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**PIC16F628A - Mnemônicos (opcodes)**

**OPCODES FIELD DESCRIPTIONS**

|  |  |
| --- | --- |
| **Field** | **Description** |
| f | Register file address (0x00 to 0x7F) |
| W | Working register (accumulator) |
| b | Bit address within an 8-bit file register |
| k | Literal field, constant data or label |
| x | Don’t care location (= 0 or 1) The assembler will generate code with x = 0. It is the recommended form of use for compatibility with all Microchip software tools |
| d | Destination select; d = 0: store result in W, d = 1: store result in file register f. Default is d = 1 |
| TO | Time-out bit |
| PD | Power-down bit |

**GENERAL FORMAT FOR INSTRUCTIONS**

Byte-oriented file register operations

13 8 7 6 0

|  |  |  |
| --- | --- | --- |
| OPCODE | d | f (FILE #) |

d = 0 for destination W

d = 1 for destination f

f = 7-bit file register address

Bit-oriented file register operations

13 10 9 7 6 0

|  |  |  |
| --- | --- | --- |
| OPCODE | b (BIT #) | f (FILE #) |

b = 3-bit bit address

f = 7-bit file register address

Literal and control operations

GENERAL

13 8 7 0

|  |  |
| --- | --- |
| OPCODE | k (literal) |

k = 8-bit immediate value

CALL and GOTO instructions only

13 11 10 0

|  |  |
| --- | --- |
| OPCODE | k (literal) |

k = 11-bit immediate value

**PIC16F628A Instruction Set**

|  |  |
| --- | --- |
| **Mnemonic, Operands** | **Description** |

BYTE-ORIENTED FILE REGISTER OPERATIONS

|  |  |
| --- | --- |
| ADDWF f,d  ANDWF f,d  CLRF f  CLRW ---  COMF f,d  DECF f,d  DECFSZ f,d  NCF f,d  INCFSZ f,d  IORWF f,d  MOVF f,d  MOVWF f  NOP ---  RLF f,d  RRF f,d  SUBWF f,d  SWAPF f,d  XORWF f,d | Add W and f  AND W with f  Clear f  Clear W  Complement f  Decrement f  Decrement f, Skip if 0  Increment f  Increment f, Skip if 0  Inclusive OR W with f  Move f  Move W to f  No Operation  Rotate Left f through Carry  Rotate Right f through Carry  Subtract W from f  Swap nibbles in f  Exclusive OR W with f |

BIT-ORIENTED FILE REGISTER OPERATIONS

|  |  |
| --- | --- |
| BCF f, b  BSF f, b  BTFSC f, b  BTFSS f, b | Bit Clear f  Bit Set f  Bit Test f, Skip if Clear  Bit Test f, Skip if Set |

LITERAL AND CONTROL OPERATIONS

|  |  |
| --- | --- |
| ADDLW k  ANDLW k  CALL k  CLRWDT ---  GOTO k  IORLW k  MOVLW k  RETFIE ---  RETLW k  RETURN ---  SLEEP ---  SUBLW k  XORLW k | Add literal and W  AND literal with W  Call subroutine  Clear Watchdog Timer  Go to address  Inclusive OR literal with W  Move literal to W  Return from interrupt  Return with literal in W  Return from Subroutine  Go into Standby mode  Subtract W from literal  Exclusive OR literal with W |