FUJITSU

NP07-12636-1E

8-bit Microcontrollers
MB95280H Series

F VALUE

MB95280H is 8-bit low-pin-count microcontroller series that has "Easy to use" as a product concept.
This series has the function that is enough for the control of various small scale systems such as electric home appliance. And can be used as sub-microcontroller for function addition in the cause of the specification change.

■FEATURES

- **F²MC-8FX CPU**
  Instruction set optimized for controllers
- **Clock**
  Maximum clock frequency : 16.25MHz
- **8/16-bit composite timer**
  case for 8-bit timer : 2 channels
  case for 16-bit timer : 1 channels
- **Timebase timer** : 1 channel
- **Watch prescaler** : 1 channel
- **External interrupt** : 6 channels
  - Interrupt by edge detection
  - Can be used to wake up the device from different low power consumption (standby) modes
- **8/10-bit A/D converter** : 5 channels
- **Low power consumption (standby) modes**
  Stop mode
  Sleep mode
  Watch mode
  Time-base timer mode
- **I/O port**
  MB95F282K/F283K/F284K : 13
  MB95F282H/F283H/F284H : 12
- **On-chip debug**
  - 1-wire serial control
  - Serial writing supported (asynchronous mode)
- **Low-voltage detection reset circuit**
  MB95F282K/F283K/F284K
- **Clock supervisor counter**
- **Dual operation Flash memory**
- **Flash memory security function**
- **Power supply** : 2.4～5.5V
  *The range of the power supply voltage is different according to the operating frequency and the operating temperature.
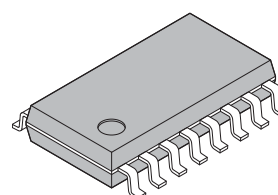
■PRODUCT LINEUP

Part number / Parameter	MB95F 282H	MB95F 283H	MB95F 284H	MB95F 282K	MB95F 283K	MB95F 284K
Type	Flash memory product					
ROM (Byte)	8K	12K	20K	8K	12K	20K
RAM (Byte)	240	496		240	496	
Low-voltage detection reset	No			Yes		

■ORDERING INFORMATION

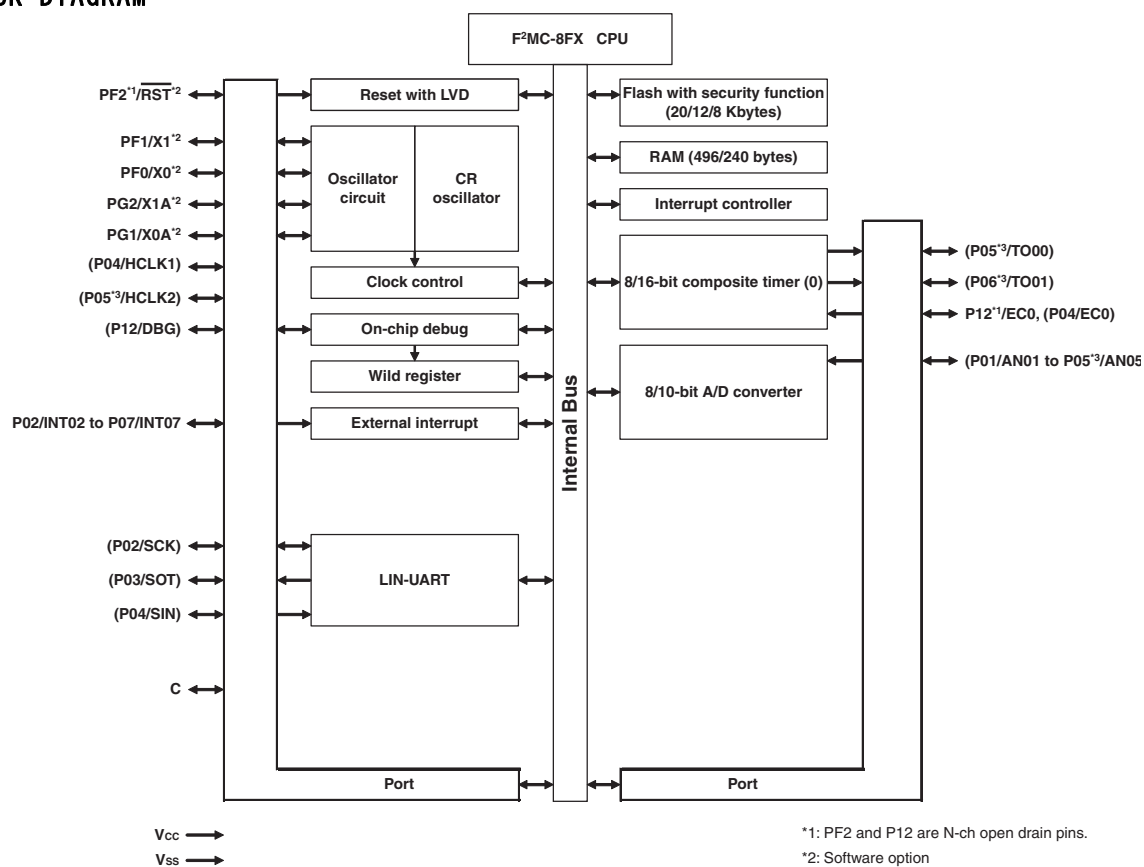| Product name	Package	Remarks
MB95F282HWQN MB95F282KWQN MB95F283HWQN MB95F283KWQN MB95F284HWQN MB95F284KWQN	Plastic・QFN, 32-pins (LCC-32P-M19) 5.00mm□, 0.50mm pitch	-
MB95F282HPH MB95F282KPH MB95F283HPH MB95F283KPH MB95F284HPH MB95F284KPH	Plastic・DIP, 16-pins (DIP-16P-M06) 19.55mm×6.35mm, 2.54mm pitch	-
MB95F282HPF MB95F282KPF MB95F283HPF MB95F283KPF MB95F284HPF MB95F284KPF	Plastic・SOP, 16-pins (FPT-16P-M06) 5.30mm×10.15mm, 1.27mm pitch	-

■PACKAGE EXAMPLE OF REFERENCE

Plastic ・ SOP, 16-pins
(FPT-16P-M06)

May, 2010   1/2

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■BLOCK DIAGRAM

F²MC-8FX CPU

PF2[*1]/RST[*2] — Reset with LVD
PF1/X1[*2]
PF0/X0[*2] — Oscillator circuit / CR oscillator
PG2/X1A[*2]
PG1/X0A[*2]
(P04/HCLK1) — Clock control
(P05[*3]/HCLK2)
(P12/DBG) — On-chip debug
— Wild register
P02/INT02 to P07/INT07 — External interrupt

(P02/SCK)
(P03/SOT) — LIN-UART
(P04/SIN)

C

Flash with security function (20/12/8 Kbytes)
RAM (496/240 bytes)
Interrupt controller
8/16-bit composite timer (0) — (P05[*3]/TO00), (P06[*3]/TO01), P12[*1]/EC0, (P04/EC0)
8/10-bit A/D converter — (P01/AN01 to P05[*3]/AN05)

Internal Bus

Port / Port

Vcc →
Vss →

*1: PF2 and P12 are N-ch open drain pins.
*2: Software option
*3: P05 and P06 are high-current pins.

■SUPPORT TOOL

● HARDWARE

Name	Part Number	Remarks
BGM adapter	MB2146-08-E	For F²MC-8FX MB95200 series
PC cable	USB cable	Attached to MB2146-08-E, 1.0m

● SOFTWARE

Software	Part Number	Operating System
SOFTUNE V3 Professional Pack	SP36503Z008-P01	Windows2000/XP/Vista

● FLASH MICROCONTROLLER PROGRAMMER

Name	Remarks
Parallel programmer	Made by Flash Support Group, Hi-Lo Systems, Data I/O, etc.
Serial on board programmer	FUJITSU FLASH MCU Programmer

■STARTER KIT

We can provide the STARTER KIT that can easily do the product evaluation and the program development of MB95200 series.
・The kit includes
 − BGM adapter
 − Evaluation board
 − USB cable (for connecting BGM adapter and PC)
 − Document and sample program (CD-ROM)

STARTER KIT MB2146-420A-01-E

NP07-12636-1E