

CMOS 8-bit Single Chip Microcomputer

Piggyback/
evaluator type

Description

The CXP87500 is a CMOS 8-bit single chip micro-computer of piggyback/evaluator combined type, which is developed for evaluating the function of the CXP87532/87540.

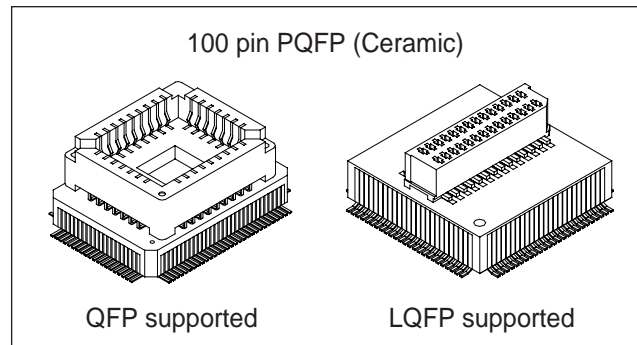
Features

- A wide instruction set (213 instructions) which covers various types of data
 - 16-bit operation/multiplication and division/boolean bit operation instructions
- Minimum instruction cycle 326ns at 12.288MHz operation
- Applicable EPROM LCC type 27C512
(Maximum 40Kbytes are available)
- Incorporated RAM capacity 1344bytes
- Peripheral functions
 - Arithmetic coprocessor Signed multiplication and division, signed sum of products.
high speed execution of many bits shift rotation operation
 - A/D converter 8-bit, 8-channel, successive approximation method
(Conversion time of 13μs/12.288MHz)
Incorporated 3-stage FIFO for A/D conversion data
 - Serial interface Incorporated buffer RAM (auto transfer for 1 to 128bytes),
2-channel
 - Timer 8-bit timer
8-bit timer/counter
19-bit time base timer
 - High precision timing pattern generator PPG 11-pin, 32-stage programmable
 - PWM output 12-bit, 2-channel (repetitive frequency 48kHz)
8-bit, 3-channel (repetitive frequency 48kHz)
 - Servo input control Capstan FG, drum FG/PG, reel FG input
 - FRC capture unit Incorporated 28-bit and 8-stage FIFO
- Interruption 12 factors, 12 vectors, multi-interruption possible
- Standby mode Sleep/stop
- Package 100-pin ceramic PQFP

Note) Mask option depends on the type of the CXP87500. Refer to the Products List for details.

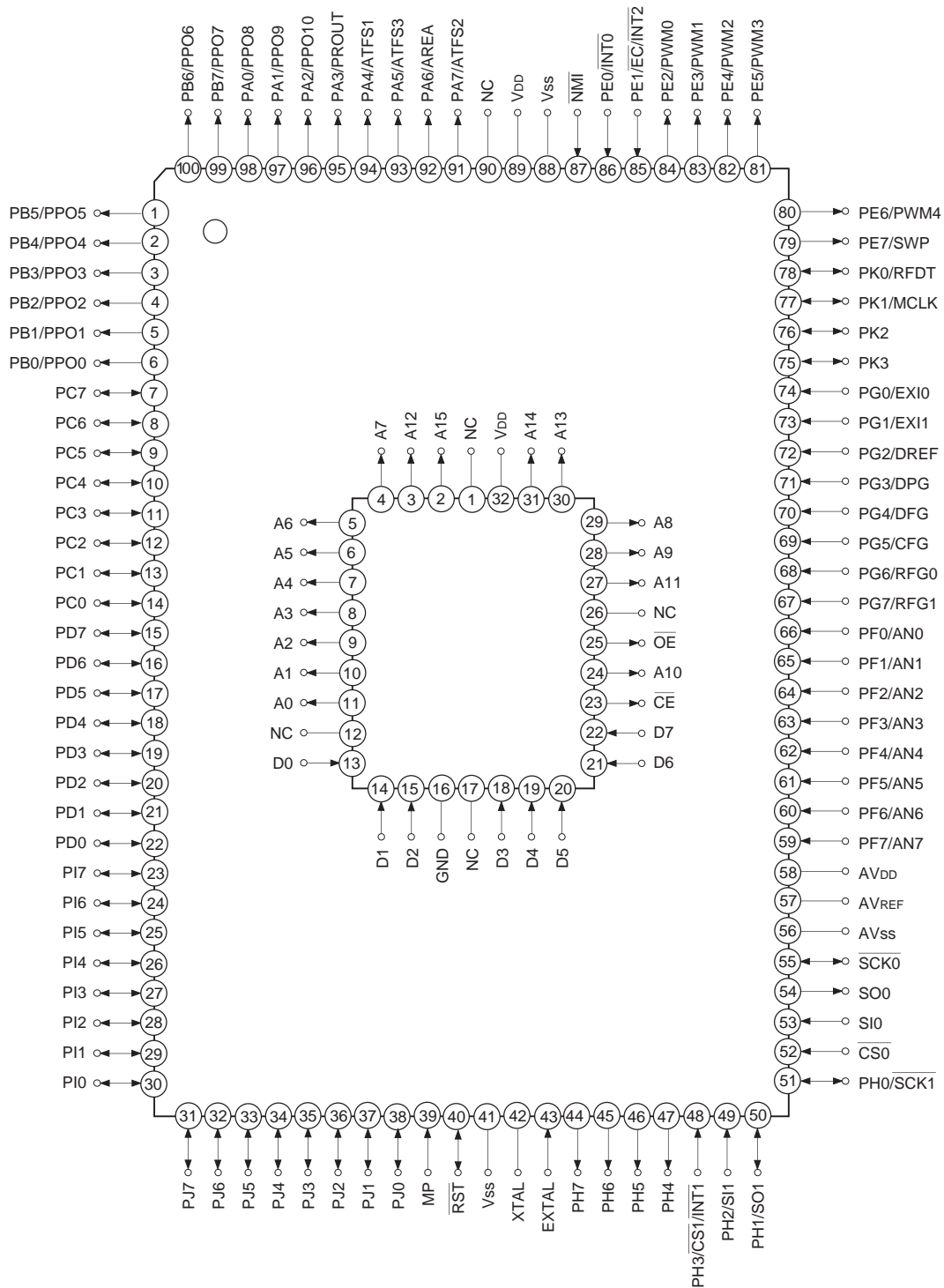
Structure

Silicon gate CMOS IC



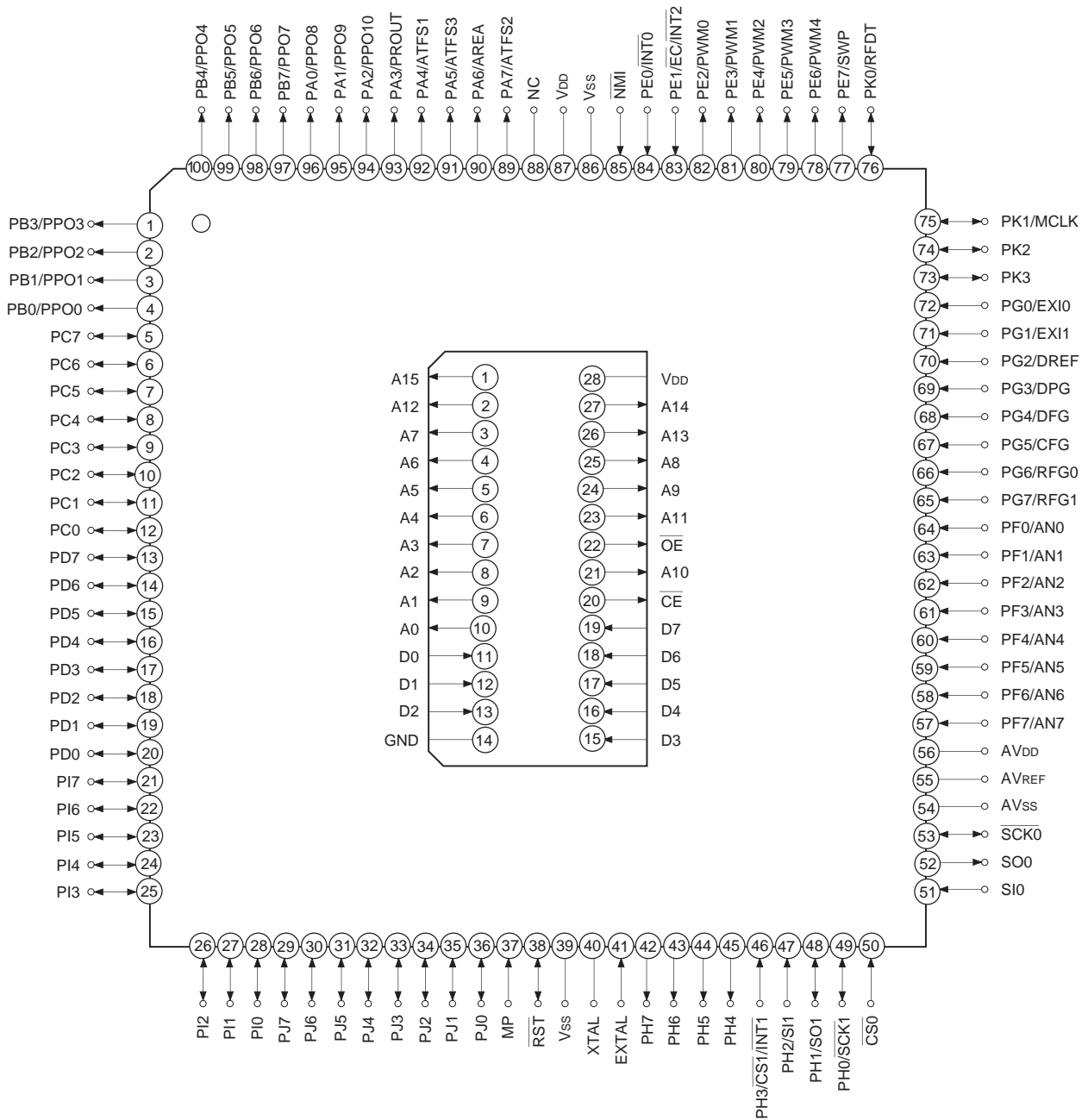
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Pin Assignment in Piggyback Mode (QFP package)



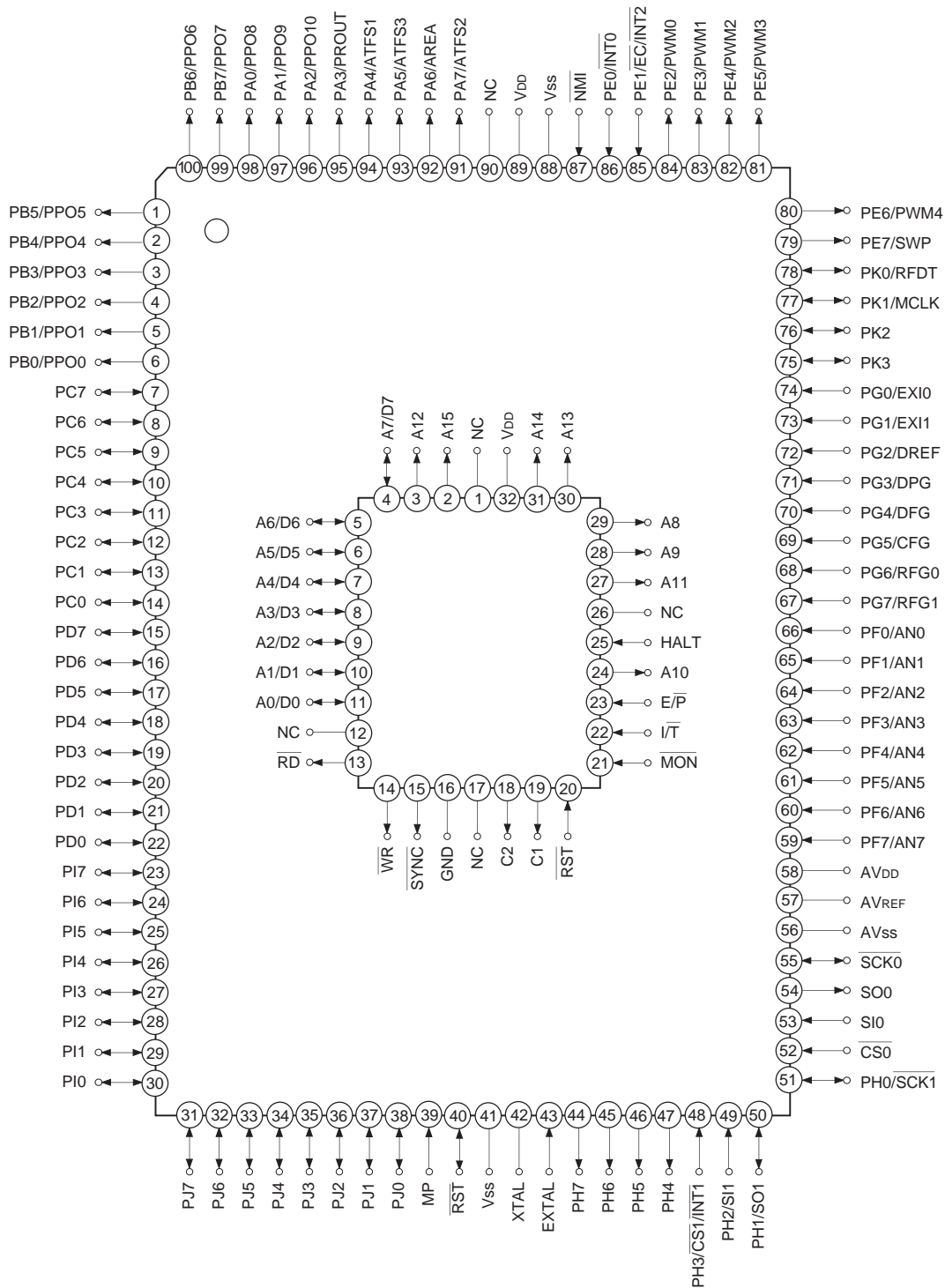
- Note**
1. NC (Pin 90) is always connected to V_{DD}.
 2. V_{SS} (Pins 41 and 88) are both connected to GND.
 3. MP (Pin 39) is always connected to GND.

Pin Assignment in Piggyback Mode (LQFP package)



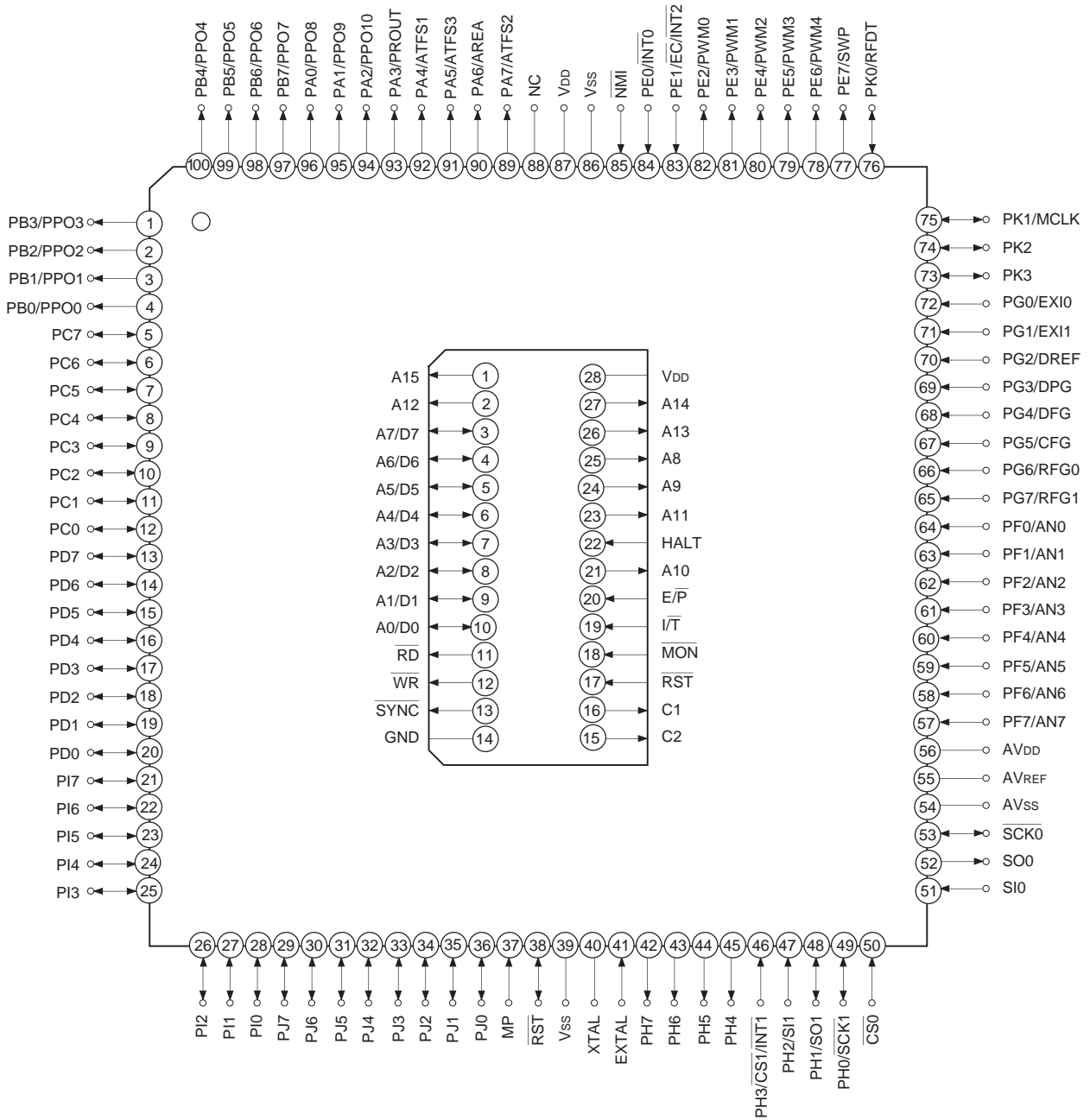
- Note**
1. NC (Pin 88) is always connected to V_{DD}.
 2. V_{SS} (Pins 39 and 86) are both connected to GND.
 3. MP (Pin 37) is always connected to GND.

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)

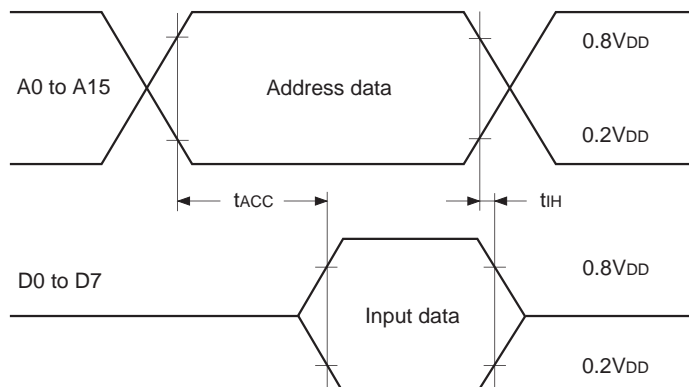


- Note**
1. NC (Pin 88) is always connected to VDD.
 2. Vss (Pins 39 and 86) are both connected to GND.
 3. MP (Pin 37) is always connected to GND.

EPROM Read Timing

($T_a = -20$ to $+75^\circ\text{C}$, $V_{DD} = 4.5$ to 5.5V , $V_{SS} = 0\text{V}$ reference)

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



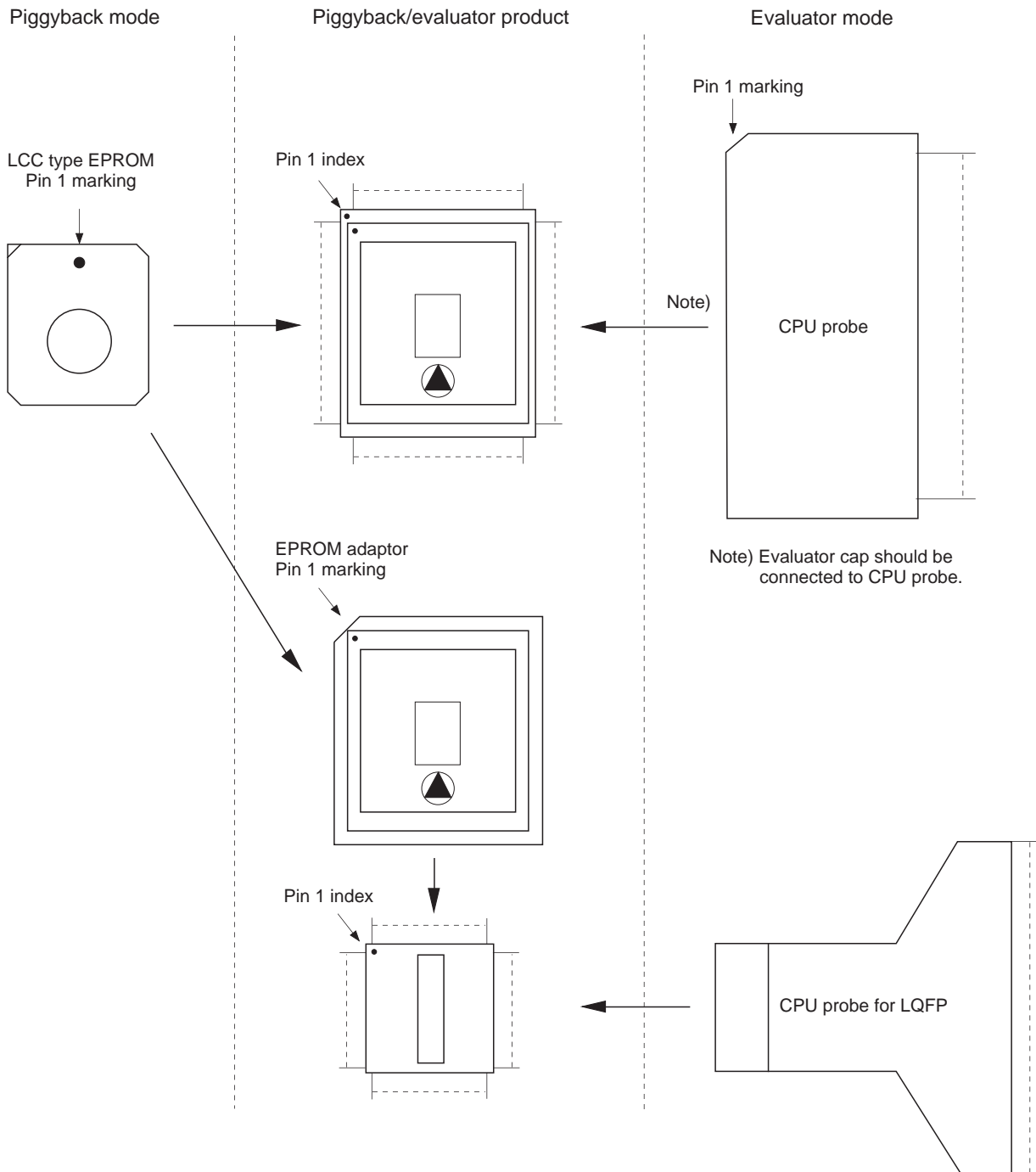
Products List

Optional item	Products		
	Mask		Piggyback/evaluator
	CXP87532	CXP87540	CXP87500-U01Q CXP87500-U01R
Package	100-pin plastic QFP/LQFP		100-pin ceramic PQFP
ROM capacity	32Kbytes	40Kbytes	EPROM 40Kbytes
Pull-up resistance for reset pin	Existent/Non-existent		Existent
Power on reset circuit	Existent/Non-existent		Existent
Input circuit format*1	PG0 to PG7, PK1	CMOS schmitt/TTLschmitt	TTL schmitt
	PK0	Buffer amplifier/Normal input	Buffer amplifier

*1 On PK1/MCLK pin and PG0/EXI0 to PG7/RFG1 pin, the input circuit format of CMOS schmitt or TTL schmitt can be selected to every pin.

On PK0/RFDT pin, buffer amplifier or normal input circuit format can be selected.

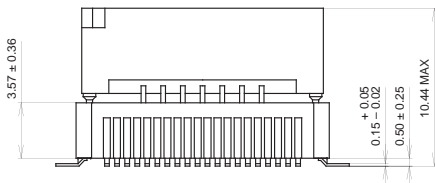
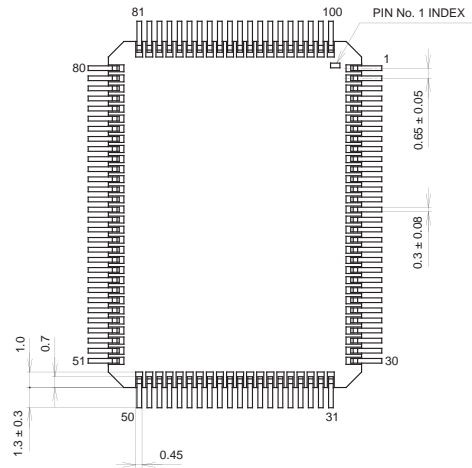
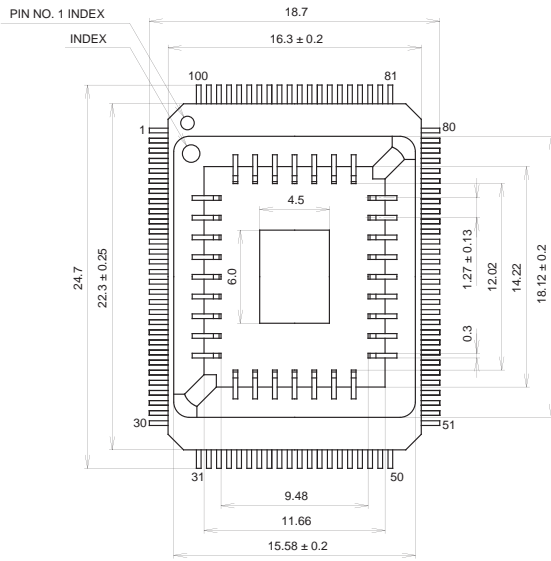
Piggyback mode/evaluator mode can be switched as shown below.



Package Outline

Unit: mm

100PIN PQFP (CERAMIC)

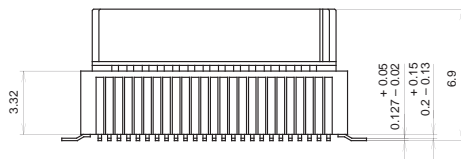
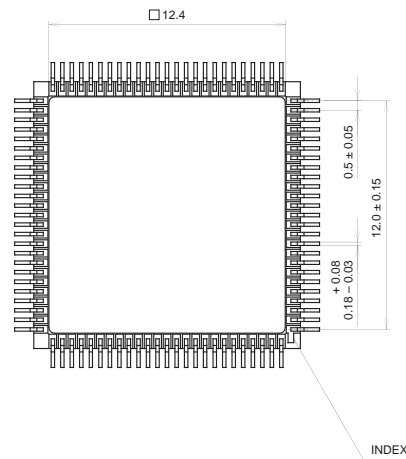
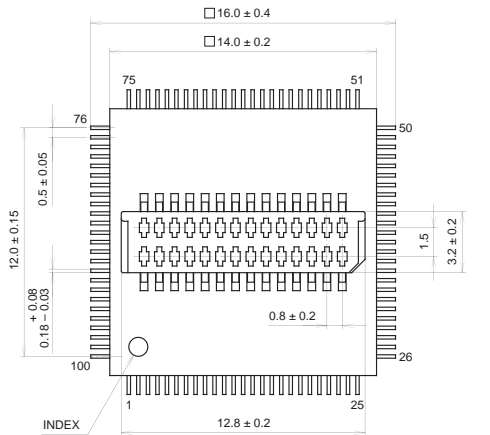


PACKAGE STRUCTURE

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