

## CMOS 8-bit Single Chip Microcomputer

Piggyback/  
evaluator type**Description**

The CXP83200A is a CMOS 8-bit single chip microcomputer of piggyback/evaluator combined type, which is developed for evaluating the function of the CXP83120A/83124A and CXP83232/83240.

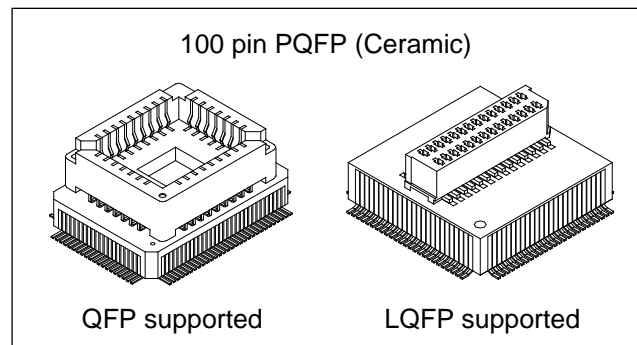
**Features**

- Wide-range instruction system (213 instructions) to cover various types of data
  - 16-bit operation/multiplication and division/Boolean bit operation instructions
- Minimum instruction cycle      400ns at 10MHz operation  
    8 $\mu$ s at 500kHz operation  
    122 $\mu$ s at 32kHz operation
- Applicable EPROM                LCC type 27C512  
    (Maximum 40K bytes are available.)
- Incorporated RAM capacity      1120 bytes (Including LCD display data area)
- Peripheral functions
  - A/D converter                      8-bit, 8-channel, successive approximation method  
    (Conversion time of 32 $\mu$ s/10 MHz)
  - Serial interface                    Incorporated 8-bit, 8-stage FIFO  
    (Auto transfer for 1 to 8 bytes), 1 channel  
    8-bit clock sync type, 1 channel
  - Timer                                 8-bit timer  
    8-bit timer/counter  
    19-bit time base timer  
    16-bit capture timer/counter  
    32kHz timer/counter
  - LCD controller/driver            Maximum 160 segment display possible (for 1/4 duty)  
    4 lines for common output, 40 lines for segment output  
    Display method static: 1/2, 1/3, 1/4 duty  
    Bias method: 1/2, 1/3 bias
  - Remote control reception circuit   8-bit pulse measurement counter with on-chip 6-stage FIFO
  - PWM output                        14 bits, 1 channel
- Interruption                        15 factors, 15 vectors, multi-interruption possible
- Standby mode                      SLEEP/STOP
- Package                              100-pin ceramic PQFP

**Note)** Mask option depends on the type of the CXP83200A. Refer to the Products List for details.

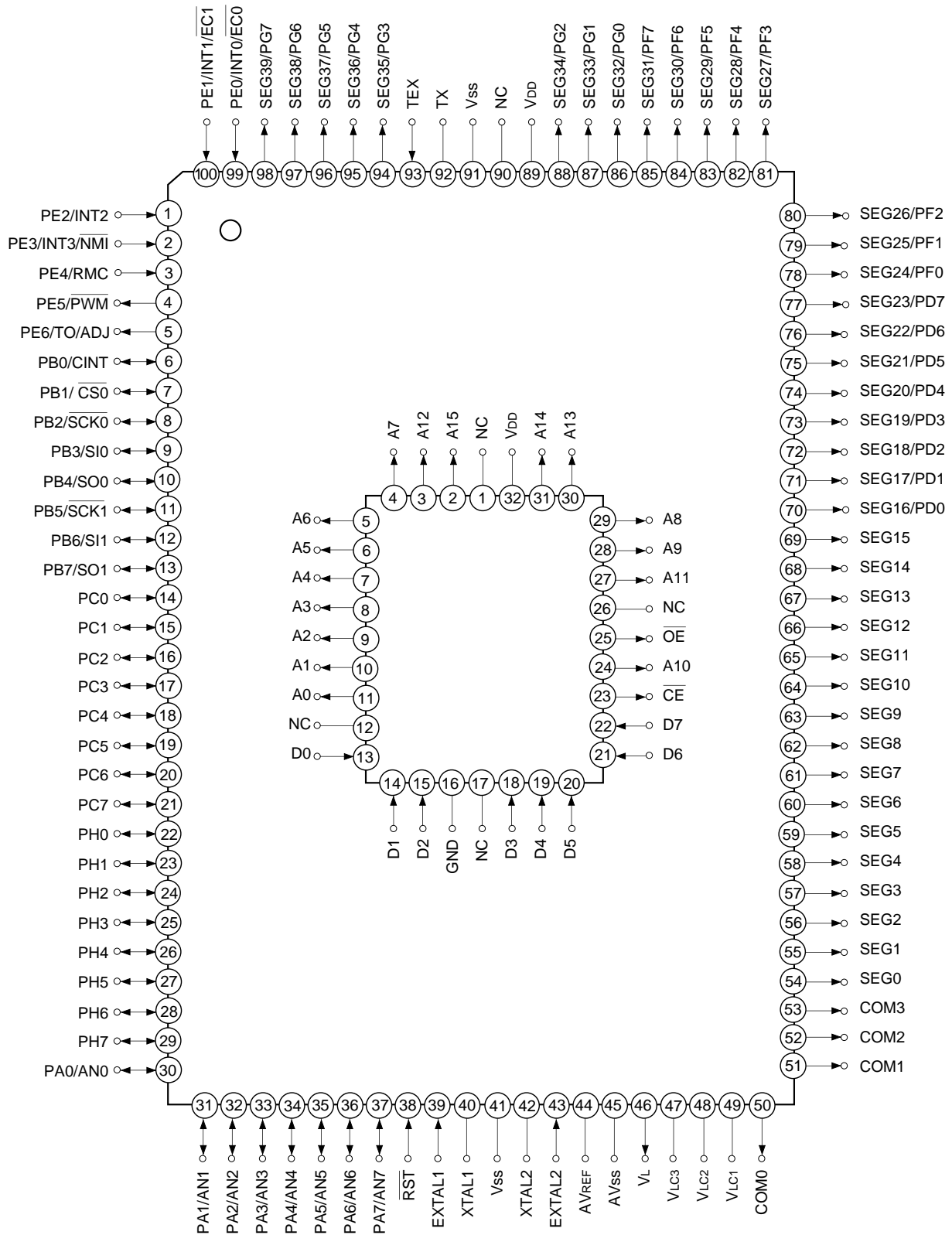
**Structure**

Silicon gate CMOS IC



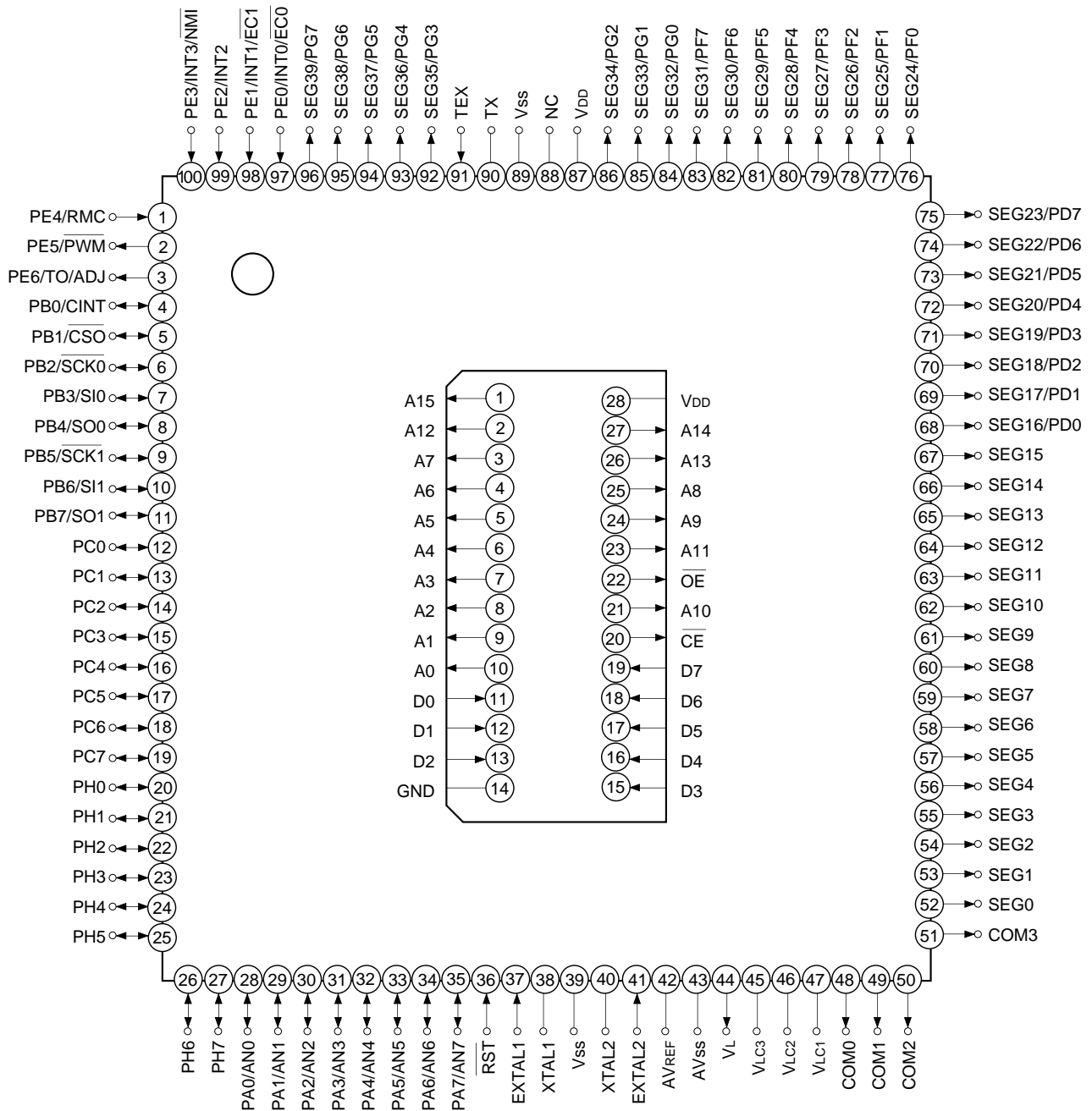
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Pin Configuration in Piggyback Mode (QFP package)



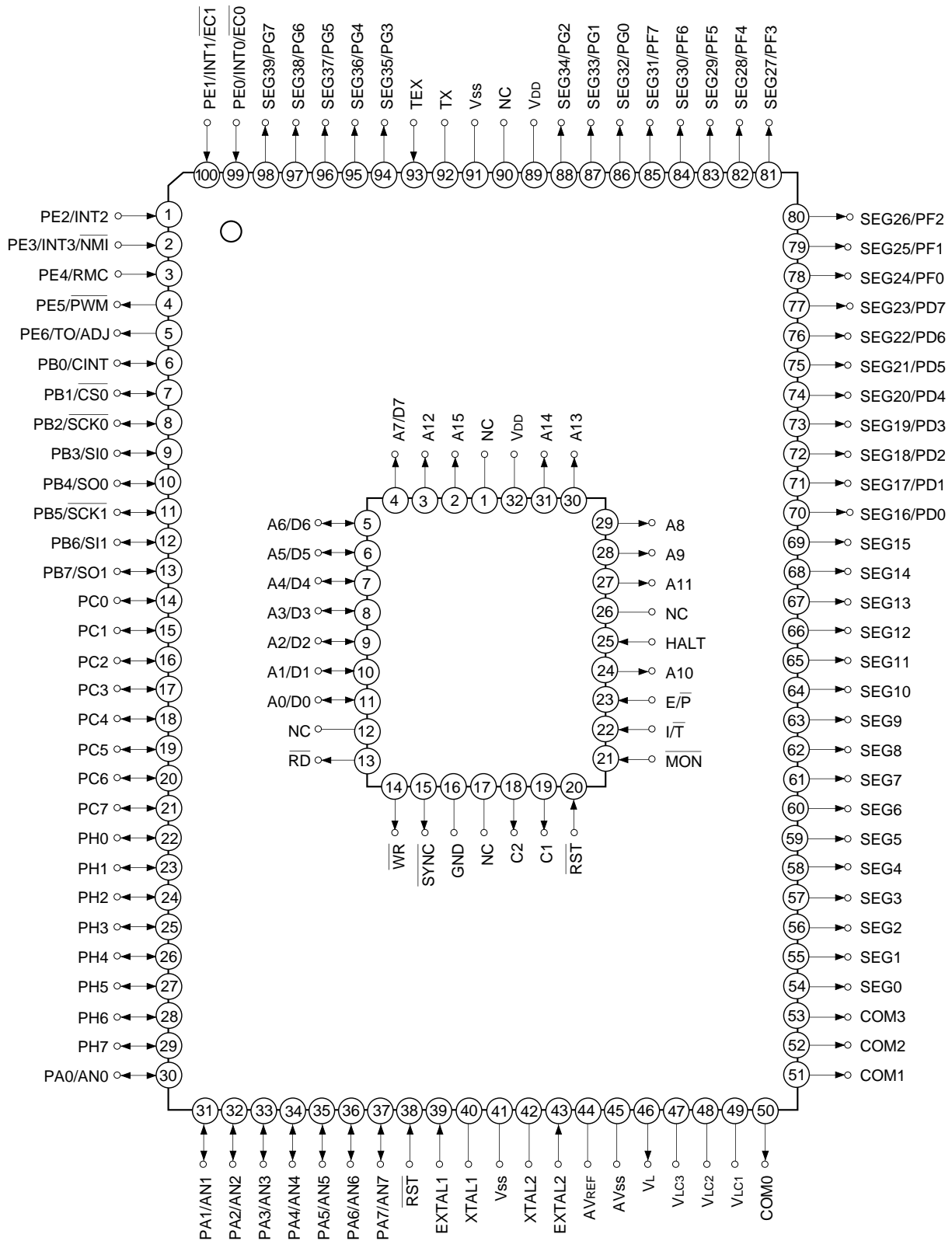
- Note)** 1. NC (Pin 90) is always connected to V<sub>DD</sub>.  
 2. V<sub>ss</sub> (Pins 41 and 91) are both connected to GND.

Pin Configuration in Piggyback Mode (LQFP package)



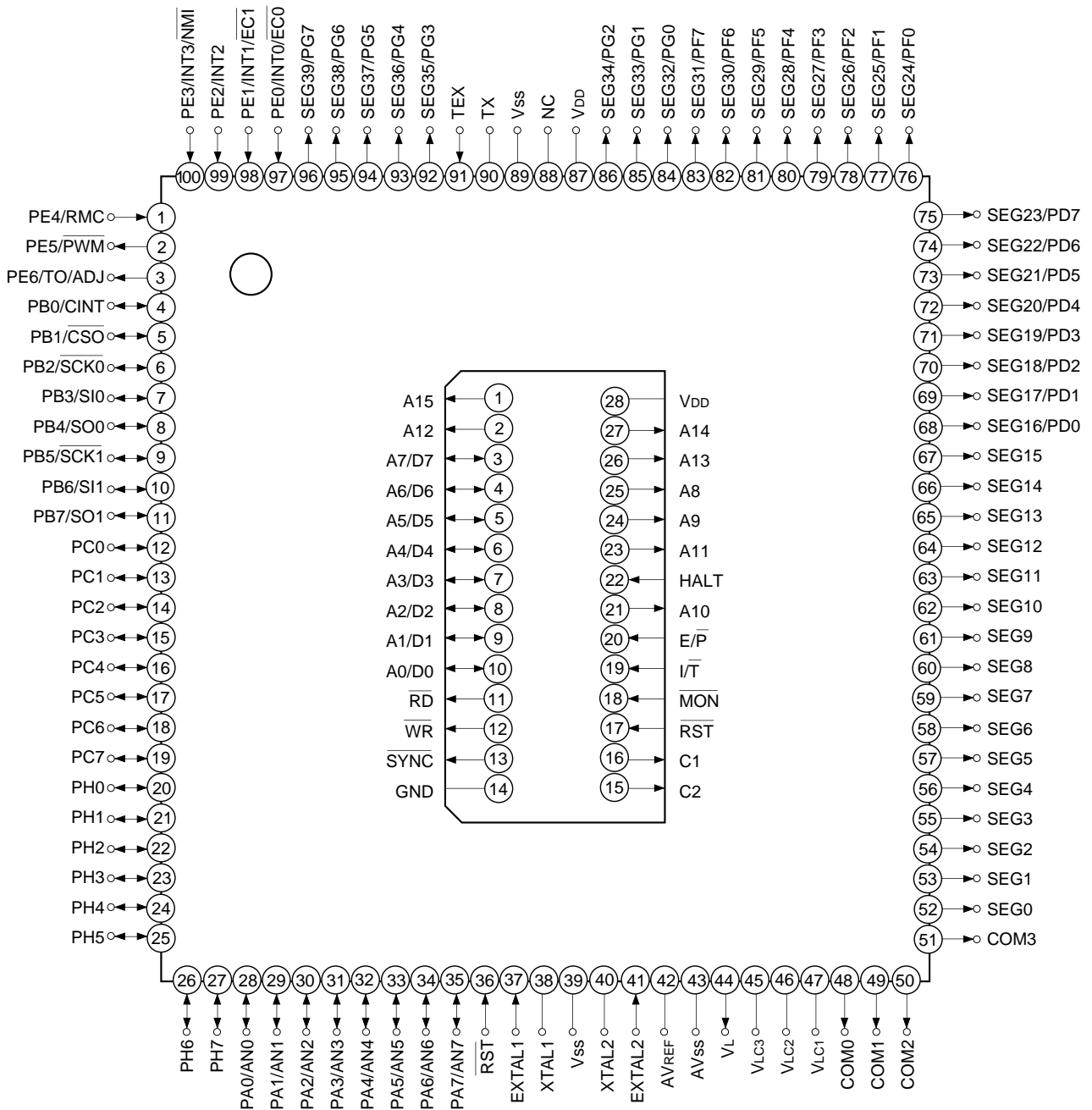
- Note)** 1. NC (Pin 88) is always connected to V<sub>DD</sub>.  
 2. V<sub>SS</sub> (Pins 39 and 89) are both connected to GND.

Pin Configuration in Evaluator Mode (QFP package)



- Note)** 1. NC (Pin 90) is always connected to V<sub>DD</sub>.  
 2. V<sub>SS</sub> (Pins 41 and 91) are both connected to GND.

Pin Configuration in Evaluator Mode (LQFP package)

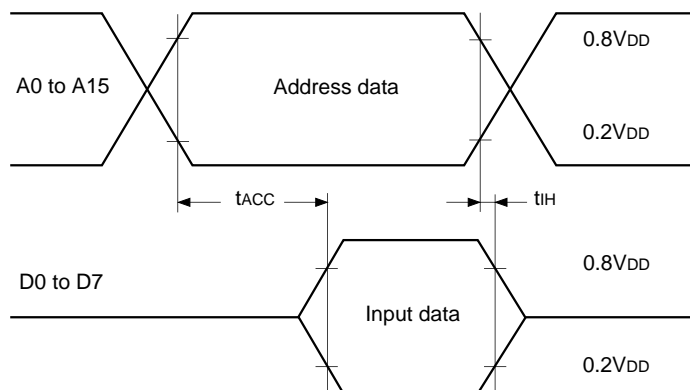


- Note)** 1. NC (Pin 88) is always connected to VDD.  
 2. Vss (Pins 39 and 89) are both connected to GND.

**EPROM Read Timing**

(Ta = -20 to +75°C, VDD = 4.5 to 5.5V, VSS = 0V reference)

Item	Symbol	Pins	Min.	Max.	Unit
Address → Data input delay time	t <sub>ACC</sub>	A0 to A15 D0 to D7		120	ns
Address → Data Hold time	t <sub>H</sub>	A0 to A15 D0 to D7	0		ns



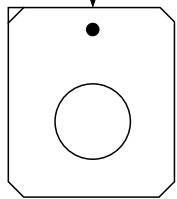
**Products List**

Option item	Products				
	Mask type				Piggyback/evaluator type
	CXP83120A	CXP83124A	CXP83232A	CXP83240A	CXP83200A-U01Q CXP83200A-U01R
Package	100-pin plastic QFP/LQFP				100-pin ceramic PQFP
Rom capacitance	20K bytes	24K bytes	32K bytes	40K bytes	EPROM 40K bytes
RAM capacitance	644 bytes		1120bytes		1120 bytes
Pull-up resistance for reset	Existent/Non-existent				Existent

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

Piggyback mode

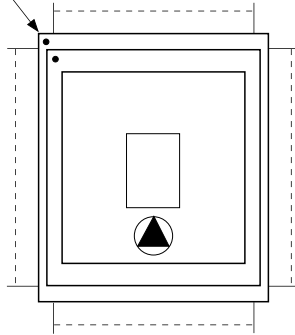
LCC type EPROM  
Pin 1 marking



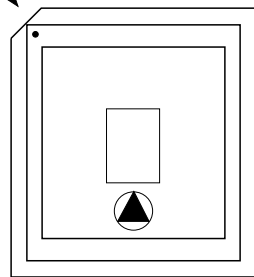
(27C512 only)

Piggyback/evaluator product

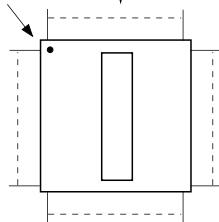
Pin 1 index



EPROM adaptor  
Pin 1 marking

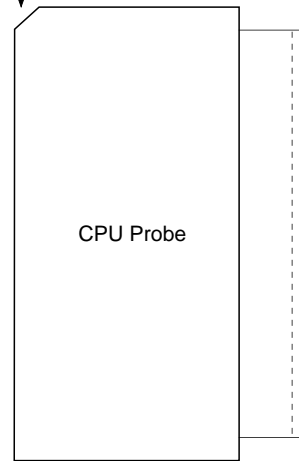


Pin 1 index



Evaluator mode

Pin 1 marking

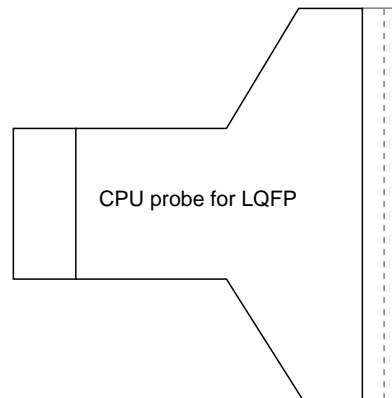


Note)

CPU Probe

Note) Evaluation cap should be connect to CPU probe.

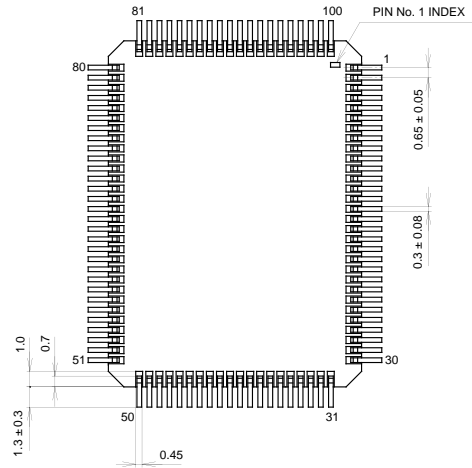
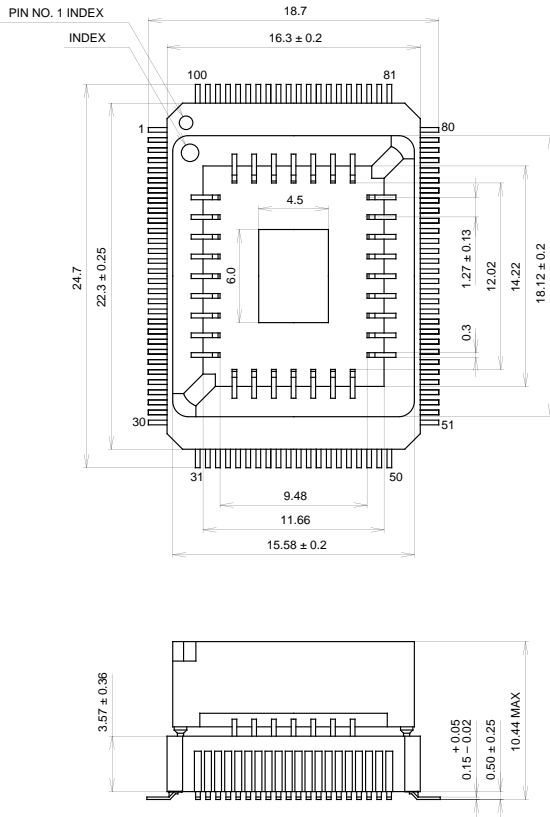
CPU probe for LQFP



Package Outline

Unit: mm

100PIN PQFP (CERAMIC)

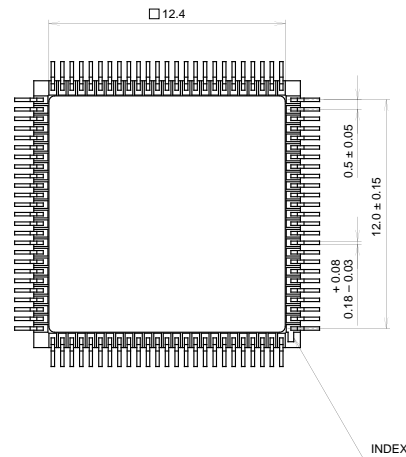
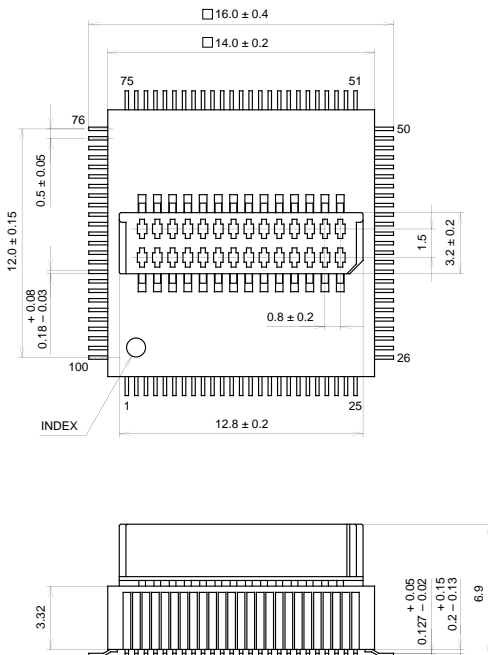


PACKAGE STRUCTURE

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