

18/20/40-Pin Flash Microcontroller Product Brief

High Performance RISC CPU:

- Only 33 single-word instructions to learn
- All instructions are single-cycle except for program branches which are two-cycle
- Two-level deep hardware stack
- Direct, Indirect and Relative Addressing modes for data and instructions
- Operating speed:
 - DC – 20 MHz clock speed
 - DC – 200 ns instruction cycle time
- On-chip Flash Program Memory:
 - 512 x 12 on PIC16F54
 - 2048 x 12 on PIC16F57
 - 2048 x 12 on PIC16F59
- General Purpose Registers (SRAM):
 - 25 x 8 on PIC16F54
 - 72 x 8 on PIC16F57
 - 134 x 8 on PIC16F59

Special Microcontroller Features:

- Power-on Reset (POR)
- Device Reset Timer (DRT)
- Watchdog Timer (WDT) with its own on-chip RC oscillator for reliable operation
- Programmable code protection
- Power-saving Sleep mode
- In-Circuit Serial Programmable™ (ICSP™) via two external pin connections.
- Selectable oscillator options:
 - RC: Low-cost RC oscillator
 - XT: Standard crystal/resonator
 - HS: High-speed crystal/resonator
 - LP: Power-saving, low-frequency crystal

Packages:

- 18-pin PDIP and SOIC for PIC16F54
- 20-pin SSOP for PIC16F54
- 28-pin PDIP, SOIC and SSOP for PIC16F57
- 40-pin PDIP for PIC16F59
- 44-pin TQFP for PIC16F59

Low-Power Features:

- Operating Current:
 - 170 μ A @ 2V, 4 MHz, typical
 - 15 μ A @ 2V, 32 kHz, typical
- Standby Current:
 - 500 nA @ 2V, typical

Peripheral Features:

- 12/20/32 I/O pins:
 - Individual direction control
 - High current sink/source
- 8-bit real-time clock/counter (TMR0) with 8-bit programmable prescaler

CMOS Technology:

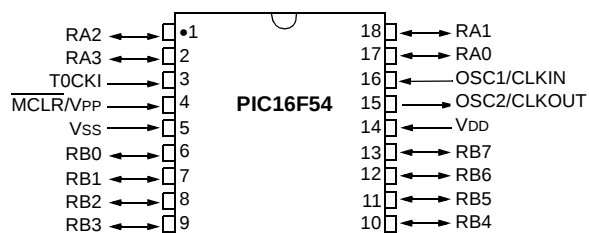
- Wide operating voltage range:
 - Industrial: 2.0V to 5.5V
 - Extended: 2.0V to 5.5V
- Wide temperature range:
 - Industrial: -40°C to 85°C
 - Extended: -40°C to 125°C
- High endurance Flash:
 - 100K write/erase cycles
 - > 40 year retention

Device	Program Memory	Data Memory	I/O	Timers 8-bit
	FLASH (words)	SRAM (bytes)		
PIC16F54	512	25	12	1
PIC16F57	2048	72	20	1
PIC16F59	2048	134	32	1

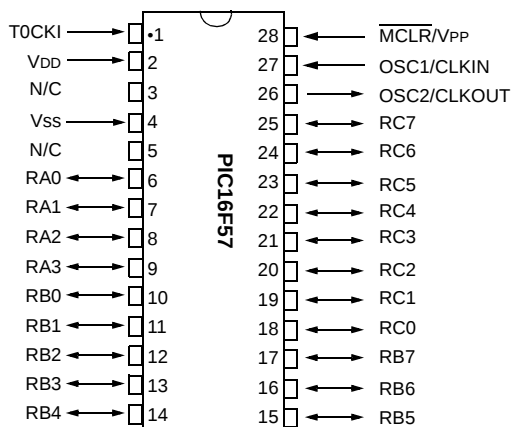
PIC16F54/57/59

Pin Diagrams

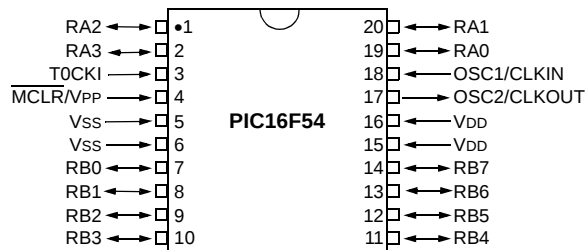
PDIP, SOIC



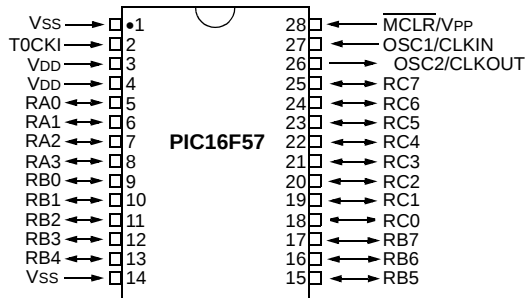
PDIP, SOIC



SSOP

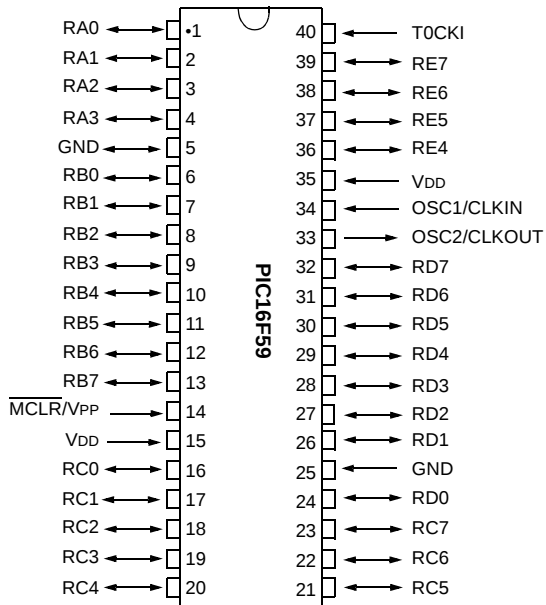


SSOP

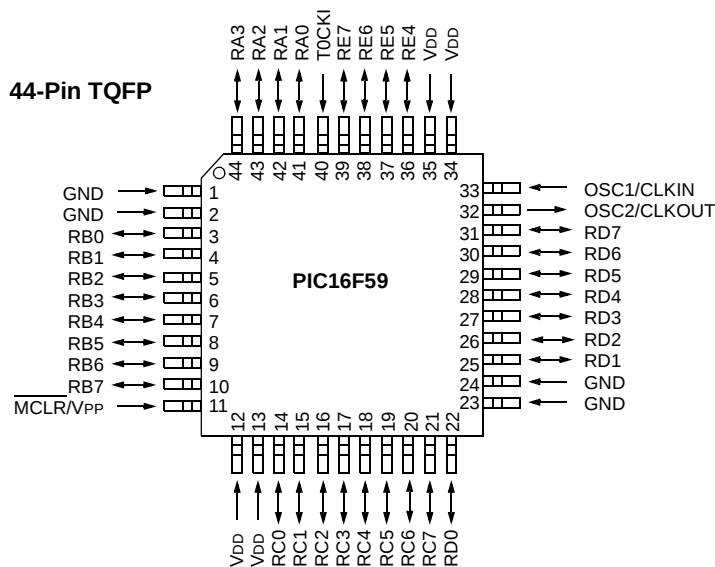


Pin Diagrams (Continued)

PDIP, 0.600"



44-Pin TQFP



PIC16F54/57/59

NOTES:

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Corporate Office

2355 West Chandler Blvd.
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Tel: 480-792-7200
Fax: 480-792-7277
Technical Support: 480-792-7627
Web Address: www.microchip.com

Atlanta

3780 Mansell Road, Suite 130
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Epping 2121, NSW
Australia
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Beijing, 100027, China
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Fax: 86-10-85282104

China - Chengdu

Rm. 2401-2402, 24th Floor,
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Chengdu 610016, China
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Fax: 86-28-86766599

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Unit 28F, World Trade Plaza
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Fuzhou 350001, China
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Fax: 86-591-7503521

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Far East International Plaza
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Rm. 1812, 18/F, Building A, United Plaza
No. 5022 Binhe Road, Futian District
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Room 401, Hongjian Building, No. 2
Fengxiangnan Road, Ronggui Town, Shunde
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No. 11, O'Shaughnessy Road
Bangalore, 560 025, India
Tel: 91-80-22290061 Fax: 91-80-22290062

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Benex S-1 6F
3-18-20, Shinyokohama
Kohoku-Ku, Yokohama-shi
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Tel: 81-45-471- 6166 Fax: 81-45-471-6122

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Samsung-Dong, Kangnam-Ku
Seoul, Korea 135-882
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Kaohsiung Branch
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Germany

Steinheilstrasse 10
D-85737 Ismaning, Germany
Tel: 49-89-627-144-0
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Italy

Via Quasimodo, 12
20025 Legnano (MI)
Milan, Italy
Tel: 39-0331-742611
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Fax: 31-416-690340

United Kingdom

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