



MICROCHIP

PIC18F6625/6721/8625/8721

64/80-Pin High-Performance, 1-Mbit Enhanced Flash Microcontrollers with A/D and nanoWatt Technology

Power Managed Modes:

- Run: CPU on, peripherals on
- Idle: CPU off, peripherals on
- Sleep: CPU off, peripherals off
- Idle mode currents down to 5.8 μ A typical
- Sleep current down to 0.1 μ A typical
- Timer1 Oscillator: 1.8 μ A, 32 kHz, 2V
- Watchdog Timer: 2.1 μ A
- Two-Speed Oscillator Start-up

Flexible Oscillator Structure:

- Four Crystal modes, up to 40 MHz
- 4X Phase Lock Loop (available for crystal and internal oscillators)
- Two External RC modes, up to 4 MHz
- Two External Clock modes, up to 40 MHz
- Internal oscillator block:
 - 8 user selectable frequencies, from 31 kHz to 8 MHz
 - Provides a complete range of clock speeds from 31 kHz to 32 MHz when used with PLL
 - User tunable to compensate for frequency drift
- Secondary oscillator using Timer1 @ 32 kHz
- Fail-Safe Clock Monitor:
 - Allows for safe shutdown if peripheral clock stops

External Memory Interface (PIC18F8625/8721 only):

- Address capability of up to 2 Mbytes
- 8-bit or 16-bit interface

Peripheral Highlights:

- High current sink/source 25 mA/25 mA
- Four programmable external interrupts
- Four input change interrupts
- Two Capture/Compare/PWM (CCP) modules

Peripheral Highlights (Continued):

- Three Enhanced Capture/Compare/PWM (ECCP) modules:
 - One, two or four PWM outputs
 - Selectable polarity
 - Programmable dead-time
 - Auto-Shutdown and Auto-Restart
- Two Master Synchronous Serial Port (MSSP) modules supporting 3-wire SPI™ (all 4 modes) and I²C™ Master and Slave modes
- Two Enhanced Addressable USART modules:
 - Supports RS-485, RS-232 and LIN 1.2
 - RS-232 operation using internal oscillator block (no external crystal required)
 - Auto-wake-up on Start bit
 - Auto-baud detect
- 10-bit, up to 16-channel Analog-to-Digital Converter module (A/D)
 - Auto-acquisition capability
 - Conversion available during Sleep
- Dual analog comparators with input multiplexing

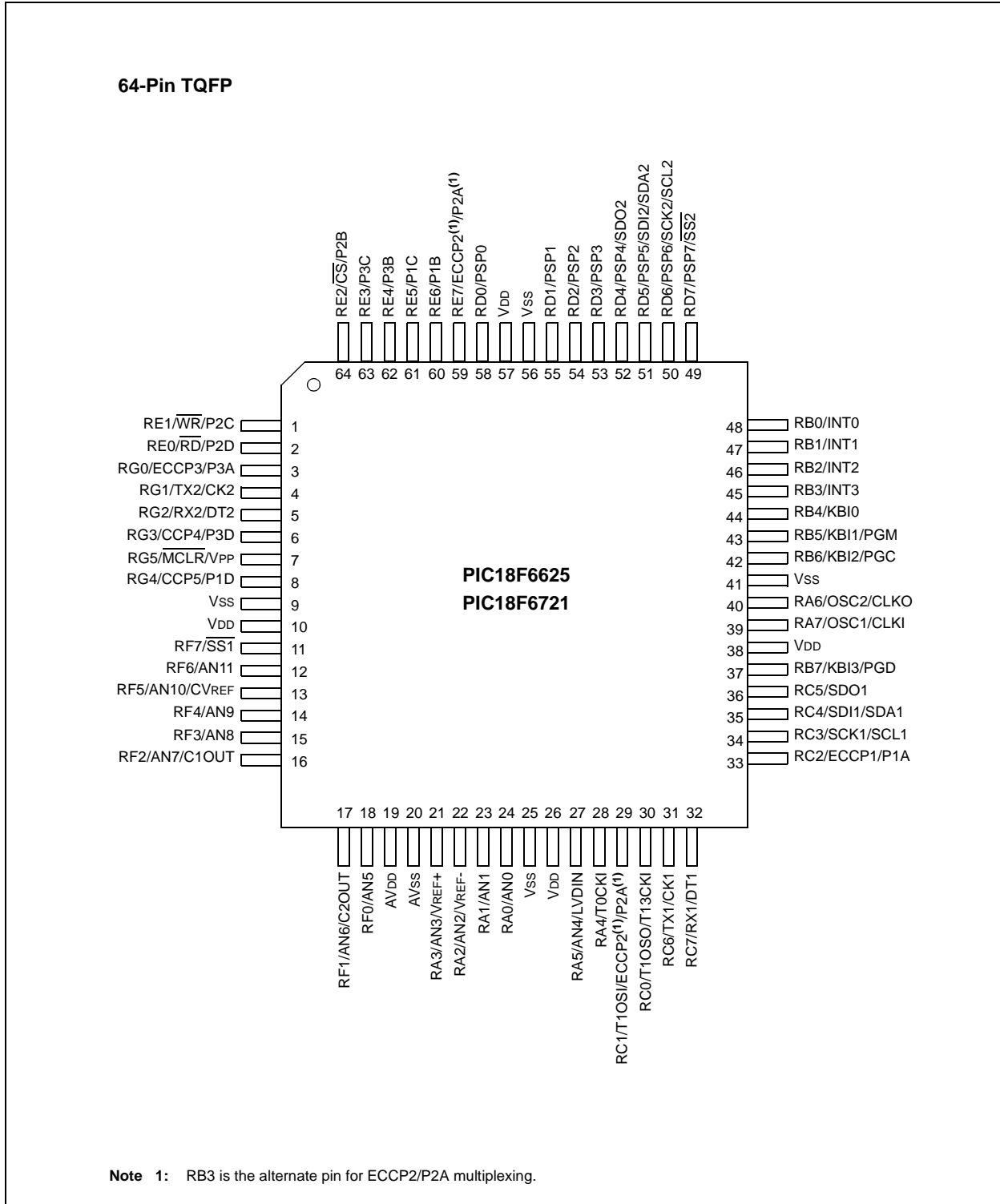
Special Microcontroller Features:

- C compiler optimized architecture:
 - Optional extended instruction set designed to optimize re-entrant code
- 100,000 erase/write cycle Enhanced Flash program memory typical
- 1,000,000 erase/write cycle Data EEPROM memory typical
- Flash/Data EEPROM Retention: 100 years typical
- Self-programmable under software control
- Priority levels for interrupts
- 8 X 8 Single Cycle Hardware Multiplier
- Extended Watchdog Timer (WDT):
 - Programmable period from 4 ms to 131s
- Single-supply 5V In-Circuit Serial Programming™ (ICSP™) via two pins
- In-Circuit Debug (ICD) via two pins
- Wide operating voltage range: 2.0V to 5.5V

Device	Program Memory		Data Memory		I/O	10-bit A/D (ch)	CCP/ ECCP (PWM)	MSSP		EUSART	Comparators	Timers 8/16-bit	External Bus	
	Flash (bytes)	# Single-Word Instructions	SRAM (bytes)	EEPROM (bytes)				SPI	Master I ² C					
PIC18F6625	96 K	49152	3936	1024	54	12	2/3	2	Y	Y	2	2	2/3	N
PIC18F6721	128 K	65536	3936	1024	54	12	2/3	2	Y	Y	2	2	2/3	N
PIC18F8625	96 K	49152	3936	1024	70	16	2/3	2	Y	Y	2	2	2/3	Y
PIC18F8721	128 K	65536	3936	1024	70	16	2/3	2	Y	Y	2	2	2/3	Y

PIC18F6625/6721/8625/8721

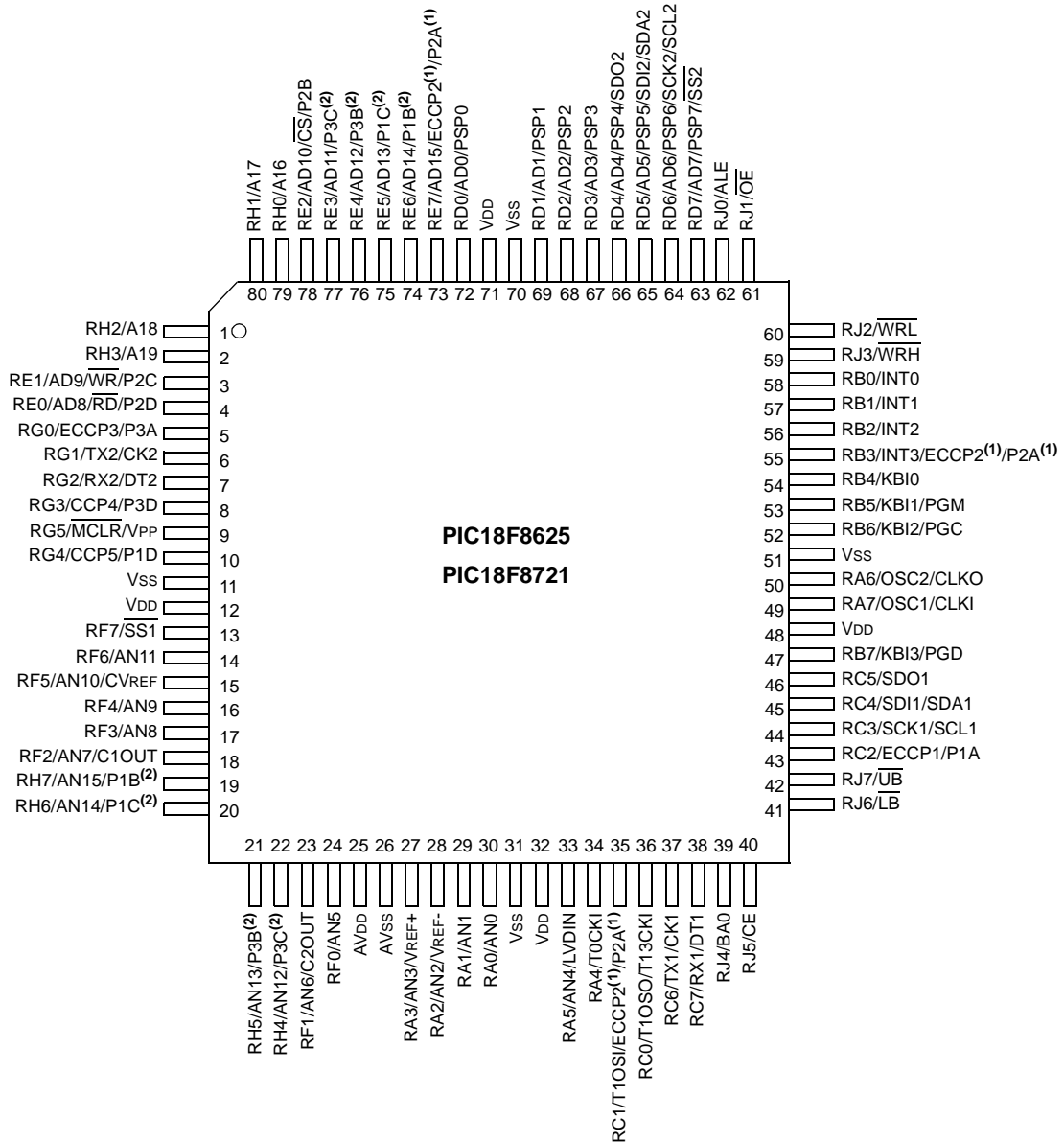
Pin Diagrams



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Pin Diagrams (Continued)

80-Pin TQFP



- Note** 1: The ECCP2/P2A pin placement is determined by the CCP2MX configuration bit and Processor Mode settings.
 2: P1B, P1C, P3B and P3C pin placement is determined by the ECCPMX configuration bit.

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NOTES:

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