

Device Overview

Summary

The MCP3004 10-bit Analog-to-Digital Converter (ADC) combines high performance and low power consumption in a small package, making it ideal for embedded control applications. The MCP3004 features a successive approximation register (SAR) architecture and an industry-standard SPI serial interface, allowing 10-bit ADC capability to be added to any PIC® microcontroller. The MCP3004 features 200k samples/second, 4 input channels, low power consumption (5nA typical standby, 425µA typical active), and is available in 14-pin PDIP, SOIC and TSSOP packages. Applications for the MCP3004 include data acquisition, instrumentation and measurement, multi-channel data loggers, industrial PCs, motor control, robotics, industrial automation, smart sensors, portable instrumentation and home medical appliances.

Additional Features

- 10-bit resolution
- Four single-ended channels
- SPI interface
- ±1 LSB DNL
- ±1 LSB INL
- 200 ksps sample rate at 5V
- -40 to +85°C temperature range
- AEC-Q100 Grade 3

Parametrics

Name	
Value	
Max Sample Rate (ksamples/sec)	
200	
Typ. INL ± (LSB)	
0.5	
Max. Supply Current (µA)	
500	
Input Type	
Single-ended	
# of Input Channels	
4	
Resolution (bits)	
10	

Interface

SPI

Temp Range (°C)

-40 to +85°C

Input Voltage Range (V)

0 to 5.5



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