
PIC10F200/202/204/206 Rev. A Silicon/Data Sheet Errata

The PIC10F200/202/204/206 parts you have received conform functionally to the Device Data Sheet (DS41239D), except for the anomalies described below.

Microchip intends to address all issues listed here in future revisions of the **PIC10F200/202/204/206 silicon**. Where noted, issues apply to listed revision only.

1. Module: Port Pins

On the PIC10F204/206 silicon, Rev. A0, the data direction control latch for port pin GP2 is overridden when the comparator output is used internally. This applies when the following bit configuration is used:

T0CS = 1	OPTION<5>
CMPT0CS = 0	CMCON0<4>
COUTEN = 1	CMCON0<6>

Work around

This issue is fixed in Rev. A1 and later.

2. Module: Comparator

On the PIC10F204/206 silicon, Rev. A0, the internal voltage reference is disabled when a **SLEEP** instruction is executed.

Work around

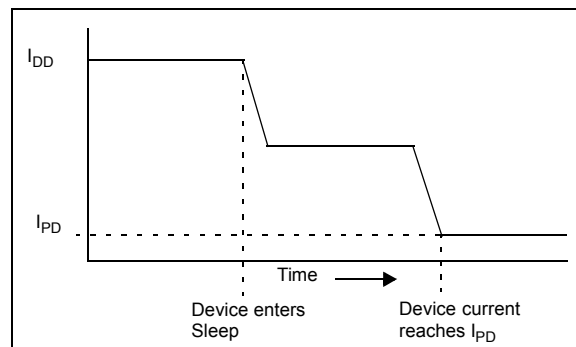
Do not issue a **SLEEP** instruction when using the internal 0.6V voltage reference. This issue is fixed in Rev. A1 and later.

3. Module: I_{PD} , Power-Down Base current

On the PIC10F200/202/204/206 silicon, revisions earlier than A3, the power-down base current may remain higher than the specification for a short time when entering Sleep.

The following graph illustrates the device current upon entering Sleep:

FIGURE 1:



The length of time between the device entering Sleep mode and the device current reaching I_{PD} increases as both temperature and voltage decrease.

Work around

This issue is fixed in Rev. A3 and later.

PIC10F200/202/204/206

4. Module: MPLAB® IDE, Revision 6.61 and Earlier

The MPLAB IDE 6.61 does not look for or set the Configuration Word in the hex file at the conventional logical location of 0xFFFF.

Work around

The CONFIG data must be assigned in two locations within the assembly code to ensure proper Configuration Word placement in the hex file. This is only required for MPLAB IDE version 6.61 and earlier.

EXAMPLE 1: CODE

```
Fixed Code
org      0xYYYY
data     _CP_OFF & _WDT_ON & etc.
__CONFIG _CP_OFF & _WDT_ON & etc.
Re-locatable Code
.config  code 0xYYYY
data     data _CP_OFF & _WDT_ON & etc.
__CONFIG data _CP_OFF & _WDT_ON & etc.
```

TABLE 1: CONFIGURATION WORD ADDRESS

Device	YYYY
PIC10F200	01FF
PIC10F202	03FF
PIC10F204	01FF
PIC10F206	03FF

Note 1: YYYY is the address of the Configuration Word for the part.

Clarifications/Corrections to the Data Sheet:

In the Device Data Sheet (DS41239D), the following clarifications and corrections should be noted.

1. Module: Special Features of the CPU

Register 9-1: Configuration Word, bit 11-5 and bit 1-0 should be (Read as '1') as shown in bold.

REGISTER 9-1: CONFIGURATION WORD FOR PIC10F200/202/204/206

—	—	—	—	—	—	—	MCLRE	$\overline{CP}$	WDTE	—	—
bit 11							bit 0				

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

bit 11-5 **Unimplemented:** Read as '1'

bit 4 **MCLRE:** GP3/ $\overline{MCLR}$ Pin Function Select bit

1 = GP3/ $\overline{MCLR}$ pin function is $\overline{MCLR}$

0 = GP3/ $\overline{MCLR}$ pin function is digital I/O, $\overline{MCLR}$ internally tied to VDD

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 **Reserved:** Read as '1'

APPENDIX A: REVISION HISTORY

Rev A Document (6/2004)

First revision of this document.

Rev B Document (6/2004)

Added Module 2, VREF is disabled in Sleep.

Rev C Document (9/2004)

Added Module 3, MPLAB IDE and the _CONFIG assembly directive.

Rev D Document (6/2006)

Added the following Modules to the “Clarifications/ Corrections to the Data Sheet” section:

- Module 1, “Internal Oscillator”
- Module 2, “Voltage Reference”
- Module 3, “8-Lead 2x3 DFN (MC) Packaging”
- Module 4, “8-Lead 2x3 DFN (MC) Package – Top Marking”
- Module 5, “6-Lead SOT-23 (OT) Package – Top Marking”

Rev E Document (3/2007)

Revised Module 1 and Module 2 work arounds.

Clarification/Corrections to the Data Sheet:

Revised Module 3: Replaced DFN Package Drawing;

Added Module 6, “Timer0 Clock”;

Added Module 7, Special Features of the CPU, Register 9-1.

Rev F Document (5/2007)

Revised Module 3, Table 1, Note 1.

Clarification/Corrections to the Data Sheet:

Data Sheet was updated. The following was removed:

- Module 1, “Internal Oscillator”
- Module 2, “Voltage Reference”
- Module 3, “8-Lead 2x3 DFN (MC) Packaging”
- Module 4, “8-Lead 2x3 DFN (MC) Package – Top Marking”
- Module 5, “6-Lead SOT-23 (OT) Package – Top Marking”
- Module 6, “Timer0 Clock”;

Module 7, Special Features of the CPU, Register 9-1 is renumbered to Module 1.

Rev G Document (6/2007)

Moved Module 3 to Module 4.

Added Module 3: I_{PD} , Power-Down Base current

Note the following details of the code protection feature on Microchip devices:

- Microchip products meet the specification contained in their particular Microchip Data Sheet.
- Microchip believes that its family of products is one of the most secure families of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of these methods, to our knowledge, require using the Microchip products in a manner outside the operating specifications contained in Microchip's Data Sheets. Most likely, the person doing so is engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as "unbreakable."

Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our products. Attempts to break Microchip's code protection feature may be a violation of the Digital Millennium Copyright Act. If such acts allow unauthorized access to your software or other copyrighted work, you may have a right to sue for relief under that Act.

Information contained in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that your application meets with your specifications. MICROCHIP MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING BUT NOT LIMITED TO ITS CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE. Microchip disclaims all liability arising from this information and its use. Use of Microchip devices in life support and/or safety applications is entirely at the buyer's risk, and the buyer agrees to defend, indemnify and hold harmless Microchip from any and all damages, claims, suits, or expenses resulting from such use. No licenses are conveyed, implicitly or otherwise, under any Microchip intellectual property rights.

Trademarks

The Microchip name and logo, the Microchip logo, Accuron, dsPIC, KEELOQ, KEELOQ logo, microID, MPLAB, PIC, PICmicro, PICSTART, PRO MATE, rPIC and SmartShunt are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

AmpLab, FilterLab, Linear Active Thermistor, Migratable Memory, MXDEV, MXLAB, SEEVAL, SmartSensor and The Embedded Control Solutions Company are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Analog-for-the-Digital Age, Application Maestro, CodeGuard, dsPICDEM, dsPICDEM.net, dsPICworks, ECAN, ECONOMONITOR, FanSense, FlexROM, fuzzylAB, In-Circuit Serial Programming, ICSP, ICEPIC, Mindi, MiWi, MPASM, MPLAB Certified logo, MPLIB, MPLINK, PICkit, PICDEM, PICDEM.net, PICLAB, PICtail, PowerCal, PowerInfo, PowerMate, PowerTool, REAL ICE, rFLAB, Select Mode, Smart Serial, SmartTel, Total Endurance, UNI/O, WiperLock and ZENA are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SQTP is a service mark of Microchip Technology Incorporated in the U.S.A.

All other trademarks mentioned herein are property of their respective companies.

© 2007, Microchip Technology Incorporated, Printed in the U.S.A., All Rights Reserved.



Printed on recycled paper.

QUALITY MANAGEMENT SYSTEM
CERTIFIED BY DNV
== ISO/TS 16949:2002 ==

Microchip received ISO/TS-16949:2002 certification for its worldwide headquarters, design and wafer fabrication facilities in Chandler and Tempe, Arizona; Gresham, Oregon and design centers in California and India. The Company's quality system processes and procedures are for its PIC® MCUs and dsPIC® DSCs, KEELOQ® code hopping devices, Serial EEPROMs, microperipherals, nonvolatile memory and analog products. In addition, Microchip's quality system for the design and manufacture of development systems is ISO 9001:2000 certified.



WORLDWIDE SALES AND SERVICE

AMERICAS

Corporate Office

2355 West Chandler Blvd.
Chandler, AZ 85224-6199
Tel: 480-792-7200
Fax: 480-792-7277
Technical Support:
<http://support.microchip.com>
Web Address:
www.microchip.com

Atlanta

Duluth, GA
Tel: 678-957-9614
Fax: 678-957-1455

Boston

Westborough, MA
Tel: 774-760-0087
Fax: 774-760-0088

Chicago

Itasca, IL
Tel: 630-285-0071
Fax: 630-285-0075

Dallas

Addison, TX
Tel: 972-818-7423
Fax: 972-818-2924

Detroit

Farmington Hills, MI
Tel: 248-538-2250
Fax: 248-538-2260

Kokomo

Kokomo, IN
Tel: 765-864-8360
Fax: 765-864-8387

Los Angeles

Mission Viejo, CA
Tel: 949-462-9523
Fax: 949-462-9608

Santa Clara

Santa Clara, CA
Tel: 408-961-6444
Fax: 408-961-6445

Toronto

Mississauga, Ontario,
Canada
Tel: 905-673-0699
Fax: 905-673-6509

ASIA/PACIFIC

Asia Pacific Office

Suites 3707-14, 37th Floor
Tower 6, The Gateway
Harbour City, Kowloon
Hong Kong
Tel: 852-2401-1200
Fax: 852-2401-3431

Australia - Sydney

Tel: 61-2-9868-6733
Fax: 61-2-9868-6755

China - Beijing

Tel: 86-10-8528-2100
Fax: 86-10-8528-2104

China - Chengdu

Tel: 86-28-8665-5511
Fax: 86-28-8665-7889

China - Fuzhou

Tel: 86-591-8750-3506
Fax: 86-591-8750-3521

China - Hong Kong SAR

Tel: 852-2401-1200
Fax: 852-2401-3431

China - Qingdao

Tel: 86-532-8502-7355
Fax: 86-532-8502-7205

China - Shanghai

Tel: 86-21-5407-5533
Fax: 86-21-5407-5066

China - Shenyang

Tel: 86-24-2334-2829
Fax: 86-24-2334-2393

China - Shenzhen

Tel: 86-755-8203-2660
Fax: 86-755-8203-1760

China - Shunde

Tel: 86-757-2839-5507
Fax: 86-757-2839-5571

China - Wuhan

Tel: 86-27-5980-5300
Fax: 86-27-5980-5118

China - Xian

Tel: 86-29-8833-7250
Fax: 86-29-8833-7256

ASIA/PACIFIC

India - Bangalore

Tel: 91-80-4182-8400
Fax: 91-80-4182-8422

India - New Delhi

Tel: 91-11-4160-8631
Fax: 91-11-4160-8632

India - Pune

Tel: 91-20-2566-1512
Fax: 91-20-2566-1513

Japan - Yokohama

Tel: 81-45-471-6166
Fax: 81-45-471-6122

Korea - Gumi

Tel: 82-54-473-4301
Fax: 82-54-473-4302

Korea - Seoul

Tel: 82-2-554-7200
Fax: 82-2-558-5932 or
82-2-558-5934

Malaysia - Penang

Tel: 60-4-646-8870
Fax: 60-4-646-5086

Philippines - Manila

Tel: 63-2-634-9065
Fax: 63-2-634-9069

Singapore

Tel: 65-6334-8870
Fax: 65-6334-8850

Taiwan - Hsin Chu

Tel: 886-3-572-9526
Fax: 886-3-572-6459

Taiwan - Kaohsiung

Tel: 886-7-536-4818
Fax: 886-7-536-4803

Taiwan - Taipei

Tel: 886-2-2500-6610
Fax: 886-2-2508-0102

Thailand - Bangkok

Tel: 66-2-694-1351
Fax: 66-2-694-1350

EUROPE

Austria - Wels

Tel: 43-7242-2244-39
Fax: 43-7242-2244-393

Denmark - Copenhagen

Tel: 45-4450-2828
Fax: 45-4485-2829

France - Paris

Tel: 33-1-69-53-63-20
Fax: 33-1-69-30-90-79

Germany - Munich

Tel: 49-89-627-144-0
Fax: 49-89-627-144-44

Italy - Milan

Tel: 39-0331-742611
Fax: 39-0331-466781

Netherlands - Drunen

Tel: 31-416-690399
Fax: 31-416-690340

Spain - Madrid

Tel: 34-91-708-08-90
Fax: 34-91-708-08-91

UK - Wokingham

Tel: 44-118-921-5869
Fax: 44-118-921-5820

12/08/06