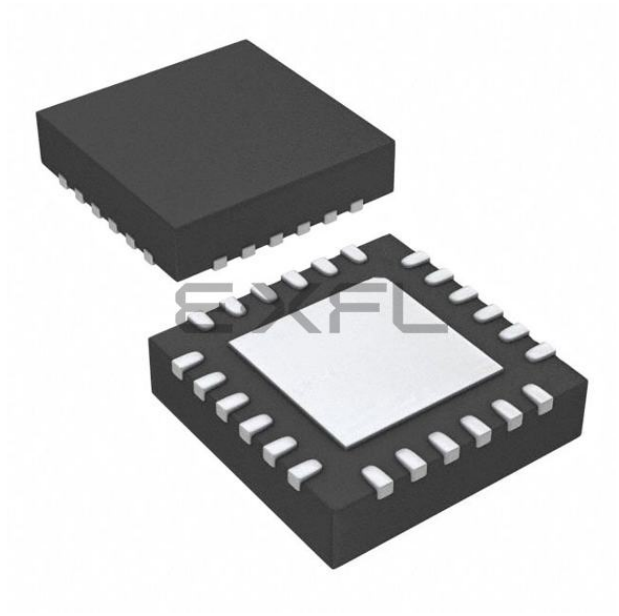
Silicon Labs - EFM32HG108F32G-A-QFN24 Datasheet



Welcome to E-XFL.COM

What is "Embedded - Microcontrollers"?

"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "Embedded - Microcontrollers"

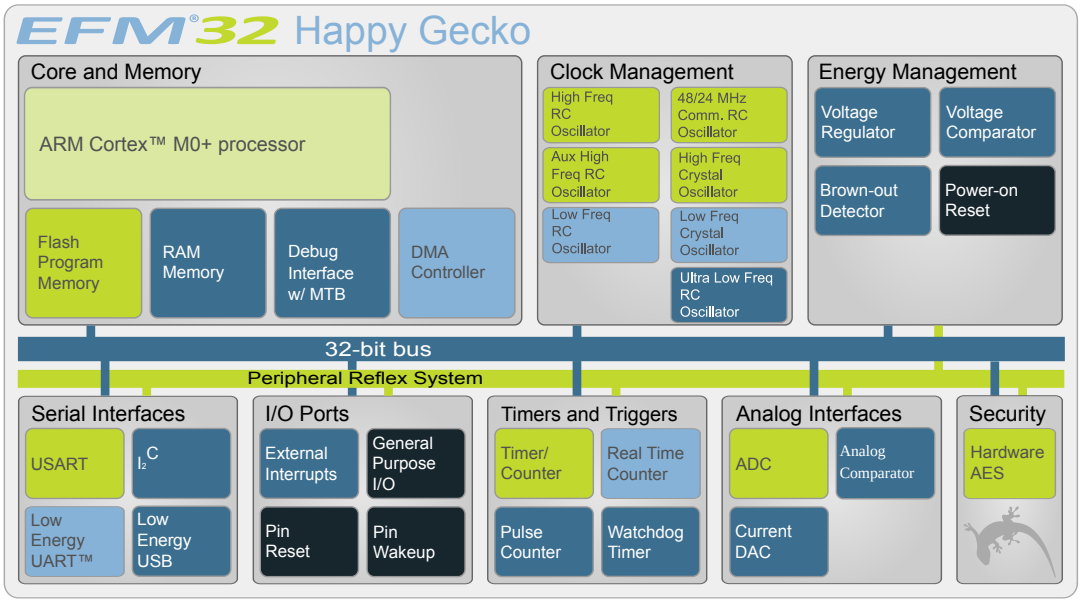
Details	
Product Status	Discontinued at Digi-Key
Core Processor	ARM® Cortex®-M0+
Core Size	32-Bit Single-Core
Speed	25MHz
Connectivity	I²C, IrDA, SmartCard, SPI, UART/USART
Peripherals	Brown-out Detect/Reset, DMA, I²S, POR, PWM, WDT
Number of I/O	17
Program Memory Size	32KB (32K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	4K x 8
Voltage - Supply (Vcc/Vdd)	1.98V ~ 3.8V
Data Converters	A/D 4x12b
Oscillator Type	Internal
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	24-VQFN Exposed Pad
Supplier Device Package	24-QFN (5x5)
Purchase URL	https://www.e-xfl.com/product-detail/silicon-labs/efm32hg108f32g-a-qfn24

EFM32HG MCU Data Short

EFM32HG MCU family with an ARM Cortex-M0+ CPU

The EFM32HG MCUs are the world's most energy-friendly microcontrollers. With a unique combination of the powerful 32-bit ARM Cortex-M0+, innovative low-energy techniques, short wake-up time from energy-saving modes, and a wide selection of peripherals, the EFM32HG microcontroller is well suited for any battery-operated application, as well as other systems requiring high performance and low-energy consumption. For a complete feature set and MCU description, the reader is referred to the appropriate *EFM32HG Data Sheet*.

- ARM Cortex-M0+ CPU platform
  - High Performance 32-bit processor @ up to 25 MHz
  - Wake-up Interrupt Controller
- Flexible Energy Management System
  - 20 nA @ 3 V Shutoff Mode
  - 0.5 µA @ 3 V Stop Mode, including Power-on Reset, Brown-out Detector, RAM and CPU retention
  - 0.9 µA @ 3 V Deep Sleep Mode, including RTC with 32.768 kHz oscillator, Power-on Reset, Brown-out Detector, RAM and CPU retention
  - 55 µA/MHz @ 3 V Sleep Mode
  - 129 µA/MHz @ 3 V Run Mode, with code executed from flash
- 64/32 kB Flash
- 8/8 kB RAM
- General Purpose I/O Pins
  - Configurable push-pull, open-drain, pull-up/down, input filter, drive strength
  - Configurable peripheral I/O locations
  - Asynchronous external interrupts
  - Output state retention and wake-up from Shutoff Mode
- 6 Channel DMA Controller
- 6 Channel Peripheral Reflex System (PRS) for autonomous inter-peripheral signaling
- Hardware AES with 128-bit keys in 54 cycles
- Timers/Counters
  - 3× 16-bit Timer/Counter
    - 3×3 Compare/Capture/PWM channels
    - Dead-Time Insertion on TIMER0
  - 1× 24-bit Real-Time Counter
  - 1× 16-bit Pulse Counter
  - Watchdog Timer with dedicated RC oscillator @ 50 nA
- Communication interfaces
  - 2× Universal Synchronous/Asynchronous Receiver/ Transmitter
    - UART/SPI/SmartCard (ISO 7816)/IrDA/I2S
    - Triple buffered full/half-duplex operation
  - Low Energy UART
    - Autonomous operation with DMA in Deep Sleep Mode
  - I^2C Interface with SMBus support
    - Address recognition in Stop Mode
  - Low Energy Universal Serial Bus (USB) Device
    - Fully USB 2.0 compliant
    - On-chip PHY and embedded 5 V to 3.3 V regulator
    - Crystal-free operation
- Ultra Low-Power Precision Analog Peripherals
  - 12-bit 1 Msamples/s Analog to Digital Converter
    - 4 single ended channels/2 differential channels
    - On-chip temperature sensor
  - Current Digital to Analog Converter
    - Capacitive sensing with up to 5 inputs
  - 1 x Analog Comparator
    - Capacitive Sensing
  - Supply Voltage Comparator
- Ultra Efficient Power-On Reset and Brown-Out Detections
- Debug Interfaces
  - 2-pin Serial Wire Debug interface
  - Micro Trace Buffer (MTB)
- Pre-Programmed USB/UART Bootloader
- Single power supply 1.98 to 3.8 V
- Temperature range -40 to 85 ºC



EFM32HG Family Selctor Guide

Table 1.1. Ordering Information

Ordering Code	Flash (kB)	RAM (kB)	Max Speed (MHz)	Supply Voltage (V)	Temperature (ºC)	Package
EFM32HG108F32G-A-QFN24	32	4	25	1.98 — 3.8	-40 — 85	QFN24
EFM32HG108F64G-A-QFN24	64	8	25	1.98 — 3.8	-40 — 85	QFN24
EFM32HG110F32G-A-QFN24	32	4	25	1.98 — 3.8	-40 — 85	QFN24
EFM32HG110F64G-A-QFN24	64	8	25	1.98 — 3.8	-40 — 85	QFN24
EFM32HG210F32G-A-QFN32	32	4	25	1.98 — 3.8	-40 — 85	QFN32
EFM32HG210F64G-A-QFN32	64	8	25	1.98 — 3.8	-40 — 85	QFN32
EFM32HG222F32G-A-QFP48	32	4	25	1.98 — 3.8	-40 — 85	TQFP48
EFM32HG222F64G-A-QFP48	64	8	25	1.98 — 3.8	-40 — 85	TQFP48
EFM32HG308F32G-A-QFN24	32	8	25	1.98 — 3.8	-40 — 85	QFN24
EFM32HG308F64G-A-QFN24	64	8	25	1.98 — 3.8	-40 — 85	QFN24
EFM32HG309F32G-A-QFN24	32	8	25	1.98 — 3.8	-40 — 85	QFN24
EFM32HG309F64G-A-QFN24	64	8	25	1.98 — 3.8	-40 — 85	QFN24
EFM32HG310F32G-A-QFN32	32	8	25	1.98 — 3.8	-40 — 85	QFN32
EFM32HG310F64G-A-QFN32	64	8	25	1.98 — 3.8	-40 — 85	QFN32
EFM32HG321F32G-A-QFP48	32	8	25	1.98 — 3.8	-40 — 85	TQFP48
EFM32HG321F64G-A-QFP48	64	8	25	1.98 — 3.8	-40 — 85	TQFP48
EFM32HG322F32G-A-QFP48	32	8	25	1.98 — 3.8	-40 — 85	TQFP48
EFM32HG322F64G-A-QFP48	64	8	25	1.98 — 3.8	-40 — 85	TQFP48
EFM32HG350F32G-A-CSP36	32	8	25	1.98 — 3.8	-40 — 85	CSP36
EFM32HG350F64G-A-CSP36	64	8	25	1.98 — 3.8	-40 — 85	CSP36