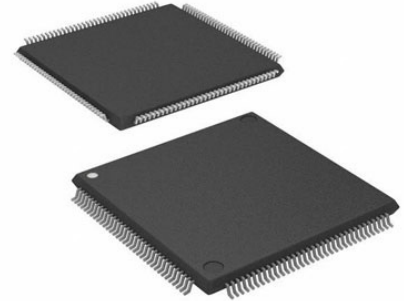


PIC/DSPIC Microcontroller, Floating Point Unit, PIC32 Family PIC32MZ EF Series Microcontrollers

Manufacturers	Microchip Technology, Inc
Package/Case	LQFP-144
Product Type	Embedded Processors & Controllers
RoHS	
Lifecycle	



Images are for reference only

Please submit RFQ for PIC32MZ2048EFM144-I/PL or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

General Description

Features

200 MHz/330 DMIPS, MIPS Warrior M-class core

DSP-enhanced core:

Four 64-bit accumulators

Single-cycle MAC, saturating and fractional math

IEEE 754-compliant

Dual Panel Flash for live update support

FPU for fast single- and double-precision math

12-bit, 18 MSPS, 48-channel ADC module

Memory Management Unit for optimum embedded OS execution

microMIPS mode for up to 35% code compression

CAN, UART, I2C, PMP, EBI, SQI & Analog Comparators

SPI/I2S interfaces for audio processing and playback

Hi-Speed USB 2.0 Device/Host/OTG

10/100 Mbps Ethernet MAC with MII and RMII interface

Crypto Engine with a RNG for data encryption/decryption and authentication (AES, 3DES, SHA, MD5, and HMAC)

Temperature Range: - 40°C to 85°C; - 40°C to 125°C

AEC-Q100 Qualified

Grade 1

Microcontroller Features

Operating voltage range of 2.2V to 3.6V

2MB Flash memory (plus an additional 160 KB of Boot Flash)

512KB SRAM memory

microMIPS mode for up to 35% smaller code size

DSP-enhanced core:

Four 64-bit accumulators

Single-cycle MAC, saturating and fractional math

IEEE 754-compliant

FPU for fast single- and double-precision math

Code-efficient (C and Assembly) architecture

Low-power management modes (Idle and Sleep)

Peripheral Features

50 MHz External Bus Interface (EBI)

50 MHz Serial Quad Interface (SQI)

Peripheral Pin Select (PPS) functionality to enable function remap

8 channels of hardware programmable DMA and 18 channels of dedicated DMA with automatic data size detection

Six UART modules (25 Mbps): Supports LIN 1.2 and IrDA protocols

Two CAN modules 2.0B Active with DeviceNet addressing support

Six 4-wire SPI modules (50 Mbps)

SQI configurable as an additional SPI module (50 MHz)

Five I2C modules (up to 1 Mbaud) with SMBus support

Parallel Master Port (PMP)

Hardware Real-Time Clock and Calendar (RTCC)

Nine 16-bit Timers/Counters (four 16-bit pairs combine to create four 32-bit timers)

Nine Capture inputs and Nine Compare/PWM outputs

Audio/Graphics/Touch HMI Features

Graphics interface: EBI or PMP

Audio data communication: I2S, LJ, RJ, USB

Audio data control interface: SPI and I2C™

Audio data master clock: Fractional clock frequencies with USB synchronization

Advanced Analog Features

12-bit ADC Module:

18 Msps rate with six Sample and Hold (S&H) circuits (five dedicated and one shared)

Up to 48 analog inputs

Can operate during sleep and idle modes

Multiple trigger sources

Six digital comparators and six digital filters

Two analog comparators with 32 programmable voltage references

Temperature sensor with $\pm 2^{\circ}\text{C}$ accuracy

Debugger Development Support

In-circuit and in-application programming

4-wire MIPS® Enhanced JTAG interface

Unlimited program and 12 complex data breakpoints

IEEE 1149.2-compatible (JTAG) boundary scan

Non-intrusive hardware-based instruction trace

Integrated Software Libraries and Tools

MPLAB Harmony - PIC32 software development framework

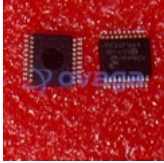
C/C++ compiler with native DSP/fractional and FPU support

TCP/IP, USB, Graphics and mTouch middleware

MFi, Android and Bluetooth audio frameworks

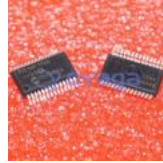
RTOS Kernels, Express Logic ThreadX, FreeRTOS, OPENRTOS, Micrium, μ C/OS and SEGGER embOS

Related Products



[PIC24F16KA101-I/SS](#)

Microchip Technology, Inc
SSOP-20



[PIC16F1936-I/SS](#)

Microchip Technology, Inc
SSOP-28



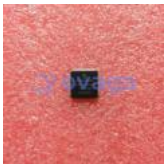
[PIC16F1938-I/SP](#)

Microchip Technology, Inc
PDIP-28



[PIC18F23K22-I/SP](#)

Microchip Technology, Inc
SPDIP-28



[PIC18F6520-I/PT](#)

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TQFP-64



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SOIC-28



[PIC18F97J60T-I/PT](#)

Microchip Technology, Inc
TQFP-100