Digital Signal Controller, dsPIC33E Series, 60 MHz, 536 KB, 122 I/O's, I2C, SPI, UART, USB, 3.6 V

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

Images are for reference only

Please submit RFQ for DSPIC33EP512MU814-I/PH or Email to us: 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, -40ºC to +125ºC, DC to 60 MIPS

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

dsPIC33E 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

11 Additional Instructions

Two 40-bit Accumulators with Rounding and Saturation Options

Flexible and Powerful Addressing modes

Single-Cycle Multiply and Accumulate

Single-Cycle shifts for up to 40-bit Data

16x16 Fractional Multiply/Divide Operations

Motor Control PWM

Two master time base modules can control dual 3-phase motors simultaneously

Up to seven PWM generators

Two PWM outputs per PWM generator

8.32 ns PWM resolution

Quadrature Encoder Interface (QEI)

32-bit position counter

32-bit Index pulse counter

Integrated Analog Features

Two independent ADC modules

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

One 10-bit ADC, 1.1 Msps with four S&H

Eight S&H using both ADC 10-bit modules

24 analog channels (64-pin devices) up to 32 analog channels (100/121/144-pin devices)

Flexible and independent ADC trigger sources

Up to three Analog Comparator modules with programmable 32 voltage points references

Timers / Capture / Compare / Standard PWM

9 16-bit Timers/Counters. Unused Output compares can be used as standard times for a total of 25 timers

16 Input Capture

16 Output Compare/ PWM

Hardware Real-Time Clock and Calendar

Peripheral Pin Select (PPS) to allow function remap

Direct Memory Access (DMA)

15-channel DMA with user-selectable priority arbitration

Communication Interfaces

USB 2.0 OTG-Compliant Full-Speed Interface

Four UART modules (15 Mbps), supporting LIN/J2602 protocols and IrDA®

Four 4-Wire SPI modules (15 Mbps)

Two ECAN™ modules (1 Mbaud) CAN 2.0B Support

Two I2C modules (up to 1 Mbaud) with SMBus Support

Data Converter Interface (DCI) module with Support for I2S and Audio Codecs

PPS to allow Function Remap

Parallel Master Port (PMP)

Qualification and Class B Support

AEC-Q100 Grade 1 (-40ºC to +125ºC)

AEC-Q100 Grade 0 (-40ºC to +150ºC)

Class B Safety Library, IEC 60730

Related Products

DSPIC30F6014A-20E/PF

Microchip Technology, Inc

TQFP-80

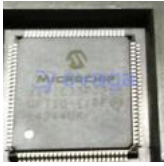**DSPIC30F5011-30I/PT**

Microchip Technology, Inc

TQFP-64

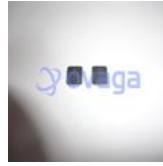**DSPIC33EP512GM710-I/PF**

Microchip Technology, Inc

TQFP-100

DSPIC33FJ256MC710-I/PF

Microchip Technology, Inc

TQFP-100

Ovaga Technologies Limited   **Email: sales@ovaga.com**

DSPIC33FJ256GP710-I/PF

Microchip Technology, Inc

TQFP-100

DSPIC30F5015-30I/PT

Microchip Technology, Inc

TQFP-64

DSPIC30F4011-30I/PT

Microchip Technology, Inc

TQFP-44

DSPIC30F4013-30I/P

Microchip Technology, Inc

PDIP-40