



ZGP323H OTP MCU Family

Product Brief

PB015009-0208

Overview

Zilog's ZGP323H 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. ZGP323H 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

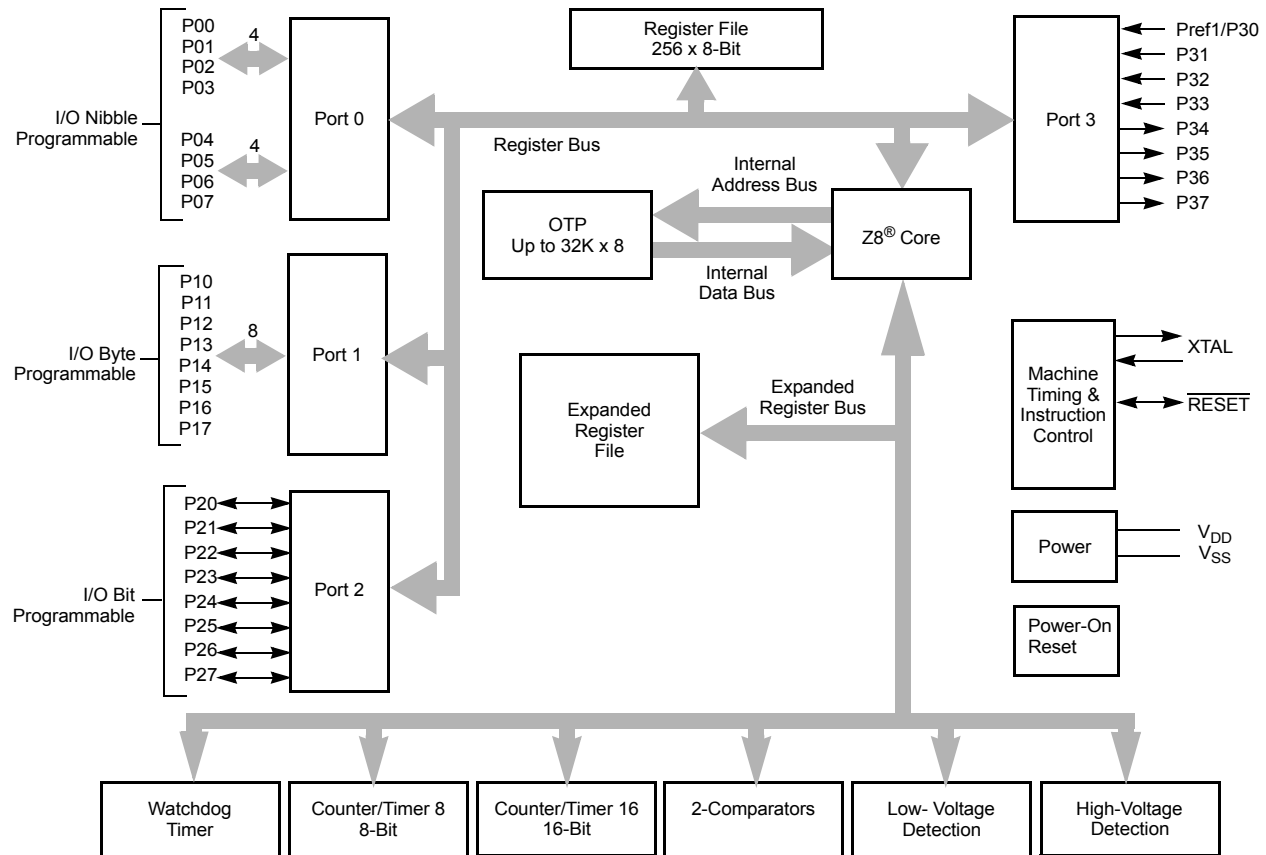
Key features of ZGP323H MCU include:

- 2.0 V to 5.5 V operation
- Low power consumption—11 mW (typical @3V)
- 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 ZGP323H 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
ZGP323HSH4832G	48-pin SSOP 32K OTP
ZGP323HSP4032G	40-pin PDIP 32K OTP
ZGP323HSK2832E	28-pin CDIP* 32K OTP
ZGP323HSK4032E	40-pin CDIP* 32K OTP
ZGP323HSH2832G	28-pin SSOP 32K OTP
ZGP323HSP2832G	28-pin PDIP 32K OTP
ZGP323HSS2832G	28-pin SOIC 32K OTP
ZGP323HSH2032G	20-pin SSOP 32K OTP
ZGP323HSK2032E	20-pin CDIP* 32K OTP
ZGP323HSP2032G	20-pin PDIP 32K OTP
ZGP323HSS2032G	20-pin SOIC 32K OTP
32 KB Extended Temperature: –40 °C to +105 °C	
Part Number	Description
ZGP323HEH4832G	48-pin SSOP 32K OTP
ZGP323HEP4032G	40-pin PDIP 32K OTP
ZGP323HEH2832G	28-pin SSOP 32K OTP
ZGP323HEP2832G	28-pin PDIP 32K OTP
ZGP323HES2832G	28-pin SOIC 32K OTP
ZGP323HEH2032G	20-pin SSOP 32K OTP
ZGP323HEP2032G	20-pin PDIP 32K OTP
ZGP323HES2032G	20-pin SOIC 32K OTP
32 KB Automotive Temperature: –40 °C to +125 °C	
Part Number	Description
ZGP323HAH4832G	48-pin SSOP 32K OTP
ZGP323HAP4032G	40-pin PDIP 32K OTP
ZGP323HAH2832G	28-pin SSOP 32K OTP
ZGP323HAP2832G	28-pin PDIP 32K OTP
ZGP323HAS2832G	28-pin SOIC 32K OTP
ZGP323HAH2032G	20-pin SSOP 32K OTP
ZGP323HAP2032G	20-pin PDIP 32K OTP

ZGP323HAS2032G	20-pin SOIC 32K OTP
16 KB Standard Temperature: 0 °C to +70 °C	
Part Number	Description
ZGP323HSH4816G	48-pin SSOP 16K OTP
ZGP323HSP4016G	40-pin PDIP 16K OTP
ZGP323HSH2816G	28-pin SSOP 16K OTP
ZGP323HSP2816G	28-pin PDIP 16K OTP
ZGP323HSS2816G	28-pin SOIC 16K OTP
ZGP323HSH2016G	20-pin SSOP 16K OTP
ZGP323HSP2016G	20-pin PDIP 16K OTP
ZGP323HSS2016G	20-pin SOIC 16K OTP
16 KB Extended Temperature: –40 °C to +105 °C	
Part Number	Description
ZGP323HEH4816G	48-pin SSOP 16K OTP
ZGP323HEP4016G	40-pin PDIP 16K OTP
ZGP323HEH2816G	28-pin SSOP 16K OTP
ZGP323HEP2816G	28-pin PDIP 16K OTP
ZGP323HES2816G	28-pin SOIC 16K OTP
ZGP323HEH2016G	20-pin SOIC 16K OTP
ZGP323HES2016G	20-pin SSOP 16K OTP
ZGP323HEP2016G	20-pin PDIP 16K OTP
16 KB Automotive Temperature: –40 °C to +125 °C	
Part Number	Description
ZGP323HAH4816G	48-pin SSOP 16K OTP
ZGP323HAP4016G	40-pin PDIP 16K OTP
ZGP323HAH2816G	28-pin SSOP 16K OTP
ZGP323HAP2816G	28-pin PDIP 16K OTP
ZGP323HAS2816G	28-pin SOIC 16K OTP
ZGP323HAH2016G	20-pin SSOP 16K OTP
ZGP323HAP2016G	20-pin PDIP 16K OTP
ZGP323HAS2016G	20-pin SOIC 16K OTP
8 KB Standard Temperature: 0 °C to +70 °C	
Part Number	Description
ZGP323HSH4808G	48-pin SSOP 8K OTP
ZGP323HSP4008G	40-pin PDIP 8K OTP

8 KB Standard Temperature: 0 °C to +70 °C	
Part Number	Description
ZGP323HSH2808G	28-pin SSOP 8K OTP
ZGP323HSP2808G	28-pin PDIP 8K OTP
ZGP323HSS2808G	28-pin SOIC 8K OTP
ZGP323HSH2008G	20-pin SSOP 8K OTP
ZGP323HSP2008G	20-pin PDIP 8K OTP
ZGP323HSS2008G	20-pin SOIC 8K OTP
8 KB Extended Temperature: –40 °C to +105 °C	
Part Number	Description
ZGP323HEH4808G	48-pin SSOP 8K OTP
ZGP323HEP4008G	40-pin PDIP 8K OTP
ZGP323HEH2808G	28-pin SSOP 8K OTP
ZGP323HEP2808G	28-pin PDIP 8K OTP
ZGP323HES2808G	28-pin SOIC 8K OTP
ZGP323HEH2008G	20-pin SSOP 8K OTP
ZGP323HEP2008G	20-pin PDIP 8K OTP
ZGP323HES2008G	20-pin SOIC 8K OTP
8 KB Automotive Temperature: –40 °C to +125 °C	
Part Number	Description
ZGP323HAH4808G	48-pin SSOP 8K OTP
ZGP323HAP4008G	40-pin PDIP 8K OTP
ZGP323HAH2808G	28-pin SSOP 8K OTP
ZGP323HAP2808G	28-pin PDIP 8K OTP
ZGP323HAS2808G	28-pin SOIC 8K OTP
ZGP323HAH2008G	20-pin SSOP 8K OTP
ZGP323HAP2008G	20-pin PDIP 8K OTP
ZGP323HAS2008G	20-pin SOIC 8K OTP
4 KB Standard Temperature: 0 °C to +70 °C	
Part Number	Description
ZGP323HSH4804G	48-pin SSOP 4K OTP
ZGP323HSP4004G	40-pin PDIP 4K OTP
ZGP323HSH2804G	28-pin SSOP 4K OTP
ZGP323HSP2804G	28-pin PDIP 4K OTP
ZGP323HSS2804G	28-pin SOIC 4K OTP

4 KB Standard Temperature: 0 °C to +70 °C	
Part Number	Description
ZGP323HSH2004G	20-pin SSOP 4K OTP
ZGP323HSP2004G	20-pin PDIP 4K OTP
ZGP323HSS2004G	20-pin SOIC 4K OTP
4 KB Extended Temperature: –40 °C to +105 °C	
Part Number	Description
ZGP323HEH4804G	48-pin SSOP 4K OTP
ZGP323HEP4004G	40-pin PDIP 4K OTP
ZGP323HEH2804G	28-pin SSOP 4K OTP
ZGP323HEP2804G	28-pin PDIP 4K OTP
ZGP323HES2804G	28-pin SOIC 4K OTP
ZGP323HEH2004G	20-pin SSOP 4K OTP
ZGP323HEP2004G	20-pin PDIP 4K OTP
ZGP323HES2004G	20-pin SOIC 4K OTP
Note: 4 KB Automotive Temperature: –40 °C to +125 °C	
Part Number	Description
ZGP323HAH4804G	48-pin SSOP 4K OTP
ZGP323HAP4004G	40-pin PDIP 4K OTP
ZGP323HAH2804G	28-pin SSOP 4K OTP
ZGP323HAP2804G	28-pin PDIP 4K OTP
ZGP323HAS2804G	28-pin SOIC 4K OTP
ZGP323HAH2004G	20-pin SSOP 4K OTP
ZGP323HAP2004G	20-pin PDIP 4K OTP
ZGP323HAS2004G	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>ZGP323HSH4804C</u>	<u>ZGP323HSH4808C</u>	<u>ZGP323HAH2016C</u>	<u>ZGP323HEH2016C</u>	<u>ZGP323HSH4832C</u>
<u>ZGP323HAP2016C</u>	<u>ZGP323HEP2016C</u>	<u>ZGP323HSS2004C</u>	<u>ZGP323HSS2008C</u>	<u>ZGP323HES2032C</u>
<u>ZGP323HAS2032C</u>	<u>ZGP323HAS2016C</u>	<u>ZGP323HES2016C</u>	<u>ZGP323HSH2832C</u>	<u>ZGP323HSP2004C</u>
<u>ZGP323HSP2008C</u>	<u>ZGP323HAS2004C</u>	<u>ZGP323HES2004C</u>	<u>ZGP323HES2008C</u>	<u>ZGP323HAS2008C</u>
<u>ZGP323HSS2816C</u>	<u>ZGP323HEP2032C</u>	<u>ZGP323HAP2032C</u>	<u>ZGP323HAH2008C</u>	<u>ZGP323HEH2008C</u>
<u>ZGP323HEH2004C</u>	<u>ZGP323HAH2004C</u>	<u>ZGP323HSS2832C</u>	<u>ZGP323HSP4004C</u>	<u>ZGP323HAH2816C</u>
<u>ZGP323HEH2816C</u>	<u>ZGP323HSP4008C</u>	<u>ZGP323HSS2016C</u>	<u>ZGP323HSS2032C</u>	<u>ZGP323HSH2016C</u>
<u>ZGP323HAH2832C</u>	<u>ZGP323HEH2832C</u>	<u>ZGP323HSP2016C</u>	<u>ZGP323HEH4832C</u>	<u>ZGP323HAH4832C</u>
<u>ZGP323HAP2832C</u>	<u>ZGP323HEP2832C</u>	<u>ZGP323HSS2808C</u>	<u>ZGP323HSS2804C</u>	<u>ZGP323HSP2804C</u>
<u>ZGP323HEP4032C</u>	<u>ZGP323HAP4032C</u>	<u>ZGP323HSP2808C</u>	<u>ZGP323HEP2004C</u>	<u>ZGP323HAP2004C</u>
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<u>ZGP323HES2832C</u>	<u>ZGP323HAS2832C</u>	<u>ZGP323HAH2032C</u>	<u>ZGP323HEH2032C</u>	<u>ZGP323HAH4808C</u>
<u>ZGP323HEH4808C</u>	<u>ZGP323HAH4804C</u>	<u>ZGP323HEH4804C</u>	<u>ZGP323HAP2804C</u>	<u>ZGP323HEP2808C</u>
<u>ZGP323HAP2808C</u>	<u>ZGP323HEP2804C</u>	<u>ZGP323HSH2808C</u>	<u>ZGP323HSH2804C</u>	<u>ZGP323HEH2808C</u>
<u>ZGP323HAH2804C</u>	<u>ZGP323HAH2808C</u>	<u>ZGP323HSP4032C</u>	<u>ZGP323HEH2804C</u>	<u>ZGP323HAS2008G</u>