

PRELIMINARY
 Notice: This is not a final specification.
 Some parametric limits are subject to change.

MITSUBISHI MICROCOMPUTERS 7507 Group

SINGLE-CHIP 8-BIT CMOS MICROCOMPUTER

DESCRIPTION

The 7507 group is an 8-bit microcomputer based on the 740 family core technology.

The 7507 group has a fluorescent display automatic display circuit, a PWM circuit, and a comparator input as additional functions, which are available for controlling functions of VTR and household appliances.

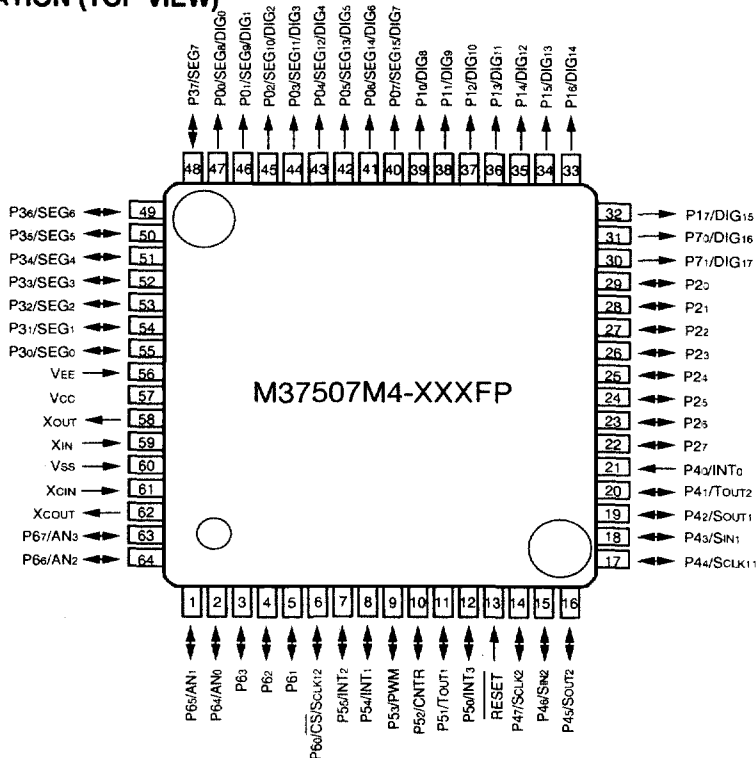
For details on availability of microcomputers in the 7507 group, refer to the section on group expansion.

FEATURES

- Basic machine-language instructions 71
- The minimum instruction execution time 0.48 μ s (at 8.38 MHz oscillation frequency)
- Memory size
 - ROM 16 to 60 K bytes
 - RAM 512 to 2048 bytes
- Programmable input/output ports 28
- High-breakdown-voltage output ports 26
- Interrupts 17 sources, 13 vectors
- Timers 8-bit $\times$ 4
- Serial I/O (Clock-synchronized) 8-bit $\times$ 2 (Serial I/O has an automatic data transfer function)

- PWM circuit 14-bit $\times$ 1
- Comparator 4-bit $\times$ 4
- Florescent display function
 - Segments 4 to 16
 - Digits 8 to 16
- Interrupt interval determination circuit (is also used as INT₂ pin)
- Noise filter circuit (at inputting clock) 5 (Pins X_{IN}, RESET, INT₂, SCL_{K1}, and SCL_{K2})
- 2 Clock generating circuit
 - Clock (X_{IN}-X_{OUT}) Internal feedback resistor
 - Sub-clock (X_{CIN}-X_{COUT}) Internal feedback resistor (connect to external ceramic resonator or quartz-crystal oscillator)
- Power source voltage
 - In high-speed mode 3.3 to 5.5 V
 - In low-speed mode 2.2 to 5.5 V
- Power dissipation
 - In high-speed mode 38 mW (at 8.38 MHz oscillation frequency, at 5 V power source voltage)
 - In low-speed mode 40 μ W (at 32 kHz oscillation frequency, at 3 V power source voltage)
- Operating temperature range -10 to 85 $^{\circ}$ C

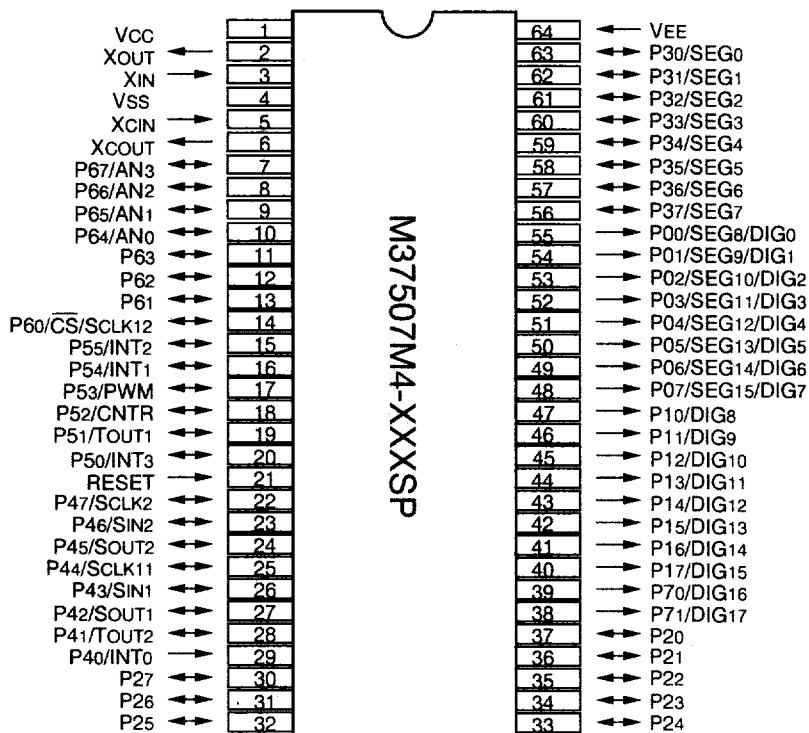
PIN CONFIGURATION (TOP VIEW)



Package type : 64P6N-A
64-pin plastic-molded QFP

Fig. 1. Pin configuration of M37507M4-XXXXFP

PIN CONFIGURATION (TOP VIEW)



Package type : 64P4B
 64-pin plastic-molded SDIP

Fig. 2. Pin configuration of M37507M4-XXXXSP

FUNCTIONAL BLOCK

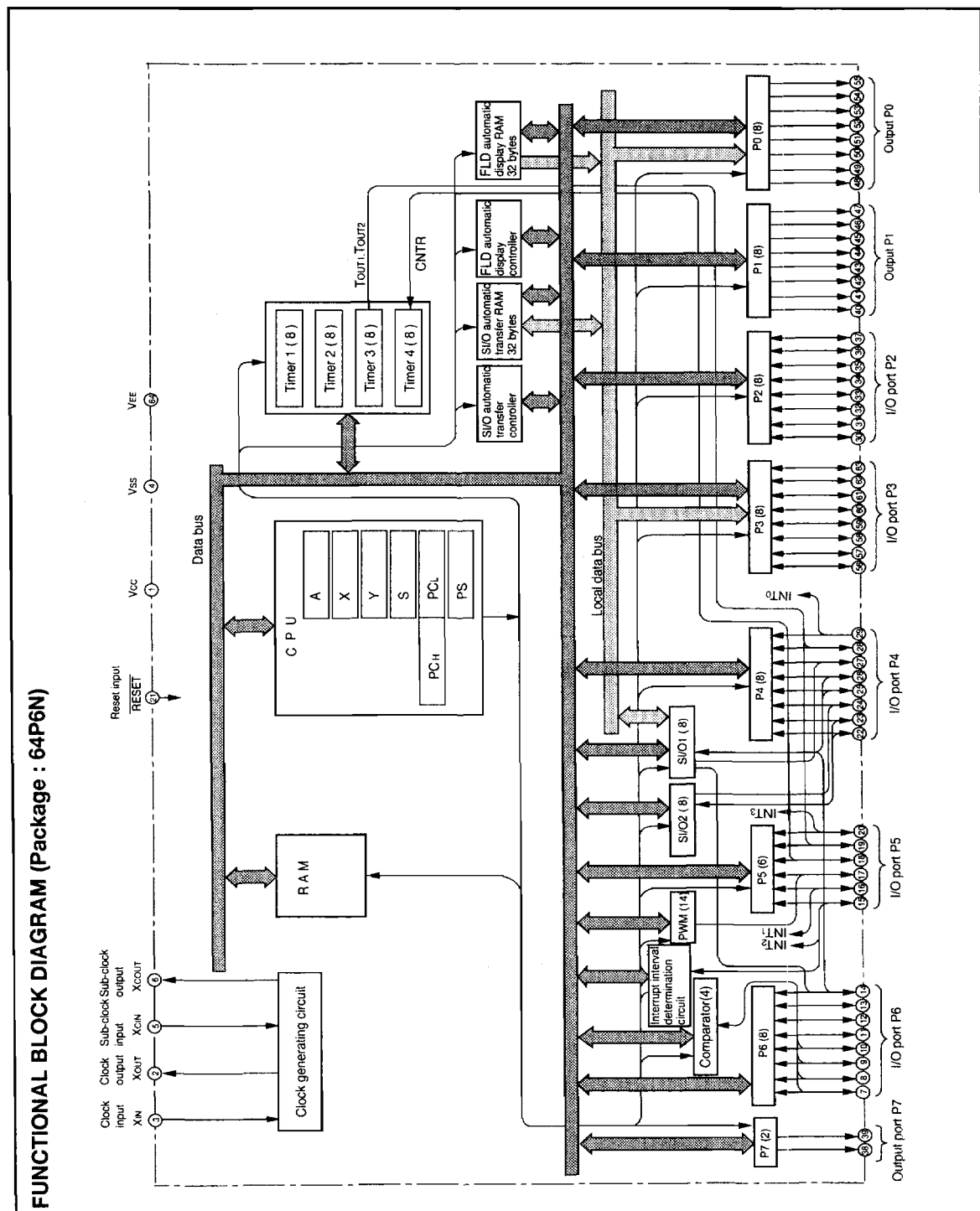


Fig. 3. Functional block diagram

PART NUMBERING

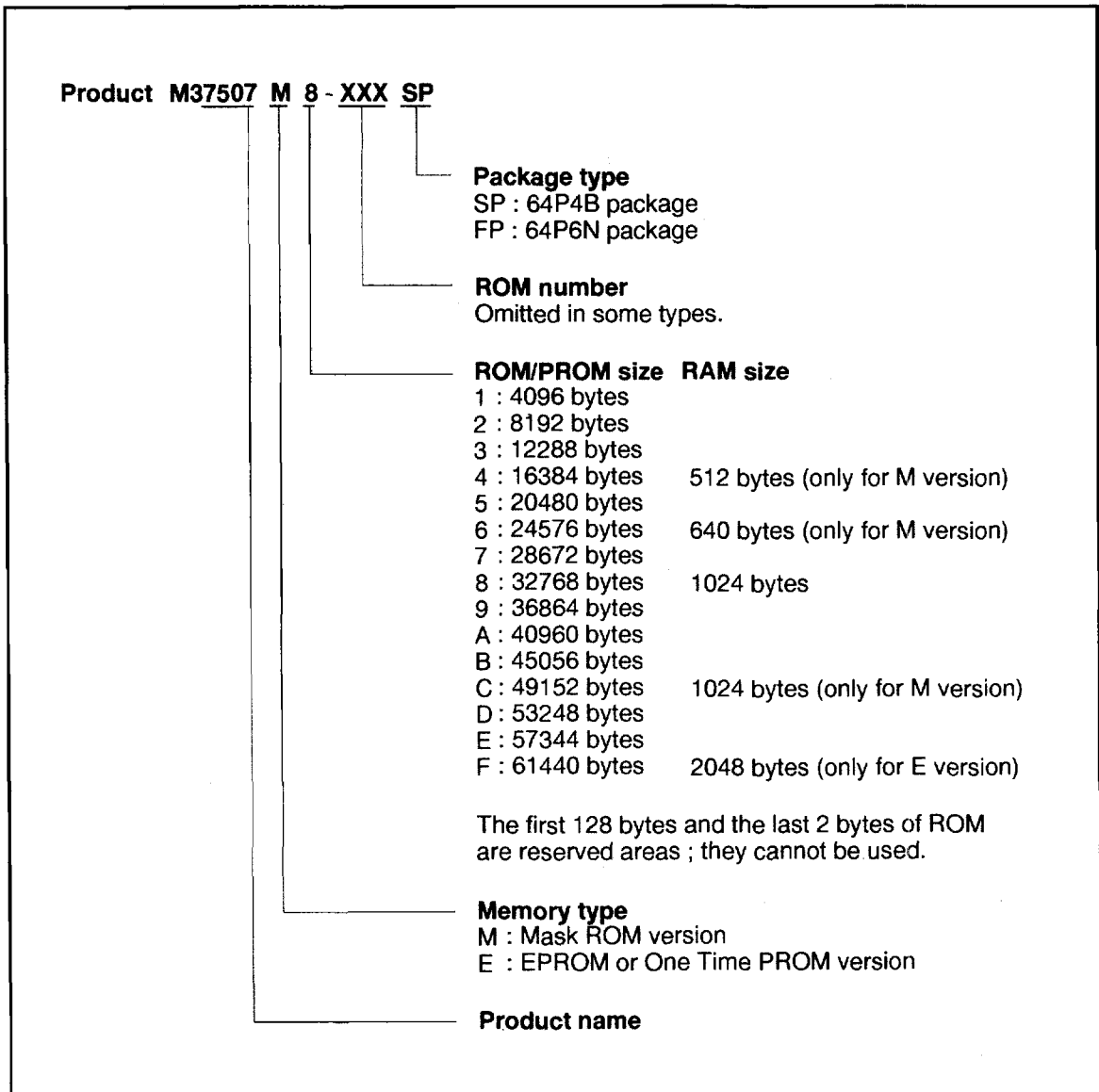


Fig. 4. Part numbering

GROUP EXPANSION

Mitsubishi plans to expand the 7507 group as follows:

Memory type

Support for Mask ROM, One Time PROM and EPROM versions.

Memory size

ROM/PROM size 16K to 60K bytes

RAM size 512 to 2048 bytes

Package

64P4B Shrink plastic molded DIP

64P6N Plastic molded QFP

64S1B Shrink ceramic DIP (EPROM version)

64D0 Ceramic LCC (EPROM version)

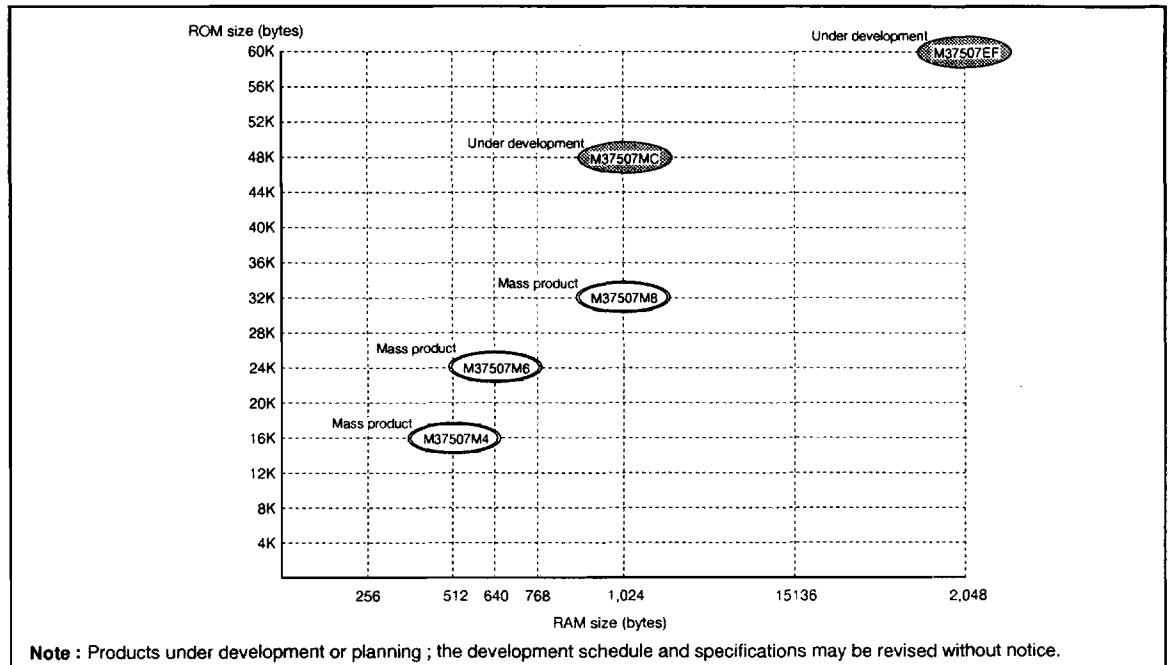


Fig. 5. Memory expansion plan

Currently supported products are listed below.

Table 1. List of supported products

Product	(P) ROM size (bytes) ROM size for User ()	RAM size (bytes)	Package	Remarks
M37507M4-XXXSP	16384	512	64P4B	Mask ROM version
M37507M4-XXXFP	(16254)		64P6N	
M37507M6-XXXSP	24576	640	64P4B	
M37507M6-XXXFP	(24446)		64P6N	
M37507M8-XXXSP	32768	1024	64P4B	
M37507M8-XXXFP	(32638)		64P6N	
M37507MC-XXXSP	49152	1024	64P4B	
M37507MC-XXXFP	(49022)		64P6N	
M37507EF-XXXSP	61440	2048	64P4B	One Time PROM version
M37507EF-XXXFP	(61310)		64P6N	One Time PROM version (blank)
M37507EFSP			64P4B	
M37507EFFP			64P6N	EPROM version
M37507EFSS			64S1B	
M37507EFFS			64D0	