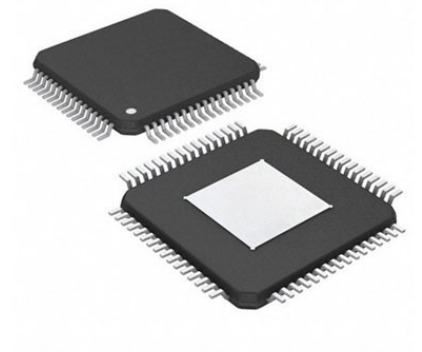



MCU 16-bit dsPIC CISC 256KB Flash 5V 64-Pin TQFP Tray



Images are for reference only

[Inquiry](#)

Manufacturer:	Microchip Technology, Inc
Package/Case:	TQFP64
Product Type:	Embedded Processors & Controllers
RoHS:	RoHS Compliant/Lead free 
Lifecycle:	Active

General Description

Microchip's dsPIC33EV family of digital signal controllers (DSCs) features a 5V 70 MIPS dsPIC[®] DSC core with enhanced on-chip features and is ideal for operating in harsh environments such as appliances, industrial and automotive applications. The 5V dsPIC33EV family comes with rich peripheral integration which includes CAN, SENT, High Speed PWMs, OP Amps and Error Correcting Code Flash for increased reliability and safety. The dsPIC33EV family of devices enable the design of high-performance, precision motor control systems that are more energy efficient. They can be used to control BLDC, permanent magnet synchronous, AC induction and stepper motors. These devices are ideal for high-performance general purpose, Touch, advanced sensor interfacing and control applications in automotive, industrial, consumer and medical segments.

The functional safety ready dsPIC33EVXXXGM00X/10X family has many features that help simplify achieving ISO 26262 functional safety compliance of your safety-critical designs. The family offers:

- Functional Safety Manual and FMEDA report
- MPLAB XC16 Functional Safety Compiler available with registration
- Learn more about our functional safety capabilities including hardware, software, and supporting collateral

Key Features

Operating Conditions

4.5V to 5.5V, -40°C to +85°C, DC to 70 MIPS

4.5V to 5.5V, -40°C to +125°C, DC to 60 MIPS

4.5V to 5.5V, -40°C to +150°C, DC to 40 MIPS

dsPIC33E Core

Code-Efficient (C and Assembly) Architecture

Two 40-Bit Wide Accumulators

Single-Cycle (MAC/MPY) with Dual Data Fetch

Single-Cycle, Mixed-Sign MUL plus Hardware Divide

32-Bit Multiply Support

Provides a boot Flash segment in addition to the existing general Flash segment

Error Code Correction (ECC) for Flash

Added Two Alternate Register Sets for Fast Context Switching

Up to Six Pulse-Width Modulation (PWM) Outputs (three generators)

High-Speed PWM

Primary Master Time Base Inputs allow Time Base Synchronization from Internal/External Sources

Dead Time for Rising and Falling Edges

8.3 ns PWM Resolution at 60 MIPS,

16.6 ns Center-Aligned mode at 60 MIPS

PWM support DC/DC, AC/DC, inverters, Power Factor Correction (PFC) and lighting

PWM support Brushless Direct Current (BLDC), Permanent Magnet Synchronous Motor (PMSM), AC Induction Motor (ACIM), Switched Reluctance Motor (SRM)

Programmable Fault inputs

Flexible trigger configurations for Analog-to-Digital conversion

Independent Time Base

Supports PWM lock, PWM output chopping and dynamic phase shifting

Integrated Analog Features

ADC configurable as 10-bit, 1.1 Msps with four S&H or 12-bit, 500 ksps with one S&H

Up to 36 analog inputs

Flexible and Independent ADC Trigger Sources

Up to Four Op Amp/Comparators with Direct Connection to the ADC module:

Additional dedicated comparator and 7-bit Digital-to-Analog Converter (DAC)

Programmable references with 128 voltage points

Programmable blanking and filtering

Charge Time Measurement Unit

Supports mTouch™ capacitive touch sensing

Provides high-resolution time measurement (1 ns)

On-chip temperature measurement

Temperature sensor diode

Multiple sources of edge input triggers

Timers/Output Compare/Input Capture

Up to nine general purpose timers

Five 16-bit or up to two 32-bit timers/counters, Timer3 can provide ADC trigger

Oscillator Frequency Monitoring through CTMU

Four Output Capture modules configurable as timers/counters

Four Input Capture modules

Communication Interfaces

CAN module with 32 buffers, 16 filters and three masks

Support for LIN/J2602 bus support and IrDA®

High and low speed (SCI)

25 Mbps data rate without PPS used

One I2C™ module (up to 1 Mbaud) with SMBus Support

Two SENT J2716 (Single Edge Nibble Transmission-Transmit/Receive) module for Automotive Applications

Direct Memory Access (DMA)

4-Channel DMA with User-Selectable Priority Arbitration

Universal Asynchronous Receiver/Transmitter (UART), Serial Peripheral Interface (SPI), ADC, Input Capture, Output Compare

Qualification and Class B Support

AEC-Q100 Grade 1 (-40°C to +125°C)

AEC-Q100 Grade 0 (-40°C to +150°C)

Class B Safety Library, IEC 60730

Functional Safety support (ISO26262)

ASIL-B focused applications

FMEDA and Safety manual

XC16 Functional Safety Compiler

Functional Safety hardware features

Flash with Error Correction Code (ECC)

CodeGuard™ Memory Protection

On-chip Regulator for CPU

Backup FRC and redundant clock sources

Fail Safe Clock Monitor

Windowed Watchdog Timer (WDT)

Windowed Deadman Timer (DMT)

Oscillator Frequency Monitoring through CTMU (OSCI, SYSCLK, FRC, BFRC, LPRC)

BOR and POR

Cyclical Redundancy Check (CRC)

Analog peripherals redundancies

Illegal Opcode Detection

PWM Lock and Dedicated PWM Fault Pin

Internal Loopback to test communication peripherals and IO ports

SFR and Configuration Locks

Math Error Trap

Address Trap

Redundant data storage for Flash-based Configuration bits and Peripheral Pin Select (PPS) Configuration bits

Recommended For You

DSPIC33EV128GM106-E/PT

Microchip Technology, Inc

TQFP-64

DSPIC33EV256GM104-I/PT

Microchip Technology, Inc

TQFP-44

DSPIC33EV256GM106-E/PT

Microchip Technology, Inc

TQFP64

DSPIC33EV64GM104-E/PT

Microchip Technology, Inc

TQFP-44

DSPIC33CH64MP508-E/PT

Microchip Technology, Inc

TQFP

DSPIC33FJ09GS302-I/SP

Microchip Technology, Inc

SPDIP

DSPIC33CH64MP508-I/PT

Microchip Technology, Inc

TQFP-80

dsPIC33CH128MP208-E/PT

Microchip Technology, Inc

TQFP-80

dsPIC33CH64MP208-I/PT

Microchip Technology, Inc

TQFP-80

DSPIC33EP128GP502-I/SO

Microchip Technology, Inc

SOIC28

DSPIC33FJ32GP304-I/PT

Microchip Technology, Inc

TQFP-44

DSPIC33CH128MP503-I/M5

Microchip Technology, Inc

UQFN-36

DSPIC33CH512MP208-I/PT

Microchip Technology, Inc

TQFP-80

DSPIC33CH128MP205-I/PT

Microchip Technology, Inc

TQFP-48

DSPIC33FJ32GP202-I/SP

Microchip Technology, Inc

DIP28