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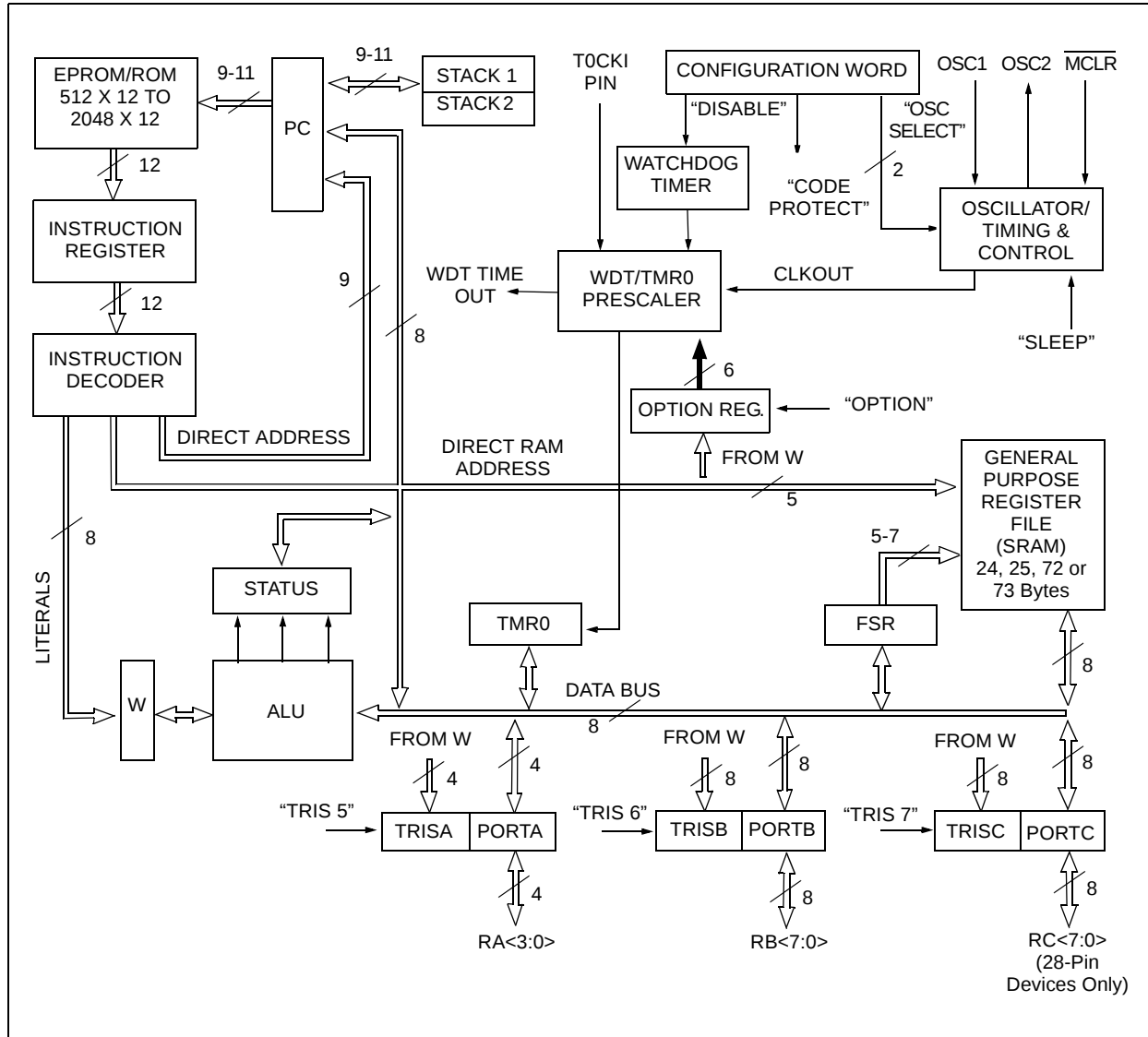
Applications of "[Embedded - Microcontrollers](#)"

Details

Product Status	Active
Core Processor	PIC
Core Size	8-Bit
Speed	20MHz
Connectivity	-
Peripherals	POR, WDT
Number of I/O	20
Program Memory Size	3KB (2K x 12)
Program Memory Type	OTP
EEPROM Size	-
RAM Size	72 x 8
Voltage - Supply (Vcc/Vdd)	3V ~ 5.5V
Data Converters	-
Oscillator Type	External
Operating Temperature	0°C ~ 70°C (TA)
Mounting Type	Through Hole
Package / Case	28-DIP (0.600", 15.24mm)
Supplier Device Package	28-PDIP
Purchase URL	https://www.e-xfl.com/product-detail/microchip-technology/pic16c57c-20-p

PIC16C5X

FIGURE 3-1: PIC16C5X SERIES BLOCK DIAGRAM



REGISTER 9-2: CONFIGURATION WORD FOR PIC16C54/C55/C56/C57

—	—	—	—	—	—	—	—	CP	WDTE	FOSC1	FOSC0
bit 11											bit 0

bit 11-4: **Unimplemented:** Read as '0'

bit 3: **CP:** Code protection bit.
 1 = Code protection off
 0 = Code protection on

bit 2: **WDTE:** Watchdog timer enable bit
 1 = WDT enabled
 0 = WDT disabled

bit 1-0: **FOSC1:FOSC0:** Oscillator selection bits⁽²⁾
 00 = LP oscillator
 01 = XT oscillator
 10 = HS oscillator
 11 = RC oscillator

- Note 1:** Refer to the PIC16C5X Programming Specifications (Literature Number DS30190) to determine how to access the configuration word.
2: PIC16LV54A supports XT, RC and LP oscillator only.

Legend:			
R = Readable bit	W = Writable bit	U = Unimplemented bit, read as '0'	
-n = Value at POR	1 = bit is set	0 = bit is cleared	x = bit is unknown

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TABLE 10-2: INSTRUCTION SET SUMMARY

Mnemonic, Operands		Description	Cycles	12-Bit Opcode			Status Affected	Notes
				MSb	LSb			
ADDWF	f, d	Add W and f	1	0001	11df	ffff	C, DC, Z	1, 2, 4
ANDWF	f, d	AND W with f	1	0001	01df	ffff	Z	2, 4
CLRF	f	Clear f	1	0000	011f	ffff	Z	4
CLRW	—	Clear W	1	0000	0100	0000	Z	
COMF	f, d	Complement f	1	0010	01df	ffff	Z	
DECF	f, d	Decrement f	1	0000	11df	ffff	Z	2, 4
DECFSZ	f, d	Decrement f, Skip if 0	1 ⁽²⁾	0010	11df	ffff	None	2, 4
INCF	f, d	Increment f	1	0010	10df	ffff	Z	2, 4
INCFSZ	f, d	Increment f, Skip if 0	1 ⁽²⁾	0011	11df	ffff	None	2, 4
IORWF	f, d	Inclusive OR W with f	1	0001	00df	ffff	Z	2, 4
MOVF	f, d	Move f	1	0010	00df	ffff	Z	2, 4
MOVWF	f	Move W to f	1	0000	001f	ffff	None	1, 4
NOP	—	No Operation	1	0000	0000	0000	None	
RLF	f, d	Rotate left f through Carry	1	0011	01df	ffff	C	2, 4
RRF	f, d	Rotate right f through Carry	1	0011	00df	ffff	C	2, 4
SUBWF	f, d	Subtract W from f	1	0000	10df	ffff	C, DC, Z	1, 2, 4
SWAPF	f, d	Swap f	1	0011	10df	ffff	None	2, 4
XORWF	f, d	Exclusive OR W with f	1	0001	10df	ffff	Z	2, 4
BIT-ORIENTED FILE REGISTER OPERATIONS								
BCF	f, b	Bit Clear f	1	0100	bbbf	ffff	None	2, 4
BSF	f, b	Bit Set f	1	0101	bbbf	ffff	None	2, 4
BTFSC	f, b	Bit Test f, Skip if Clear	1 ⁽²⁾	0110	bbbf	ffff	None	
BTFSS	f, b	Bit Test f, Skip if Set	1 ⁽²⁾	0111	bbbf	ffff	None	
LITERAL AND CONTROL OPERATIONS								
ANDLW	k	AND literal with W	1	1110	kkkk	kkkk	Z	1
CALL	k	Call subroutine	2	1001	kkkk	kkkk	None	
CLRWDT	k	Clear Watchdog Timer	1	0000	0000	0100	TO, PD	
GOTO	k	Unconditional branch	2	101k	kkkk	kkkk	None	
IORLW	k	Inclusive OR Literal with W	1	1101	kkkk	kkkk	Z	
MOVLW	k	Move Literal to W	1	1100	kkkk	kkkk	None	
OPTION	k	Load OPTION register	1	0000	0000	0010	None	
RETLW	k	Return, place Literal in W	2	1000	kkkk	kkkk	None	
SLEEP	—	Go into standby mode	1	0000	0000	0011	TO, PD	
TRIS	f	Load TRIS register	1	0000	0000	0fff	None	3
XORLW	k	Exclusive OR Literal to W	1	1111	kkkk	kkkk	Z	

Note 1: The 9th bit of the program counter will be forced to a '0' by any instruction that writes to the PC except for GOTO (see Section 6.5 for more on program counter).

- When an I/O register is modified as a function of itself (e.g. `MOVF PORTB, 1`), the value used will be that value present on the pins themselves. For example, if the data latch is '1' for a pin configured as input and is driven low by an external device, the data will be written back with a '0'.
- The instruction `TRIS f`, where $f = 5, 6$ or 7 causes the contents of the W register to be written to the tristate latches of PORTA, B or C respectively. A '1' forces the pin to a hi-impedance state and disables the output buffers.
- If this instruction is executed on the TMR0 register (and, where applicable, $d = 1$), the prescaler will be cleared (if assigned to TMR0).

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BSF Bit Set f

Syntax: [*label*] BSF f,b
 Operands: $0 \leq f \leq 31$
 $0 \leq b \leq 7$
 Operation: $1 \rightarrow (f)$
 Status Affected: None
 Encoding:

0101	bbbbf	ffff
------	-------	------

 Description: Bit 'b' in register 'f' is set.
 Words: 1
 Cycles: 1
 Example: BSF FLAG_REG, 7

Before Instruction
 FLAG_REG = 0x0A
 After Instruction
 FLAG_REG = 0x8A

BTFSC Bit Test f, Skip if Clear

Syntax: [*label*] BTFSC f,b
 Operands: $0 \leq f \leq 31$
 $0 \leq b \leq 7$
 Operation: skip if $(f) = 0$
 Status Affected: None
 Encoding:

0110	bbbbf	ffff
------	-------	------

 Description: If bit 'b' in register 'f' is 0 then the next instruction is skipped.
 If bit 'b' is 0 then the next instruction fetched during the current instruction execution is discarded, and a NOP is executed instead, making this a 2-cycle instruction.
 Words: 1
 Cycles: 1(2)
 Example: HERE BTFSC FLAG, 1
 FALSE GOTO PROCESS_CODE
 TRUE •
 •
 •

Before Instruction
 PC = address (HERE)
 After Instruction
 if FLAG<1> = 0,
 PC = address (TRUE);
 if FLAG<1> = 1,
 PC = address (FALSE)

BTFSS Bit Test f, Skip if Set

Syntax: [*label*] BTFSS f,b
 Operands: $0 \leq f \leq 31$
 $0 \leq b < 7$
 Operation: skip if $(f) = 1$
 Status Affected: None
 Encoding:

0111	bbbbf	ffff
------	-------	------

 Description: If bit 'b' in register 'f' is '1' then the next instruction is skipped.
 If bit 'b' is '1', then the next instruction fetched during the current instruction execution, is discarded and a NOP is executed instead, making this a 2-cycle instruction.
 Words: 1
 Cycles: 1(2)

Example: HERE BTFSS FLAG, 1
 FALSE GOTO PROCESS_CODE
 TRUE •
 •
 •

Before Instruction
 PC = address (HERE)
 After Instruction
 If FLAG<1> = 0,
 PC = address (FALSE);
 if FLAG<1> = 1,
 PC = address (TRUE)

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NOTES:

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12.5 DC Characteristics: PIC16C54/55/56/57-RCE, XTE, 10E, HSE, LPE (Extended)

DC CHARACTERISTICS			Standard Operating Conditions (unless otherwise specified)				
			Operating Temperature $-40^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ for extended				
Param No.	Symbol	Characteristic	Min	Typ†	Max	Units	Conditions
D030	V_{IL}	Input Low Voltage					
		I/O ports	V_{SS}	—	$0.15 V_{DD}$	V	Pin at hi-impedance PIC16C5X-RC only ⁽³⁾ PIC16C5X-XT, 10, HS, LP
		MCLR (Schmitt Trigger)	V_{SS}	—	$0.15 V_{DD}$	V	
		T0CKI (Schmitt Trigger)	V_{SS}	—	$0.15 V_{DD}$	V	
		OSC1 (Schmitt Trigger)	V_{SS}	—	$0.15 V_{DD}$	V	
		OSC1 (Schmitt Trigger)	V_{SS}	—	$0.3 V_{DD}$	V	
D040	V_{IH}	Input High Voltage					
		I/O ports	$0.45 V_{DD}$	—	V_{DD}	V	For all V_{DD} ⁽⁴⁾ $4.0\text{V} < V_{DD} \leq 5.5\text{V}$ ⁽⁴⁾ $V_{DD} > 5.5\text{V}$
		I/O ports	2.0	—	V_{DD}	V	
		I/O ports	$0.36 V_{DD}$	—	V_{DD}	V	
		MCLR (Schmitt Trigger)	$0.85 V_{DD}$	—	V_{DD}	V	
		T0CKI (Schmitt Trigger)	$0.85 V_{DD}$	—	V_{DD}	V	PIC16C5X-RC only ⁽³⁾ PIC16C5X-XT, 10, HS, LP
		OSC1 (Schmitt Trigger)	$0.85 V_{DD}$	—	V_{DD}	V	
D050	V_{HYS}	Hysteresis of Schmitt Trigger inputs	$0.15 V_{DD}^*$	—	—	V	
D060	I_{IL}	Input Leakage Current ^(1,2)					For $V_{DD} \leq 5.5\text{V}$: $V_{SS} \leq V_{PIN} \leq V_{DD}$, pin at hi-impedance $V_{PIN} = V_{SS} + 0.25\text{V}$ $V_{PIN} = V_{DD}$ $V_{SS} \leq V_{PIN} \leq V_{DD}$ $V_{SS} \leq V_{PIN} \leq V_{DD}$, PIC16C5X-XT, 10, HS, LP
		I/O ports	–1	0.5	+1	μA	
		MCLR	–5	—	—	μA	
		MCLR	—	0.5	+5	μA	
		T0CKI	–3	0.5	+3	μA	
D080	V_{OL}	Output Low Voltage					
		I/O ports	—	—	0.6	V	$I_{OL} = 8.7\text{ mA}$, $V_{DD} = 4.5\text{V}$ $I_{OL} = 1.6\text{ mA}$, $V_{DD} = 4.5\text{V}$, PIC16C5X-RC
D090	V_{OH}	Output High Voltage ⁽²⁾					
		I/O ports	$V_{DD} - 0.7$	—	—	V	$I_{OH} = -5.4\text{ mA}$, $V_{DD} = 4.5\text{V}$ $I_{OH} = -1.0\text{ mA}$, $V_{DD} = 4.5\text{V}$, PIC16C5X-RC
D090	V_{OH}	OSC2/CLKOUT	$V_{DD} - 0.7$	—	—	V	

* These parameters are characterized but not tested.

† Data in the Typical ("Typ") column is based on characterization results at 25°C . This data is for design guidance only and is not tested.

Note 1: The leakage current on the $\overline{\text{MCLR}}/\text{VPP}$ pin is strongly dependent on the applied voltage level. The specified levels represent normal operating conditions. Higher leakage current may be measured at different input voltage.

2: Negative current is defined as coming out of the pin.

3: For PIC16C5X-RC devices, the OSC1/CLKIN pin is a Schmitt Trigger input. It is not recommended that the PIC16C5X be driven with external clock in RC mode.

4: The user may use the better of the two specifications.

PIC16C5X

FIGURE 12-3: CLKOUT AND I/O TIMING - PIC16C54/55/56/57

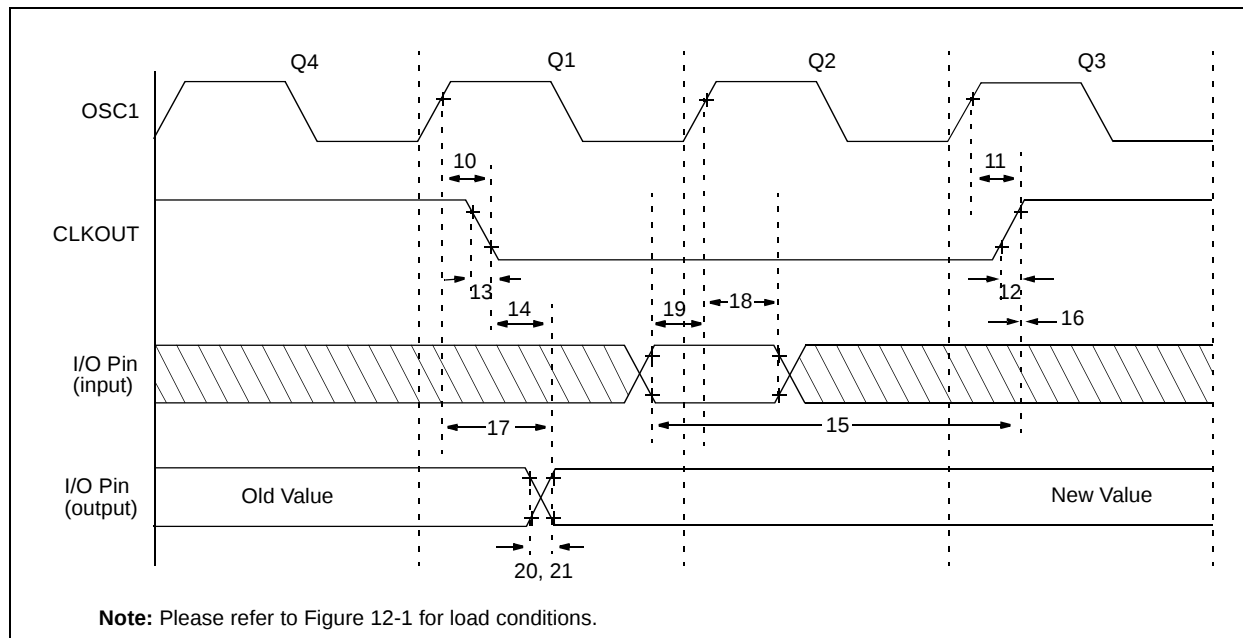


TABLE 12-2: CLKOUT AND I/O TIMING REQUIREMENTS - PIC16C54/55/56/57

Standard Operating Conditions (unless otherwise specified)						
AC Characteristics						
Operating Temperature 0°C ≤ TA ≤ +70°C for commercial -40°C ≤ TA ≤ +85°C for industrial -40°C ≤ TA ≤ +125°C for extended						
Param No.	Symbol	Characteristic	Min	Typ†	Max	Units
10	TosH2ckL	OSC1↑ to CLKOUT↓ ⁽¹⁾	—	15	30**	ns
11	TosH2ckH	OSC1↑ to CLKOUT↑ ⁽¹⁾	—	15	30**	ns
12	TckR	CLKOUT rise time ⁽¹⁾	—	5.0	15**	ns
13	TckF	CLKOUT fall time ⁽¹⁾	—	5.0	15**	ns
14	TckL2ioV	CLKOUT↓ to Port out valid ⁽¹⁾	—	—	40**	ns
15	TioV2ckH	Port in valid before CLKOUT↑ ⁽¹⁾	0.25 TCY+30*	—	—	ns
16	TckH2ioI	Port in hold after CLKOUT↑ ⁽¹⁾	0*	—	—	ns
17	TosH2ioV	OSC1↑ (Q1 cycle) to Port out valid ⁽²⁾	—	—	100*	ns
18	TosH2ioI	OSC1↑ (Q2 cycle) to Port input invalid (I/O in hold time)	TBD	—	—	ns
19	TioV2osH	Port input valid to OSC1↑ (I/O in setup time)	TBD	—	—	ns
20	TioR	Port output rise time ⁽²⁾	—	10	25**	ns
21	TioF	Port output fall time ⁽²⁾	—	10	25**	ns

* These parameters are characterized but not tested.

** These parameters are design targets and are not tested. No characterization data available at this time.

† Data in the Typical ("Typ") column is at 5.0V, 25°C unless otherwise stated. These parameters are for design guidance only and are not tested.

Note 1: Measurements are taken in RC Mode where CLKOUT output is 4 x Tosc.

2: Please refer to Figure 12-1 for load conditions.

PIC16C5X

FIGURE 12-5: TIMER0 CLOCK TIMINGS - PIC16C54/55/56/57

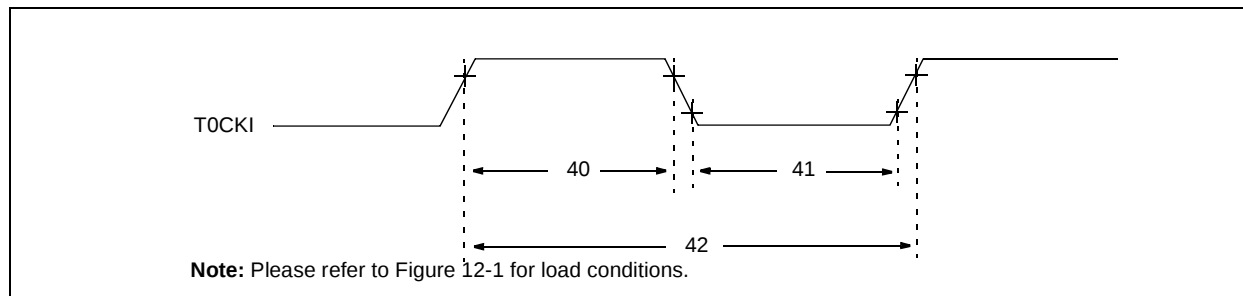


TABLE 12-4: TIMER0 CLOCK REQUIREMENTS - PIC16C54/55/56/57

AC Characteristics		Standard Operating Conditions (unless otherwise specified)					
		Operating Temperature $0^{\circ}\text{C} \leq T_A \leq +70^{\circ}\text{C}$ for commercial $-40^{\circ}\text{C} \leq T_A \leq +85^{\circ}\text{C}$ for industrial $-40^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$ for extended					
Param No.	Symbol	Characteristic	Min	Typ†	Max	Units	Conditions
40	Tt0H	T0CKI High Pulse Width - No Prescaler	$0.5 T_{CY} + 20^*$	—	—	ns	
		- With Prescaler	10^*	—	—	ns	
41	Tt0L	T0CKI Low Pulse Width - No Prescaler	$0.5 T_{CY} + 20^*$	—	—	ns	
		- With Prescaler	10^*	—	—	ns	
42	Tt0P	T0CKI Period	20 or $\frac{T_{CY} + 40^*}{N}$	—	—	ns	Whichever is greater. N = Prescale Value (1, 2, 4,..., 256)

* These parameters are characterized but not tested.

† Data in the Typical ("Typ") column is at 5.0V, 25°C unless otherwise stated. These parameters are for design guidance only and are not tested.

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13.6 Timing Diagrams and Specifications

FIGURE 13-2: EXTERNAL CLOCK TIMING - PIC16CR54A

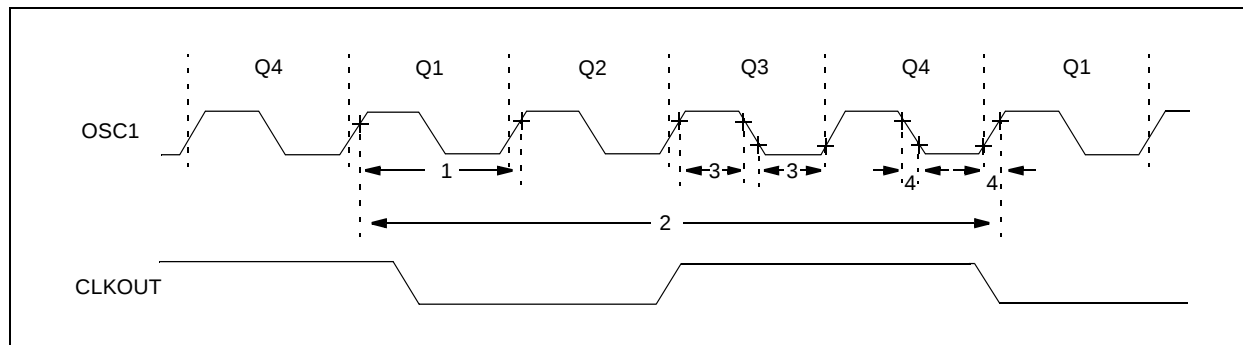


TABLE 13-1: EXTERNAL CLOCK TIMING REQUIREMENTS - PIC16CR54A

Standard Operating Conditions (unless otherwise specified)							
AC Characteristics		Operating Temperature					
		0°C ≤ TA ≤ +70°C for commercial					
		-40°C ≤ TA ≤ +85°C for industrial					
		-40°C ≤ TA ≤ +125°C for extended					
Param No.	Symbol	Characteristic	Min	Typ†	Max	Units	Conditions
	FOSC	External CLKIN Frequency ⁽¹⁾	DC	—	4.0	MHz	XT osc mode
			DC	—	4.0	MHz	HS osc mode (04)
			DC	—	10	MHz	HS osc mode (10)
			DC	—	20	MHz	HS osc mode (20)
			DC	—	200	kHz	LP osc mode
		Oscillator Frequency ⁽¹⁾	DC	—	4.0	MHz	RC osc mode
			0.1	—	4.0	MHz	XT osc mode
			4.0	—	4.0	MHz	HS osc mode (04)
			4.0	—	10	MHz	HS osc mode (10)
			4.0	—	20	MHz	HS osc mode (20)
			5.0	—	200	kHz	LP osc mode

* These parameters are characterized but not tested.

† Data in the Typical ("Typ") column is based on characterization results at 25°C. This data is for design guidance only and is not tested.

Note 1: All specified values are based on characterization data for that particular oscillator type under standard operating conditions with the device executing code. Exceeding these specified limits may result in an unstable oscillator operation and/or higher than expected current consumption.

When an external clock input is used, the "max" cycle time limit is "DC" (no clock) for all devices.

2: Instruction cycle period (Tcy) equals four times the input oscillator time base period.

FIGURE 14-2: TYPICAL RC OSC FREQUENCY vs. VDD, CEXT = 20 PF

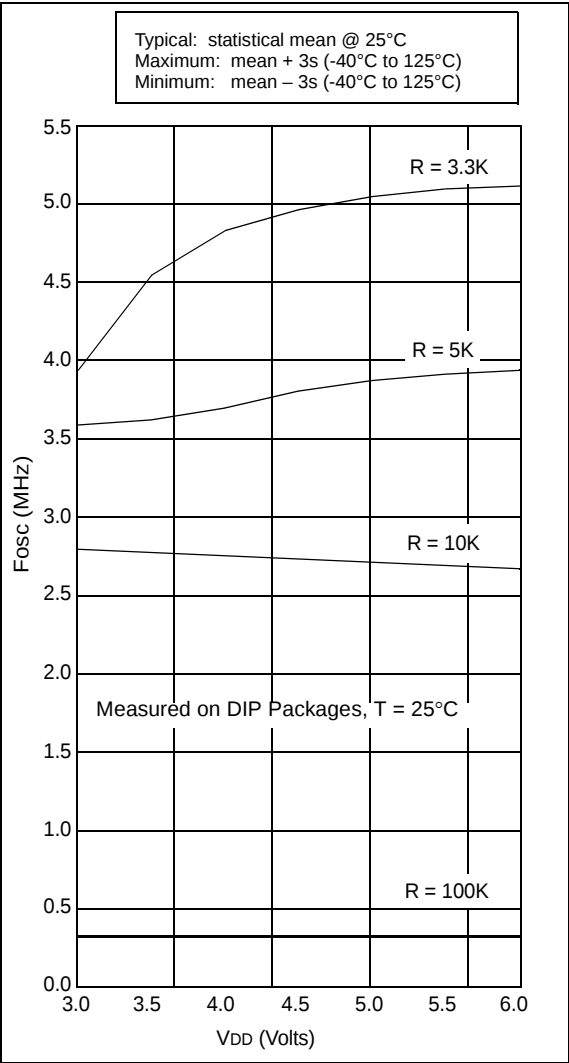


FIGURE 14-3: TYPICAL RC OSC FREQUENCY vs. VDD, CEXT = 100 PF

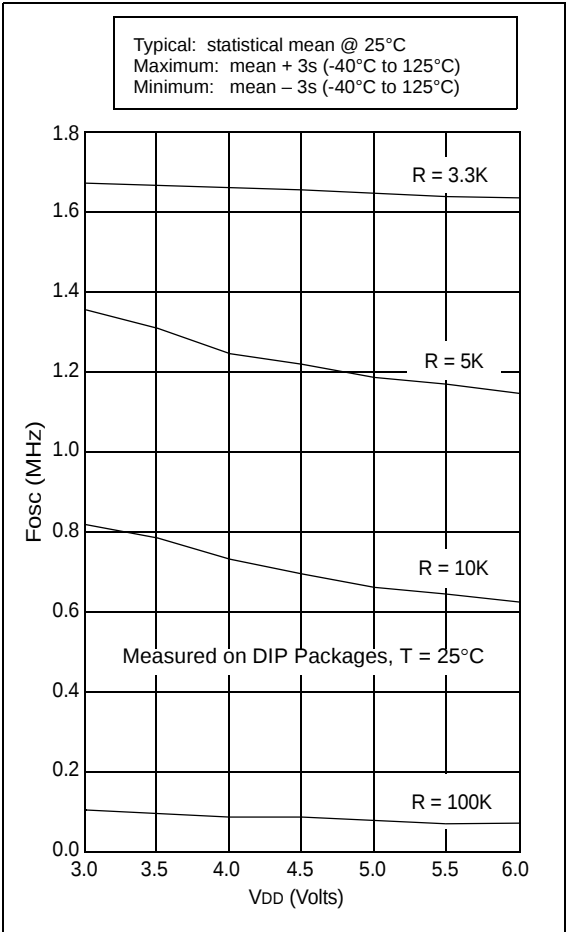


FIGURE 14-13: MAXIMUM IDD VS. FREQUENCY (EXTERNAL CLOCK, -40°C TO +85°C)

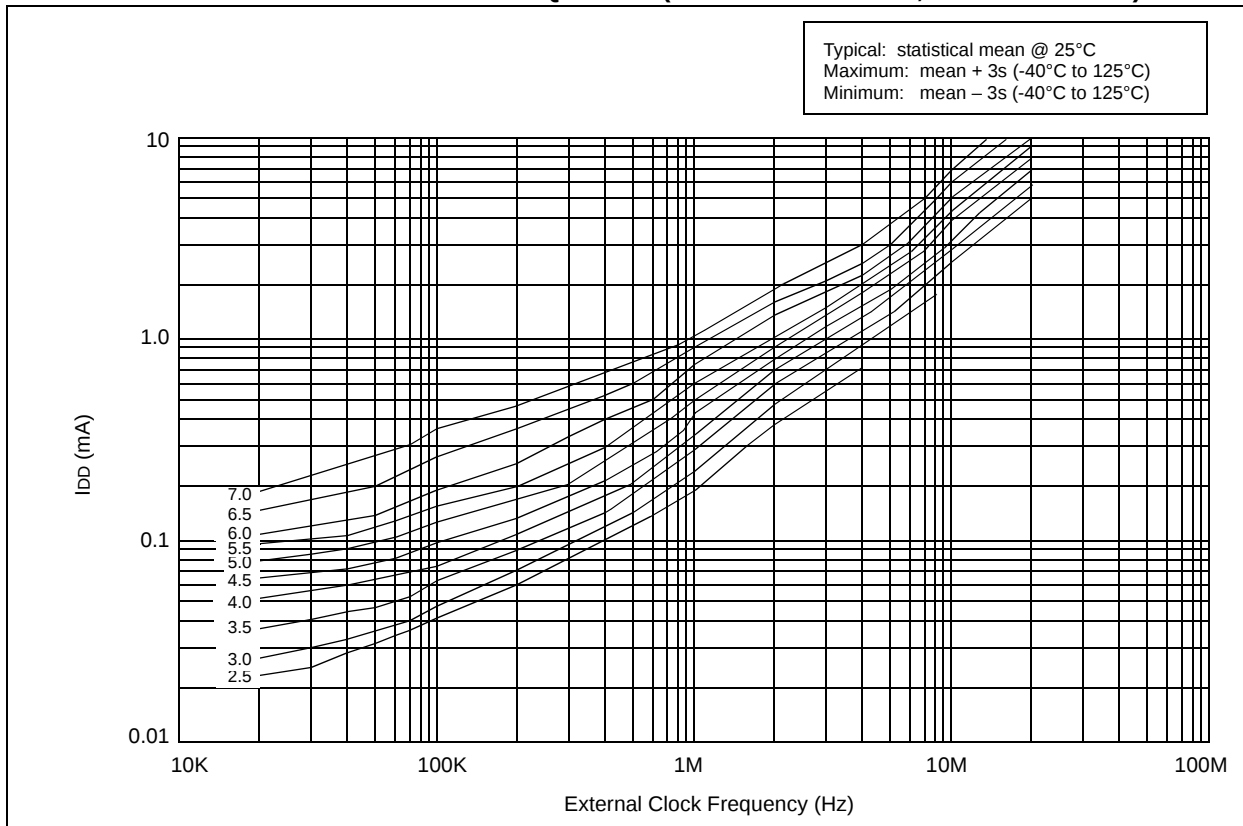
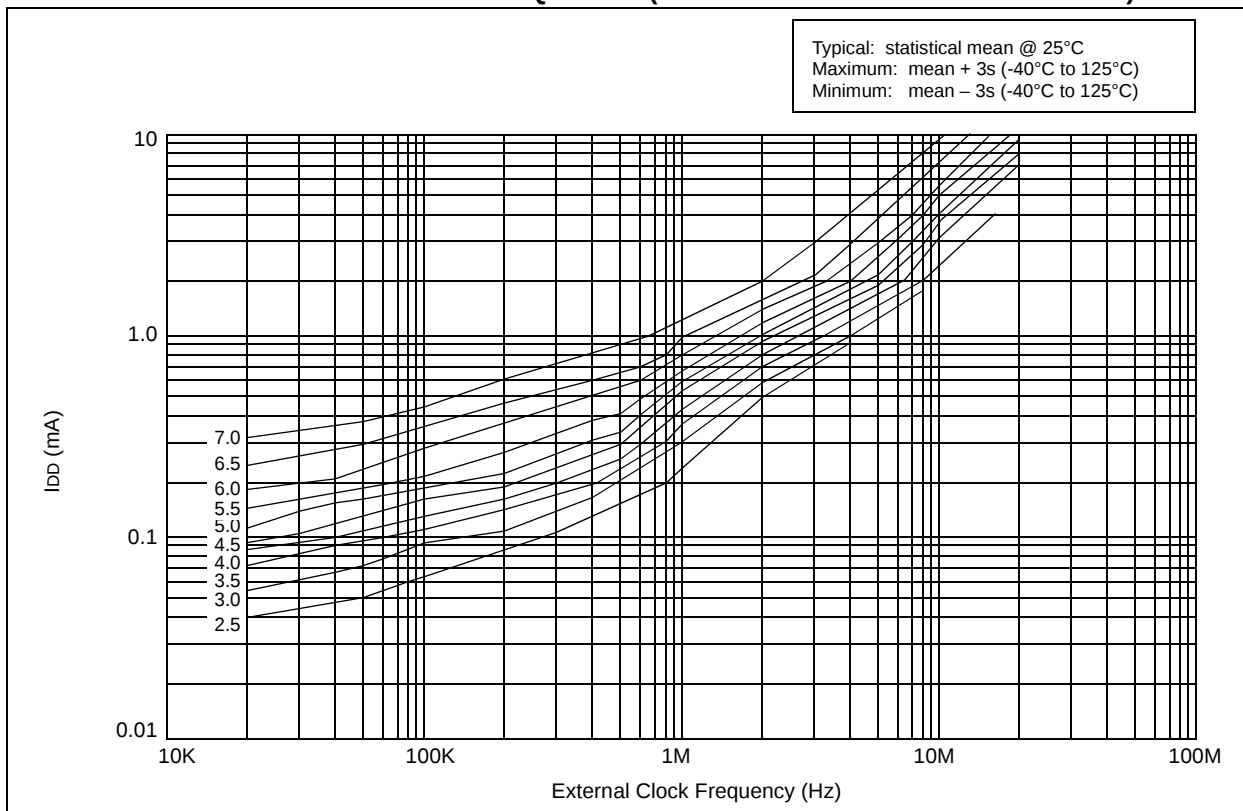


FIGURE 14-14: MAXIMUM I_{DD} vs. FREQUENCY (EXTERNAL CLOCK -55°C TO +125°C)



PIC16C5X

**TABLE 14-2: INPUT CAPACITANCE FOR
PIC16C54/56**

Pin	Typical Capacitance (pF)	
	18L PDIP	18L SOIC
RA port	5.0	4.3
RB port	5.0	4.3
$\overline{\text{MCLR}}$	17.0	17.0
OSC1	4.0	3.5
OSC2/CLKOUT	4.3	3.5
T0CKI	3.2	2.8

All capacitance values are typical at 25°C. A part-to-part variation of $\pm 25\%$ (three standard deviations) should be taken into account.

**TABLE 14-3: INPUT CAPACITANCE FOR
PIC16C55/57**

Pin	Typical Capacitance (pF)	
	28L PDIP (600 mil)	28L SOIC
RA port	5.2	4.8
RB port	5.6	4.7
RC port	5.0	4.1
$\overline{\text{MCLR}}$	17.0	17.0
OSC1	6.6	3.5
OSC2/CLKOUT	4.6	3.5
T0CKI	4.5	3.5

All capacitance values are typical at 25°C. A part-to-part variation of $\pm 25\%$ (three standard deviations) should be taken into account.

PIC16C5X

TABLE 15-1: EXTERNAL CLOCK TIMING REQUIREMENTS - PIC16C54A

Standard Operating Conditions (unless otherwise specified) Operating Temperature 0°C ≤ Ta ≤ +70°C for commercial -40°C ≤ Ta ≤ +85°C for industrial -20°C ≤ Ta ≤ +85°C for industrial - PIC16LV54A-02I -40°C ≤ Ta ≤ +125°C for extended							
AC Characteristics							
Param No.	Symbol	Characteristic	Min	Typ†	Max	Units	Conditions
1	Tosc	External CLKIN Period ⁽¹⁾	250	—	—	ns	XT osc mode
			500	—	—	ns	XT osc mode (PIC16LV54A)
			250	—	—	ns	HS osc mode (04)
			100	—	—	ns	HS osc mode (10)
			50	—	—	ns	HS osc mode (20)
			5.0	—	—	μs	LP osc mode
		Oscillator Period ⁽¹⁾	250	—	—	ns	RC osc mode
			500	—	—	ns	RC osc mode (PIC16LV54A)
			250	—	10,000	ns	XT osc mode
			500	—	—	ns	XT osc mode (PIC16LV54A)
			250	—	250	ns	HS osc mode (04)
			100	—	250	ns	HS osc mode (10)
			50	—	250	ns	HS osc mode (20)
			5.0	—	200	μs	LP osc mode
2	Tcy	Instruction Cycle Time ⁽²⁾	—	4/Fosc	—	—	
3	TosL, TosH	Clock in (OSC1) Low or High Time	85*	—	—	ns	XT oscillator
			20*	—	—	ns	HS oscillator
			2.0*	—	—	μs	LP oscillator
4	TosR, TosF	Clock in (OSC1) Rise or Fall Time	—	—	25*	ns	XT oscillator
			—	—	25*	ns	HS oscillator
			—	—	50*	ns	LP oscillator

* These parameters are characterized but not tested.

† Data in the Typical ("Typ") column is based on characterization results at 25°C. This data is for design guidance only and is not tested.

Note 1: All specified values are based on characterization data for that particular oscillator type under standard operating conditions with the device executing code. Exceeding these specified limits may result in an unstable oscillator operation and/or higher than expected current consumption.

When an external clock input is used, the "max" cycle time limit is "DC" (no clock) for all devices.

2: Instruction cycle period (Tcy) equals four times the input oscillator time base period.

FIGURE 16-4: TYPICAL RC OSCILLATOR FREQUENCY vs. VDD, CEXT = 300 pF, 25°C

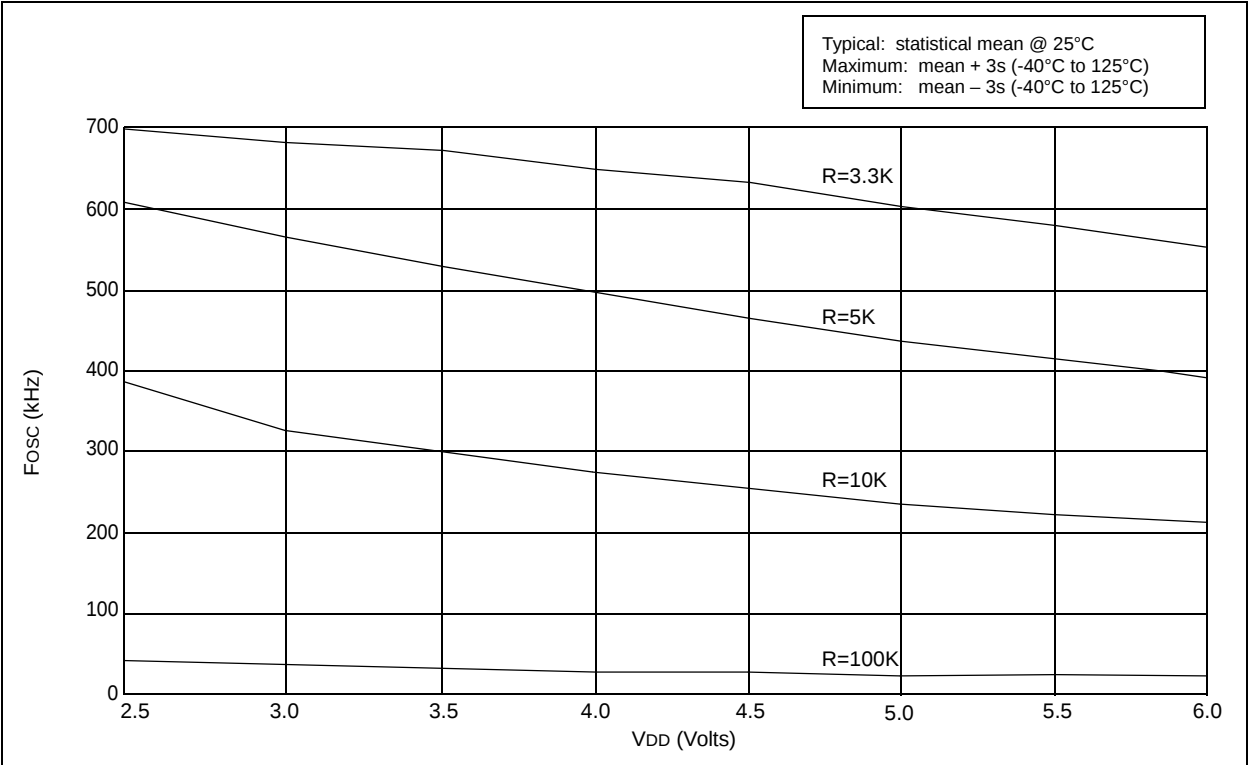


FIGURE 16-16: WDT TIMER TIME-OUT PERIOD vs. VDD⁽¹⁾

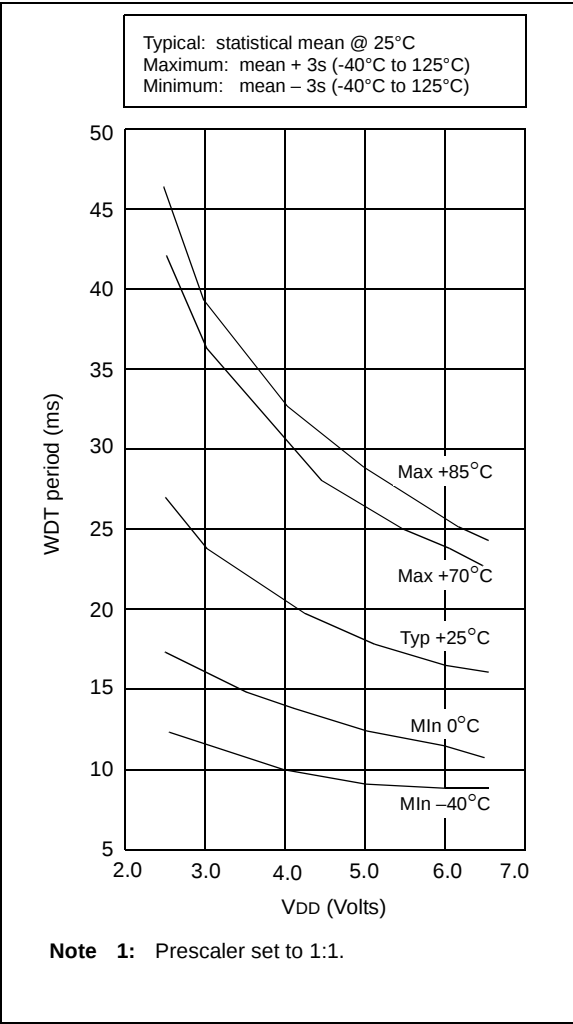


FIGURE 16-17: TRANSCONDUCTANCE (gm) OF HS OSCILLATOR vs. VDD

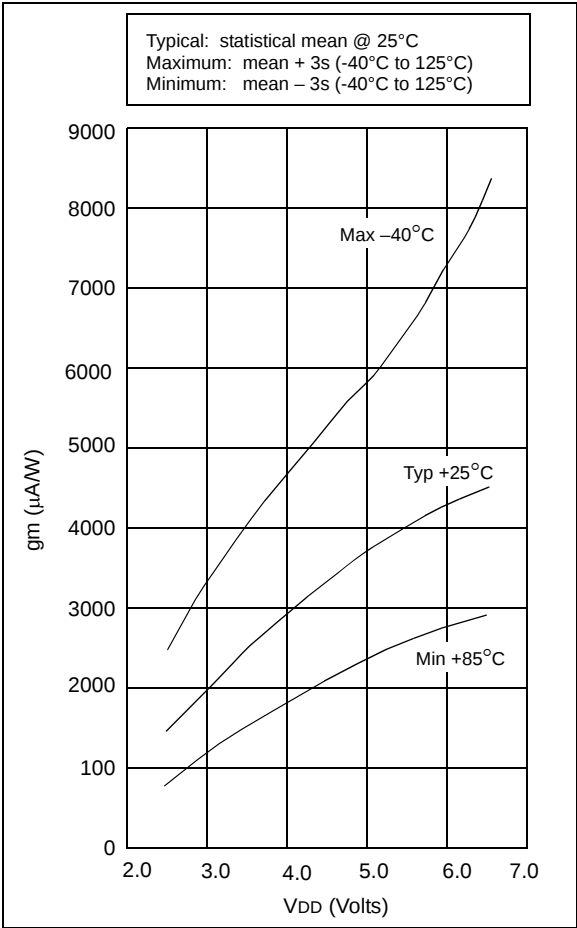


FIGURE 18-12: TYPICAL I_{DD} vs. FREQUENCY (WDT DISABLED, RC MODE @ 100 pF, 25°C)

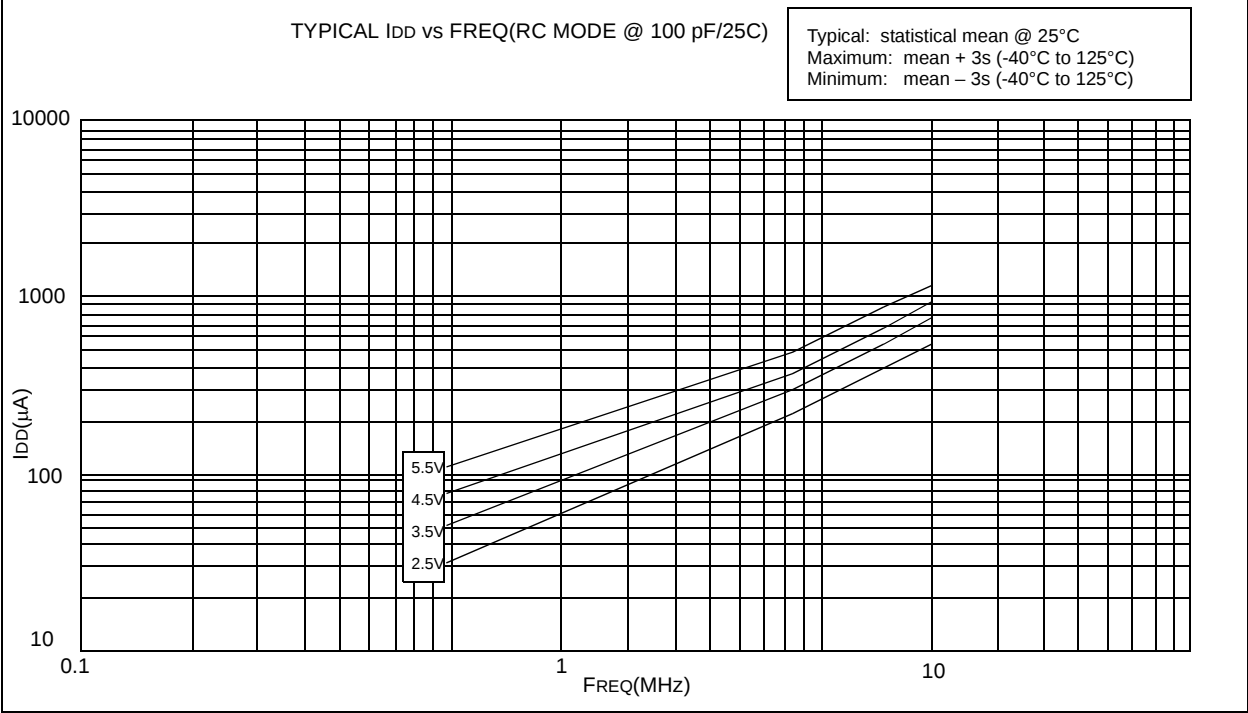
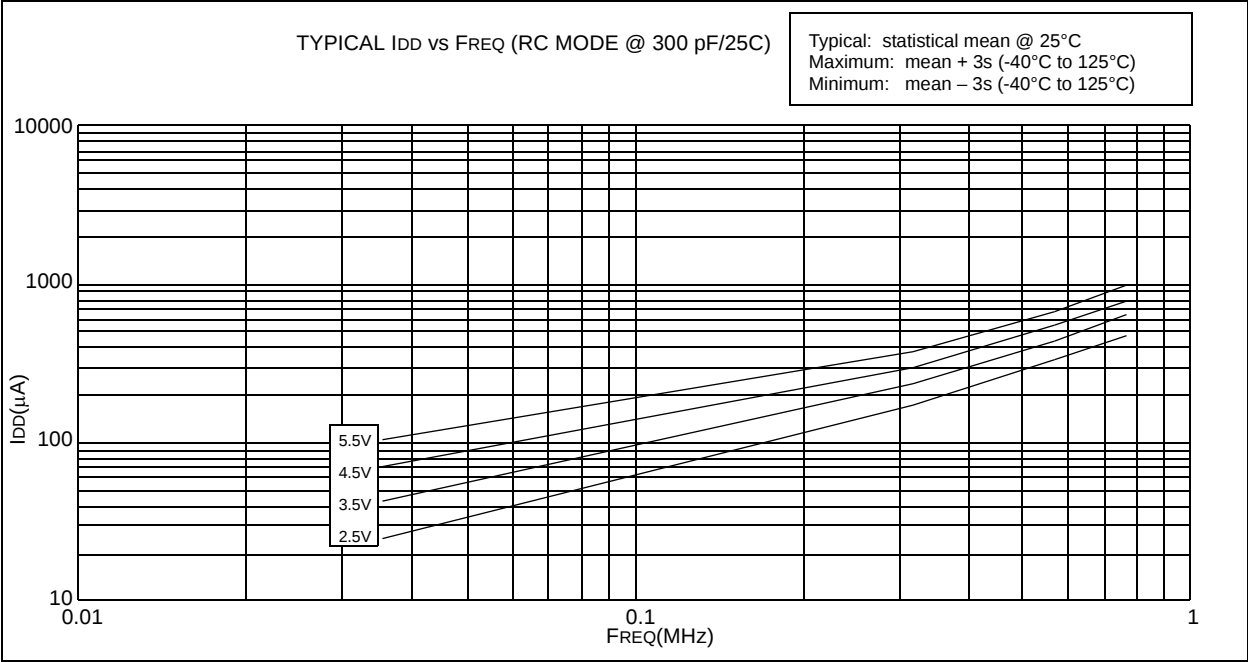


FIGURE 18-13: TYPICAL I_{DD} vs. FREQUENCY (WDT DISABLED, RC MODE @ 300 pF, 25°C)



19.3 Timing Parameter Symbolology and Load Conditions

The timing parameter symbols have been created with one of the following formats:

- 1. TppS2ppS
- 2. TppS

T		T
F	Frequency	Time

Lowercase letters (pp) and their meanings:

pp		
2	to	mc $\overline{\text{MCLR}}$
ck	CLKOUT	osc oscillator
cy	cycle time	os OSC1
drt	device reset timer	t0 T0CKI
io	I/O port	wdt watchdog timer

Uppercase letters and their meanings:

S		
F	Fall	P Period
H	High	R Rise
I	Invalid (Hi-impedance)	V Valid
L	Low	Z Hi-impedance

FIGURE 19-2: LOAD CONDITIONS FOR DEVICE TIMING SPECIFICATIONS - PIC16C54C/C55A/C56A/C57C/C58B-40

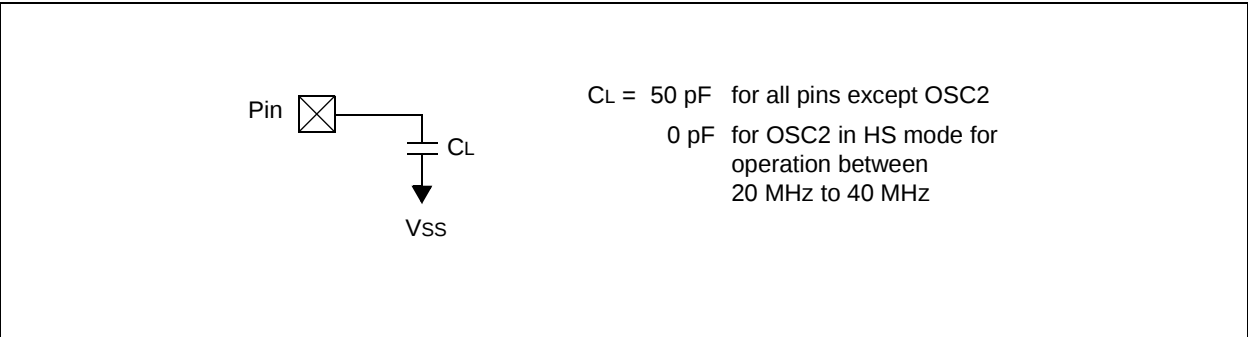


FIGURE 19-6: TIMER0 CLOCK TIMINGS - PIC16C5X-40

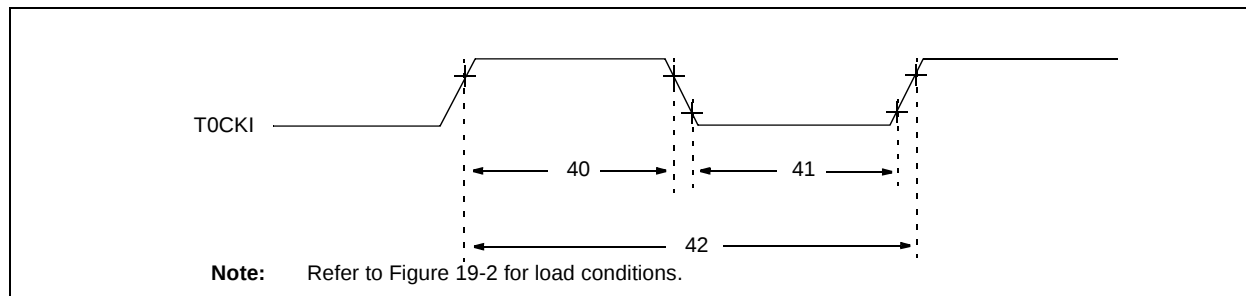


TABLE 19-4: TIMER0 CLOCK REQUIREMENTS PIC16C5X-40

AC Characteristics			Standard Operating Conditions (unless otherwise specified)				
			Operating Temperature $0^{\circ}\text{C} \leq T_A \leq +70^{\circ}\text{C}$ for commercial				
Param No.	Symbol	Characteristic	Min	Typ†	Max	Units	Conditions
40	Tt0H	T0CKI High Pulse Width - No Prescaler	$0.5 T_{CY} + 20^*$	—	—	ns	
		- With Prescaler	10^*	—	—	ns	
41	Tt0L	T0CKI Low Pulse Width - No Prescaler	$0.5 T_{CY} + 20^*$	—	—	ns	
		- With Prescaler	10^*	—	—	ns	
42	Tt0P	T0CKI Period	$20 \text{ or } \frac{T_{CY} + 40^*}{N}$	—	—	ns	Whichever is greater. N = Prescale Value (1, 2, 4,..., 256)

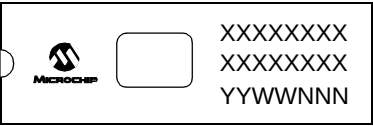
* These parameters are characterized but not tested.

† Data in the Typical ("Typ") column is at 5V, 25°C unless otherwise stated. These parameters are for design guidance only and are not tested.

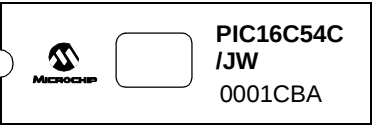
PIC16C5X

Package Marking Information (Cont'd)

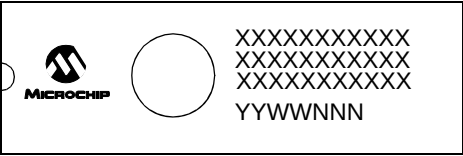
18-Lead Cerdip Windowed



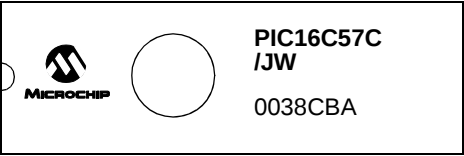
Example



28-Lead Cerdip Windowed



Example



Legend:	XX...X	Customer-specific information
	Y	Year code (last digit of calendar year)
	YY	Year code (last 2 digits of calendar year)
	WW	Week code (week of January 1 is week '01')
	NNN	Alphanumeric traceability code
	(e3)	Pb-free JEDEC designator for Matte Tin (Sn)
	*	This package is Pb-free. The Pb-free JEDEC designator (e3) can be found on the outer packaging for this package.

Note: In the event the full Microchip part number cannot be marked on one line, it will be carried over to the next line, thus limiting the number of available characters for customer-specific information.

PIC16C5X

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