



ZGP323L OTP MCU Family

Product Brief

PB015109-0208

Overview

Zilog's ZGP323L is an OTP-based member of the family of general-purpose microcontrollers. With 237 B of general-purpose RAM and up to 32 KB of OTP, Zilog's CMOS microcontrollers offer fast-executing use of memory, sophisticated interrupts, input/output bit manipulation, automated pulse generation/reception, and internal key-scan pull-up transistors. ZGP323L is compatible with Zilog's ZGR163L/ZGR323L families.

Product Block Diagram

Watchdog Timer		Up to 32 KB OTP	Power-On Reset
T8 Timer Capture & Transmit		Z8® Core	2 Comparators
T16 Timer Capture & Transmit		Low Battery Voltage Detection	
237 Bytes RAM		High Battery Voltage Detection	
Port 0 8 I/O	Port 1 8 I/O	Port 2 8 I/O	Port 3 8 I/O

Features

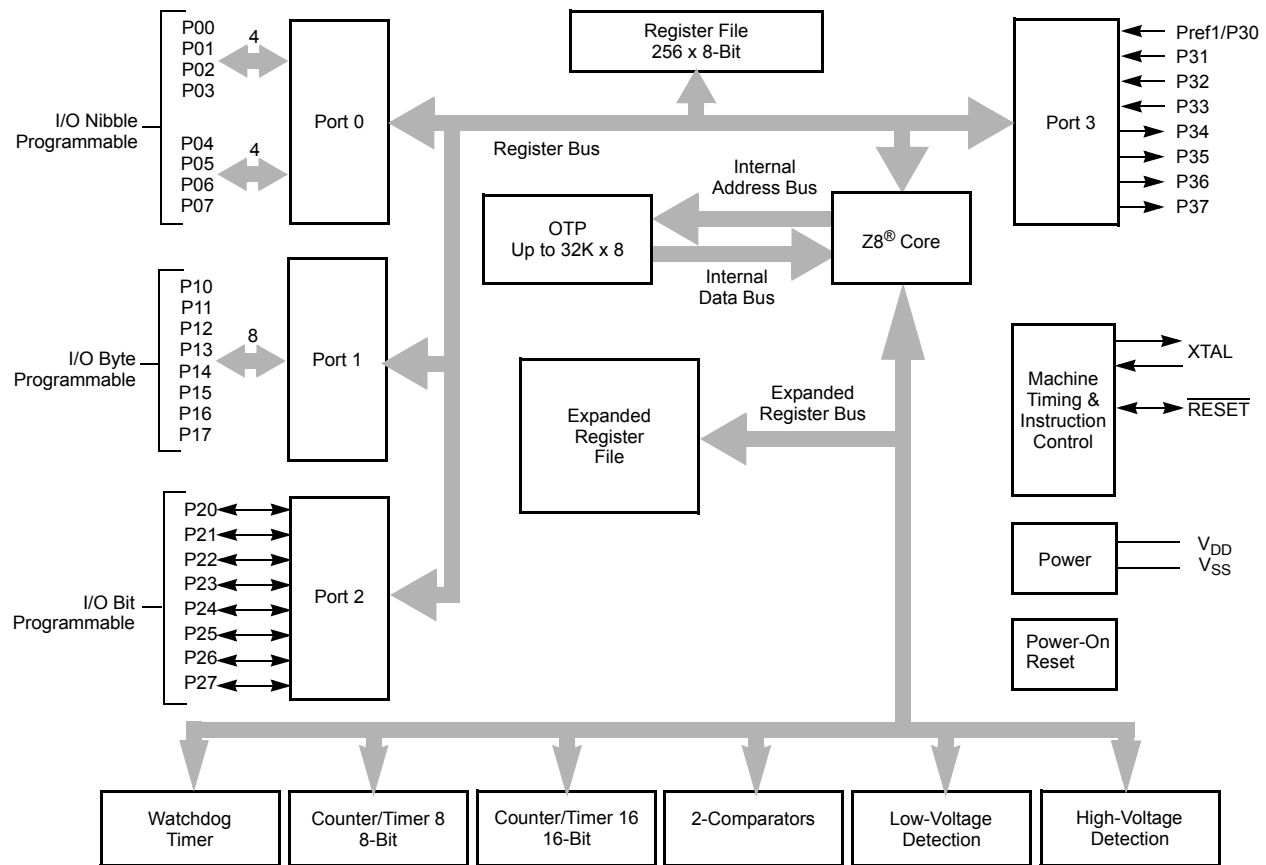
Key features of ZGP323L include:

- 2.0 V to 3.6 V operation
- Low power consumption—11 mW (typical @ 3 V)
- Three standby modes:
 - STOP—2 μ A (typical)

- HALT—0.8 mA (typical)
- Low voltage reset
- Special architecture to automate both generation and reception of complex pulses or signals:
 - One programmable 8-bit counter/timer with two capture registers and two load registers
 - One programmable 16-bit counter/timer with one capture register and two reload registers
 - Programmable input glitch filter for pulse reception
- Six priority interrupts:
 - Three external
 - Two assigned to counter/timers
 - One low-voltage detection interrupt
- Low-voltage and high-voltage detection flags
- Programmable Watchdog Timer (WDT)
- Power-On Reset (POR) circuits
- Two independent comparators with programmable interrupt polarity
- Programmable EPROM options:
 - Port 0: 0–3 pull-up transistors
 - Port 0: 4–7 pull-up transistors
 - Port 1: 0–3 pull-up transistors
 - Port 1: 4–7 pull-up transistors
 - Port 2: 0–7 pull-up transistors
 - EPROM Protection
 - WDT enabled at POR
- Standard (0 °C to +70 °C), Extended (-40 °C to +105 °C), and Automotive (-40 °C to +125 °C) temperature ranges

Architecture

Figure 1 displays the architecture of ZGP323L architecture.



Note: Refer to the specific package for available pins.

Figure 1. Architectural Diagram

Ordering Information

Order the tools from Zilog®, providing the part numbers as given below:

32 KB Standard Temperature: 0 °C to +70 °C	
Part Number	Description
ZGP323LSH4832G	48-pin SSOP 32K OTP
ZGP323LSK4032E	40-pin CDIP* 32K OTP
ZGP323LSP4032G	40-pin PDIP 32K OTP
ZGP323LSK2832E	28-pin CDIP* 32K OTP
ZGP323LSH2832G	28-pin SSOP 32K OTP
ZGP323LSP2832G	28-pin PDIP 32K OTP
ZGP323LSS2832G	28-pin SOIC 32K OTP
ZGP323LSK2032E	20-pin CDIP* 32K OTP
ZGP323LSH2032G	20-pin SSOP 32K OTP
ZGP323LSP2032G	20-pin PDIP 32K OTP
ZGP323LSS2032G	20-pin SOIC 32K OTP
32 KB Extended Temperature: –40 °C to +105 °C	
Part Number	Description
ZGP323LEH4832G	48-pin SSOP 32K OTP
ZGP323LEP4032G	40-pin PDIP 32K OTP
ZGP323LEH2832G	28-pin SSOP 32K OTP
ZGP323LEP2832G	28-pin PDIP 32K OTP
ZGP323LES2832G	28-pin SOIC 32K OTP
ZGP323LEH2032G	20-pin SSOP 32K OTP
ZGP323LEP2032G	20-pin PDIP 32K OTP
ZGP323LES2032G	20-pin SOIC 32K OTP
32 KB Automotive Temperature: –40 °C to +125 °C	
Part Number	Description
ZGP323LAH4832G	48-pin SSOP 32K OTP
ZGP323LAP4032G	40-pin PDIP 32K OTP
ZGP323LAH2832G	28-pin SSOP 32K OTP
ZGP323LAP2832G	28-pin PDIP 32K OTP
ZGP323LAS2832G	28-pin SOIC 32K OTP
ZGP323LAH2032G	20-pin SSOP 32K OTP
ZGP323LAP2032G	20-pin PDIP 32K OTP

32 KB Automotive Temperature: –40 °C to +125 °C	
Part Number	Description
ZGP323LAS2032G	20-pin SOIC 32K OTP
16 KB Standard Temperature: 0 °C to +70 °C	
Part Number	Description
ZGP323LSH4816G	48-pin SSOP 16K OTP
ZGP323LSP4016G	40-pin PDIP 16K OTP
ZGP323LSH2816G	28-pin SSOP 16K OTP
ZGP323LSP2816G	28-pin PDIP 16K OTP
ZGP323LSS2816G	28-pin SOIC 16K OTP
ZGP323LSH2016G	20-pin SSOP 16K OTP
ZGP323LSP2016G	20-pin PDIP 16K OTP
ZGP323LSS2016G	20-pin SOIC 16K OTP
16 KB Extended Temperature: –40 °C to +105 °C	
Part Number	Description
ZGP323LEH4816G	48-pin SSOP 16K OTP
ZGP323LEP4016G	40-pin PDIP 16K OTP
ZGP323LEP2816G	28-pin PDIP 16K OTP
ZGP323LEH2816G	28-pin SSOP 16K OTP
ZGP323LES2816G	28-pin SOIC 16K OTP
ZGP323LES2016G	20-pin PDIP 16K OTP
ZGP323LEH2016G	20-pin SSOP 16K OTP
ZGP323LEP2016G	20-pin PDIP 16K OTP
16 KB Automotive Temperature: –40 °C to +125 °C	
Part Number	Description
ZGP323LAH4816G	48-pin SSOP 16K OTP
ZGP323LAP4016G	40-pin PDIP 16K OTP
ZGP323LAH2816G	28-pin SSOP 16K OTP
ZGP323LAP2816G	28-pin PDIP 16K OTP
ZGP323LAS2816G	28-pin SOIC 16K OTP
ZGP323LAH2016G	20-pin SSOP 16K OTP
ZGP323LAP2016G	20-pin PDIP 16K OTP
ZGP323LAS2016G	20-pin SOIC 16K OTP

8 KB Standard Temperature: 0 °C to +70 °C	
Part Number	Description
ZGP323LSH4808G	48-pin SSOP 8K OTP
ZGP323LSP4008G	40-pin PDIP 8K OTP
ZGP323LSH2808G	28-pin SSOP 8K OTP
ZGP323LSP2808G	28-pin PDIP 8K OTP
ZGP323LSS2808G	28-pin SOIC 8K OTP
ZGP323LSH2008G	20-pin SSOP 8K OTP
ZGP323LSP2008G	20-pin PDIP 8K OTP
ZGP323LSS2008G	20-pin SOIC 8K OTP
8 KB Extended Temperature: –40 °C to +105 °C	
Part Number	Description
ZGP323LEH4808G	48-pin SSOP 8K OTP
ZGP323LEP4008G	40-pin PDIP 8K OTP
ZGP323LEH2808G	28-pin SSOP 8K OTP
ZGP323LEP2808G	28-pin PDIP 8K OTP
ZGP323LES2808G	28-pin SOIC 8K OTP
ZGP323LEH2008G	20-pin SSOP 8K OTP
ZGP323LEP2008G	20-pin PDIP 8K OTP
ZGP323LES2008G	20-pin SOIC 8K OTP
8 KB Automotive Temperature: –40 °C to +125 °C	
Part Number	Description
ZGP323LAH4808G	48-pin SSOP 8K OTP
ZGP323LAP4008G	40-pin PDIP 8K OTP
ZGP323LAH2808G	28-pin SSOP 8K OTP
ZGP323LAP2808G	28-pin PDIP 8K OTP
ZGP323LAS2808G	28-pin SOIC 8K OTP
ZGP323LAH2008G	20-pin SSOP 8K OTP
ZGP323LAP2008G	20-pin PDIP 8K OTP
ZGP323LAS2008G	20-pin SOIC 8K OTP
4 KB Standard Temperature: 0 °C to +70 °C	
Part Number	Description
ZGP323LSH4804G	48-pin SSOP 4K OTP
ZGP323LSP4004G	40-pin PDIP 4K OTP
ZGP323LSH2804G	28-pin SSOP 4K OTP

4 KB Standard Temperature: 0 °C to +70 °C	
Part Number	Description
ZGP323LSP2804G	28-pin PDIP 4K OTP
ZGP323LSS2804G	28-pin SOIC 4K OTP
ZGP323LSH2004G	20-pin SSOP 4K OTP
ZGP323LSP2004G	20-pin PDIP 4K OTP
ZGP323LSS2004G	20-pin SOIC 4K OTP
4 KB Extended Temperature: –40 °C to +105 °C	
Part Number	Description
ZGP323LEH4804G	48-pin SSOP 4K OTP
ZGP323LEP4004G	40-pin PDIP 4K OTP
ZGP323LEH2804G	28-pin SSOP 4K OTP
ZGP323LEP2804G	28-pin PDIP 4K OTP
ZGP323LES2804G	28-pin SOIC 4K OTP
ZGP323LEH2004G	20-pin SSOP 4K OTP
ZGP323LEP2004G	20-pin PDIP 4K OTP
ZGP323LES2004G	20-pin SOIC 4K OTP
4 KB Automotive Temperature: –40 °C to +125 °C	
Part Number	Description
ZGP323LAH4804G	48-pin SSOP 4K OTP
ZGP323LAP4004G	40-pin PDIP 4K OTP
ZGP323LAH2804G	28-pin SSOP 4K OTP
ZGP323LAP2804G	28-pin PDIP 4K OTP
ZGP323LAS2804G	28-pin SOIC 4K OTP
ZGP323LAH2004G	20-pin SSOP 4K OTP
ZGP323LAP2004G	20-pin PDIP 4K OTP
ZGP323LAS2004G	20-pin SOIC 4K OTP
Development Tools	
Part Number	Description
ZGP323ICE02ZEMG	ZGP323 In-Circuit Emulator
ZLP323ICE01ZAC*	40/48-Pins Accessory Kit
Note: *This kit has been replaced by an improved version, ZCRMZNICE02ZACG.	
ZCRMZNICE02ZACG	40/48-Pin Accessory Kit
ZGP32300200ZPR (USB)	Programming system



- **Notes:** * Windowed Cerdip. These units are intended to be used for engineering code development only. Zilog® does not recommend/guarantee this package for production use.

Zilog Developer Studio II (ZDS II) Integrated Development Environment, ZDS II—Crimzon+GP, is also available.



Warning: DO NOT USE IN LIFE SUPPORT

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ZiLOG:

<u>ZGP323LSH4804C</u>	<u>ZGP323LSH4808C</u>	<u>ZGP323LSH4832C</u>	<u>ZGP323LAH2016C</u>	<u>ZGP323LEH2016C</u>
<u>ZGP323LEP2016C</u>	<u>ZGP323LAP2016C</u>	<u>ZGP323LSS2008C</u>	<u>ZGP323LSS2004C</u>	<u>ZGP323LES2032C</u>
<u>ZGP323LAS2032C</u>	<u>ZGP323LES2016C</u>	<u>ZGP323LSH2832C</u>	<u>ZGP323LAS2016C</u>	<u>ZGP323LSP2004C</u>
<u>ZGP323LSP2008C</u>	<u>ZGP323LES2008C</u>	<u>ZGP323LAS2008C</u>	<u>ZGP323LAS2004C</u>	<u>ZGP323LES2004C</u>
<u>ZGP323LSS2816C</u>	<u>ZGP323LEP2032C</u>	<u>ZGP323LAP2032C</u>	<u>ZGP323LEH2008C</u>	<u>ZGP323LAH2004C</u>
<u>ZGP323LEH2004C</u>	<u>ZGP323LAH2008C</u>	<u>ZGP323LSS2832C</u>	<u>ZGP323LSP4004C</u>	<u>ZGP323LEH2816C</u>
<u>ZGP323LAH2816C</u>	<u>ZGP323LSP4008C</u>	<u>ZGP323LSS2016C</u>	<u>ZGP323LSS2032C</u>	<u>ZGP323LSH2016C</u>
<u>ZGP323LEH2832C</u>	<u>ZGP323LAH2832C</u>	<u>ZGP323LSP2016C</u>	<u>ZGP323LEH4832C</u>	<u>ZGP323LAH4832C</u>
<u>ZGP323LAP2832C</u>	<u>ZGP323LEP2832C</u>	<u>ZGP323LSS2808C</u>	<u>ZGP323LSS2804C</u>	<u>ZGP323LSP2804C</u>
<u>ZGP323LSP2808C</u>	<u>ZGP323LAP4032C</u>	<u>ZGP323LEP4032C</u>	<u>ZGP323LEP2008C</u>	<u>ZGP323LEP2004C</u>
<u>ZGP323LAP2008C</u>	<u>ZGP323LAP2004C</u>	<u>ZGP323LSP4016C</u>	<u>ZGP323LSP2816C</u>	<u>ZGP323LES2804C</u>
<u>ZGP323LAS2808C</u>	<u>ZGP323LES2808C</u>	<u>ZGP323LAS2804C</u>	<u>ZGP323LAP4008C</u>	<u>ZGP323LEP4008C</u>
<u>ZGP323LAP4004C</u>	<u>ZGP323LEP4004C</u>	<u>ZGP323LSK4032E</u>	<u>ZGP323LSH4816C</u>	<u>ZGP323LSH2032C</u>
<u>ZGP323LSK2832E</u>	<u>ZGP323LSK2032E</u>	<u>ZGP323LEP2816C</u>	<u>ZGP323LAP2816C</u>	<u>ZGP323LSP2032C</u>
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<u>ZGP323LEP4016C</u>	<u>ZGP323LSH2004C</u>	<u>ZGP323LSH2008C</u>	<u>ZGP323LAS2832C</u>	<u>ZGP323LES2832C</u>
<u>ZGP323LES2816C</u>	<u>ZGP323LAS2816C</u>	<u>ZGP323LAH2032C</u>	<u>ZGP323LEH2032C</u>	<u>ZGP323LAH4804C</u>
<u>ZGP323LEH4804C</u>	<u>ZGP323LEH4808C</u>	<u>ZGP323LAH4808C</u>	<u>ZGP323LAP2804C</u>	<u>ZGP323LAP2808C</u>
<u>ZGP323LEP2808C</u>	<u>ZGP323LEP2804C</u>	<u>ZGP323LSH2808C</u>	<u>ZGP323LSH2804C</u>	<u>ZGP323LEH2804C</u>
<u>ZGP323LAH2808C</u>	<u>ZGP323LSP4032C</u>	<u>ZGP323LAH2804C</u>	<u>ZGP323LEH2808C</u>	<u>ZGP323LAS2008G</u>