

Digital Signal Controller, dsPIC33E Series, 140 MHz, 512 KB, 35 I/O's

Manufacturers	<a href="#">Microchip Technology, Inc</a>
Package/Case	TQFP-44
Product Type	Embedded Processors & Controllers
RoHS	
Lifecycle	



Images are for reference only

Please submit RFQ for DSPIC33EP512GM604-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, up to 70 MIPS

3.0V to 3.6V, -40°C to +125°C, up to 60 MIPS

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

Up to 12 PWM Outputs (six generators)

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

Dead Time for Rising and Falling Edges

7.14 ns PWM Resolution

PWM Support for DC/DC, AC/DC, Inverters, PFC, Lighting, BLDC, PMSM, ACIM, SRM

Programmable Fault Inputs

Flexible Trigger Configurations for ADC Conversions

Supports PWM Lock, PWM Output Chopping and Dynamic Phase Shifting

Two Independent ADC modules

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

11, 13, 18, 30 or 49 analog inputs

Flexible and Independent ADC Trigger Sources

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

Additional dedicated comparator

Programmable references with 32 voltage points

Programmable blanking and filtering

Charge Time Measurement Unit (CTMU)

Supports miTouch™ capacitive touch sensing

Provides high-resolution time measurement (1 ns)

On-chip temperature measurement

21 General Purpose Timers

Nine 16-bit and up to four 32-bit timers/counters

Eight output capture modules configurable as timers/counters

PTG module with two configurable timers/counters

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

Eight Input Capture modules

Peripheral Pin Select (PPS) to allow Function Remap

Peripheral Trigger Generator (PTG) for Scheduling Complex Sequences

Four Enhanced Addressable UART modules (17.5 Mbps)

With support for LIN/J2602 protocols and IrDA®

Three 3-Wire/4-Wire SPI modules (15 Mbps)

25 Mbps Data Rate for Dedicated SPI module (with no PPS)

Two I2C™ modules (up to 1 Mbps) with SMBus Support

Two CAN modules (1 Mbps) CAN 2.0B Support

Programmable Cyclic Redundancy Check (CRC)

Codec Interface module (DCI) with I2S Support

4-Channel DMA with User-Selectable Priority Arbitration

Peripherals Supported by the DMA Controller include UART, SPI, ADC and input capture, Output compare and timers

## Related Products



### [DSPIC30F6014A-20E/PE](#)

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