SIO10N268

Advanced Notebook I/O for ISA or LPC Designs with X-Bus Interface for I/O, Memory, and FWH Emulation and Four Serial Ports

PRODUCT FEATURES

Data Brief

- 3.3 Volt Operation (5 Volt Tolerant)
- PC99, PC01, ACPI 1.0 Compliant
- LPC or ISA Interface
  — SIO10N268 offers two modes of operation: LPC Mode or ISA Mode. These modes are jumper selectable.
- X-Bus Interface (LPC Mode Only)
  — Three chip selects (2 I/O and 1 Memory)
  — 8-bit data transfers
  — Support for up to 2MB Flash
  — Interfaces with 3V memory devices
  — Support for up to two external I/O components
  — Offers three modes of operation for I/O devices
  — Provides FWH Emulation
- Serial IRQ Compatible with Serialized IRQ Support for PCI Systems
- Programmable Wake-up Event (PME) Interface
- (33) General Purpose Input/Output Pins
- System Management Interrupt
- 2.88MB Super I/O Floppy Disk Controller
  — Licensed CMOS 765B Floppy Disk Controller
  — Software and Register Compatible with SMSC's Proprietary 82077AA Compatible Core
  — Supports Two Floppy Drives Directly
  — Configurable Open Drain/Push-Pull Output Drivers
  — Supports Vertical Recording Format
  — 16-Byte Data FIFO
  — 100% IBM Compatibility
  — Detects All Overrun and Underrun Conditions
  — Sophisticated Power Control Circuitry (PCC) Including Multiple Power Down Modes for Reduced Power Consumption
  — DMA Enable Logic
  — Data Rate and Drive Control Registers
  — 480 Address, Up to 15 IRQ and Four DMA Options

- Floppy Disk Available on Parallel Port Pins (ACPI Compliant)
  — Enhanced Digital Data Separator
  — 2 Mbps, 1 Mbps, 500 Kbps, 300 Kbps, 250 Kbps Data Rates
  — Programmable Precompensation Modes
- Serial Ports
  — Four Full Function Serial Ports
  — High Speed NS16C550 Compatible UARTs with Send/Receive 16-Byte FIFOs
  — Supports 230k and 460k Baud
  — Programmable Baud Rate Generator
  — Modem Control Circuitry
  — 480 Address and 15 IRQ Options
- Infrared Communications Controller
  — IrDA v1.2 (4Mbps), HPSIR, ASKIR, Consumer IR Support
  — 2 IR Ports
  — 96 Base I/O Address, 15 IRQ, and 4 DMA Options
- Multi-Mode Parallel Port with ChiProtect
  — Standard Mode IBM PC/XT, PC/AT, and PS/2 Compatible Bi-directional Parallel Port
  — Enhanced Parallel Port (EPP) Compatible - EPP 1.7 and EPP 1.9 (IEEE 1284 Compliant)
  — EEE 1284 Compliant Enhanced Capabilities Port (ECP)
  — ChiProtect Circuitry for Protection
  — 480 Address, Up to 15 IRQ, and Four DMA Options
- Two LED Drivers with blinking options
- Watch Dog Timer with optional output pin
- 128 Pin VTQN lead-free RoHS compliant package

SMSC®

ORDER NUMBER:

SIO10N268-NU FOR 128 PIN, VTQN LEAD-FREE ROHS COMPLIANT PACKAGE

SMSC®

80 ARKAY DRIVE, HAUPPAUGE, NY 11788 (631) 435-6000, FAX (631) 273-3123

General Description

The SIO10N268 is a single chip I/O device that can be used on the ISA or LPC bus. Bus selection is accomplished as a jumper option. Offering the same part with two system busses enables easy migration from an ISA architecture to the LPC generation enabling the preservation of design techniques and BIOS.

The SIO10N268 is a 3.3V operational (5.0V tolerant), PC 99/2001, and ACPI 1.0 compliant Super I/O Controller. This device includes SMSC's true CMOS 765B floppy disk controller with advanced digital data separator and SMSC's Multi-Mode parallel port with ChiProtect circuitry plus EPP and ECP support.

Each variation of the part also includes 33 GPIO pins, support for two LED's with blinking option, and a WatchDog Timer (WDT) with optional output pin. The SIO10N268 includes (4) 16C550 compatible UARTs. One UART includes additional support for a Serial Infrared Interface that complies with IrDA v1.2 (Fast IR), HPSIR, and ASKIR formats, as well as Consumer IR.

SIO10N268, when LPC Mode is selected, implements the LPC bus interface. In this mode, the X-Bus Interface is enabled to interface to external I/O devices that have an 8-bit data bus and to standard ISA memory devices, up to 2MB, which can serve as BIOS flash.

SIO10N268, when ISA Mode is selected, supports the ISA Plug-and-Play Standard (Version 1.0a). The I/O Address, DMA Channel and Hardware IRQ of each device in the part may be reprogrammed through the internal configuration registers.

PRODUCT PREVIEW
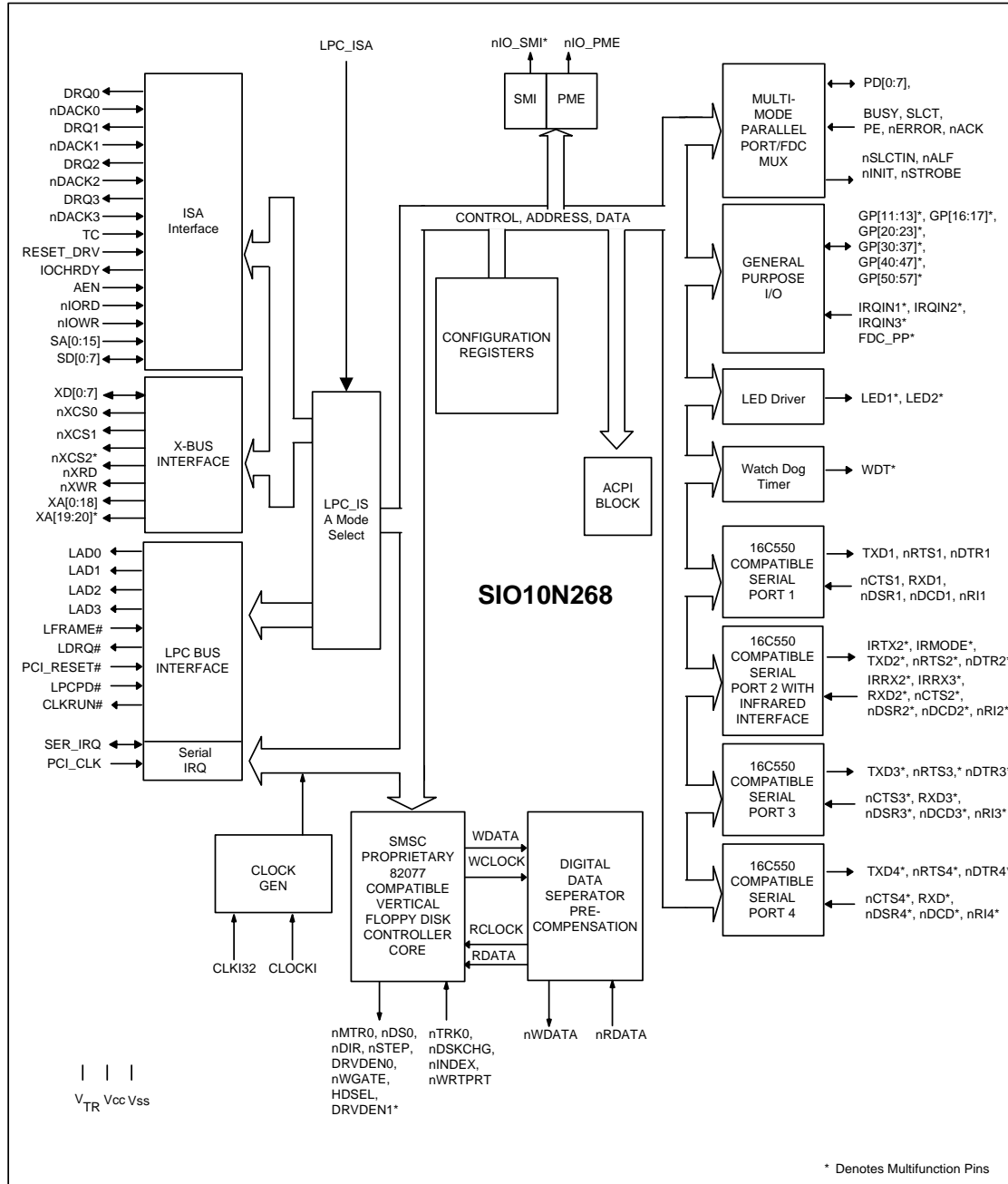
Block Diagram

Figure 1 SIO10N268 Block Diagram
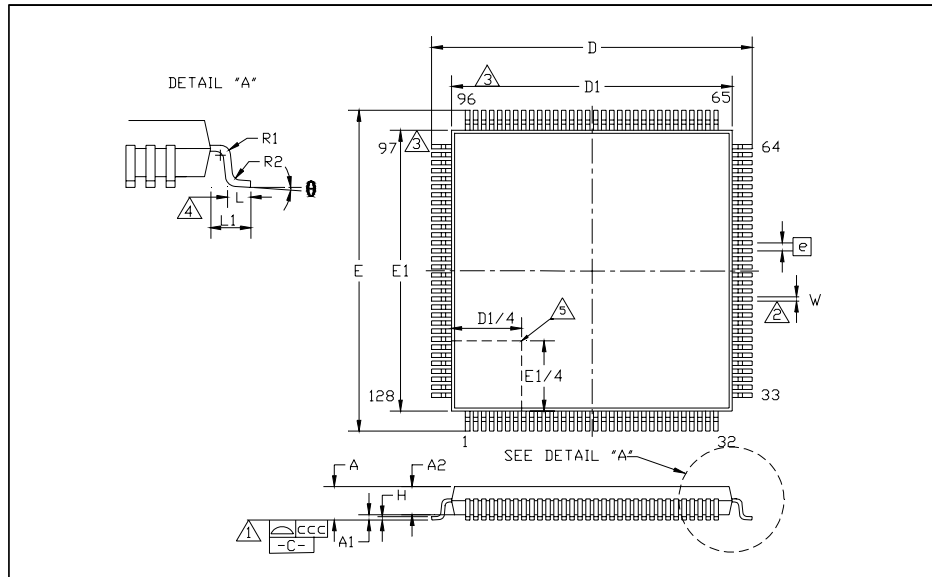
Package Outline

Figure 2 128 Pin VTQN Package Outline, 14x14x1.0 Body, 2 MM Footprint

Table 1 128 Pin VTQN Package Parameters

	MIN	NOMINAL	MAX	REMARKS
A	~	~	1.20	Overall Package Height
A1	0.05	~	0.15	Standoff
A2	0.95	~	1.05	Body Thickness
D	15.80	~	16.20	X Span
D1	13.80	~	14.20	X body Size
E	15.80	~	16.20	Y Span
E1	13.80	~	14.20	Y body Size
H	0.09	~	0.20	Lead Frame Thickness
L	0.45	0.60	0.75	Lead Foot Length
L1	~	1.00	~	Lead Length
e	0.40 Basic			Lead Pitch
q	0º	~	7º	Lead Foot Angle
W	0.13	0.18	0.23	Lead Width
R1	0.08	~	~	Lead Shoulder Radius
R2	0.08	~	0.20	Lead Foot Radius
ccc	~	~	0.08	Coplanarity

Notes:

[1] Controlling Unit: millimeter.

[2] Tolerance on the true position of the leads is ± 0.035 mm maximum.

[3] Package body dimensions D1 and E1 do not include the mold protrusion. Maximum mold protrusion is 0.25 mm.

[4] Dimension for foot length L measured at the gauge plane 0.25 mm above the seating plane.

[5] Details of pin 1 identifier are optional but must be located within the zone indicated.

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