T_A = -40°C to 85°C, V_{CC} = 1.8V to 5.5V (unless otherwise noted) (Continued)

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
R_{RST}	Reset Pull-up Resistor		30		60	kΩ
R_{PU}	I/O Pin Pull-up Resistor		20		50	kΩ
V_{ACIO}	Analog Comparator Input Offset Voltage	V_{CC} = 5V V_{in} = V_{CC}/2		<10	40	mV
I_{ACLK}	Analog Comparator Input Leakage Current	V_{CC} = 5V V_{in} = V_{CC}/2	-50		50	nA
t_{ACID}	Analog Comparator Propagation Delay	V_{CC} = 2.7V V_{CC} = 4.0V		750 500		ns

Notes:
1. “Max” means the highest value where the pin is guaranteed to be read as low
2. “Min” means the lowest value where the pin is guaranteed to be read as high
3. Although each I/O port can sink more than the test conditions (20 mA at V_{CC} = 5V, 10 mA at V_{CC} = 3V) under steady state conditions (non-transient), the following must be observed:
   ATmega48P/88P/168P/328P:
   1] The sum of all I_{OL}, for ports C0 - C5, ADC7, ADC6 should not exceed 100 mA.
   2] The sum of all I_{OL}, for ports B0 - B5, D5 - D7, XTAL1, XTAL2 should not exceed 100 mA.
   3] The sum of all I_{OL}, for ports D0 - D4, $\overline{\text{RESET}}$ should not exceed 100 mA.
   If I_{OL} exceeds the test condition, V_{OL} may exceed the related specification. Pins are not guaranteed to sink current greater than the listed test condition.
4. Although each I/O port can source more than the test conditions (20 mA at V_{CC} = 5V, 10 mA at V_{CC} = 3V) under steady state conditions (non-transient), the following must be observed:
   ATmega48P/88P/168P/328P:
   1] The sum of all I_{OH}, for ports C0 - C5, D0- D4, ADC7, $\overline{\text{RESET}}$ should not exceed 150 mA.
   2] The sum of all I_{OH}, for ports B0 - B5, D5 - D7, ADC6, XTAL1, XTAL2 should not exceed 150 mA.
   If II_{OH} exceeds the test condition, V_{OH} may exceed the related specification. Pins are not guaranteed to source current greater than the listed test condition.

26.2.1 ATmega48P DC Characteristics

T_A = -40°C to 85°C, V_{CC} = 1.8V to 5.5V (unless otherwise noted)

Symbol	Parameter	Condition	Min.	Typ.[2]	Max.	Units
I_{CC}	Power Supply Current[1]	Active 1 MHz, V_{CC} = 2V		0.3	0.5	mA
		Active 4 MHz, V_{CC} = 3V		1.9	2.5	mA
		Active 8 MHz, V_{CC} = 5V		6.8	9	mA
		Idle 1 MHz, V_{CC} = 2V		0.06	0.15	mA
		Idle 4 MHz, V_{CC} = 3V		0.4	0.7	mA
		Idle 8 MHz, V_{CC} = 5V		1.6	2.7	mA
	Power-save mode[3][4]	32 kHz TOSC enabled, V_{CC} = 1.8V		0.75	1.6	µA
		32 kHz TOSC enabled, V_{CC} = 3V		0.85	2.6	µA
	Power-down mode[3]	WDT enabled, V_{CC} = 3V		4.2	8	µA
		WDT disabled, V_{CC} = 3V		0.18	2	µA

Notes:
1. Values with “Minimizing Power Consumption” enabled (0xFF).
2. Typical values at 25°C. Maximum values are test limits in production.
3. The current consumption values include input leakage current.