

CMOS 8-bit Single Chip Microcomputer

**Piggyback/
evaluator type**

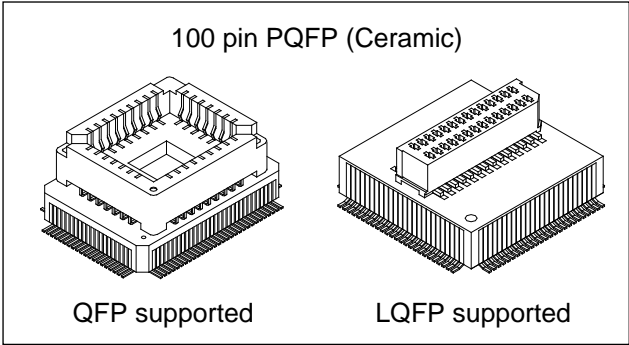
Description

The CXP81900 is a CMOS 8-bit single chip micro-computer of piggyback/evaluator combined type, which is developed for evaluating the function of the CXP81952/81960.

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 (3.0 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 CXP81900. Refer to the Products List for details.

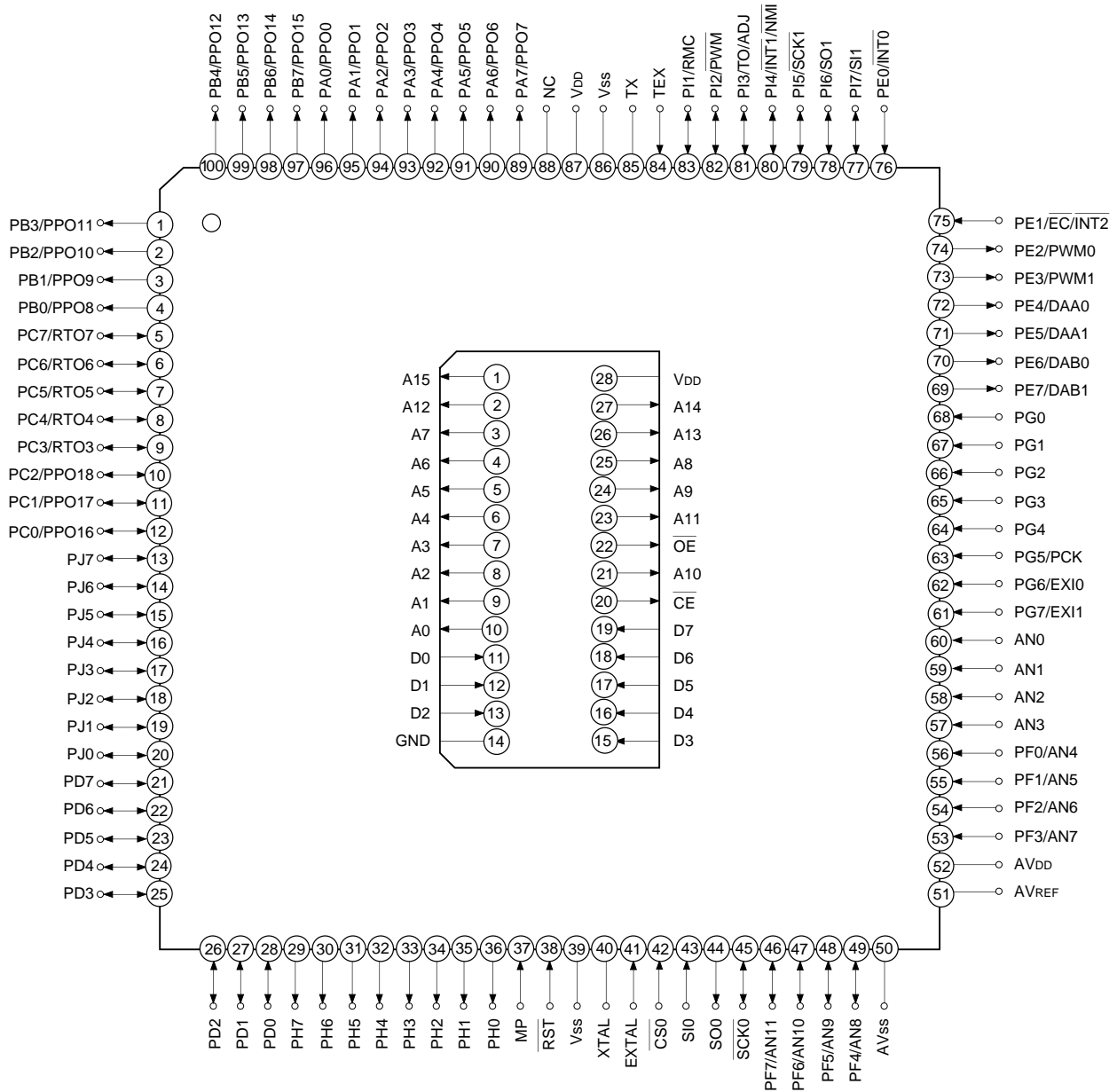


Structure

Silicon gate CMOS IC

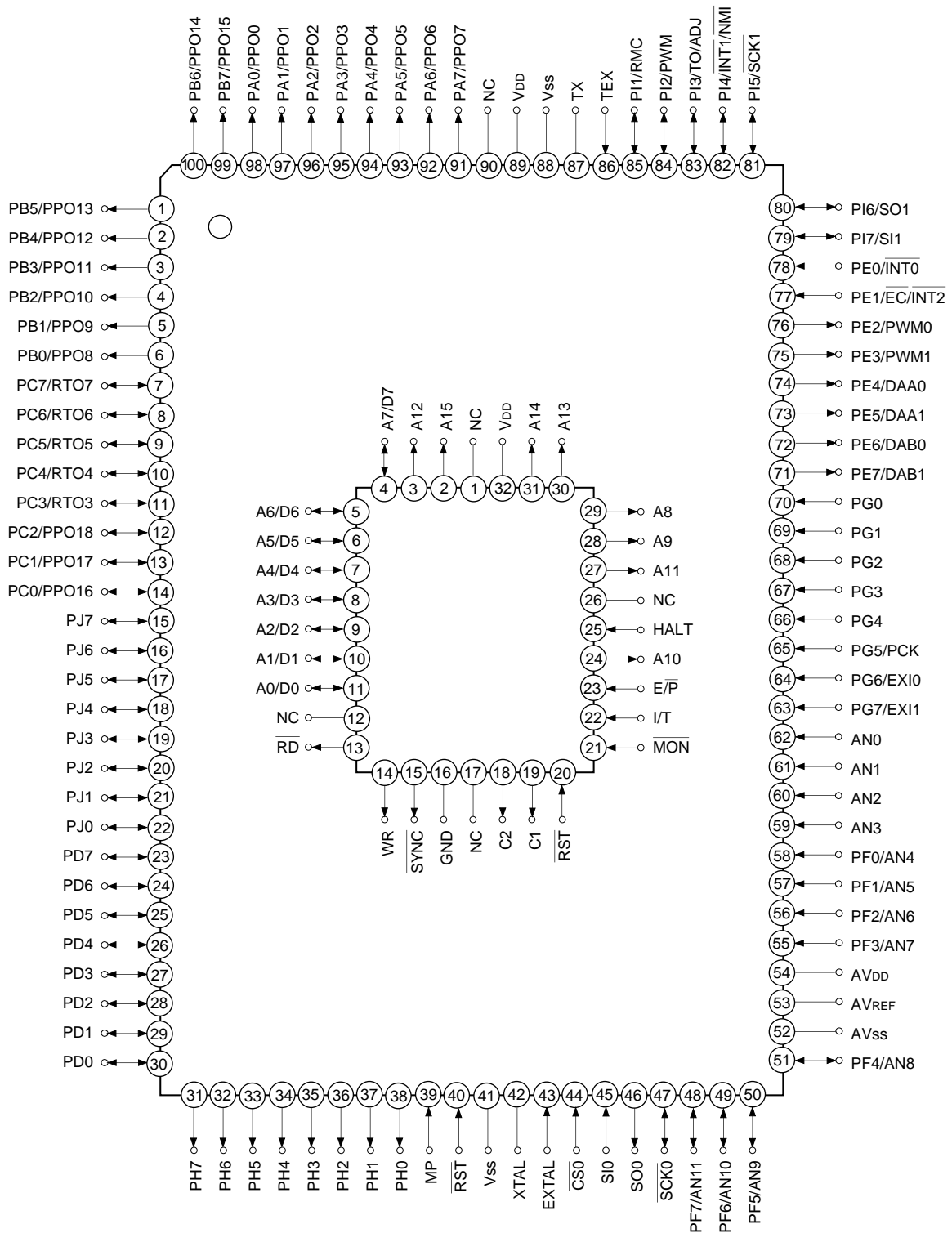
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Pin Assignment in Piggyback Mode (LQFP package)



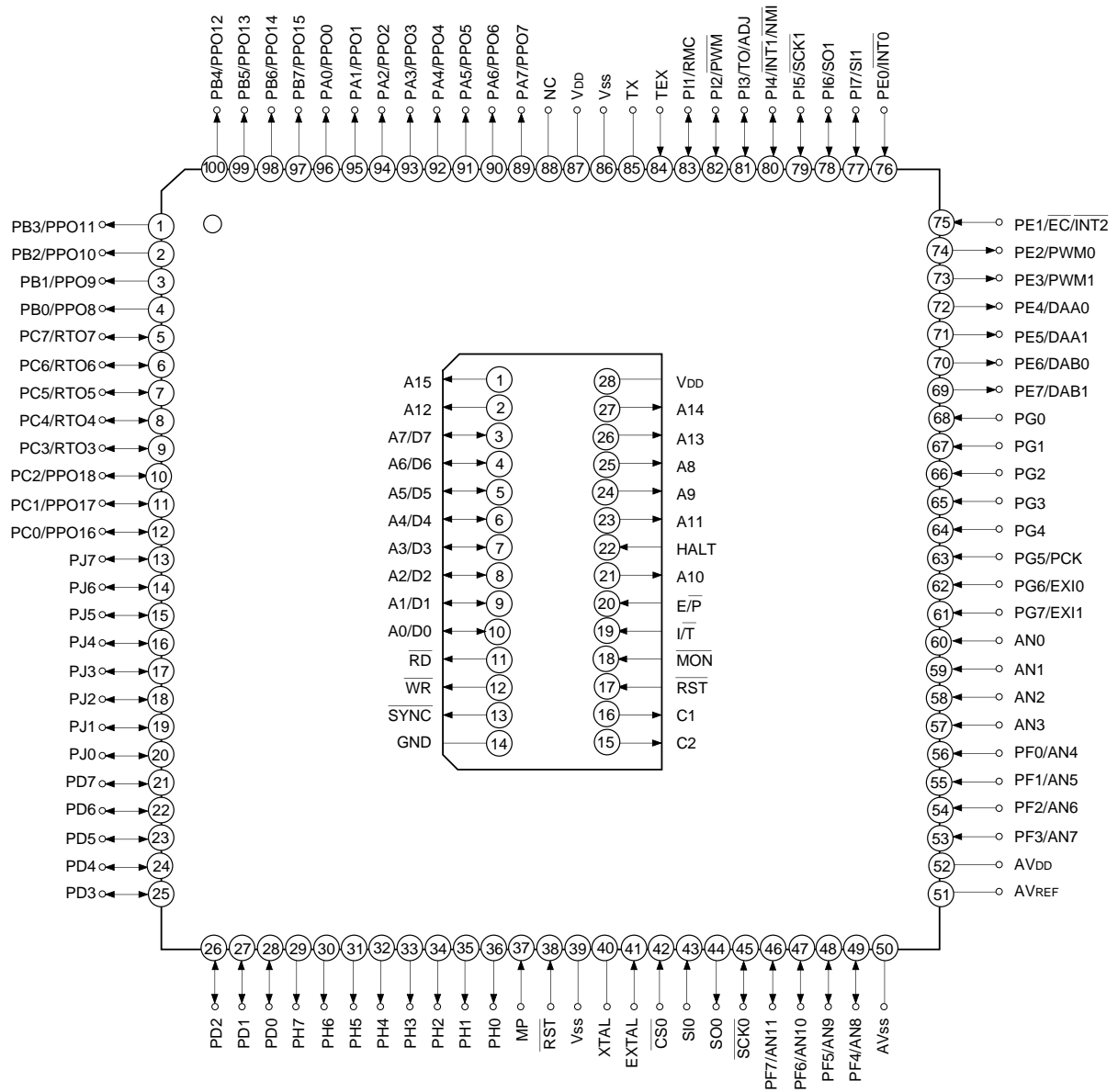
- Note)**
1. NC (Pin 88) is always connected to V_{DD}.
 2. V_{SS} (Pins 39 and 86) are both connected to GND.
 3. MP (Pin 37) is always connected to GND.

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)



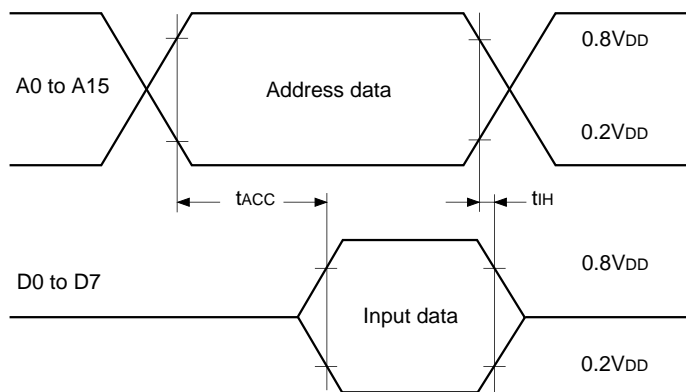
- Note)**
1. NC (Pin 88) is always connected to VDD.
 2. Vss (Pins 39 and 86) are both connected to GND.
 3. MP (Pin 37) is always connected to GND.

EPROM Read Timing ($T_a = -20$ to $+75^\circ\text{C}$, $V_{DD} = 3.0$ to 5.5V , $V_{SS} = 0\text{V}$)

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)

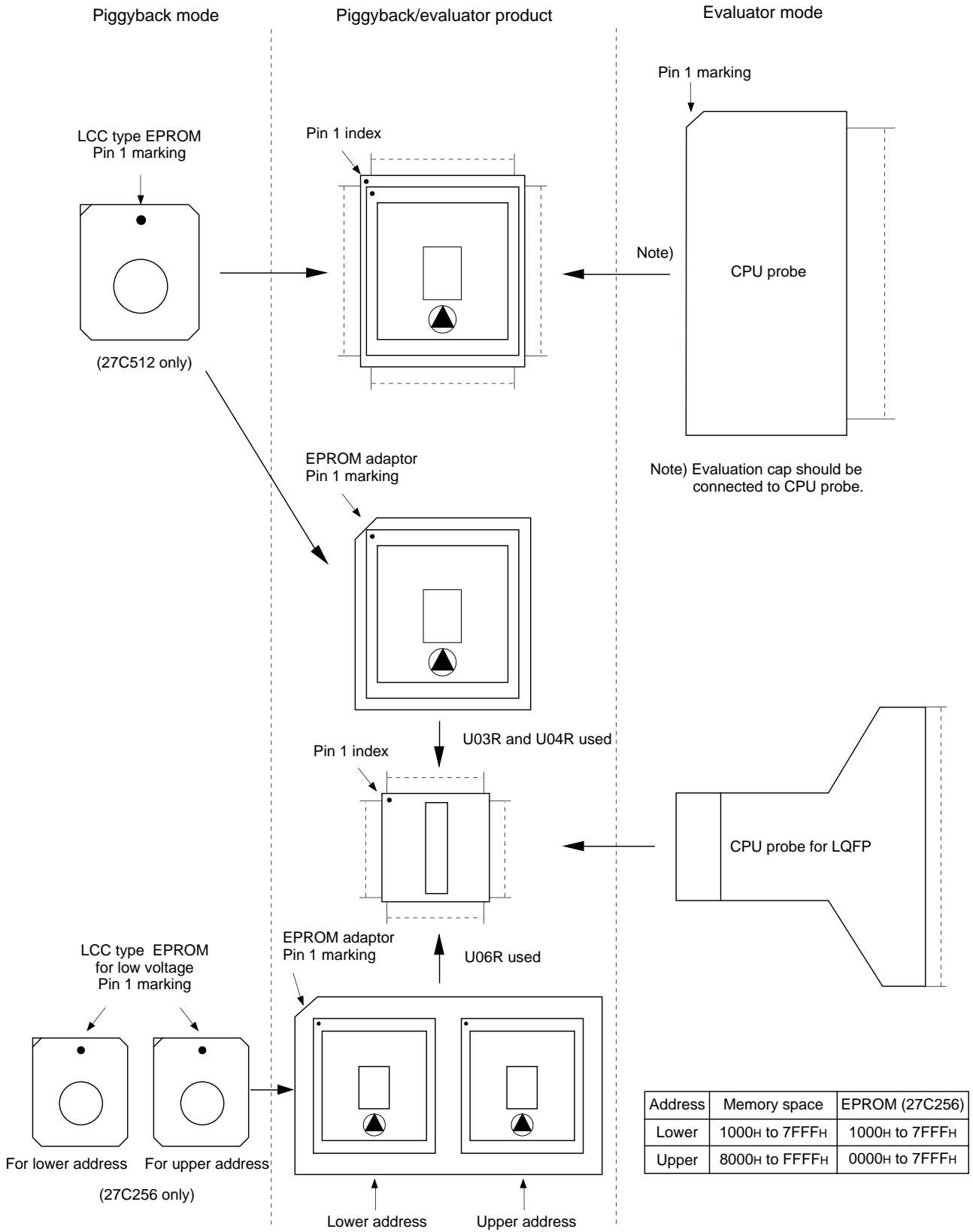
*2 At 12MHz operation ($V_{DD} = 3.0$ to 5.5V), At 16MHz operation ($V_{DD} = 4.5$ to 5.5V)



Products List

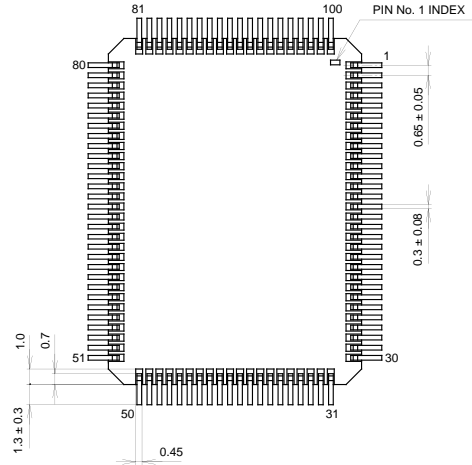
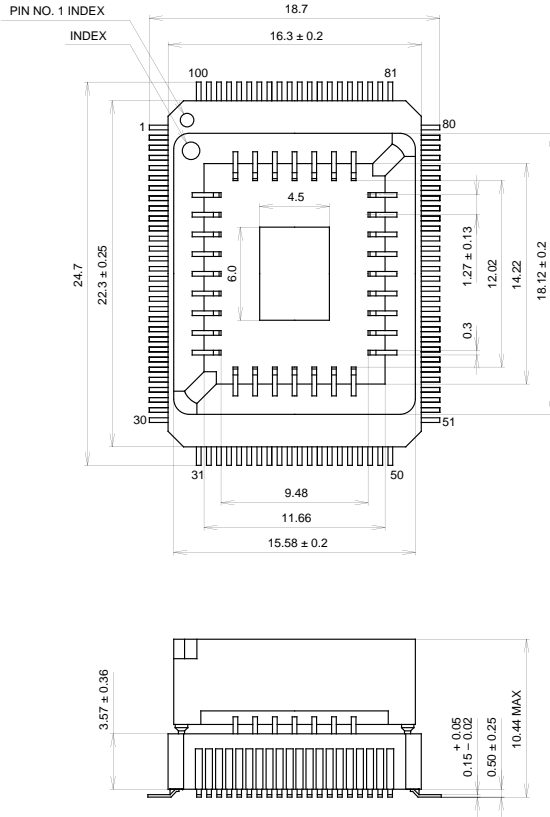
Option item	Products				
	Mask product		Piggyback/evaluator product		
	CXP81952	CXP81960	CXP81900-U03Q CXP81900-U03R	CXP81900-U04Q CXP81900-U04R	CXP81900-U06R
Package	100-pin plastic QFP/LQFP		100-pin ceramic PQFP		
ROM capacity	52Kbytes	60Kbytes	EPROM 60Kbytes		
			$27\text{C}512 \times 1$	$27\text{C}512 \times 1$	$27\text{C}256 \times 2$
Pull-up resistor for reset pin	Existent/Non-existent		Existent		
Supply voltage	3.0 to 5.5V		4.5 to 5.5V	3.0 to 5.5V	3.0 to 5.5V

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



Package Outline Unit: mm

100PIN PQFP (CERAMIC)

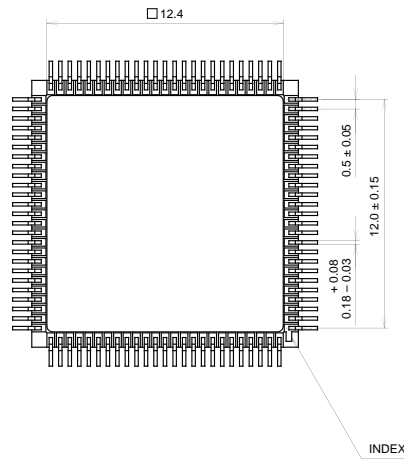
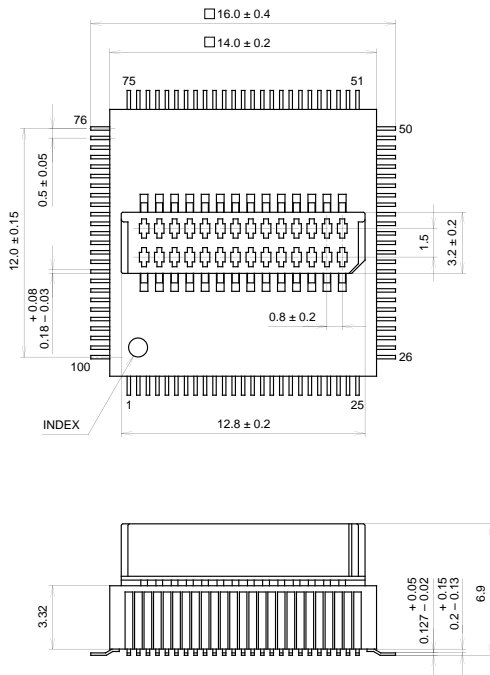


PACKAGE STRUCTURE

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

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

100PIN PQFP (CERAMIC)



PACKAGE STRUCTURE

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

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