

Digital Signal Controller, dsPIC33E Series, 70 MHz, 512 KB, 53 I/O's, ECAN, I2C, SPI, UART, 1.8 V

Manufacturers	<a href="#">Microchip Technology, Inc</a>
Package/Case	TQFP-64
Product Type	Embedded Processors & Controllers
RoHS	Rohs
Lifecycle	



Images are for reference only

Please submit RFQ for DSPIC33EP512MC506-I/PT or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

## General Description

Microchip's dsPIC33E family of digital signal controllers (DSCs) features a 70 MIPS dsPIC® DSC core with integrated DSP and enhanced on-chip peripherals. These DSCs enable the design of high-performance, precision motor control systems that are more energy efficient, quieter in operation, have a great range and extended life. They can be used to control brushless DC, permanent magnet synchronous, AC induction and stepper motors. These devices are also ideal for high-performance general purpose applications.

## Features

### Operating Conditions

3.0V to 3.6V, -40°C to +85°C, DC to 70 MIPS

3.0V to 3.6V, -40°C to +150°C, DC to 60 MIPS

dsPIC33E DSC Core

Modified Harvard Architecture

C Compiler Optimized Instruction Set

16-bit Wide Data Path

24-bit Wide Instructions

16x16 Integer Multiply Operations

32/16 and 16/16 Integer Divide Operations

Two 40-bit Accumulators with Rounding and Saturation Options

Single-Cycle Multiply and Accumulate

Single-Cycle shifts for up to 40-bit Data

16x16 Fractional Multiply/Divide Operations

High-Speed PWM

Up to three PWM pairs with independent timing

Dead time for rising and falling edges

7.14 ns PWM resolution

PWM support for Inverters, PFC, Lighting- BLDC, PMSM, ACIM, SRM

Programmable Fault inputs

Flexible trigger configurations for ADC conversions

Advanced Analog Features

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

Up to three Op amp/Comparators

Op Amp direct connection to the ADC module

Additional dedicated comparator

Programmable references with 32 voltage points for comparators

Charge Time Measurement Unit (CTMU)

Timers/Output Compare/Input Capture

12 general purpose timers

Five 16-bit and up to two 32-bit timers/counters

Four OC modules configurable as timers/counters

PTG module with two configurable timers/counters

32-bit Quadrature Encoder Interface (QEI) module configurable as a timer/counter

Four IC modules

Peripheral Trigger Generator (PTG) for scheduling complex sequences

Communication Interfaces

Two UART modules (15 Mbps)

Two 4-wire SPI modules (15 Mbps)

CAN™ module (1 Mbaud) CAN 2.0B support

Two I2C™ modules (up to 1 Mbaud) with SMBus support

PPS to allow function remap

Programmable Cyclic Redundancy Check (CRC)

Direct Memory Access (DMA)

4-channel DMA with user-selectable priority arbitration

UART, SPI, ADC, CAN, IC, OC, and Timers

## Related Products



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TQFP-80



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