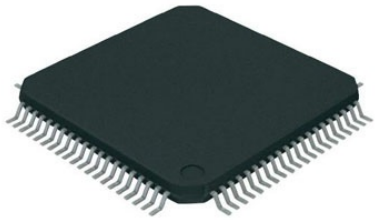
DSPIC33FJ128GP804-H/PT

Data Sheet

Digital Signal Processors & Controllers - DSP, DSC 16 bit DSC 20MIPS 128KB Flash

Manufacturers	Microchip Technology, Inc
Package/Case	TQFP-44
Product Type	Embedded Processors & Controllers
RoHS	Green
Lifecycle	



Images are for reference only

Please submit RFQ for DSPIC33FJ128GP804-H/PT or Email to us: sales@ovaga.com We will contact you in 12 hours. RFQ

General Description

•dsPIC33Fs are designed to execute digital filter algorithmsand high-speed precision digital control loops, ideal for applications thatneed to perform under pressure •GeneralPurpose Digital Signal Controllers (DSCs) with advanced analog and seamlessmigration options to PIC24F, PIC24H MCUs and dsPIC30F DSCs

Features

Operating Range

Up to 40 MIPS operation (at 3.0-3.6V)

3.0V to 3.6V, -40ºC to +150ºC, DC to 20 MIPS

3.0V to 3.6V, -40ºC to +125ºC, DC to 40 MIPS

High-Performance dsPIC33FJ core

Modified Harvard architecture

C compiler optimized instruction set

24-bit wide instructions, 16-bit wide data path

Linear program memory addressing up to 4M instruction words

Linear data memory addressing up to 64 Kbytes

Two 40-bit accumulators with rounding and saturation options

Indirect, Modulo and Bit-reversed addressing modes

16 x 16 fractional/integer multiply operations

32/16 and 16/16 divide operations

Single-cycle multiply and accumulate (MAC) with accumulator write back and dual data fetch

Single-cycle MUL plus hardware divide

Up to ±16-bit shifts for up to 40-bit data

On-chip Flash and SRAM

Direct Memory Access (DMA)

8-channel hardare DMA

Up to 2 Kbytes dual ported DMA buffer area (DMA RAM) to store data transferred via DMA

Most peripherals support DMA

Timers/Capture/Compare/PWM

Up to five 16-bit and up to two 32-bit Timers/Counters

One timer runs as a Real-Time Clock with an external 32.768 kHz oscillator

Input Capture (up to four channels) with Capture on up, down or both edges

16-bit capture input functions

4-deep FIFO on each capture

Output Compare (up to four channels) with Single or Dual 16-bit Compare mode and 16-bit Glitchless PWM mode

Hardware Real-Time Clock/Calendar (RTCC)

Interrupt Controller

5-cycle latency

118 interrupt vectors

Up to 49 available interrupt sources

Up to three external interrups

Seven programmable priority levels

Five processor exceptions

Digital I/O

Peripheral pin Select functionality

Up to 35 programmable digital I/O pins

Wake-up/Interrupt-on-Change for up to 21 pins

Output pins can drive from 3.0V to 3.6V

Up to 5V output with open drain configuration

All digital input pins are 5V tolerant

4 mA sink on all I/O pins

System Management

Flexible clock options: External, crystal, resonator and internal RC

Fully integrated Phase-Locked Loop (PLL)

Extremely low jitter PLL

Power-up Timer

Oscillator Start-up Timer/Stabilizer

Watchdog Timer with its own RC oscillator

Fail-Safe Clock Monitor

Reset by multiple sources

Power Management

On-chip 2.5V voltage regulator

Switch between clock sources in real time

Idle, Sleep, and Doze modes with fast wake-up

Analog-to-Digital Converters (ADCs)

10-bit, 11 Msps or 12-bit, 500 Ksps conversion

Two and four simultaneous samples (10-bit ADC)

Up to 13 input channels with auto-scanning

Conversion start can be manual or synchronized with one of four trigger sources

Conversion possible in Sleep mode

Other Analog Peripherals

Two analog comparators with programmable input/output configuration

4-bit DAC with two ranges for analog comparators

16-bit dual channel 100 Ksps audio DAC

Data Converter Interface (DCI) module

Codec interface

Supports I2S and AC.97 protocols

Up to 16-bit data words, up to 16 words per frame

4-word deep TX and RX buffers

Communication Modules

4-wire SPI (up to two modules) with I/O interface to simple codecs

I2C™ with Full Multi-Master Slave mode support, slave address masking, 7-bit and 10-bit addressing, integrated signal conditioning and bus collision detection

UART (up to two modules) with LIN bus support, IrDA® and hardware flow control with CTS and RTS

Enhanced CAN (ECAN) module (1 Mbaud) with 2.0B support

Parallel Master Slave Port (PMP/EPSP)

Programmable Cyclic Redundancy Check (CRC)

Debugger Development Support

In-circuit and in-application programming

Two program breakpoints

Trace and run-time watch

Related Products

DSPIC30F6014A-20E/PF

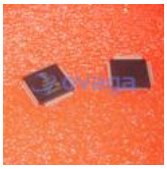
Microchip Technology, Inc

TQFP-80

DSPIC33EP512MU814-I/PH

Microchip Technology, Inc

TQFP-144



DSPIC30F5011-30I/PT

Microchip Technology, Inc

TQFP-64

DSPIC33EP512GM710-I/PF

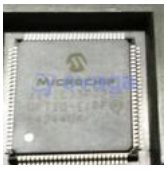
Microchip Technology, Inc

TQFP-100

DSPIC33FJ256MC710-I/PF

Microchip Technology, Inc

TQFP-100



DSPIC33FJ256GP710-I/PF

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TQFP-100

[DSPIC30F5015-30I/PT]

Microchip Technology, Inc

TQFP-64

[DSPIC30F4011-30I/PT]

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TQFP-44