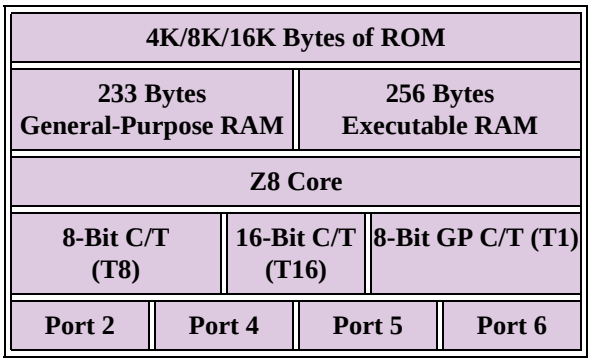
Z86L972/Z86L973/Z86L974

Low-Voltage Microcontrollers

PB007002-1102

Product Brief

Product Block Diagram



General Description

The Z86L972/Z86L973/Z86L974 are low-voltage general-purpose Z8® microcontrollers.

The Z86L972/Z86L973/Z86L974 family is designed to be used in a wide variety of embedded control applications, such as appliances, battery chargers, IR remotes, keyboards, and security systems.

Operating Characteristics

- 8-MHz operation
- 2.3 V to 5.5 V operating voltage
- Low power consumption with three standby modes:
  - Stop
  - Halt
  - Low voltage standby
- Low-battery detection flag
- Low-voltage protection circuit (VBO)
- Watch-dog timer and power-on reset circuits

Key Features

- 4K/8K/16K bytes of ROM
- 256 bytes of executable RAM
- Two independent analog comparators
- VDD power filter
- Constant current source

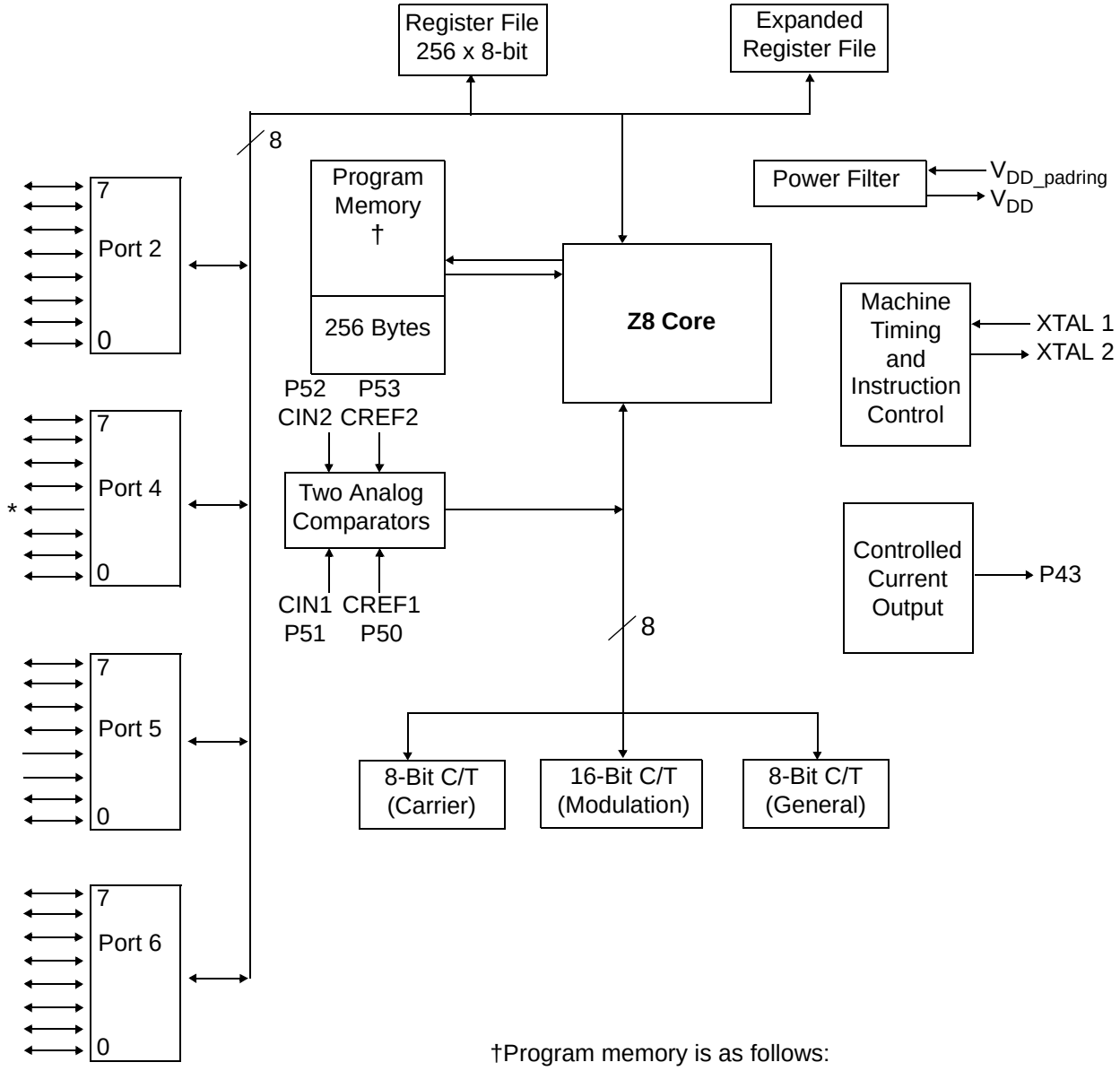
Counter/Timer Structure

- Programmable 8-bit counter/timer (T8) with two 8-bit capture registers and two 8-bit load registers
- Programmable 16-bit counter/timer (T16) with one 16-bit capture register pair and one 16-bit load register pair
- General-purpose 8-bit counter/timer (T1) with 6-bit prescaler

Input/Output and Interrupts

- Twenty-nine bidirectional I/Os with programmable resistive pull-up transistors
- Sixteen I/Os are selectable as stop-mode recovery sources.
- Six interrupt vectors with nine interrupt sources
  - Three external sources
  - Two comparator interrupts
  - Three timer interrupts
  - One low-voltage detector

Block Diagram of Z86L972/Z86L973/Z86L974

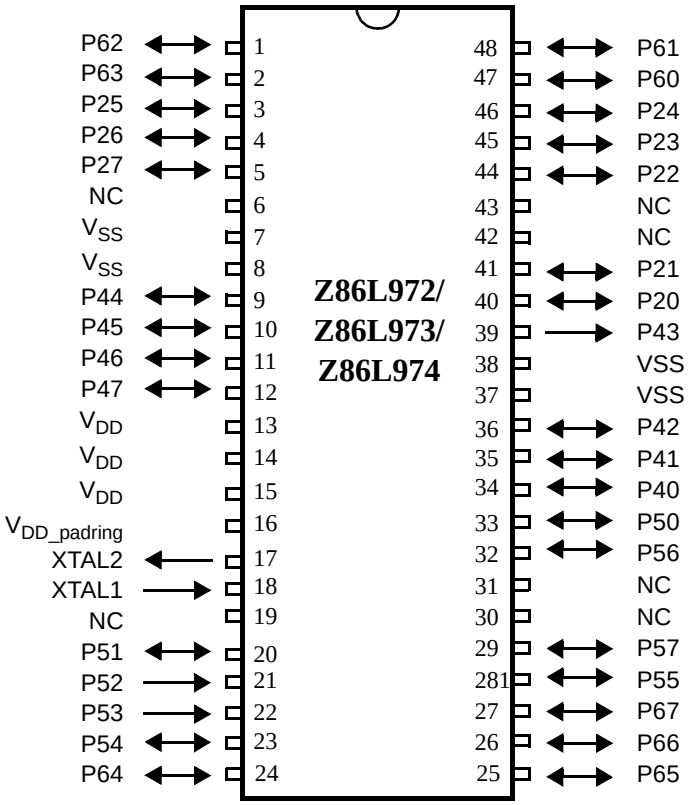


*Controlled Current Output

†Program memory is as follows:

Z86L972	4K ROM
Z86L973	8K ROM
Z86L974	16K ROM

Pin-Outs and Pin Direction



Notes:

1. All V_{SS} pins must be connected to ground.
2. All V_{DD} pins must be connected to the same filtering capacitor.
3. NC is no connection to the die.
4. Power must be connected to $V_{DD\_padring}$. Current passes to V_{DD} through the internal power filter.

User Selectable Option Bits

- RC/other (LC, resonator, or crystal)
- Watchdog timer default state
- 32-kHz crystal
- Port 6 enable
- Ports 20-27 pull-up transistor
- Ports 40-42 pull-up transistor
- Ports 44-47 pull-up transistor
- Ports 50-51 pull-up transistor
- Ports 54-57 pull-up transistor
- Ports 60-63 pull-up transistor
- Ports 64-67 pull-up transistor

Development Suite

The following development tools are available for the programming and debugging of this device:

- Z86L9900100ZEM Emulator/Programmer
- ZiLOG Developer Studio (ZDS)

Related Products

Z8 microcontrollers of interest are as follows:

Z86L990	Z86L974 with 4-Channel, 8-Bit Sigma Delta Analog-to-Digital Converter
Z86L88	Low-Voltage IR Controller (16K ROM, 28 pin)

Electrical Features Summary

- 50 mA Maximum Supply Current
- 2.3 V to 5.5 V Operating Range

Ordering Information

Part	PSI	Description
Z86D99 (OTP)	Z86D990PZ008SC Z86D990HZ008SC	40-pin PDIP 48-pin SSOP
Z86L97Mask ROM)	Z86L972PZ008SC Z86L972HZ008SC Z86L973PZ008SC Z86L973HZ008SC Z86L974PZ008SC Z86L974HZ008SC	40-pin PDIP 48-pin SSOP 40-pin PDIP 48-pin SSOP 40-pin PDIP 48-pin SSOP
Emulator	Z86L9900100ZEM	Emulator/Programmer
Adapter	Z86D9900100ZDH	48 SSOP Adapter
Evaluation Board	Z86L9900100ZCO	Evaluation Board

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