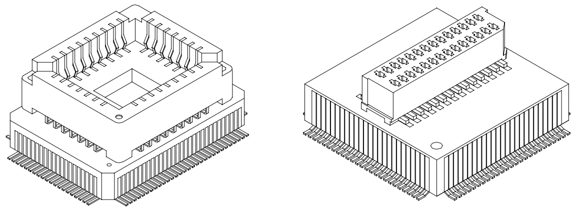
SONY

CXP81900M

CMOS 8-bit Single Chip Microcomputer

**Piggyback/
evaluator type**

100 pin PQFP (Ceramic)



QFP supported LQFP supported

Description

The CXP81900M is a CMOS 8-bit single chip micro-computer of piggyback/evaluator combined type, which is developed for evaluating the function of the CXP81952M/81960M.

Features

- A wide instruction set (213 instructions) which cover various types of data.
  - 16-bit operation/multiplication and division/ boolean bit operation instructions

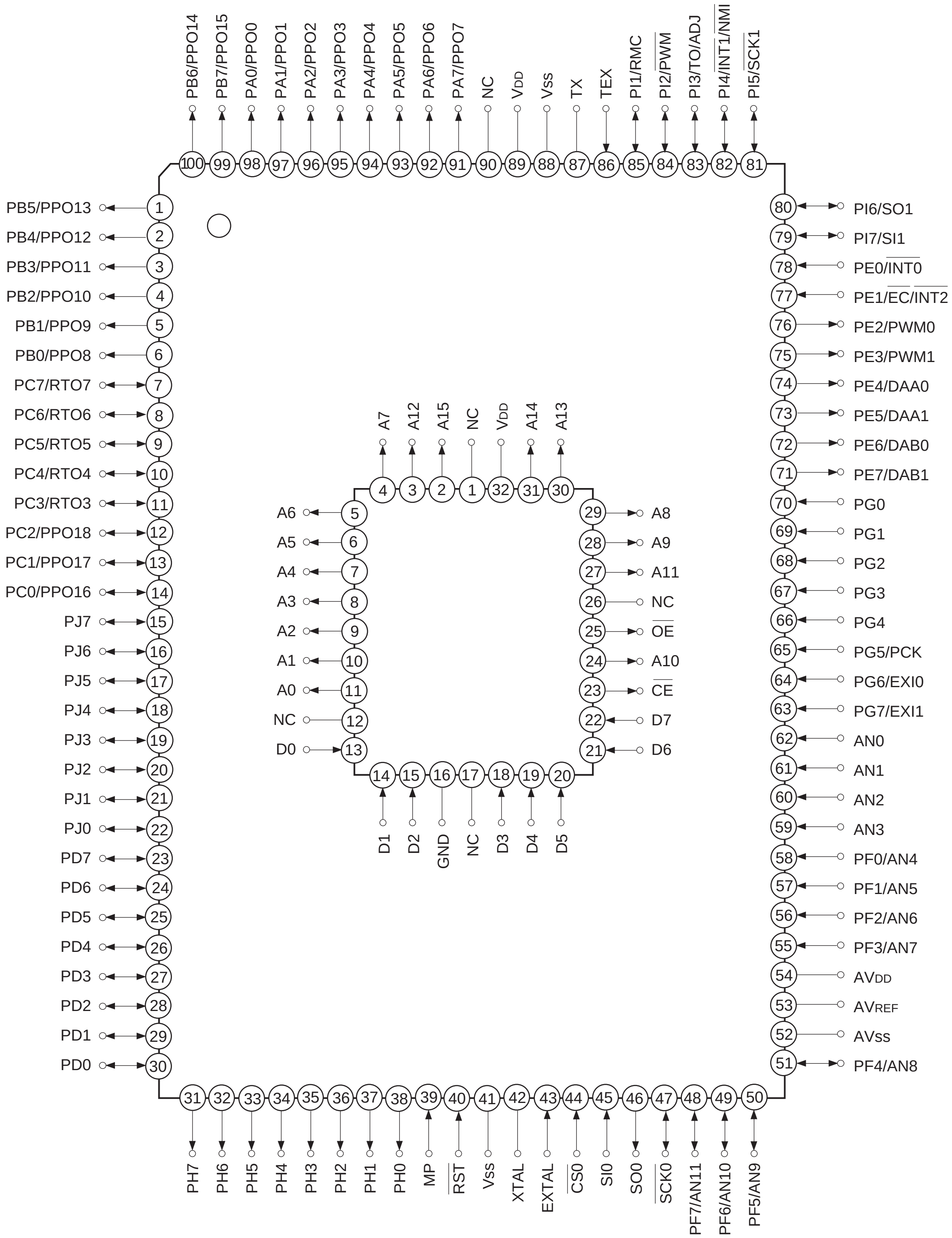
• Minimum instruction cycle	250ns at 16MHz operation (4.5 to 5.5V) 333ns at 12MHz operation (2.7 to 5.5V) 122µs at 32kHz operation
• Applicable EPROM	LCC type 27C256, LCC type 27C512 (Maximum 60Kbytes are available.)
• Incorporated RAM capacity	2048 bytes
• Peripheral functions	
– A/D converter	8-bit, 12-channel, successive approximation method (Conversion time of 20µs/16MHz)
– Serial interface	Incorporated buffer RAM (Auto transfer for 1 to 32 bytes), 1 channel Incorporated 8-bit and 8-stage FIFO (Auto transfer for 1 to 8 bytes), 1 channel
– Timer	8-bit timer, 8-bit timer/counter 19-bit time base timer 32kHz timer/counter
– High precision timing pattern generator	PPG 19-pin, 32-stage programmable RTG 5 pins, 2 channels
– PWM/DA gate output	PWM output 12 bits, 2 channels (Repetitive frequency 62.5kHz/16MHz) DA gate pulse output 13 bits, 4channels
– FRC capture unit	Incorporated 26-bit and 8-stage FIFO
– PWM output	14 bits, 1 channel
– Remote control receiving circuit	8-bit pulse measurement counter with on-chip 6-stage FIFO
– General purpose prescaler	7 bits (PG5 input frequency division, FRC capture possible.)
– HSYNC counter	12-bit event counter (SYNC1 input count)
• Interruption	20 factors, 15 vectors, multi-interruption possible
• Standby mode	SLEEP/STOP
• Package	100-pin ceramic PQFP

Note) Mask option depends on the type of the CXP81900M. Refer to the Products List for details.

Structure

Silicon gate CMOS IC

Pin Assignment in Piggyback Mode (QFP package)

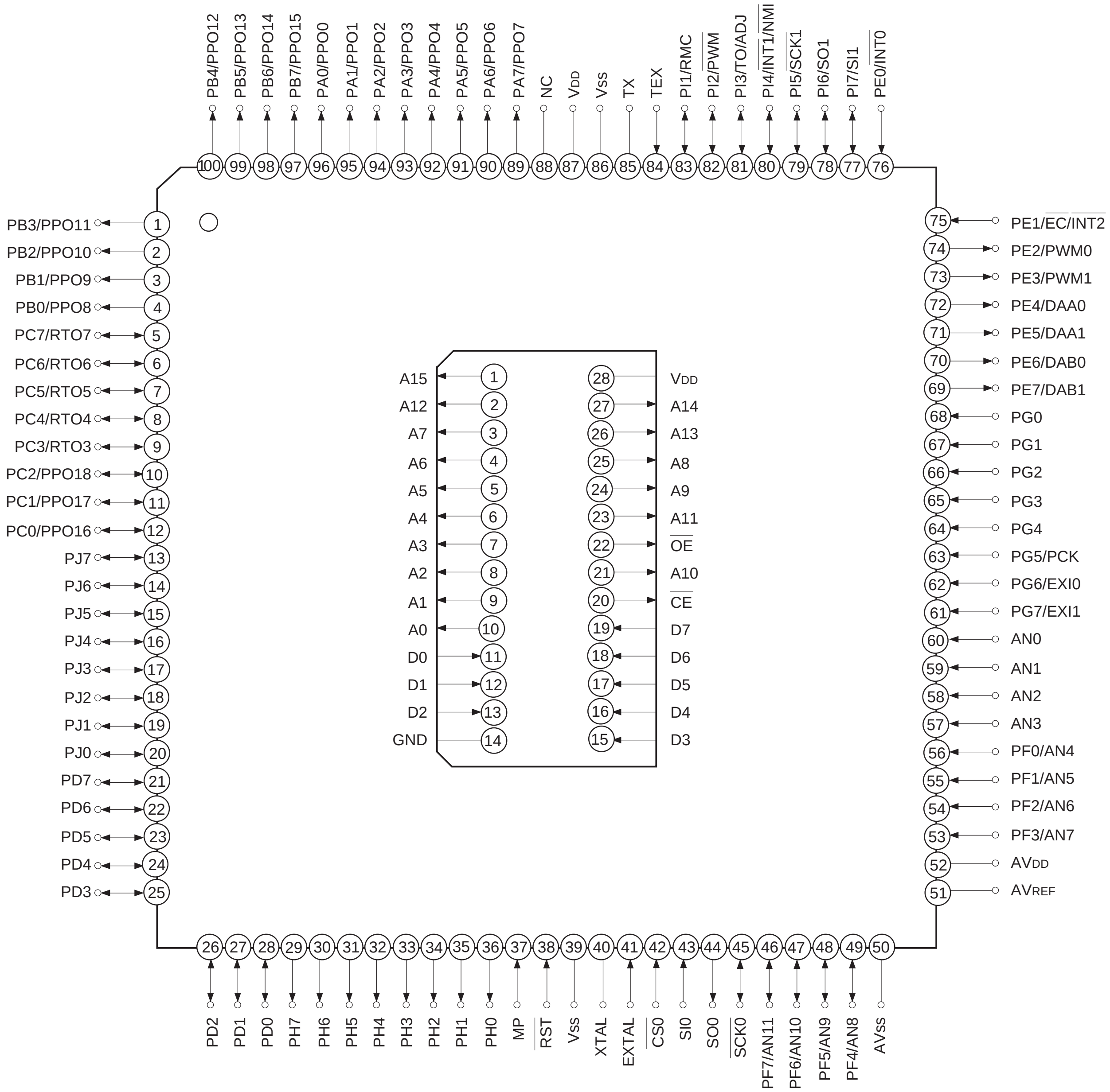


Note) 1. NC (Pin 90) is always connected to V_{DD}.

2. V_{SS} (Pins 41 and 88) are both connected to GND.

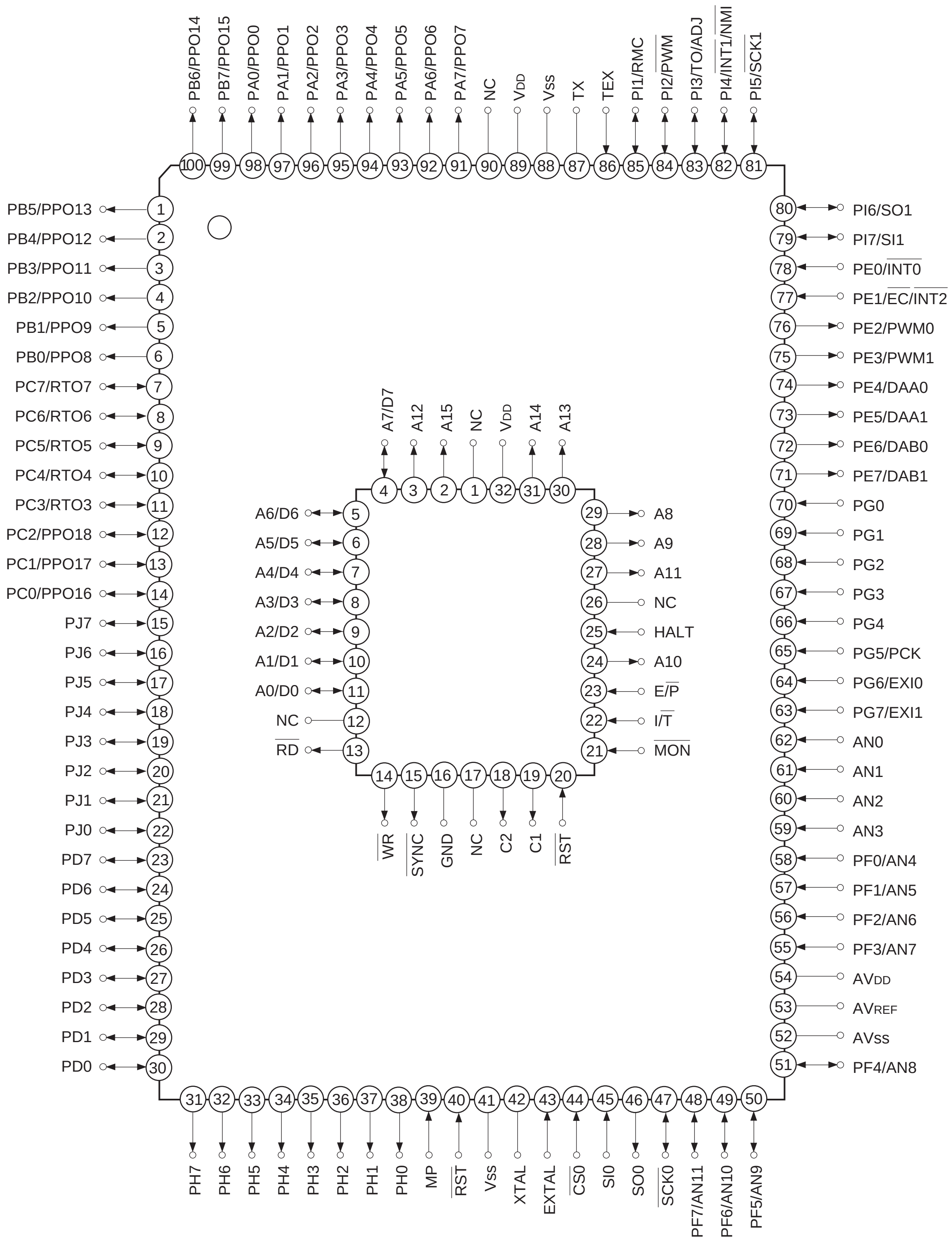
3. MP (Pin 39) is always connected to GND.

Pin Assignment in Piggyback Mode (LQFP package)



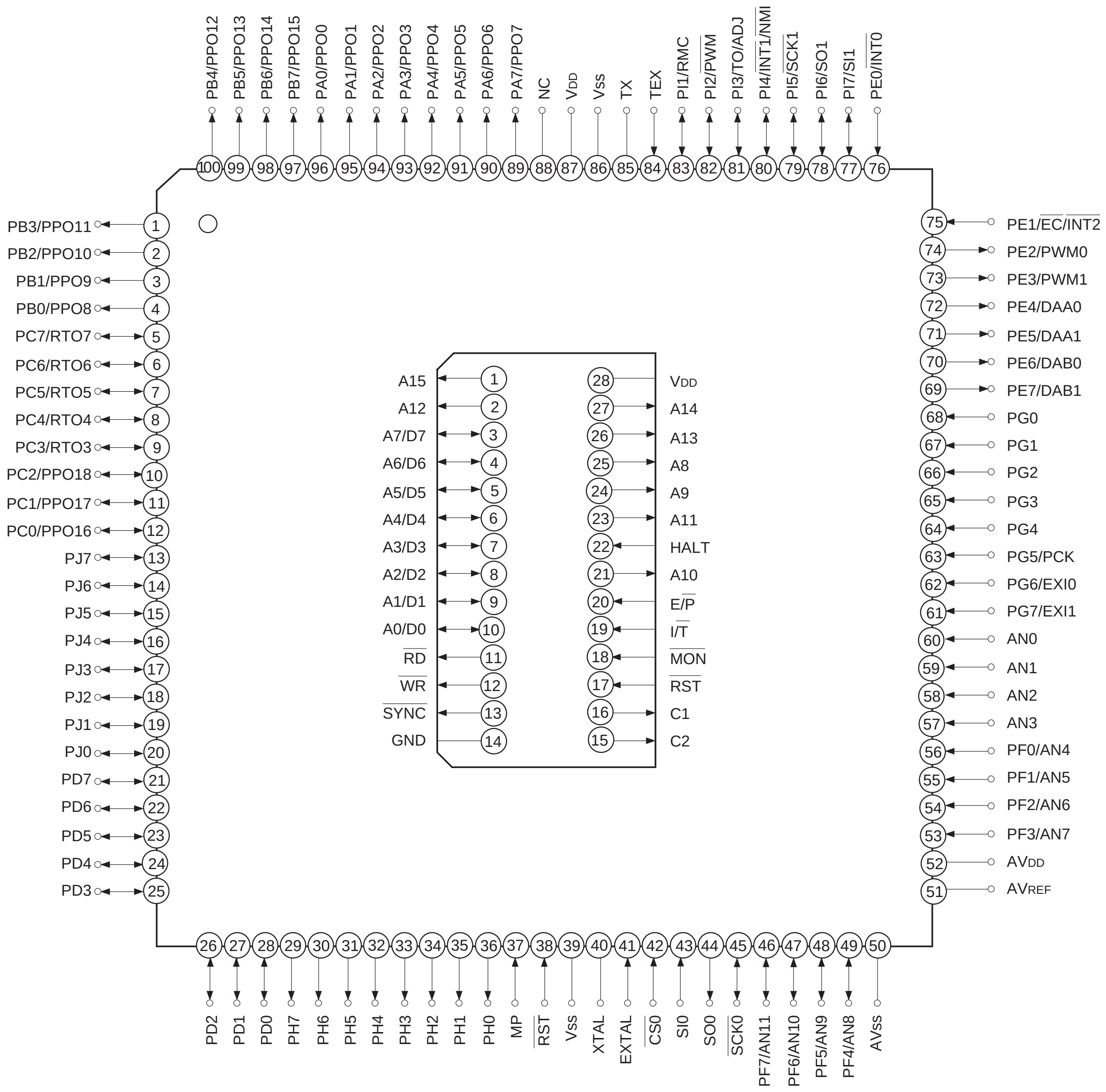
Note) 1. NC (Pin 88) is always connected to VDD.
2. VSS (Pins 39 and 86) are both connected to GND.
3. MP (Pin 37) is always connected to GND.

Pin Assignment in Evaluator Mode (QFP package)



Note) 1. NC (Pin 90) is always connected to V_{DD}.
2. V_{SS} (Pins 41 and 88) are both connected to GND.
3. MP (Pin 39) is always connected to GND.

Pin Assignment in Evaluator Mode (LQFP package)



Note) 1. NC (Pin 88) is always connected to VDD.

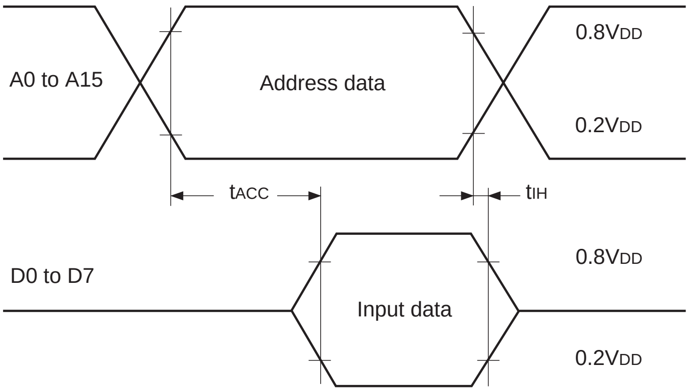
2. VSS (Pins 39 and 86) are both connected to GND.
3. MP (Pin 37) is always connected to GND.

EPROM Read Timing (Ta = –20 to +75°C, V_{DD} = 2.7 to 5.5V, Vss = 0V)

Item	Symbol	Pin	Min.	Max.	Unit
Address → data input delay time	t_{ACC}	A0 to A15 D0 to D7		100*1	ns
				75*2	
Address → data hold time	t_{IH}	A0 to A15 D0 to D7	0		ns

*1 At 12MHz operation (V_{DD} = 4.5 to 5.5V)

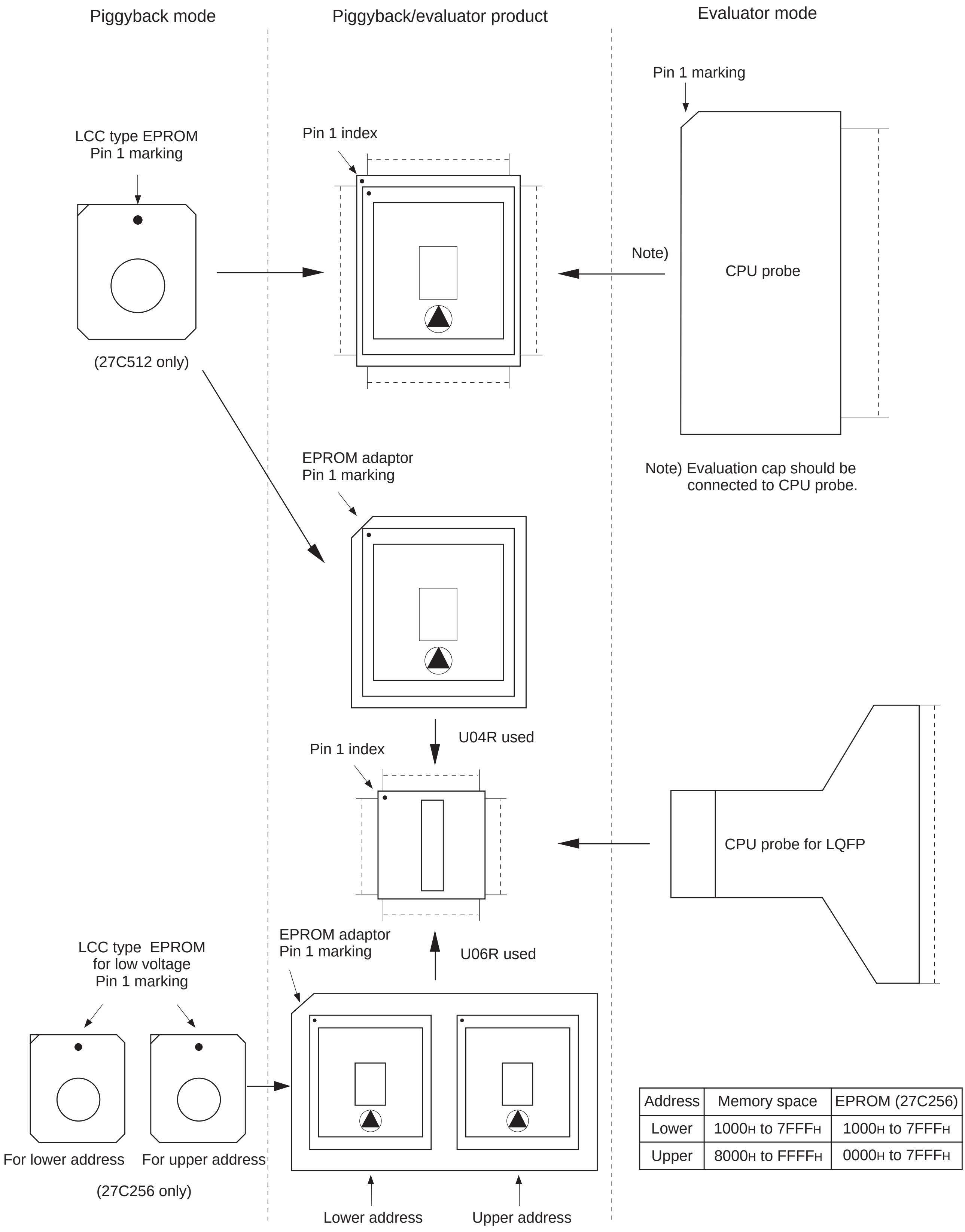
*2 At 12MHz operation (V_{DD} = 2.7 to 5.5V), At 16MHz operation (V_{DD} = 4.5 to 5.5V)



Products List

Option item	Products			
	Mask product		Piggyback/evaluator product	
	CXP81952M	CXP81960M	CXP81900M-U04Q CXP81900M-U04R	CXP81900M-U06R
Package	100-pin plastic QFP/LQFP		100-pin ceramic PQFP	
ROM capacity	52Kbytes	60Kbytes	EPROM 60Kbytes	
			27C512 × 1	27C256 × 2
Pull-up resistor for reset pin	Existent/Non-existent		Existent	
Supply voltage	2.7 to 5.5V		2.7 to 5.5V	2.7 to 5.5V

Piggyback mode/evaluator mode can be switched as shown below.

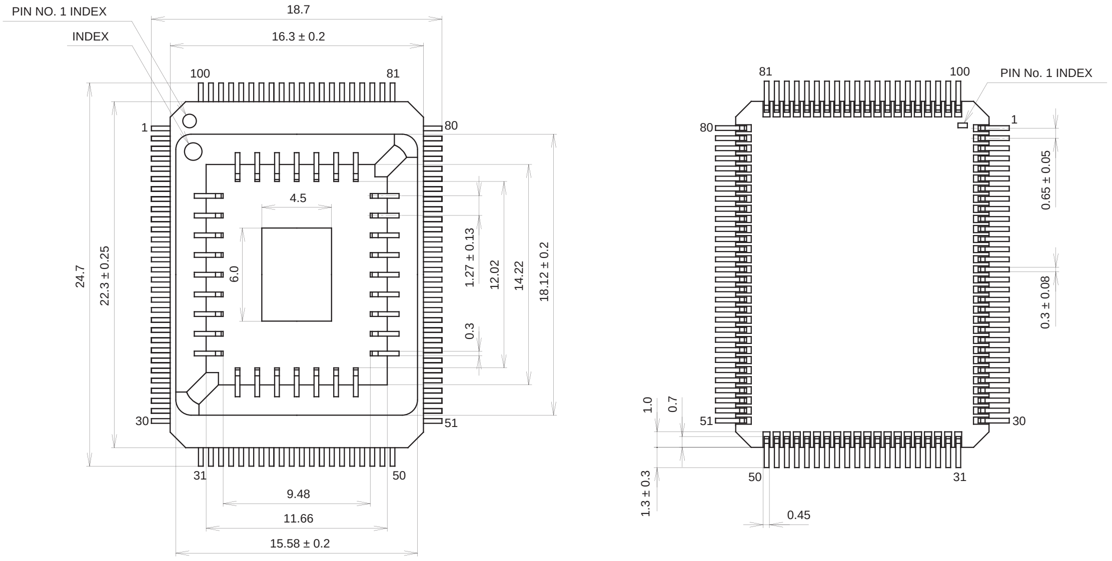


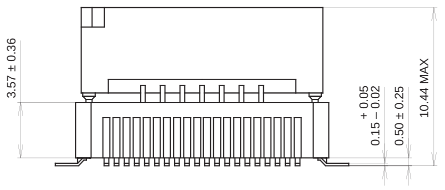
Note) Evaluation cap should be connected to CPU probe.

Address	Memory space	EPROM (27C256)
Lower	1000$_H$ to 7FFF$_H$	1000$_H$ to 7FFF$_H$
Upper	8000$_H$ to FFFF$_H$	0000$_H$ to 7FFF$_H$

Package Outline Unit: mm

100PIN PQFP (CERAMIC)



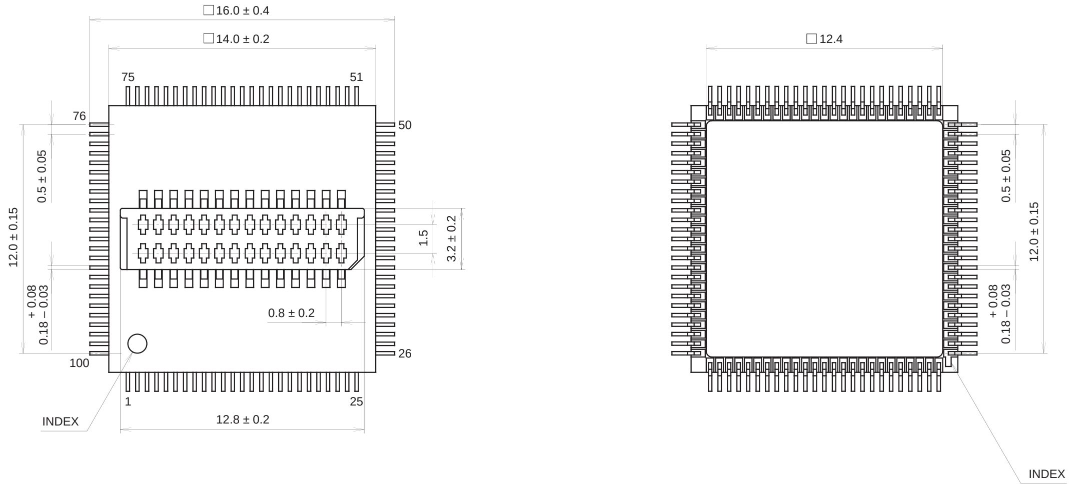


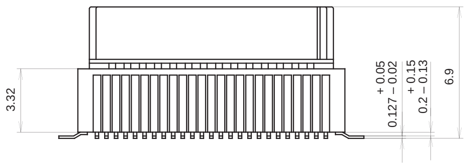
SONY CODE	PQFP-100C-L01
EIAJ CODE	AQFP100-C-0000-A
JEDEC CODE	——————

PACKAGE STRUCTURE

PACKAGE MATERIAL	CERAMIC
LEAD TREATMENT	GOLD PLATING
LEAD MATERIAL	42 ALLOY
PACKAGE WEIGHT	5.7g

100PIN PQFP (CERAMIC)





SONY CODE	PQFP-100C-L02
EIAJ CODE	AQFP100-C-1414-A
JEDEC CODE	——————

PACKAGE STRUCTURE

PACKAGE MATERIAL	CERAMIC
LEAD TREATMENT	GOLD PLATING
LEAD MATERIAL	42 ALLOY
PACKAGE WEIGHT	2.2g