PIC16F527 and PIC16F570

20/28-pin PIC® Microcontrollers
with Dual Op Amps for Low-Cost, Analog Integrated, General Purpose Applications

Summary

Designing the simplest solution to any complex problem can often be challenging. Microchip has combined the flexibility of integrated analog with the intelligence of an 8-bit PIC® MCU to create the low-cost PIC16F527/PIC16F570. With an on-board ADC, dual op amps and comparators, Microchip offers an excellent solution is available in both 20-pin and 28-pin packages.

The PIC16F527 and PIC16F570 offer excellent solutions for cost-sensitive general-purpose applications. The integration of analog such as op amps, comparators and an 8-bit ADC can help you lower your BOM cost and save board footprint. The additional supporting features, such as integrated Hardware Interrupts, watchdog timer and Brown-Out Reset help significantly reduce code footprint while increasing system performance and robustness.

The feature set of the PIC16F527 and PIC16F570 gives you the flexibility to implement these devices into various solutions like smoke detectors, carbon monoxide detectors, signal conditioning and sensing systems.

Features

- Integrated operational amplifiers
  - Two independent operational amplifiers
  - 3 MHz Gain Bandwidth Product (GBWP)
  - External connections to all ports
  - Single power mode operation
- Comparators
  - Two analog comparators
  - Absolute and programmable references
- Analog-to-Digital Converter
  - 8-bit resolution
  - Eight external input channels
  - One internal channel to convert comparator
  - 0.6V reference input
- Brown-Out Reset (BOR)/Power-On Reset (POR)/ Watchdog Timer (WDT)
  - BOR/POR: Protect as batteries are depleted or changed
  - WDT: Provides protection against system failure
- eXtreme Low Power (XLP)

8-bit MCU: Simple. Intelligent. Analog.
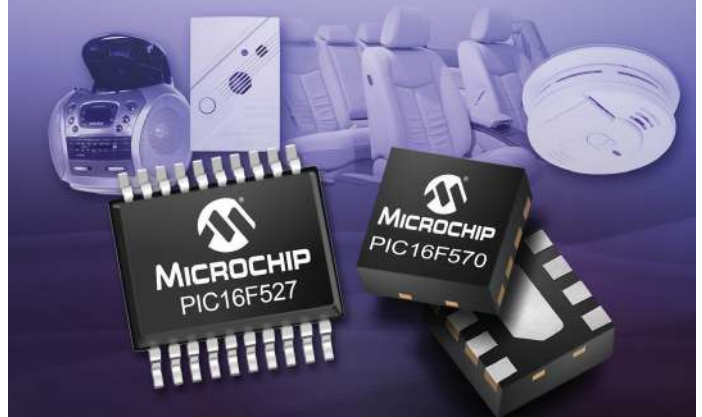
Product Benefits

Cost-Optimized Performance
The highly efficient 8-bit architecture and the hardware interrupt capability, offer you the freedom to implement more complex functions without adding software overhead.

Intelligent Analog
With an on-chip dual op amp module, 8-bit ADC and two comparators, these MCUs are ideal for systems that require signal conditioning and amplification to interpret analog inputs.

Operational Flexibility
These devices have a wide operating voltage range from 2.0V–5.5V in temperatures ranging from −40 to 85°C, which meet the requirements of a variety of general purpose applications.

Variety of Packaging Options
These devices are available in a broad range of 20-/28-pin packages, some as small as a 4 × 4 QFN. This gives you the flexibility and compatibility to use these MCUs in smaller applications.

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Additional Information

Sample & Purchasing Information

8-bit PIC® Micrcontrollers

| Product | Flash (KB) | Data EE (B) | SRAM (B) | I/O Pins | Analog | | | Internal Oscillator | Digital | Interrupts | XLP |
					Op Amp	8-bit ADC Ch.	Comparator		Timers/WDT		
PIC16F527	1.5	64	68	18	2	8	2	4/8 MHz	1 8-bit, 1 WDT	✓	✓
PIC16F570	3	64	132	24	2	8	2	4/8 MHz	1 8-bit, 1 WDT	✓	✓

Tape & reel as well as extended temperature options are available.

Development Tools from Microchip

Part Number	Development Tool	Description
DM164137	Curiosity Development Board	This development board is a cost-effective, fully integrated 8-bit development platform targeted at first-time users, Makers and those seeking a feature-rich rapid prototyping board.
DM164120-3	PICkit Demonstration Board	Demonstration and evaluation board for 28-pin general purpose products (PIC16F570 only)
DM163045	PICDEM™ Lab Development Board	Development board kit
DM163029	PICDEM Mechatronics Demonstration Kit	Demonstration and development board

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www.microchip.com/8bit

Visit our web site for additional product information and to locate your local sales office.

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