SOT360-1 (TSSOP20)	6 0 2	-40 to +85	25	100.0	400	3.0 - 3.6	4

I²C Repeaters Hubs Expanders

Type Number	Package	Inputs	Outputs	Operating Temperature Range °C	I ² C Bus (kHz)	Operating Voltage
P82B96	SOT97-1 (DIP8) SOT96-1 (SO8) SOT505-1 (TSSOP8)	1	1	-40 to +85	400	2.0 - 15.0
P82B715	SOT97-1 (DIP8) SOT96-1 (SO8)	1	1	-40 to +85	400	4.5 - 12.0
PCA9510	SOT96-1 (SO8) SOT505-1 (TSSOP8)	1	1	-40 to +85	400	3.0 - 3.6
PCA9511	SOT96-1 (SO8) SOT505-1 (TSSOP8)	1	1	-40 to +85	400	3.0 - 3.6
PCA9512	SOT96-1 (SO8) SOT505-1 (TSSOP8)	1	1	-40 to +85	400	3.0 - 3.6
PCA9513	SOT96-1 (SO8) SOT505-1 (TSSOP8)	1	1	-40 to +85	400	3.0 - 3.6
PCA9514	SOT96-1 (SO8) SOT505-1 (TSSOP8)	1	1	-40 to +85	400	3.0 - 3.6
PCA9515	SOT96-1 (SO8) SOT505-1 (TSSOP8)	1	1	-40 to +85	400	3.0 - 3.6
PCA9515A	SOT96-1 (SO8) SOT505-1 (TSSOP8)	1	1	-40 to +85	400	2.3 - 3.6
PCA9516	SOT109 (SO16) SOT403-1 (TSSOP16)	1	4	-40 to +85	400	3.0 - 3.6
PCA9516A	SOT109 (SO16) SOT403-1 (TSSOP16)	1	4	-40 to +85	400	2.3 - 3.6
PCA9518	SOT163-1 (SO20) SOT360-1 (TSSOP20)	1	4	-40 to +85	400	3.0 - 3.6

Type Number	Package	Inputs	Outputs	Interrupt	Hardware reset	Operating Temperature °C	I ² C bus (kHz)	Operating Voltage	# of addresses
PCA9540B	SOT96-1 (SO8) SOT505-1 (TSSOP8)	1	2			-40 to +85	400	2.3 - 5.5	1
PCA9541	SOT629-1 (HVQFN16) SOT109-1 (SO16) SOT403-1 (TSSOP16)	2	1	1-2	Yes	-40 to +85	400	2.3 - 5.5	16
PAC9542A	SOT108-1 (SO14) SOT402-1 (TSSOP14)	1	2	2-1		-40 to +85	400	2.3 - 5.5	8
PCA9543A	SOT108-1 (SO14) SOT402-1 (TSSOP14)	1	2	2-1	Yes	-40 to +85	400	2.3 - 5.5	4
PCA9544A	SOT662-1 (HVQFN20) SOT163-1 (SO20) SOT360-1 (TSSOP20)	1	4	4-1		-40 to +85	400	2.3 - 5.5	8
PCA9545A	SOT662-1 (HVQFN20) SOT163-1 (SO20) SOT360-1 (TSSOP20)	1	4	4-1	Yes	-40 to +85	400	2.3 - 5.5	4
PCA9546A	SOT629-1 (HVQFN16) SOT109-1 (SO16) SOT403-1 (TSSOP16)	1	4		Yes	-40 to +85	400	2.3 - 5.5	8
PCA9547	SOT616-1 (HVQFN24) SOT137-1 (SO24) SOT355-1 (TSSOP24)	1	8		Yes	-40 to +85	400	2.3 - 5.5	8
PCA9548A	SOT616-1 (HVQFN24) SOT137-1 (SO24) SOT355-1 (TSSOP24)	1	8		Yes	-40 to +85	400	2.3 - 5.5	8

Type Number	Package	Operating Temperature °C	Memory Size (kHz)	I ² C bus (kHz)	Operating Voltage	# of addresses
PCA24508	SOT96-1 (SO8) SOT505-1 (TSSOP8)	-40 to +85	8	400	2.5 - 3.6	1
PCA8581	SOT97-1 (DIP8) SOT96-1 (SO8) SOT94-1 (CDIP24)	-25 to +85	1	100	4.5 - 5.5	8
PCA8581C	SOT96-1 (SO8)	-25 to +85	1	100	2.5 - 6.0	8
PCF8570	SOT97-1 (DIP8) SOT176-1 (SO8)	-40 to +85	2	100	2.5 - 6.0	8
PCF8582C-2	SOT97-1 (DIP8) SOT96-1 (SO8)	-40 to +85	2	100	2.5 - 6.0	8
PCF8594C-2	SOT97-1 (DIP8) SOT96-1 (SO8)	-40 to +85	4	100	2.5 - 6.0	4
PCF8598C-2	SOT97-1 (DIP8) SOT176-1 (SO8)	-40 to +85	8	100	2.5 - 6.0	2
PCF85102C-2	SOT97-1 (DIP8) SOT96-1 (SO8)	-40 to +85	2	100	2.5 - 6.0	8
PCF85103C-2	SOT97-1 (DIP8) SOT96-1 (SO8)	-40 to +85	2	100	2.5 - 6.0	8
PCF85116-3	SOT97-1 (DIP8) SOT96-1 (SO8)	-40 to +85	16	400	2.5 - 6.0	1



Related literature

Title	Order code
I ² C Logic Selection Guide	9397 750 13239
PCA8550	9397 750 04323
PCA9500/PCA9501 (6/02)	9397 750 09897
PCA9504A (12/01)	9397 750 08562
PCA9511/9512/9513/9514	9397 750 11453
PCA9515/16 (5/04)	9397 750 12799
PCA9518 (6/02)	9397 750 10013
PCA9530/9533/9531/9532 LED Dimmers	9397 750 10198
PCA9534/9535 I/O Expanders	9397 750 10197
PCA954X Family of I ² C Multiplexers and Switches	9397 750 10655
PCA9541 Master Selector	9397 750 10997
PCA9550/9551/9552 (12/01)	9397 750 10654
PCA9554/54A/55 (1st print 12/01)	9397 750 10653
PCA9558 (12/01)	9397 750 10652
PCA9559 System Mgmt ICs	9397 750 06813
PCA9560/9561 (5/04)	9397 750 12802
PCA9564 (6/02)	9397 750 10013
P82B96 Buffer Chip	9397 750 10694
P82B715 Bus Extender Chip	9397 750 09151
I ² C Bus Solutions (2/04)	9397 750 09897
I ² C 2002-1 Evaluation Board Kit	9397 750 12744
I ² C EEPROM and RAM	9397 750 10658
LM75A (5/04)	9397 750 13232

Why choose Philips Semiconductors?

Benefits

- * Only two bus lines are required: a serial data line (SDA) and a serial clock line (SCL)
- * Each device connected to the bus is software-addressable through a unique address and simple master/slave relationship exist at all times. Masters can operate as master-transmitters or as master-receivers
- * True multi-master bus operation, including collision detection and arbitration to prevent data corruption if two or more masters simultaneously initiate data transceivers
- * Serial, 8-bit oriented, bi-directional data transfers can be made at 100 kbits/s in the standard mode or 400 kbits/s in the fast mode.
- * On-chip filtering (50 ns) rejects spikes on the bus data line to preserve data integrity
- * The number of ICs that can be connected to the same bus is limited only by a maximum bus capacitance of 400 pF.