

## CMOS 8-bit 1-chip Microcomputer

Piggyback/  
evaluator type

### Description

The CXP85300A/85390A are CMOS 8-bit 1-chip microcomputers that serve as both piggyback and evaluator. The CXP85300A/85390A are developed for evaluating the function of the CXP85324A/CXP85332A/85340A.

Note that CXP85300A corresponds to the fixed font, and CXP85390A corresponds to the custom font respectively.

### Features

- Instruction set which supports a wide array of data types
  - 213 types of instructions which include 16-bit calculations, multiplication and division arithmetic, and boolean bit operations.
- Minimum instruction cycle 1 $\mu$ s/4MHz (4MHz version)  
0.5 $\mu$ s/8MHz (8MHz version)
- EPROM 27C512  
LCC type 27C512
- Incorporated RAM capacity 576 bytes
- EPROM for custom font (CXP85390A only)  
LCC type 27C256, LCC type 27C512  
(used volume is 16K bytes)
- Peripheral functions
  - On-screen display function 12  $\times$  18 dots, 256 types 15 colors, 21 characters  $\times$  12 lines  
Black frame output half blanking, shadow, background color on full screen/  
half blanking  
Double scanning mode, jitter elimination circuit
  - I<sup>2</sup>C bus interface
  - PWM output 14 bits, 1 channel  
8 bits, 8 channels
  - Remote control receiving circuit 8-bit pulse measurement counter, 6-stage FIFO
  - A/D converter 8 bits, 4 channels, successive approximation system  
(conversion time of 40 $\mu$ s/4MHz, 8MHz)
  - HSYNC counter
  - Power supply frequency counter
  - Watchdog timer
  - Serial I/O 8-bit clock synchronized
  - Timers 8-bit timer, 8-bit timer/counter, 19-bit time-base timer
- Interrupts 14 factors, 14 vectors multi-interruption possible
- Standby mode Sleep
- Package 64-pin ceramic SDIP/QFP

### Structure

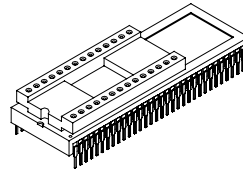
Silicon gate CMOS IC

**Note)** Optional mask depends on the type of the CXP85300A/85390A. Refer to the product list for details.

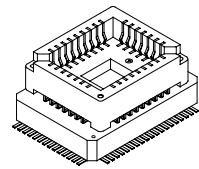
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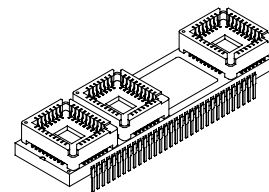
64 pin PSDIP (Ceramic)



64 pin PQFP (Ceramic)



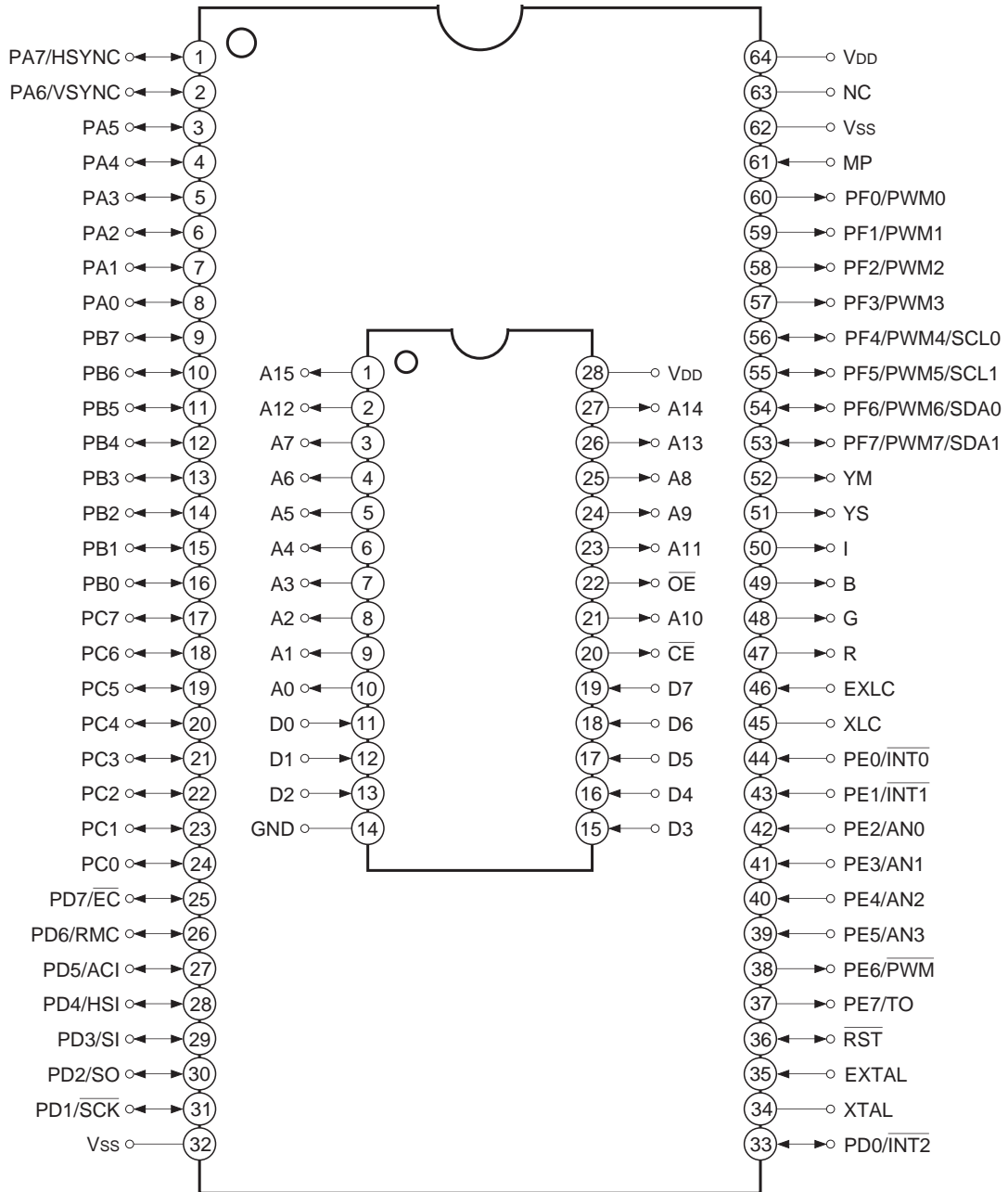
64 pin PSDIP (Ceramic)



CXP85300A

Pin Assignment: Piggyback mode 1

(Top View) 64 pin PSDIP Package

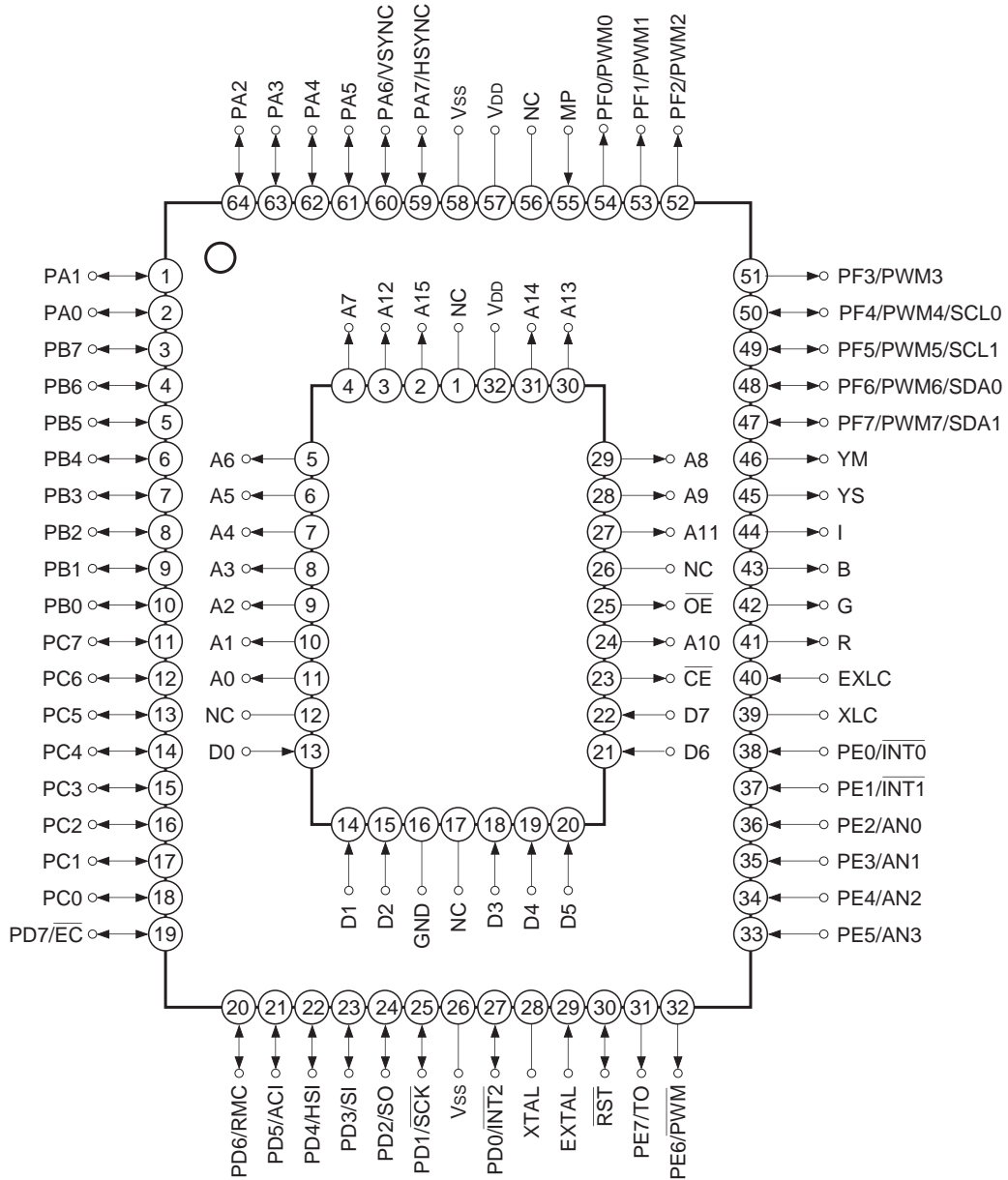


- Note)**
1. NC (Pin 63) is always connected to VDD.
  2. Vss (Pins 32 and 62) are always connected to GND.
  3. MP (Pin 61) is always connected to GND.

CXP85300A

Pin Assignment: Piggyback mode 2

(Top View) 64 pin PQFP Package

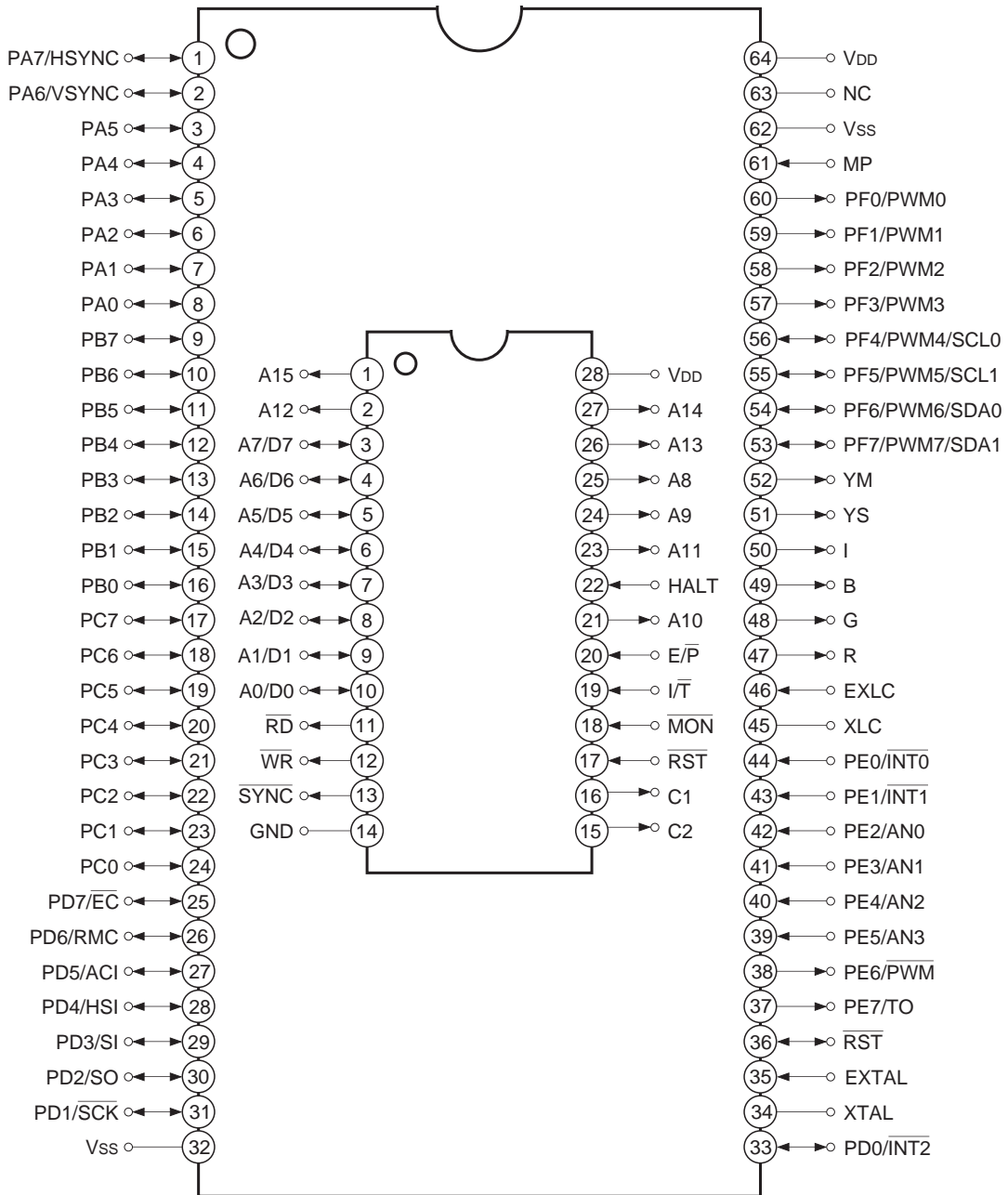


- Note)**
1. NC (Pin 56) is always connected to VDD.
  2. Vss (Pins 26 and 58) are always connected to GND.
  3. MP (Pin 55) is always connected to GND.

CXP85300A

Pin Assignment: Evaluator Mode 1

(Top View) 64 pin PSDIP Package

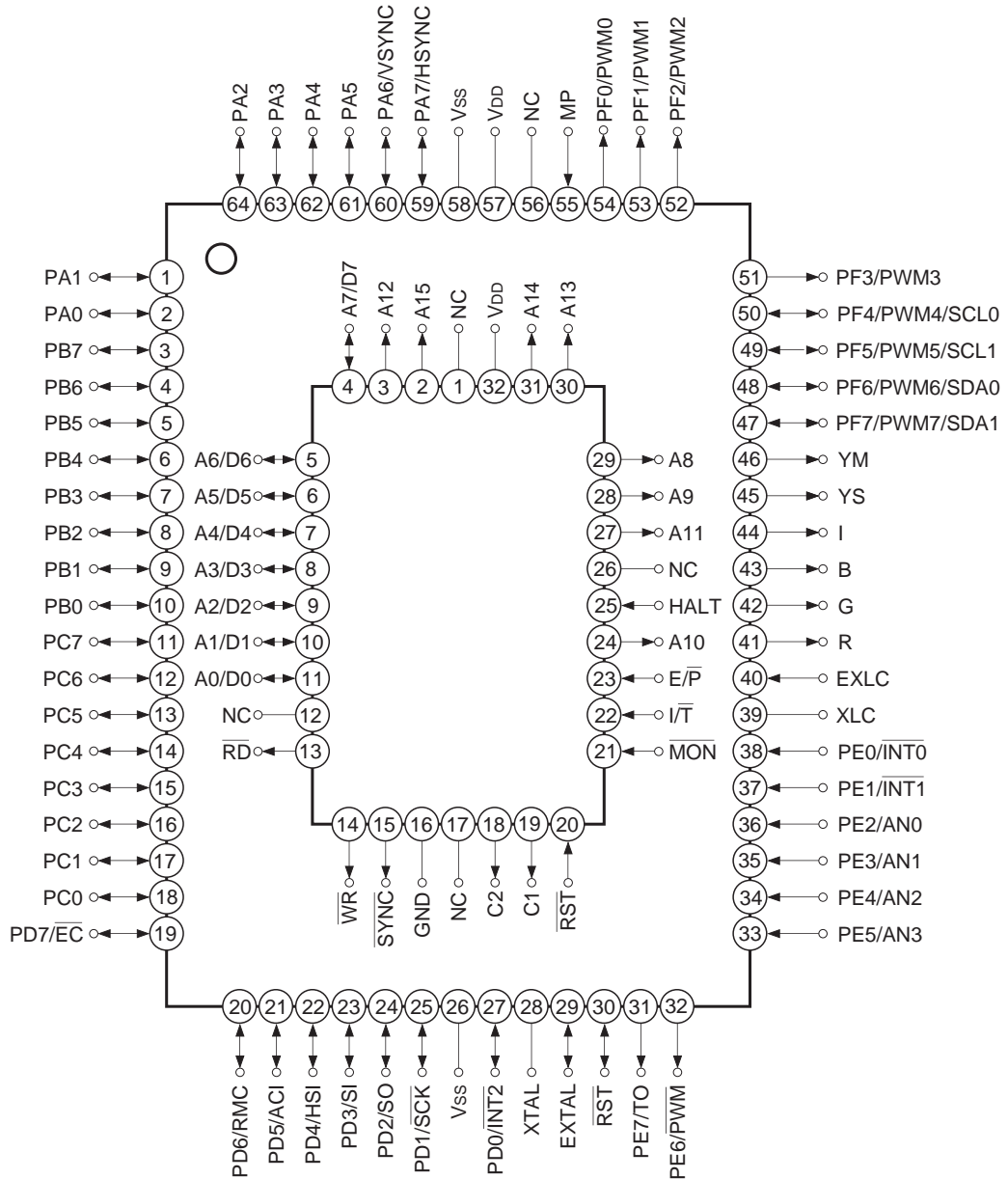


- Note)**
1. NC (Pin 63) is always connected to VDD.
  2. Vss (Pins 32 and 62) are always connected to GND.
  3. MP (Pin 61) is always connected to GND.

CXP85300A

Pin Assignment: Evaluator Mode 2

(Top View) 64 pin PQFP Package

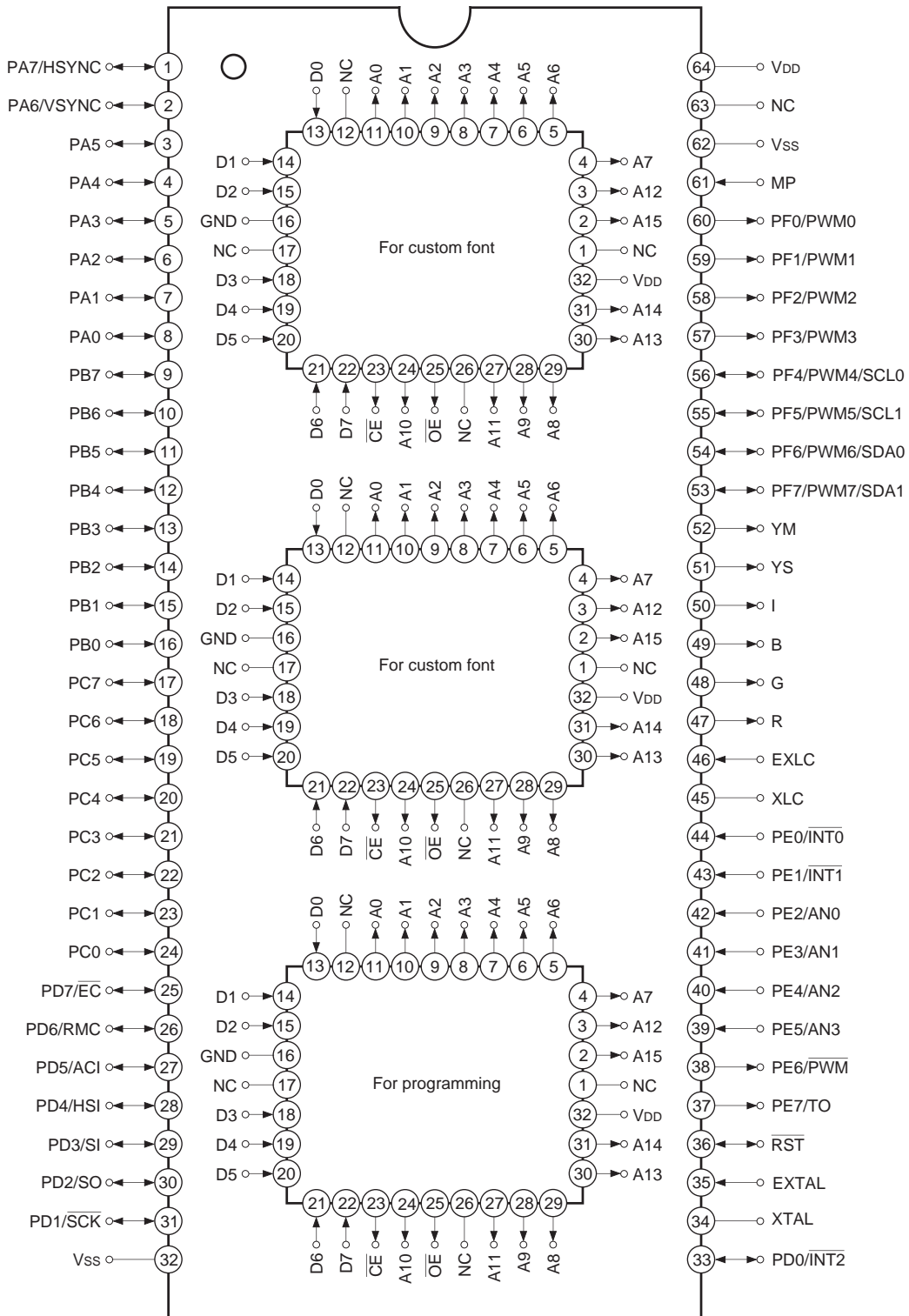


- Note)**
1. NC (Pin 56) is always connected to VDD.
  2. Vss (Pins 26 and 58) are always connected to GND.
  3. MP (Pin 55) is always connected to GND.

CXP85390A

Pin Assignment: Piggyback Mode

(Top View) 64 pin PSDIP Package

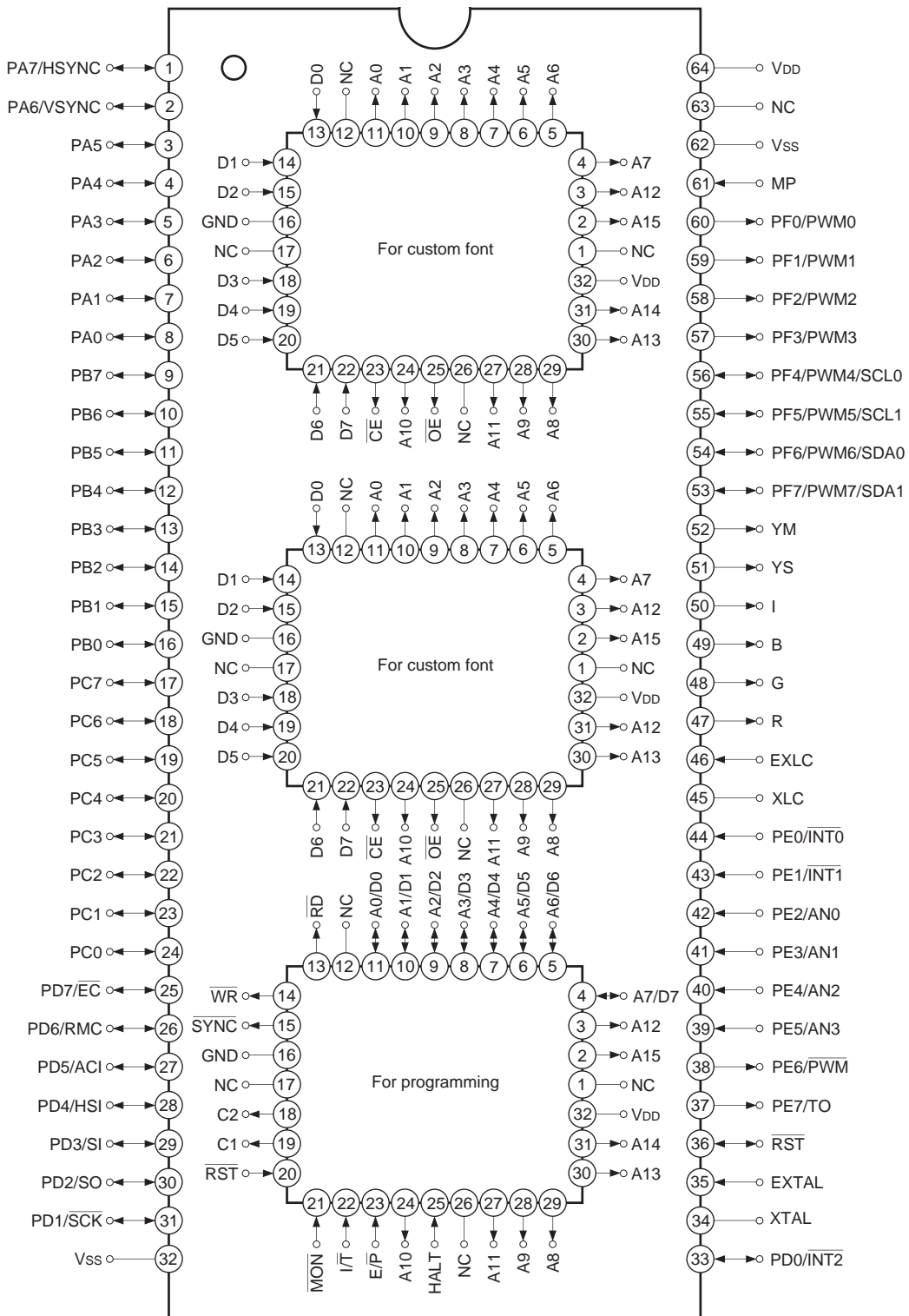


- Note)**
1. NC (Pin 63) is always connected to V<sub>DD</sub>.
  2. Vss (Pins 32 and 62) are always connected to GND.
  3. MP (Pin 61) is always connected to GND.

CXP85390A

Pin Assignment: Evaluator Mode

(Top View) 64 pin PSDIP Package



- Note)**
1. NC (Pin 63) is always connected to V<sub>DD</sub>.
  2. V<sub>SS</sub> (Pins 32 and 62) are always connected to GND.
  3. MP (Pin 61) is always connected to GND.

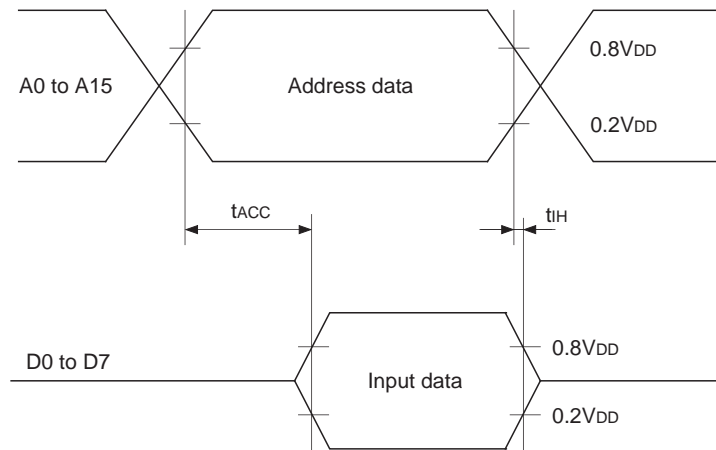
**EPROM Read Timing**

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

Item	Symbol	Pin	Min.	Max.	Unit
Address → data input delay time	t <sub>ACC</sub>	A0 to A15 D0 to D7		150*1	ns
				250*2	
Address → data hold time	t <sub>IH</sub>	A0 to A15 D0 to D7	0		ns

\*1 Oscillator clock 8MHz version

\*2 Oscillator clock 4MHz version



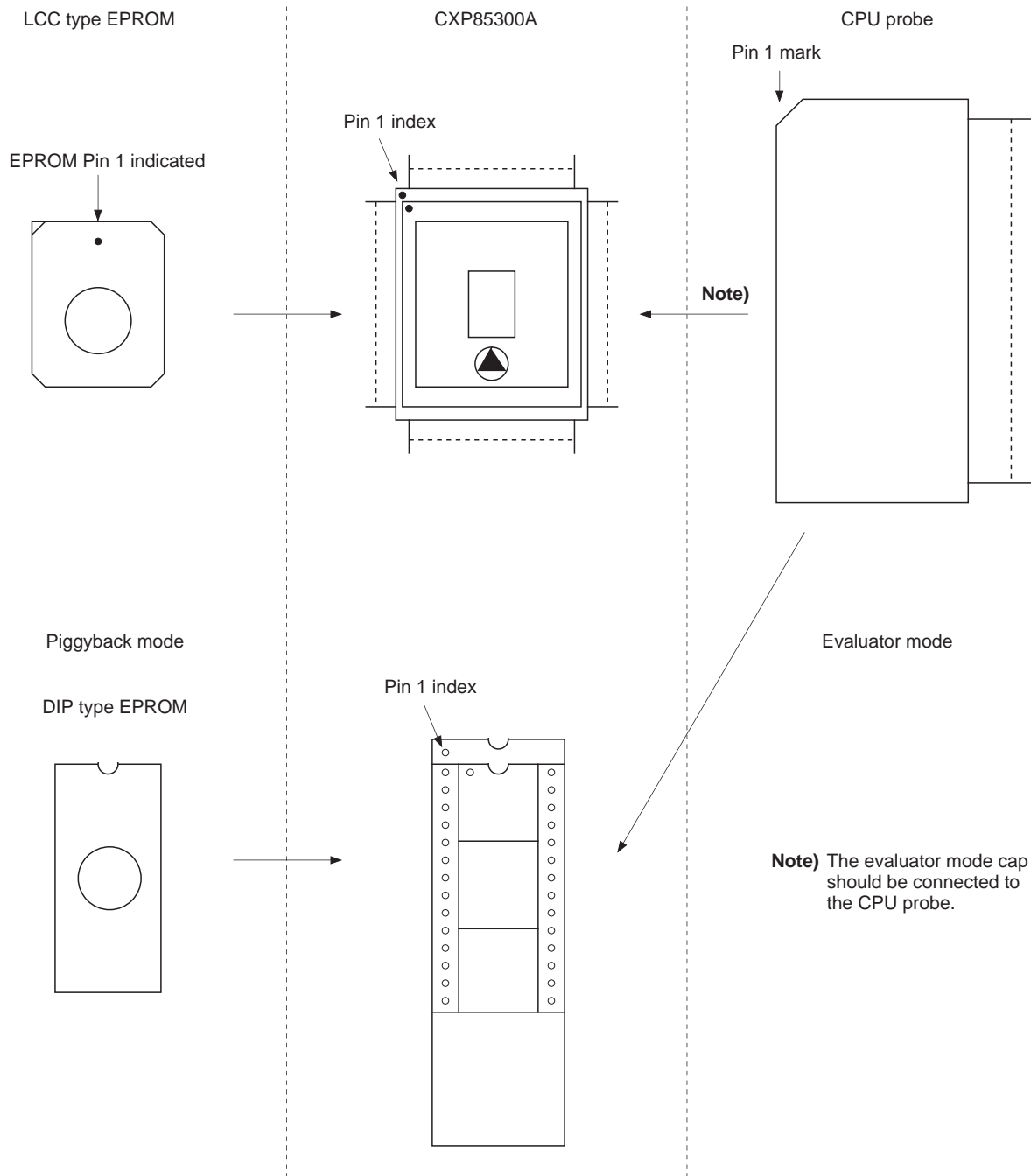
**Product List**

Optional item	Product						
	Mask			Piggyback/evaluator			
	CXP85324A	CXP85332A	CXP85340A	CXP85300A-U02S CXP85300A-U02Q	CXP85300A-U03S CXP85300A-U03Q	CXP85390A-U02S	CXP85390A-U03S
Package	64 pin plastic SDIP/QFP			64 pin ceramic PSDIP/PQFP		64 pin ceramic PSDIP	
Oscillator clock	4MHz/8MHz			4MHz	8MHz	4MHz	8MHz
ROM capacity	24K bytes	32K bytes	40K bytes	EPROM 40K bytes			
Reset pin pull-up resistor	Existent/Non existent			Existent			
Power-on reset circuit	Existent/Non existent			Existent			
Font data	User data			Fixed		EPROM 16K bytes	



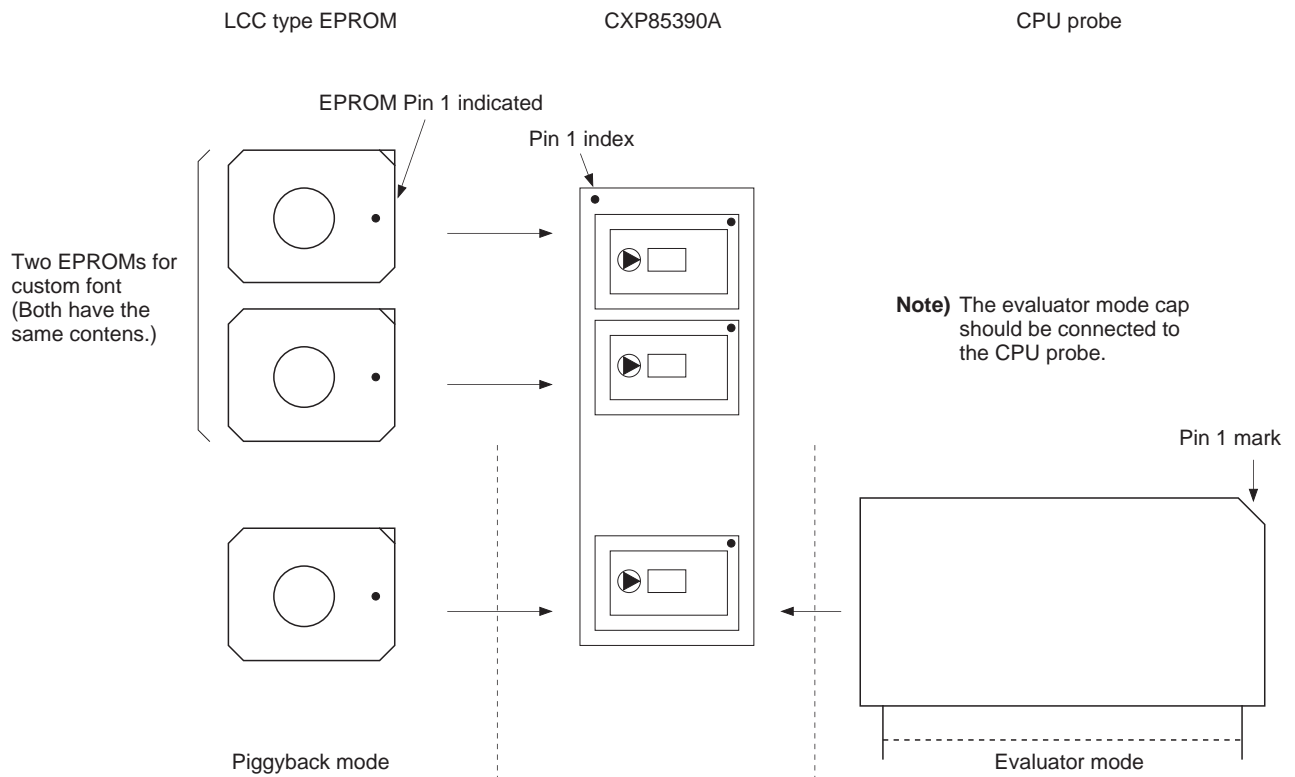
**CXP85300A**

Piggyback mode/evaluator mode switching process is as follows.



**CXP85390A**

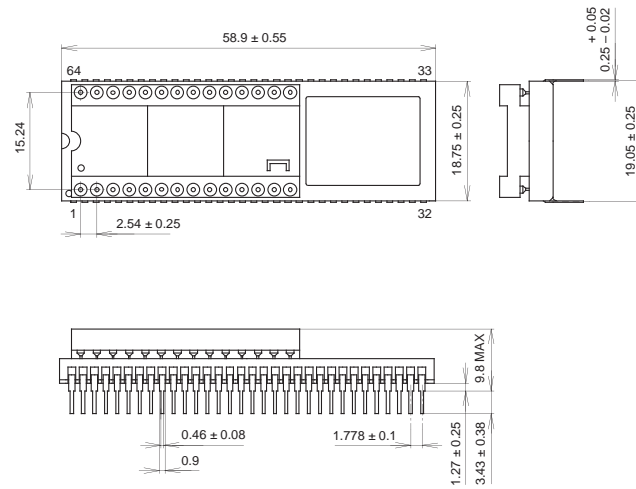
Piggyback mode/evaluator mode switching process is as follows.



Package Outline

Unit: mm

64PIN PSDIP (CERAMIC) 750mil

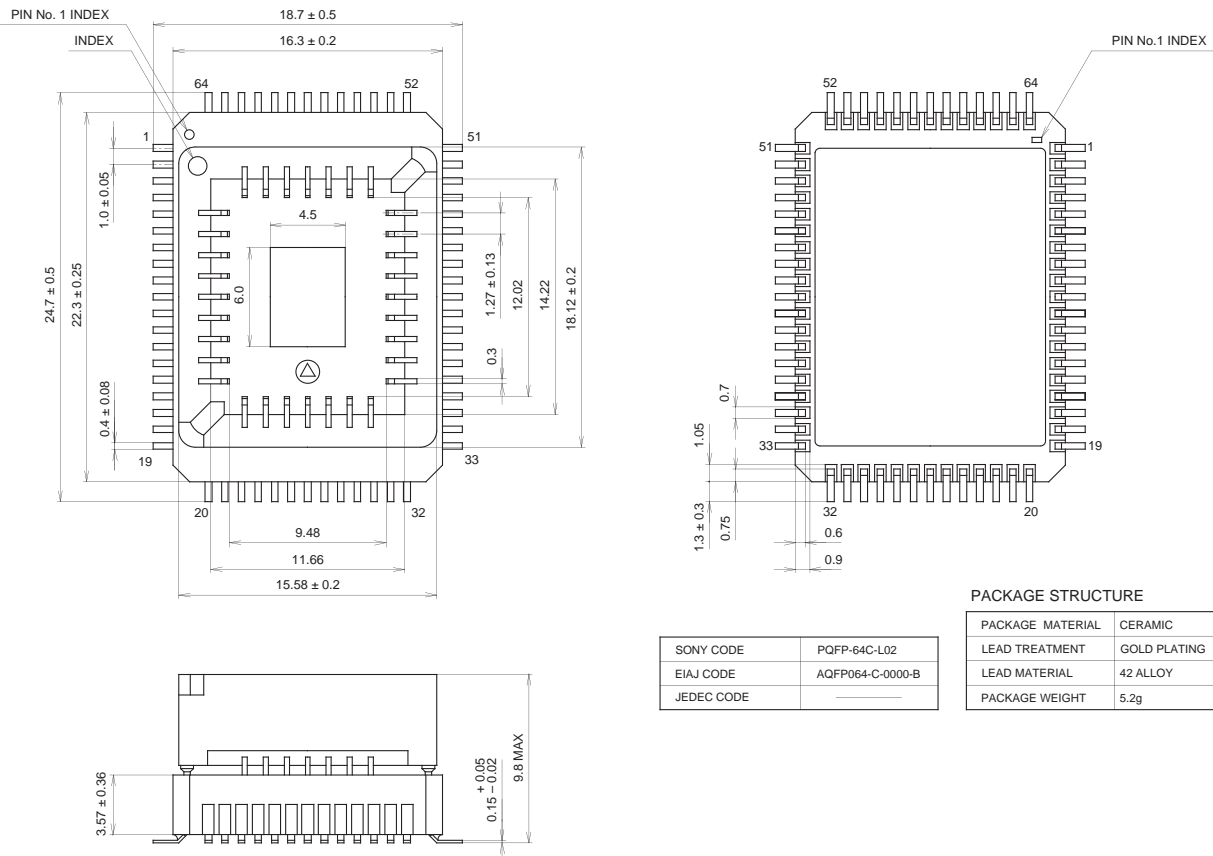


PACKAGE STRUCTURE

SONY CODE	PSDIP-64C-01
EIAJ CODE	ADIP064-C-0750-A
JEDEC CODE	

PACKAGE MATERIAL	CERAMIC
LEAD TREATMENT	GOLD PLATING
LEAD MATERIAL	42 ALLOY
PACKAGE WEIGHT	16.0g

64PIN PQFP (CERAMIC)



PACKAGE STRUCTURE

SONY CODE	PQFP-64C-L02
EIAJ CODE	AQFP064-C-0000-B
JEDEC CODE	

PACKAGE MATERIAL	CERAMIC
LEAD TREATMENT	GOLD PLATING
LEAD MATERIAL	42 ALLOY
PACKAGE WEIGHT	5.2g

64PIN PSDIP (CERAMIC)

