PIC12F1501/16F1503/7/8/9

8/14/20-Pin Flash, 8-Bit, High-Temperature Microcontrollers

High-Performance RISC CPU:

- C Compiler Optimized Architecture
- Only 49 Instructions
- Operating Speed:
  - DC – 20 MHz clock input
  - DC – 200 ns instruction cycle
- Interrupt Capability with Automatic Context Saving
- 16-Level Deep Hardware Stack with Optional Overflow/Underflow Reset
- Direct, Indirect and Relative Addressing modes:
  - Two full 16-bit File Select Registers (FSRs)
  - FSRs can read program and data memory

Flexible Oscillator Structure:

- 16 MHz Internal Oscillator Block:
  - Factory calibrated to ±1%, typical
  - Software selectable frequency range from 16 MHz to 31 kHz
- 31 kHz Low-Power Internal Oscillator
- Three External Clock modes up to 20 MHz

Special Microcontroller Features:

- Operating Voltage Range:
  - 2.5V to 5.5V (PIC12F1501/16F1503/7/8/9)
- Self-Programmable under Software Control
- Power-on Reset (POR)
- Power-up Timer (PWRT)
- Extended Watchdog Timer (WDT):
  - Programmable period from 1 ms to 256s
- Programmable Code Protection
- In-Circuit Serial Programming™ (ICSP™) via Two Pins
- Enhanced Low-Voltage Programming (LVP)
- In-Circuit Debug (ICD) via Two Pins
- Power-Saving Sleep mode
- Integrated Temperature Indicator
- 128 Bytes High-Endurance Flash
  - 100,000 write Flash endurance (minimum)

Memory:

- Up to 8 Kwords Linear Program Memory Addressing
- Up to 512 bytes Linear Data Memory Addressing
- High-Endurance Flash Data Memory (HEF)
  - 128 bytes if nonvolatile data storage
  - 100k erase/write cycles

Peripheral Features:

- Analog-to-Digital Converter (ADC):
  - 10-bit resolution
  - Up to 12 external channels
  - Up to Three internal channels:
    - Fixed Voltage Reference
    - Digital-to-Analog Converter (DAC) (PIC12F1501/16F1503/8/9 only)
    - Temperature Indicator channel
  - Auto acquisition capability
  - Conversion available during Sleep
- 5-Bit Digital-to-Analog Converter (DAC) (PIC12F1501/16F1503/8/9 only):
  - Output available externally
  - Positive reference selection
  - Internal connections to comparators and ADC
- Up to Two Comparators (PIC12F1501/16F1503/8/9 only):
  - Rail-to-rail inputs
  - Power mode control
  - Software controllable hysteresis
- Voltage Reference:
  - 1.024V Fixed Voltage Reference (FVR) with 1x, 2x and 4x Gain output levels
- Up to 18 I/O Pins (1 Input-only Pin):
  - High-current sink/source 25 mA/25 mA
  - Individually programmable weak pull-ups
  - Individually programmable Interrupt-on-Change (IOC) pins
- Timer0: 8-Bit Timer/Counter with 8-Bit Programmable Prescaler
- Enhanced Timer1:
  - 16-bit timer/counter with prescaler
  - External Gate Input mode
- Timer2: 8-Bit Timer/Counter with 8-Bit Period Register, Prescaler and Postscaler
- Four 10-bit PWM modules
- Master Synchronous Serial Port (MSSP) with SPI and I^2C with (PIC16F1503/8/9 only):
  - 7-bit address masking
  - SMBus/PMBus™ compatibility
- Enhanced Universal Synchronous Asynchronous Receiver Transmitter (EUSART) (PIC16F1508/9 only)
  - RS-232, RS-485 and LIN compatible
  - Auto-Baud Detect
  - Auto-wake-up on Start

Peripheral Features (Continued):

- Up to Four Configurable Logic Cell (CLC) modules:
  - 16 selectable input source signals
  - Four inputs per module
  - Software control of combinational/sequential logic/state/clock functions
  - AND/OR/XOR/D Flop/D Latch/SR/JK
  - Inputs from external and internal sources
  - Output available to pins and peripherals
  - Operation while in Sleep
- Numerically Controlled Oscillator (NCO):
  - 20-bit accumulator
  - 16-bit increment
  - True linear frequency control
  - High-speed clock input
  - Selectable Output modes
    - Fixed Duty Cycle (FDC) mode
    - Pulse Frequency (PF) mode
- Complementary Waveform Generator (CWG):
  - Eight selectable signal sources
  - Selectable falling and rising edge dead-band control
  - Polarity control
  - Four auto-shutdown sources
  - Multiple input sources: PWM, CLC, NCO

Note: This document is supplemented by the following documents:

- *"PIC12(L)F1501 8-Pin, 8-Bit Microcontroller (*DS40001615)
- *"PIC16(L)F1503 14-Pin, 8-Bit Microcontroller (*DS40001607)
- *"PIC16(L)F1507 20-Pin, 8-Bit Microcontroller (*DS40001586)
- *"PIC16(L)F1508/9 20-Pin, 8-Bit Microcontroller (*DS40001609)

PIC12F1501/PIC16F150X FAMILY TYPES

Device	Data Sheet Index	Program Memory Flash (words)	Data SRAM (bytes)	I/O's(2)	10-bit ADC (ch)	Comparators	DAC	Timers (8/16-bit)	PWM	EUSART	MSSP (I^2C/SPI)	CWG	CLC	NCO	Debug(1)	XLP
PIC12F1501	(1)	1024	64	6	4	1	1	2/1	4	—	—	1	2	1	H	—
PIC16F1503	(2)	2048	128	12	8	2	1	2/1	4	—	1	1	2	1	H	—
PIC16F1507	(3)	2048	128	18	12	—	—	2/1	4	—	—	1	2	1	H	—
PIC16F1508	(4)	4096	256	18	12	2	1	2/1	4	1	1	1	4	1	I/H	Y
PIC16F1509	(4)	8192	512	18	12	2	1	2/1	4	1	1	1	4	1	I/H	Y

Note 1: Debugging Methods: (I) - Integrated on Chip; (H) - using Debug Header; (E) - using Emulation Header.
2: One pin is input-only.

Data Sheet Index:

1: DS40001615 PIC12(L)F1501 Data Sheet, 8-Pin Flash, 8-bit Microcontrollers.
2: DS40001607 PIC16(L)F1503 Data Sheet, 14-Pin Flash, 8-bit Microcontrollers.
3: DS40001586 PIC16(L)F1507 Data Sheet, 20-Pin Flash, 8-bit Microcontrollers.
4: DS40001609 PIC16(L)F1508/1509 Data Sheet, 20-Pin Flash, 8-bit Microcontrollers.

Note: For other small form-factor package availability and marking information, please visit **http://www.microchip.com/packaging** or contact your local sales office.

Table of Contents

TO OUR VALUED CUSTOMERS

It is our intention to provide our valued customers with the best documentation possible to ensure successful use of your Microchip products. To this end, we will continue to improve our publications to better suit your needs. Our publications will be refined and enhanced as new volumes and updates are introduced.

If you have any questions or comments regarding this publication, please contact the Marketing Communications Department via E-mail at **docerrors@microchip.com**. We welcome your feedback.

Most Current Data Sheet

To obtain the most up-to-date version of this data sheet, please register at our Worldwide Website at:

http://www.microchip.com

You can determine the version of a data sheet by examining its literature number found on the bottom outside corner of any page. The last character of the literature number is the version number, (e.g., DS30000000A is version A of document DS30000000).

Errata

An errata sheet, describing minor operational differences from the data sheet and recommended workarounds, may exist for current devices. As device/documentation issues become known to us, we will publish an errata sheet. The errata will specify the revision of silicon and revision of document to which it applies.

To determine if an errata sheet exists for a particular device, please check with one of the following:

- Microchip's Worldwide Website; **http://www.microchip.com**
- Your local Microchip sales office (see last page)

When contacting a sales office, please specify which device, revision of silicon and data sheet (include literature number) you are using.

Customer Notification System

Register on our website at **www.microchip.com** to receive the most current information on all of our products.

1.0 DEVICE OVERVIEW

This document contains device-specific information for the following devices, operating in an ambient temperature range between -40°C and 150°C:

- PIC12F1501
- PIC16F1503
- PIC16F1507
- PIC16F1508
- PIC16F1509

Note: This data sheet documents only the devices' features and specifications that are in addition to the features and specifications of the non-specialty PIC12F1501/16F1503/7/8/9 devices. For information on the features and specifications shared by this document's high-temperature devices and the non-specialty devices, see the following documents:

- "*PIC12(L)F1501 8-Pin, 8-Bit Microcontroller (*DS40001615)
- "*PIC16(L)F1503 14-Pin, 8-Bit Microcontroller (*DS40001607)
- "*PIC16(L)F1507 20-Pin, 8-Bit Microcontroller (*DS40001586)
- "*PIC16(L)F1508/9 20-Pin, 8-Bit Microcontroller (*DS40001609)

The PIC12F1501/16F1503/7/8/9 devices offer Core Independent Peripherals (CIPs), Intelligent Analog modules, and several other features that allow for high-performance, low-cost, and low-power applications.

The primary differentiating features and specifications of the high-temperature PIC12F1501/16F1503/7/8/9 devices are as follows:

- All AC timing specifications are increased by 30%
- This derating factor includes parameters, such as T_{PWRT}
- Maximum HS frequency of operation is 20 MHz
- Oscillator tolerances and V_{DD} operation range are revised

Note 1: The test duration for AEC-Q100 reliability testing for devices operating at 150°C is 1,000 hours. Any design operating at 125°C to 150°C for longer than that period is not warranted without prior written approval from Microchip Technology Inc.

2: Writes are not allowed for Flash program memory above 125°C.

3: The temperature range indicator in the catalog part number and device marking is "H" for -40°C and 150°C.

Example: PIC16F1509-H/SL indicates the device is shipped in tape and reel configuration in the SOIC package and is rated for operation from -40°C and 150°C.

4: The low-voltage versions of these devices PIC12LF1501/16LF1503/7/8/9 are not released for operation above 125°C.

5: Only SOIC (SL), TSSOP (ST), SSOP (SS) and QFN (ML) packages will be offered, not PDIP or UQFN.

2.0 ELECTRICAL CHARACTERISTICS

Note: Other than some basic data, this section documents only the high-temperature PIC12F1501/16F1503/7/8/9 devices' specifications that differ from those of the non-specialty PIC12F1501/16F1503/7/8/9 devices. For detailed information on the electrical specifications shared by the high-temperature and non-specialty devices, see the following data sheets:

- "*PIC12(L)F1501 8-Pin, 8-Bit Microcontroller (*DS40001615)
- "*PIC16(L)F1503 14-Pin, 8-Bit Microcontroller (*DS40001607)
- "*PIC16(L)F1507 20-Pin, 8-Bit Microcontroller (*DS40001586)
- "*PIC16(L)F1508/9 20-Pin, 8-Bit Microcontroller (*DS40001609)

2.1 Absolute Maximum Ratings(†)

Parameter	Condition	Value
Max. Current: V_{DD}	Source	15 mA
Max. Current: V_{SS}	Sink	15 mA
Max. Current: Pin	Source	5 mA
Max. Current: Pin	Sink	5 mA
Max. Storage Temperature	—	-65°C to +155°C
Max. Junction Temperature	Under Bias	+155°C
Ambient Temperature	Under Bias	-40°C to +150°C

Note 1: Maximum current rating requires even load distribution across I/O pins. Maximum current rating may be limited by the device package power dissipation characterizations, see the "Thermal Characteristics" section in the data sheet to calculate device specifications.

2: Power dissipation is calculated as follows: $P_{DIS} = V_{DD} \times \{I_{DD} - \sum I_{OH}\} + \sum \{(V_{DD} - V_{OH}) \times I_{OH}\} + \sum(V_{OL} \times I_{OL})$.

† NOTICE: Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at those or any other conditions above those indicated in the operation listings of this specification is not implied. Exposure above maximum rating conditions for extended periods may affect device reliability.

2.2 Standard Operating Conditions

The standard operating conditions for any device are defined as:

Operating Voltage: $V_{DDMIN} \le V_{DD} \le V_{DDMAX}$
Operating Temperature: $T_{A\_MIN} \le T_A \le T_{A\_MAX}$

V_{DD} — Operating Supply Voltage

PIC12F1501/16F1503/7/8/9

V_{DDMIN} (Fosc ≤ 20 MHz) ..... +2.5V

V_{DDMAX} ..... +5.5V

T_A — Operating Ambient Temperature Range

High Temperature

T_{A_MIN} ..... -40°C

T_{A_MAX} ..... +150°C

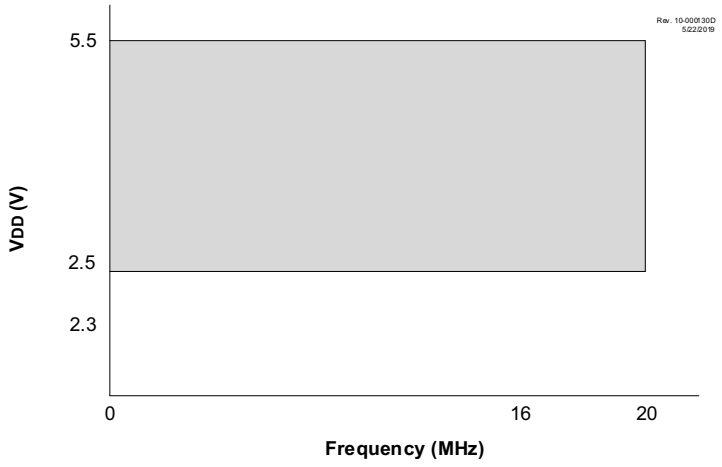
2.3 DC Characteristics

TABLE 2-1: SUPPLY VOLTAGE (-40°C ≤ T_A ≤ +150°C)

PIC12F1501/16F1503/7/8/9			Standard Operating Conditions (unless otherwise stated)				
Param No.	**Symbol**	**Characteristic**	**Min.**	**Typ.†**	**Max.**	**Units**	**Conditions**
Supply Voltage							
D001	V_{DD}	Supply Voltage	**2.5**	—	5.5	V	F_{OSC} ≤ 16 MHz F_{OSC} ≤ 20 MHz
D002	V_{DR}	RAM Data Retention Voltage	**2.1**	—	—	V	Device in Sleep mode
D003A	V_{ADFVR}	FVR Gain Voltage Accuracy for ADC	**-10**	—	**+10**	%	1x V_{FVR}, V_{DD} ≥ 2.5V 2x V_{FVR}, V_{DD} ≥ 2.5V 4x V_{FVR}, V_{DD} ≥ 4.75V

† Data in "Typ." column is at 3.0V, 25°C unless otherwise stated. These parameters are for design guidance only and are not tested.

FIGURE 2-1: VOLTAGE-FREQUENCY GRAPH, -40°C ≤ T_A ≤ +150°C



Note 1: The shaded region indicates the permissible combinations of voltage and frequency.

2.4 AC Characteristics

TABLE 2-2: INTERNAL OSCILLATOR PARAMETERS FOR PIC12F1501/16F1503/7/8/9 (HIGH TEMP)

PIC12F1501/16F1503/7/8/9			Standard Operating Conditions (unless otherwise stated) Operating Temperature: -40°C ≤ TA ≤ +150°C for High Temperature					
Param No.	**Symbol**	**Device Characteristic**	**Frequency Tolerance**	**Min.**	**Typ.†**	**Max.**	**Units**	**Conditions**
OS08	HFOSC	Internal-Calibrated HFINTOSC Frequency	—	—	**16**	—	MHz	See Figure 2-2 for details.

* These parameters are characterized but not tested.

† Data in "Typ" column is at 3.0V, 25°C unless otherwise stated. These parameters are for design guidance only and are not tested.

Note 1: To ensure these oscillator frequency tolerances, VDD and VSS must be capacitively decoupled as close to the device as possible. 0.1 µF and 0.01 µF values in parallel are recommended.

FIGURE 2-2: HFINTOSC FREQUENCY ACCURACY OVER VDD AND TEMPERATURE

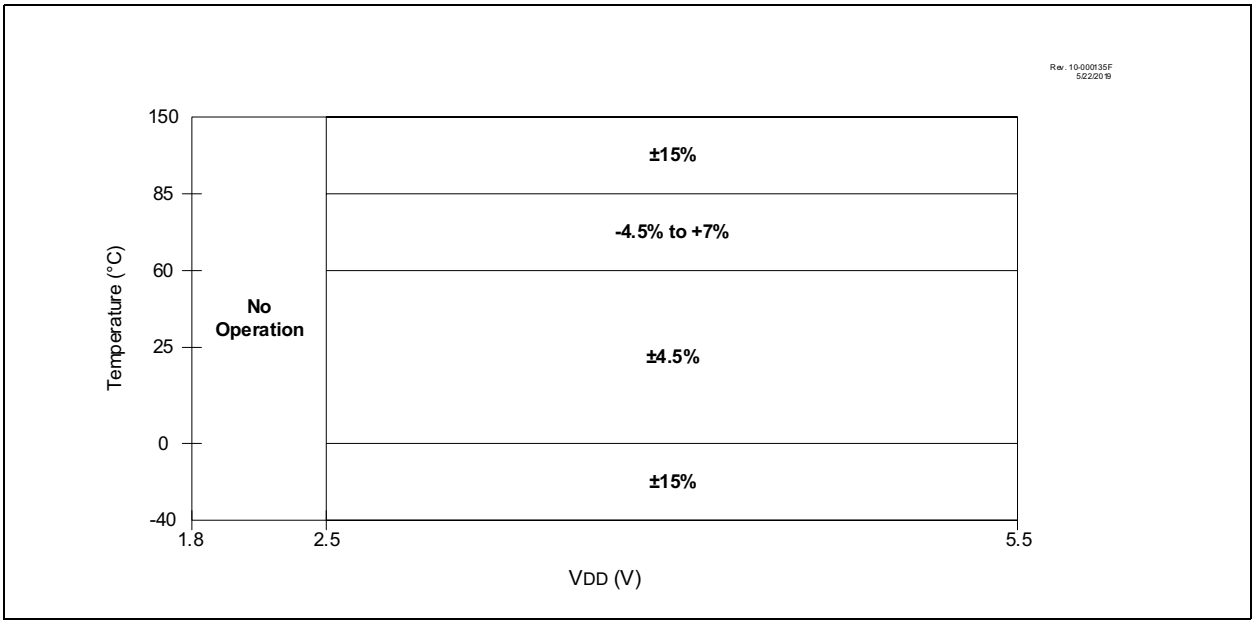


TABLE 2-3: RESET, WATCHDOG TIMER, OSCILLATOR START-UP TIMER, POWER-UP TIMER, BROWN-OUT TIMER AND LOW-POWER BROWN-OUT RESET SPECIFICATIONS

PIC12F1501/16F1503/7/8/9			Standard Operating Conditions (unless otherwise stated) Operating Temperature: -40°C ≤ TA ≤ +150°C for High Temperature				
			Min.	Typ.†	Max. +150°C	Units	Conditions
31	TWDTLP	Low-Power Watchdog Timer Time-out Period	7	16	**33**	ms	VDD = 3.3V-5V, 1:16 Prescaler used (PIC16F1508/9) 1:512 Prescaler used (PIC12F1501/16F1503/7)

TABLE 2-4: ANALOG-TO-DIGITAL CONVERTER (ADC) CHARACTERISTICS

Standard Operating Conditions (unless otherwise stated) VDD = 3.0V, TA = 150°C							
Param. No.	Sym.	Characteristic	Min.	Typ.†	Max.	Units	Conditions
AD04	EOFF	Offset Error	—	—	**±3.5**	LSb	VREF = 3.0V

TABLE 2-5: COMPARATOR SPECIFICATIONS

Standard Operating Conditions (unless otherwise stated) VDD = 3.0V, TA = 150°C							
Param. No.	Sym.	Characteristic	Min.	Typ.†	Max.	Units	Conditions
CM01	VIOFF	Input Offset Voltage	—	—	**±70**	mV	CxSP = 1, VICM = VDD/2

APPENDIX A: REVISION HISTORY

Revision A (July 2019)

Initial release of document.

THE MICROCHIP WEBSITE

Microchip provides online support via our WWW site at www.microchip.com. This website is used as a means to make files and information easily available to customers. Accessible by using your favorite Internet browser, the website contains the following information:

- **Product Support** – Data sheets and errata, application notes and sample programs, design resources, user's guides and hardware support documents, latest software releases and archived software
- **General Technical Support** – Frequently Asked Questions (FAQ), technical support requests, online discussion groups, Microchip consultant program member listing
- **Business of Microchip** – Product selector and ordering guides, latest Microchip press releases, listing of seminars and events, listings of Microchip sales offices, distributors and factory representatives

CUSTOMER CHANGE NOTIFICATION SERVICE

Microchip's customer notification service helps keep customers current on Microchip products. Subscribers will receive e-mail notification whenever there are changes, updates, revisions or errata related to a specified product family or development tool of interest.

To register, access the Microchip website at www.microchip.com. Under "Support", click on "Customer Change Notification" and follow the registration instructions.

CUSTOMER SUPPORT

Users of Microchip products can receive assistance through several channels:

- Distributor or Representative
- Local Sales Office
- Field Application Engineer (FAE)
- Technical Support

Customers should contact their distributor, representative or Field Application Engineer (FAE) for support. Local sales offices are also available to help customers. A listing of sales offices and locations is included in the back of this document.

Technical support is available through the website at: http://microchip.com/support

PRODUCT IDENTIFICATION SYSTEM

To order or obtain information, e.g., on pricing or delivery, refer to the factory or the listed sales office.

PART NO.	[X](1)	-	X	/XX	XXX
Device	Tape and Reel Option		Temperature Range	Package	Pattern

Device:	PIC12F1501 PIC16F1503 PIC16F1507 PIC16F1508 PIC16F1509	
Tape and Reel Option:	Blank T	= Standard packaging (tube or tray) = Tape and Reel(1)
Temperature Range:	H	= -40°C to +150°C (High Temperature)
Package:(2)	ML SL SS ST	= QFN (16-Lead and 20-Lead) = SOIC (14-Lead) = SSOP (20-Lead) = TSSOP (14-Lead)
Pattern:	QTP, SQTP, Code or Special Requirements (blank otherwise)	

Examples:

a) PIC16F1508T - H/SL
Tape and Reel,
High temperature,
SOIC package

b) PIC16F1509 - H/ML 298
High temperature,
QFN package
QTP pattern #298

Note 1: Tape and Reel identifier only appears in the catalog part number description. This identifier is used for ordering purposes and is not printed on the device package. Check with your Microchip Sales Office for package availability with the Tape and Reel option.

2: For other small form-factor package availability and marking information, please visit www.microchip.com/packaging or contact your local sales office.

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.

For information regarding Microchip's Quality Management Systems, please visit www.microchip.com/quality.

ISBN: 978-1-5224-4760-3

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://www.microchip.com/support
Web Address:
www.microchip.com

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

Austin, TX
Tel: 512-257-3370

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
Novi, MI
Tel: 248-848-4000

Houston, TX
Tel: 281-894-5983

Indianapolis
Noblesville, IN
Tel: 317-773-8323
Fax: 317-773-5453
Tel: 317-536-2380

Los Angeles
Mission Viejo, CA
Tel: 949-462-9523
Fax: 949-462-9608
Tel: 951-273-7800

Raleigh, NC
Tel: 919-844-7510

New York, NY
Tel: 631-435-6000

San Jose, CA
Tel: 408-735-9110
Tel: 408-436-4270

Canada - Toronto
Tel: 905-695-1980
Fax: 905-695-2078

ASIA/PACIFIC

Australia - Sydney
Tel: 61-2-9868-6733

China - Beijing
Tel: 86-10-8569-7000

China - Chengdu
Tel: 86-28-8665-5511

China - Chongqing
Tel: 86-23-8980-9588

China - Dongguan
Tel: 86-769-8702-9880

China - Guangzhou
Tel: 86-20-8755-8029

China - Hangzhou
Tel: 86-571-8792-8115

China - Hong Kong SAR
Tel: 852-2943-5100

China - Nanjing
Tel: 86-25-8473-2460

China - Qingdao
Tel: 86-532-8502-7355

China - Shanghai
Tel: 86-21-3326-8000

China - Shenyang
Tel: 86-24-2334-2829

China - Shenzhen
Tel: 86-755-8864-2200

China - Suzhou
Tel: 86-186-6233-1526

China - Wuhan
Tel: 86-27-5980-5300

China - Xian
Tel: 86-29-8833-7252

China - Xiamen
Tel: 86-592-2388138

China - Zhuhai
Tel: 86-756-3210040

ASIA/PACIFIC

India - Bangalore
Tel: 91-80-3090-4444

India - New Delhi
Tel: 91-11-4160-8631

India - Pune
Tel: 91-20-4121-0141

Japan - Osaka
Tel: 81-6-6152-7160

Japan - Tokyo
Tel: 81-3-6880- 3770

Korea - Daegu
Tel: 82-53-744-4301

Korea - Seoul
Tel: 82-2-554-7200

Malaysia - Kuala Lumpur
Tel: 60-3-7651-7906

Malaysia - Penang
Tel: 60-4-227-8870

Philippines - Manila
Tel: 63-2-634-9065

Singapore
Tel: 65-6334-8870

Taiwan - Hsin Chu
Tel: 886-3-577-8366

Taiwan - Kaohsiung
Tel: 886-7-213-7830

Taiwan - Taipei
Tel: 886-2-2508-8600

Thailand - Bangkok
Tel: 66-2-694-1351

Vietnam - Ho Chi Minh
Tel: 84-28-5448-2100

EUROPE

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

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

Finland - Espoo
Tel: 358-9-4520-820

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

Germany - Garching
Tel: 49-8931-9700

Germany - Haan
Tel: 49-2129-3766400

Germany - Heilbronn
Tel: 49-7131-72400

Germany - Karlsruhe
Tel: 49-721-625370

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

Germany - Rosenheim
Tel: 49-8031-354-560

Israel - Ra'anana
Tel: 972-9-744-7705

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

Italy - Padova
Tel: 39-049-7625286

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

Norway - Trondheim
Tel: 47-7288-4388

Poland - Warsaw
Tel: 48-22-3325737

Romania - Bucharest
Tel: 40-21-407-87-50

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

Sweden - Gothenberg
Tel: 46-31-704-60-40

Sweden - Stockholm
Tel: 46-8-5090-4654

UK - Wokingham
Tel: 44-118-921-5800
Fax: 44-118-921-5820

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for 8-bit Microcontrollers - MCU ***category:***

Click to view products by Microchip ***manufacturer:***

Other Similar products are found below :

CY8C28433-24PVXIT MB95F696KPMC-G-SNE2 ISD-ES1600_USB_PROG HD64F2144AFA20 STM8TL53G4U6 UPD78F0503AMC-CAB-AX MC9S08GT32ACFDER MB95F202KPF-G-SNE2 UPD78F0537AGK-GAJ-AX MB95F318EPMC-G-SNE2 LC78615E-01US-H MB95F698KPMC-G-UNE2 MB89F538-101PMC-GE1 LC87FBK08AU-SSOP-H LC87F2C64AU-QFP-H MB95F636KNWQN-G-118-SNE1 LC87F5NC8AVU-QIP-E STM8AL3168TAX STM8S007C8T6TR LC87F2G08AU-SSOP-E CP8085AT STM8TL52G4U6 MB95F272HPF-G-SNE2 ST72F361AR9T6 STM8AF5286UCX UPSD3312DV-40T6 LC87F2416AU-EB-2E MB95F118NWPMC-GE1 MB95F128NBPMC-GE1 MB95F202HPF-G-SNE2 MB95F202HP-G-SH-SNE2 MB95F202KP-G-SH-SNE2 MB95F203HPF-G-SNE2 MB95F204HP-G-SH-SNE2 MB95F204KP-G-SH-SNE2 MB95F212KPF-G-SNE2 MB95F212KPH-G-SNE2 MB95F223KPF-G-SNE1 MB95F264HPFT-G-SNE2 MB95F272KPF-G-SNE2 MB95F273HPF-G-SNE2 MB95F283KPF-G-SNE1 MB95F354LPF-G-SNE2 MB95F354LPFT-G-SNE2 MB95F564HWQN-G-SNE1 MCV14A-I/SL MB95F636KPMC-G-UNE2 PIC16LF1566-I/SO PIC12F509T-E/SN PIC16F18855T-I/SO