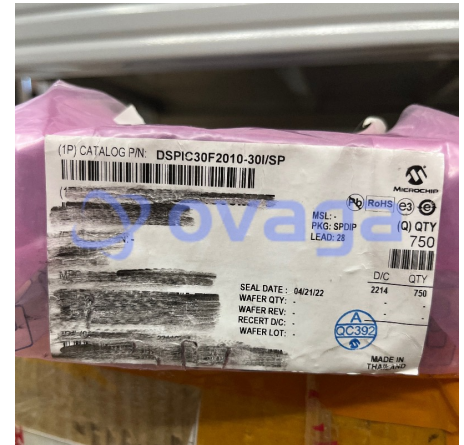


16 BIT MCU/DSP 28LD 30MIPS 12 KB FLASH, -40C to +85C, 28-SPDIP, TUBE, Digital Signal Processors & Controllers (DSP, DSC) (DSP, DSC) 20MHz 12KB Flash

Manufacturers	<a href="#">Microchip Technology, Inc</a>
Package/Case	SPDIP-28
Product Type	Embedded Processors & Controllers
RoHS	
Lifecycle	



Images are for reference only

Please submit RFQ for DSPIC30F2010-30I/SP or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

## General Description

dsPIC30F Motor Control 16-bit Digital Signal Controller. Seamless migration options from this device to dsPIC33F, PIC24H or PIC24F devices in similar packages.

For product comparison, please consider: dsPIC33EV32GM002

## Features

- High-Performance dsPIC30F core
- Modified Harvard architecture
- C compiler optimized instruction set architecture
- 24-bit wide instructions, 16-bit wide data path
- Up to 30 MIPS operation
- DSP Engine for math intensive operations
- Modulo and Bit-Reversed Addressing modes
- Two 40-bit wide accumulators with optional saturation logic
- 17-bit x 17-bit single cycle hardware fractional/ integer multiplier
- Single cycle Multiply Accumulate (MAC) operation

40-stage Barrel Shifter

Dual data fetch

Operating Conditions

Wide operating voltage range (2.5V to 5.5V)

Industrial and Extended temperature ranges

Peripheral Features

High current sink/source I/O pins: 25 mA/25 mA

Optionally pair up 16-bit timers into 32-bit timer modules

3-wire SPI™ modules (supports 4 Frame modes)

I2C™ module supports Multi-Master/Slave mode and 7-bit/10-bit addressing

Addressable UART modules with FIFO buffers

Motor Control PWM Module Features

Motor Control PWM Module with Complementary or Independent Output modes

Edge and Center Aligned modes

Multiple duty cycle generators

Dedicated time base with 4 modes

Programmable output polarity

Dead time control for Complementary mode

Manual output control

Trigger for synchronized A/D conversions

Quadrature Encoder Interface Module Features

QEI with Phase A, Phase B and Index Pulse input

16-bit up/down position counter

Count direction status

Position Measurement (x2 and x4) mode

Programmable digital noise filters on inputs

Alternate 16-bit Timer/Counter mode

Interrupt on position counter rollover/underflow

#### Analog Features

10-bit 1 Msps Analog-to-Digital Converter (A/D)

A/D Conversion available during Sleep and Idle

4 Sample/Hold Channels

Multiple Conversion Sequencing Options

#### Special Microcontroller Features

Enhanced Flash program memory with 10,000 erase/write cycle (min.) for industrial temperature range, 100K (typical)

Data EEPROM memory with 100,000 erase/write cycle (min.) for industrial temperature range, 1M (typical)

Self-reprogrammable under software control

Power-on Reset (POR), Power-up Timer (PWRT) and Oscillator Start-up Timer (OST)

Flexible Watchdog Timer (WDT) with on-chip low power RC oscillator for reliable operation

Fail-Safe clock monitor operation

Detects clock failure and switches to on-chip low power RC oscillator

Programmable code protection

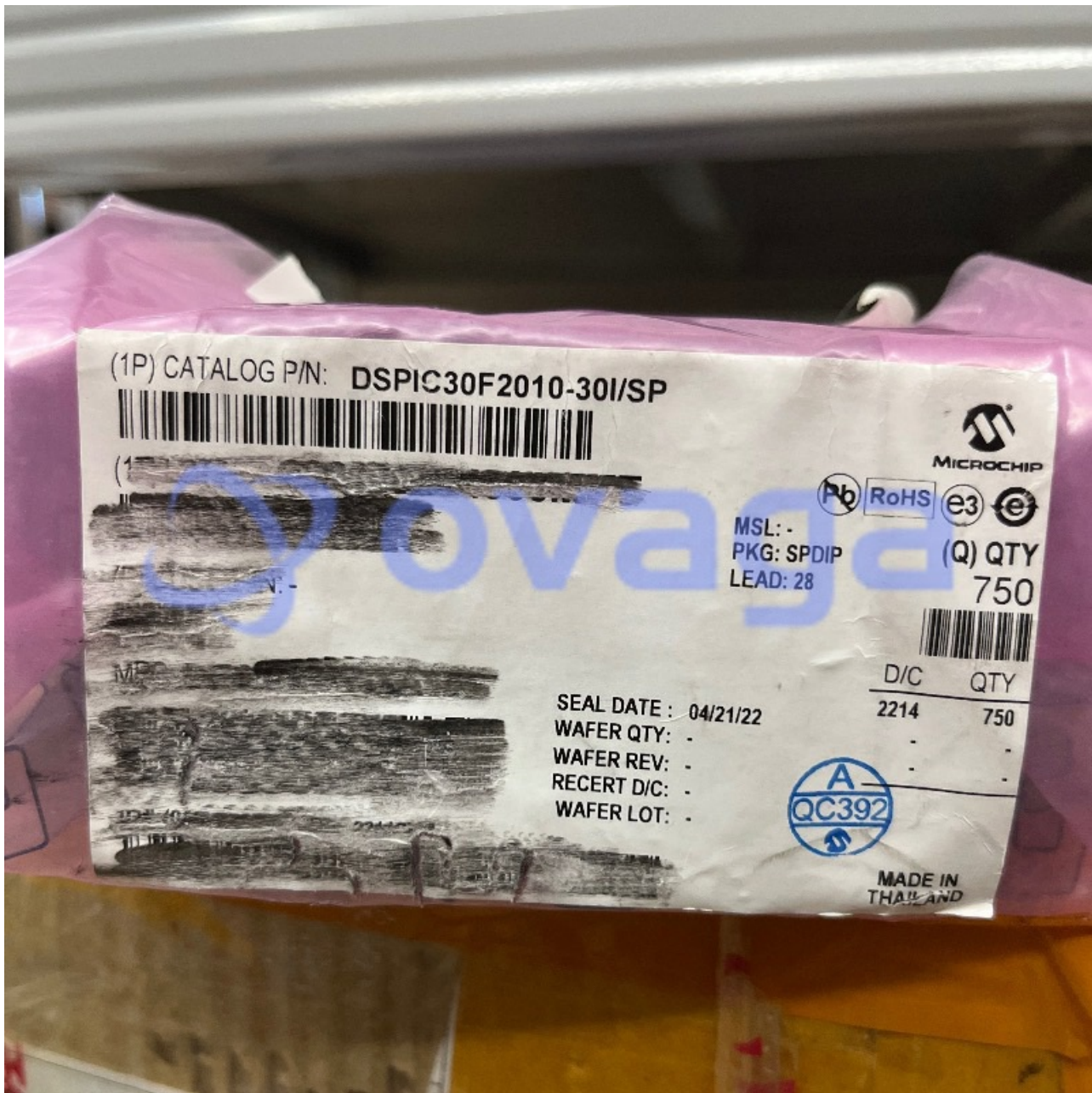
In-Circuit Serial Programming™ (ICSP™)

DC to 40 MHz external clock input

4 MHz-10 MHz oscillator input with PLL active (4x, 8x, 16x)

Programmable Brown-out Detection and Reset generation

Sleep, Idle and Alternate Clock modes for power management



**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](#)

Microchip Technology, Inc  
TQFP-100



[DSPIC30F5015-30I/PT](#)

Microchip Technology, Inc  
TQFP-64



[DSPIC30F4011-30I/PT](#)

Microchip Technology, Inc  
TQFP-44