SONY

CXP85400/85490

CMOS 8-bit 1-chip Microcomputer

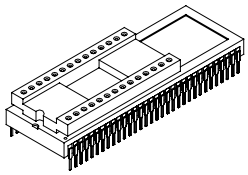
Piggyback/ evaluator type

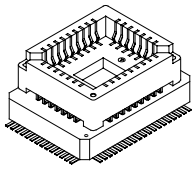
Description

The CXP85400/85490 are CMOS 8-bit 1-chip microcomputers that serve as both piggyback and evaluator. The CXP85400/85490 are developed for evaluating the function of the CXP85452/85460.

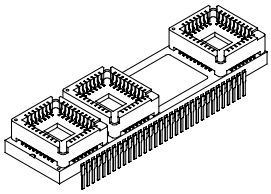
Note that CXP85400 corresponds to the fixed font, and CXP85490 corresponds to the custom font respectively.

64 pin PSDIP (Ceramic) 64 pin PQFP (Ceramic)





64 pin PSDIP (Ceramic)



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 0.5µs/8MHz
- EPROM 27C512
  LCC type 27C512
  (Maximum of 60K bytes are available.)
- Incorporated RAM capacity 960 bytes
- EPROM for custom font (CXP85490 only)
  LCC type 27C256, LCC type 27C512
  (used volume is 24K bytes)
- Peripheral functions
  - — On-screen display function 12 × 18 dots, 384 types 15 colors, 32 characters × 12 lines
    Black frame output half blanking, shadow, background color on full screen/ half blanking
    Double scanning mode, jitter elimination circuit
  - — I^2C 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 20µs/8MHz)
  - — HSYNC counter 2 channels
  - — 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 CXP85400/85490. Refer to the product list for details.

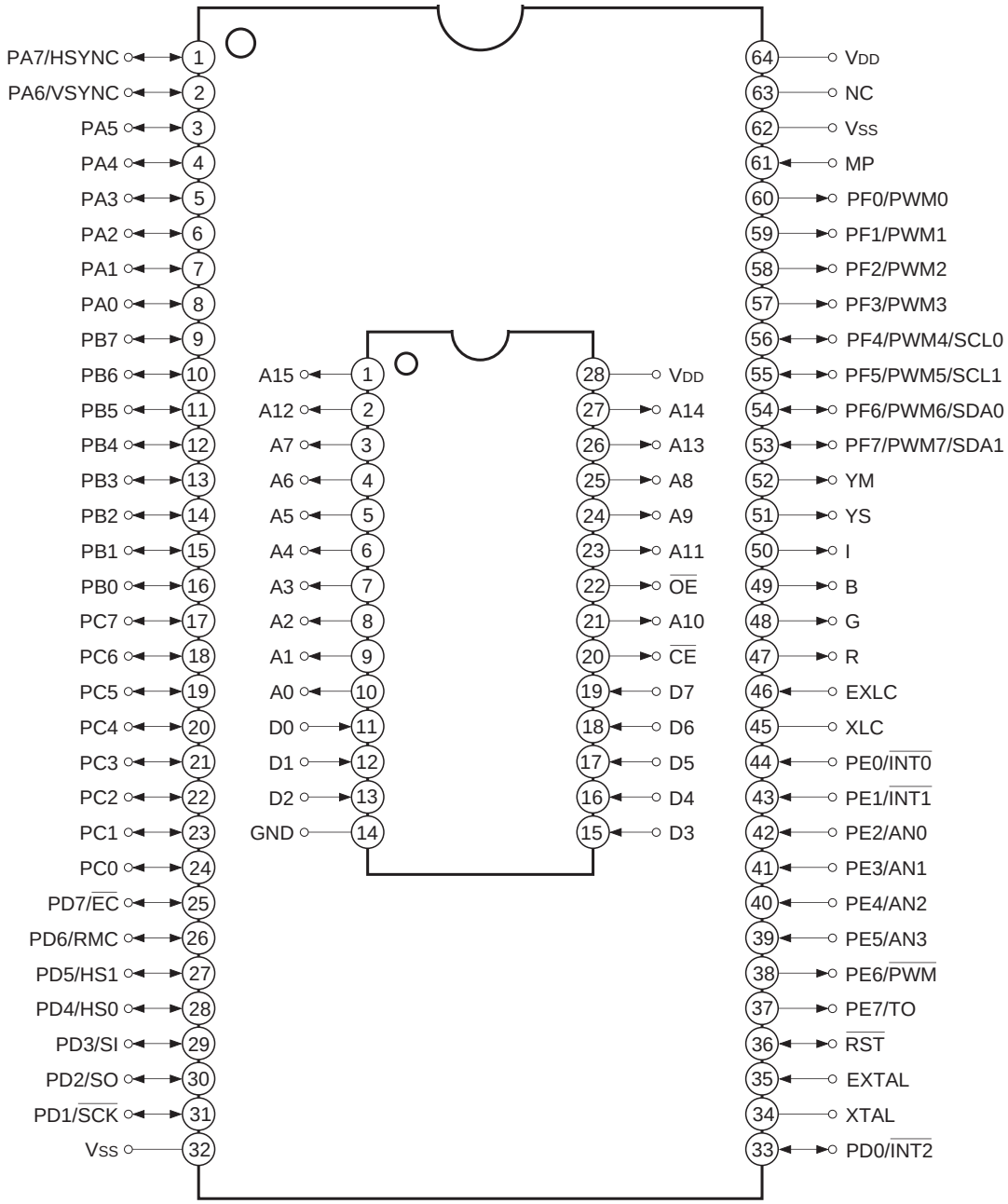
Purchase of Sony's I^2C components conveys a license under the Philips I^2C Patent Rights to use these components in an I^2C system, provided that the system conforms to the I^2C Standard Specifications as defined by Philips.

E94335B7Z-PS

CXP85400

Pin Assignment: Piggyback mode 1

(Top View) 64 pin PSDIP Package

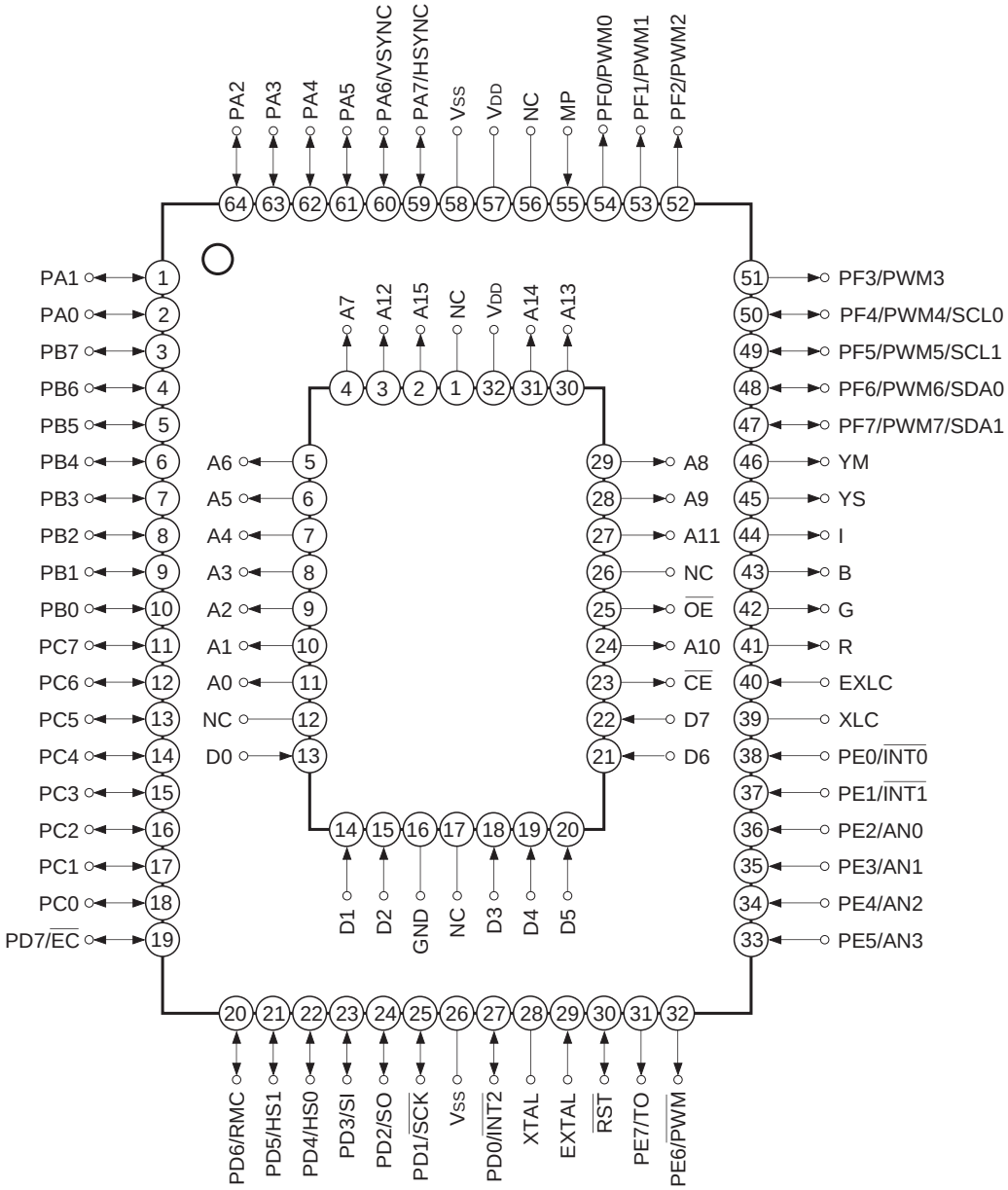


Note) 1. NC (Pin 63) is always connected to V_{DD}.
2. Vss (Pins 32 and 62) are always connected to GND.
3. MP (Pin 61) is always connected to GND.

CXP85400

Pin Assignment: Piggyback mode 2

(Top View) 64 pin PQFP Package

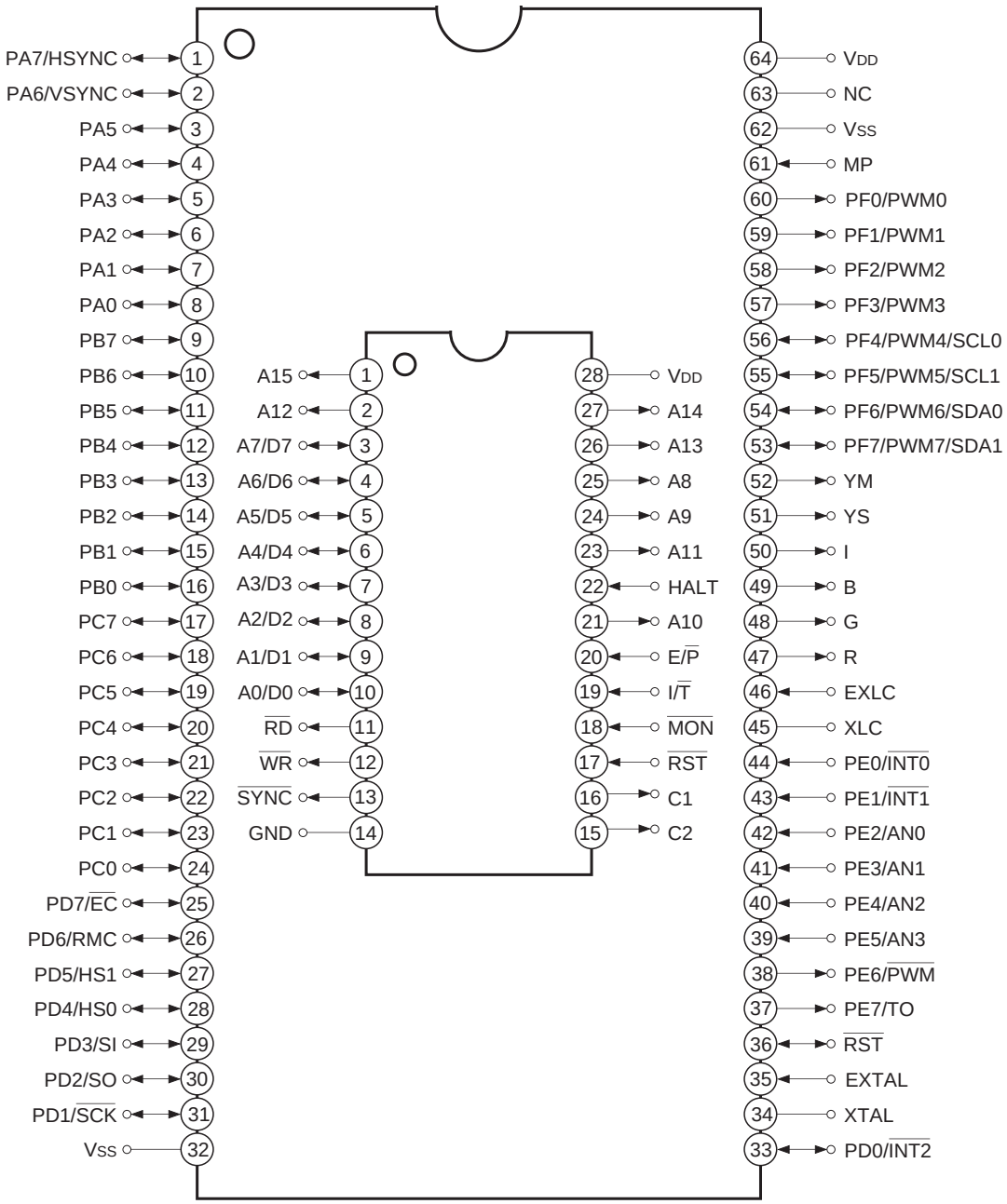


Note) 1. NC (Pin 56) is always connected to V_{DD}.
2. Vss (Pins 26 and 58) are always connected to GND.
3. MP (Pin 55) is always connected to GND.

CXP85400

Pin Assignment: Evaluator Mode 1

(Top View) 64 pin PSDIP Package



Note) 1. NC (Pin 63) is always connected to V_{DD}.
2. Vss (Pins 32 and 62) are always connected to GND.
3. MP (Pin 61) is always connected to GND.

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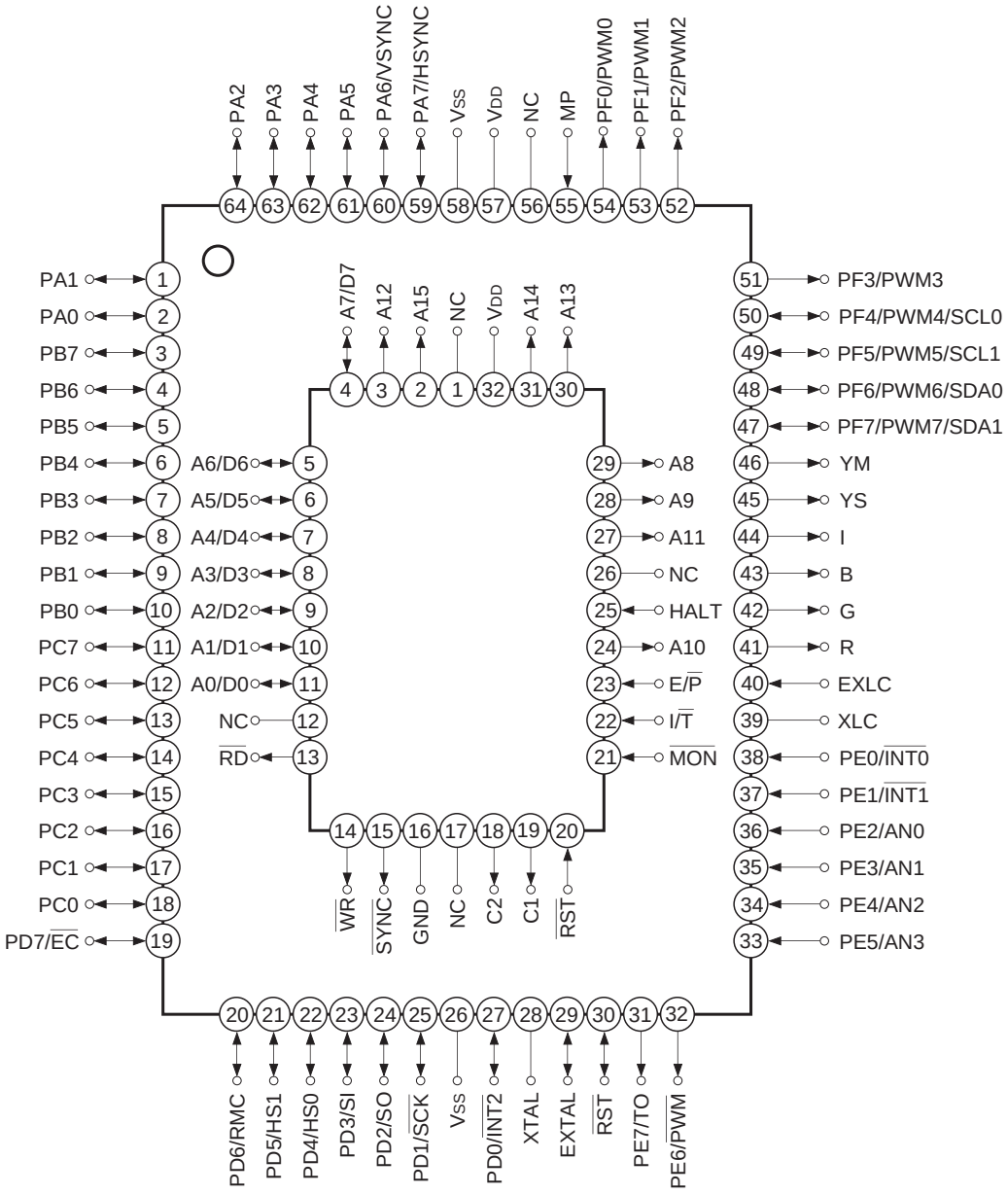
Pin Assignment: Evaluator Mode 2

(Top View) 64 pin PQFP Package



Note) 1. NC (Pin 56) is always connected to V_{DD}.
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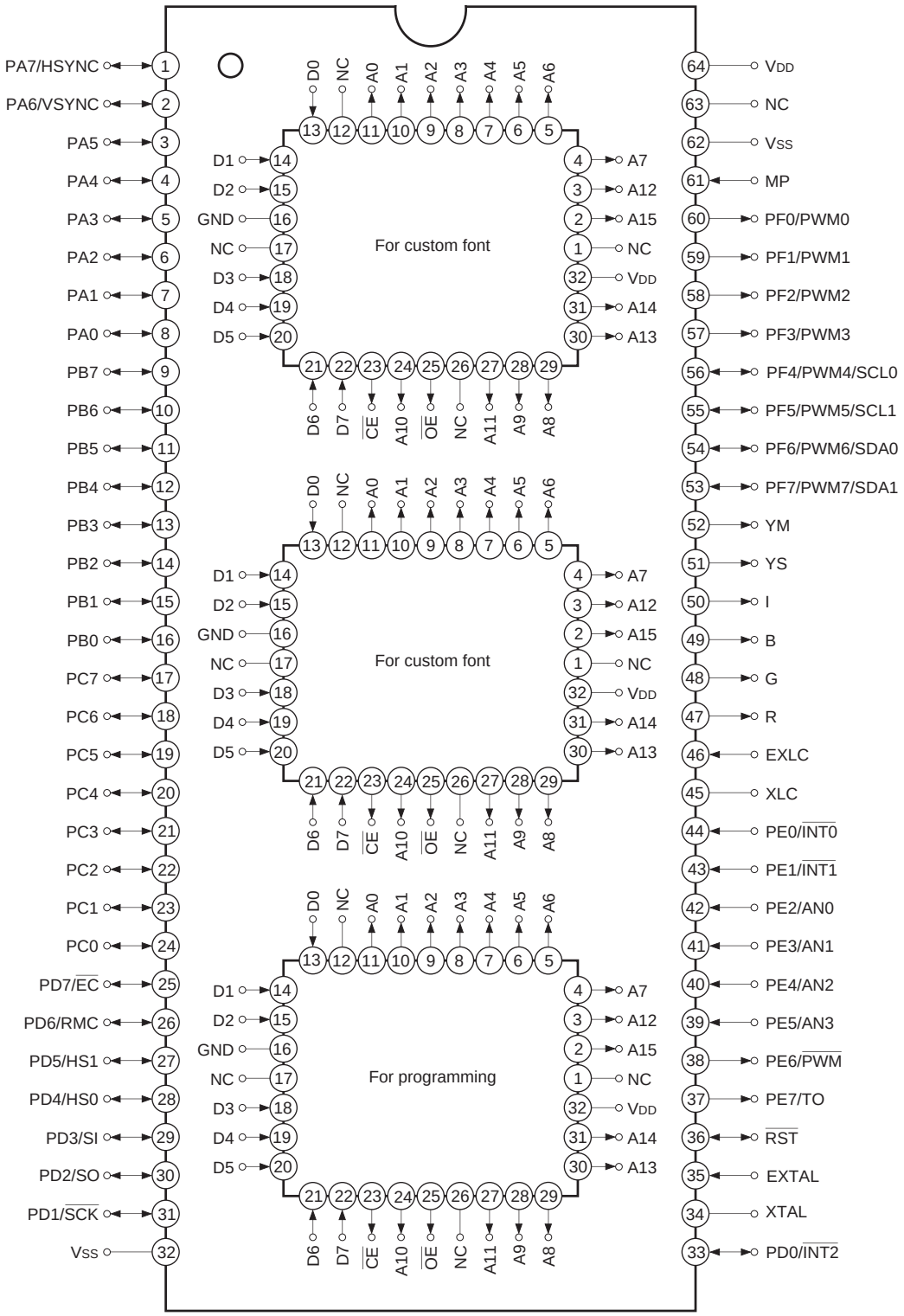
CXP85490

Pin Assignment: Piggyback Mode

(Top View) 64 pin PSDIP Package



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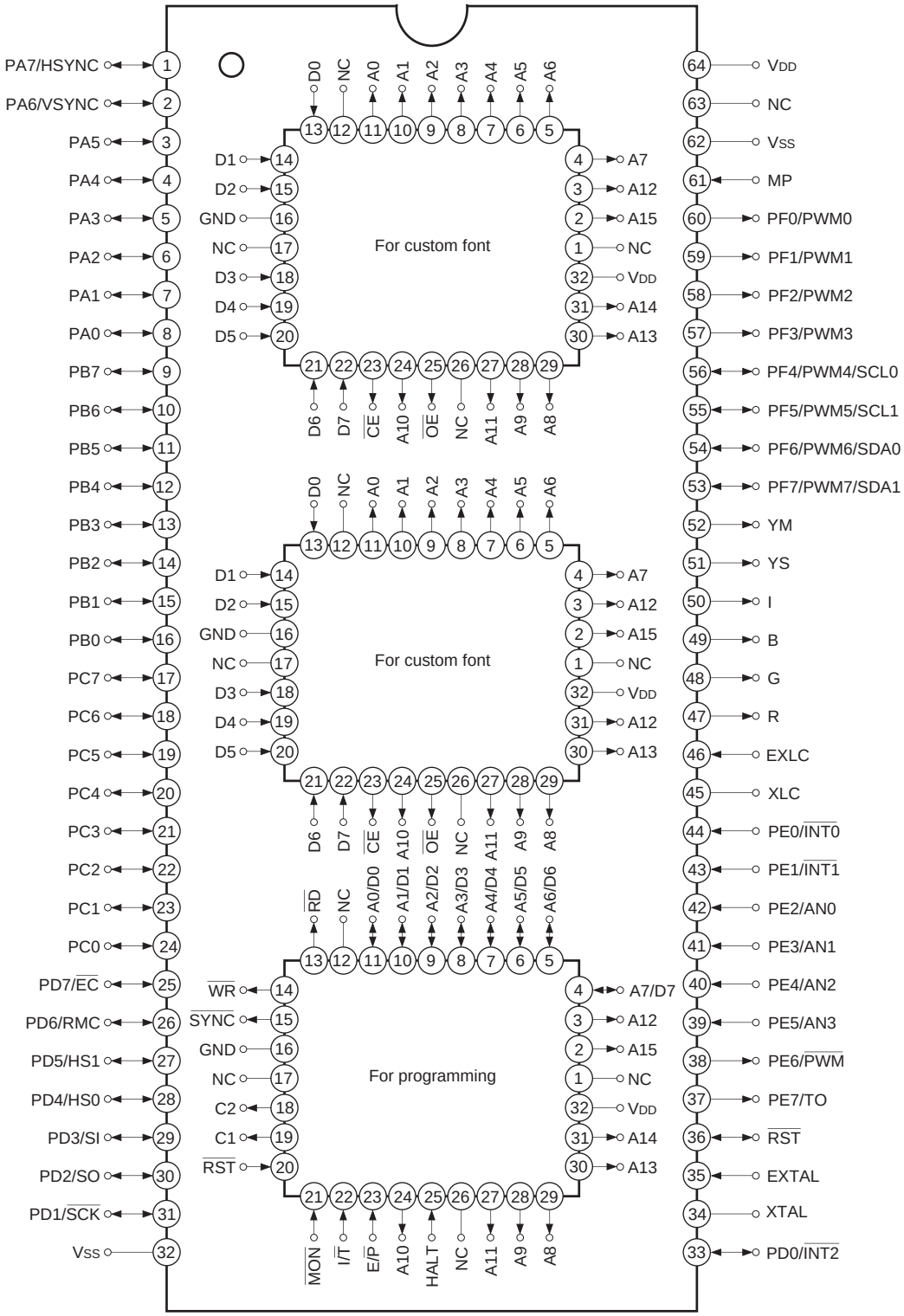
CXP85490

Pin Assignment: Evaluator Mode

(Top View) 64 pin PSDIP Package



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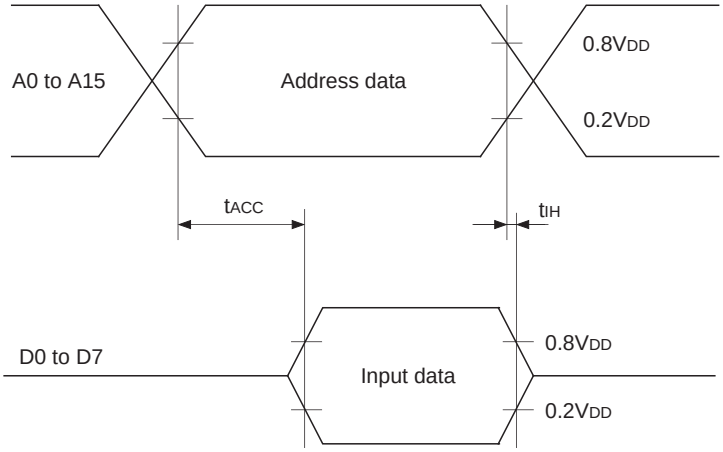
3. MP (Pin 61) is always connected to GND.

EPROM Read Timing

(Ta = –20 to +75°C, V_{DD} = 4.5 to 5.5V, V_{SS} = 0V)

Item	Symbol	Pin	Min.	Max.	Unit
Address → data input delay time	t_{ACC}	A0 to A15 D0 to D7		150	ns
Address → data hold time	t_{IH}	A0 to A15 D0 to D7	0		ns

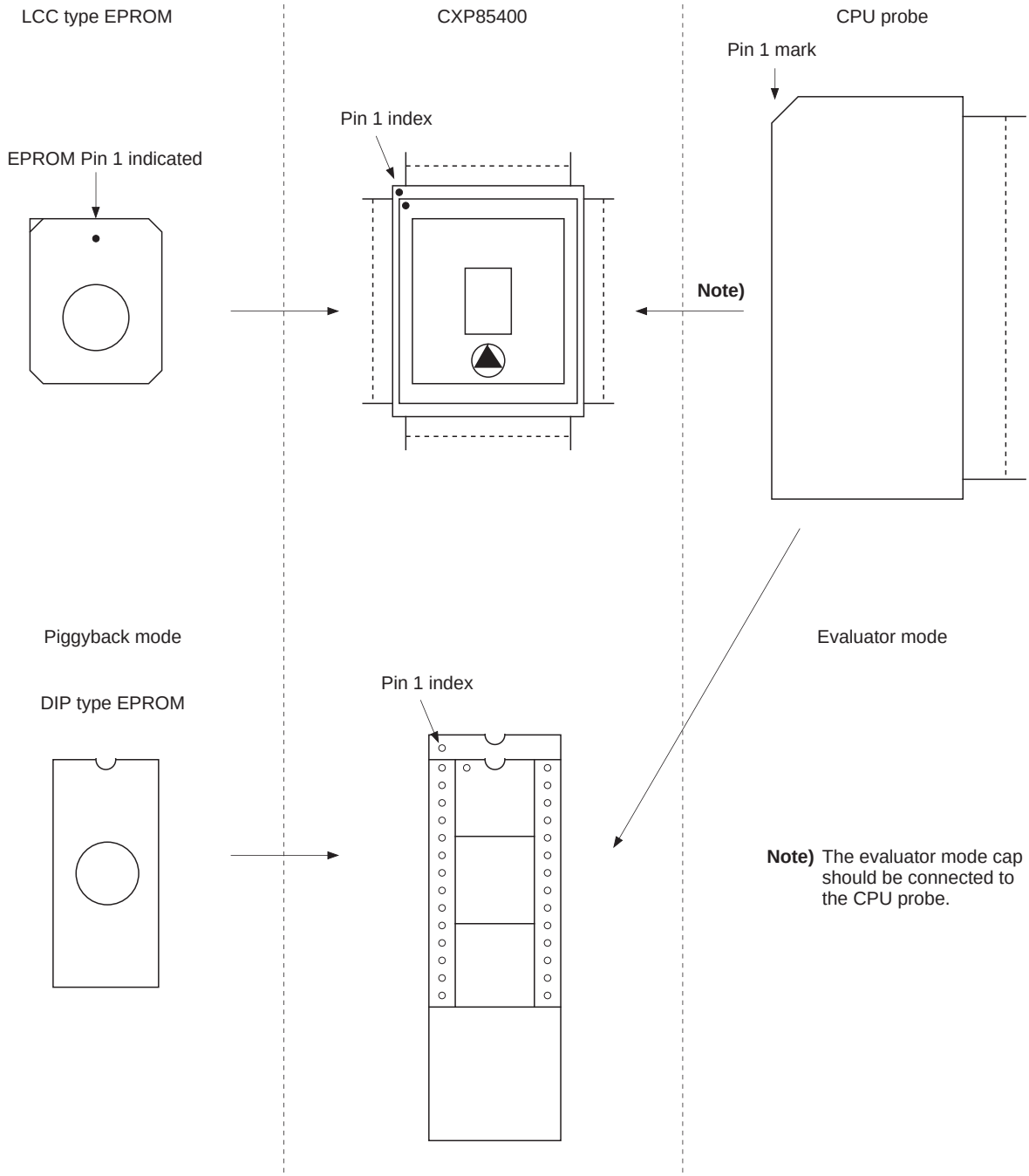


Product List

Optional item	Product			
	Mask		Piggyback/evaluator	
	CXP85452	CXP85460	CXP85400-U01S CXP85400-U01Q	CXP85490-U01S
Package	64 pin plastic SDIP/QFP		64 pin ceramic PSDIP/PQFP	64 pin ceramic PSDIP
ROM capacity	52K bytes	60K bytes	EPROM 60K bytes	
Reset pin pull-up resister	Existent/Non existent		Existent	
Power-on reset circuit	Existent/Non existent		Existent	
Font data	User data		Fixed	EPROM 24K bytes

CXP85400

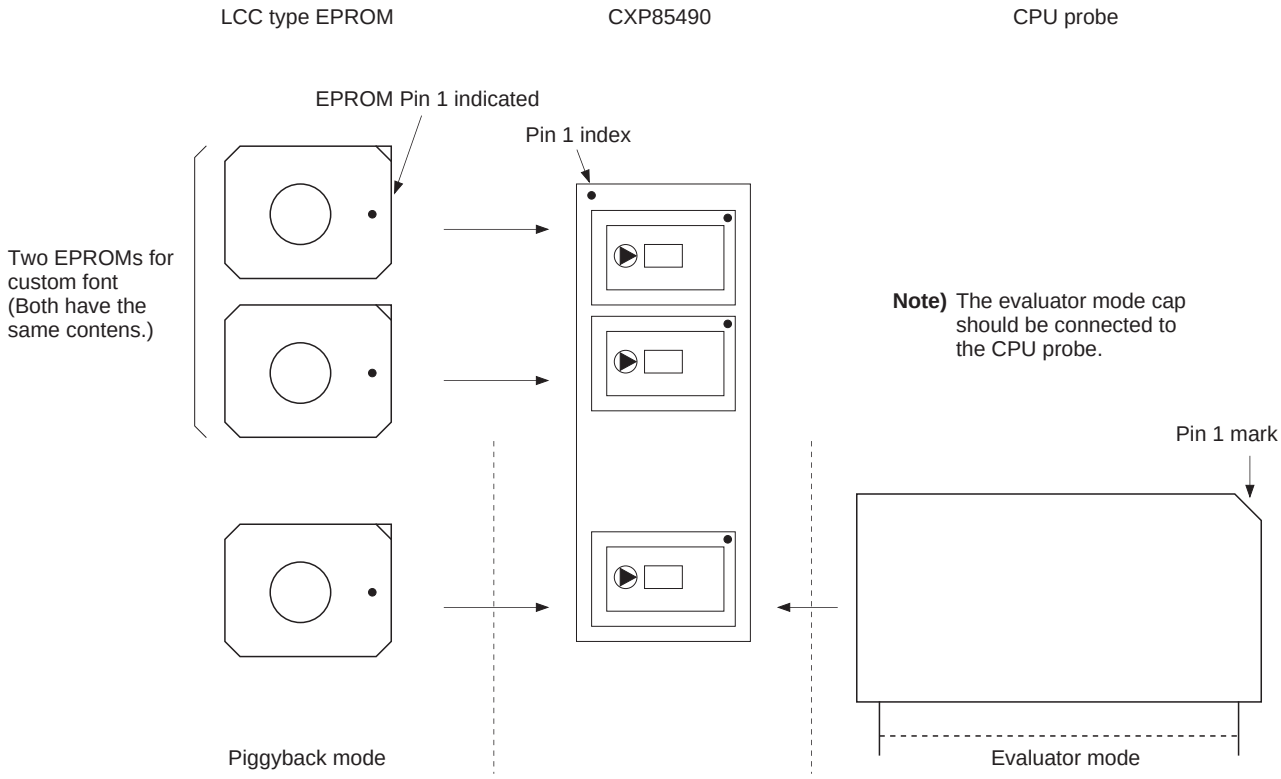
Piggyback mode/evaluator mode switching process is as follows.



Note) The evaluator mode cap should be connected to the CPU probe.

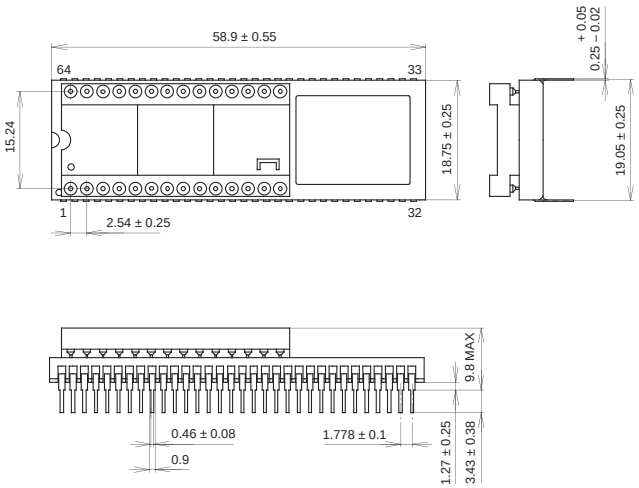
CXP85490

Piggyback mode/evaluator mode switching process is as follows.



Package Outline Unit: mm

64PIN PSDIP (CERAMIC) 750mil

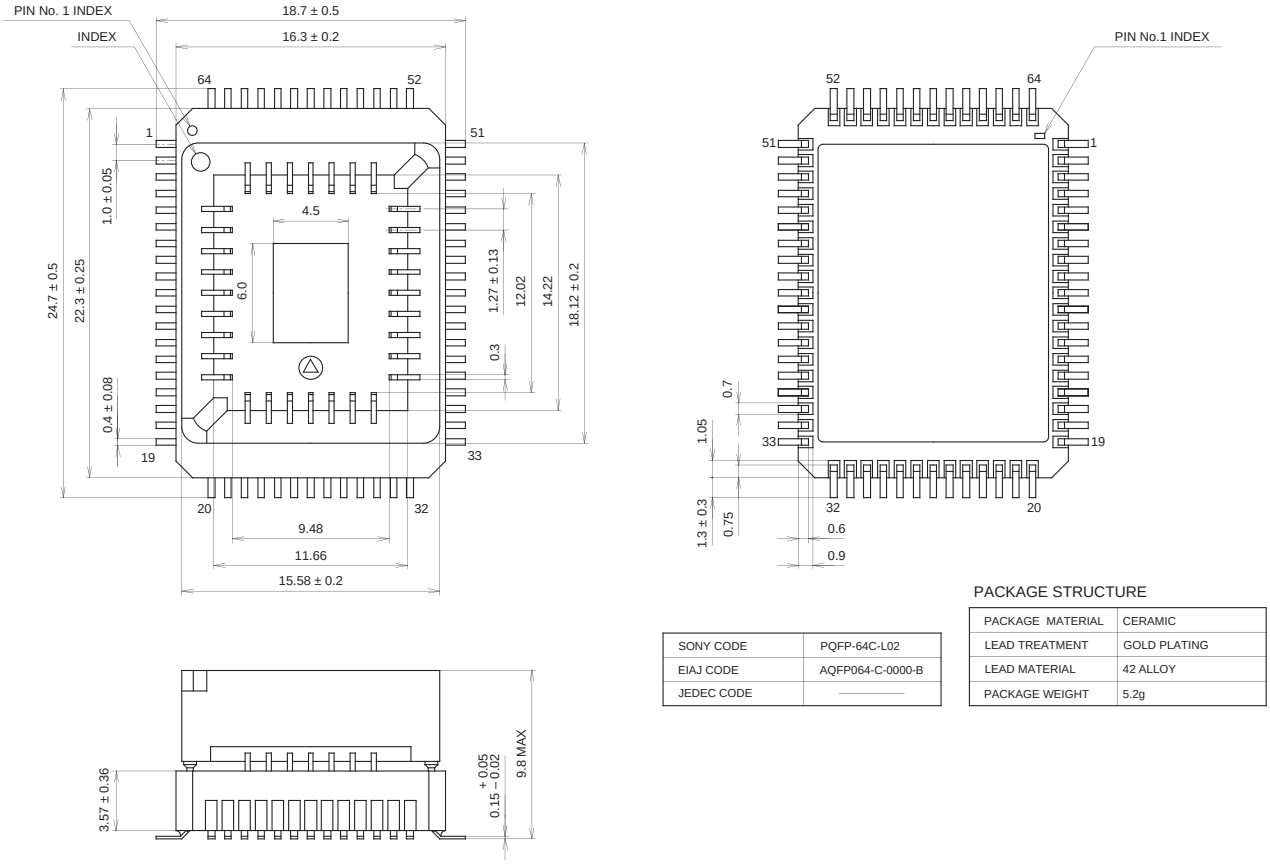


PACKAGE STRUCTURE

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)

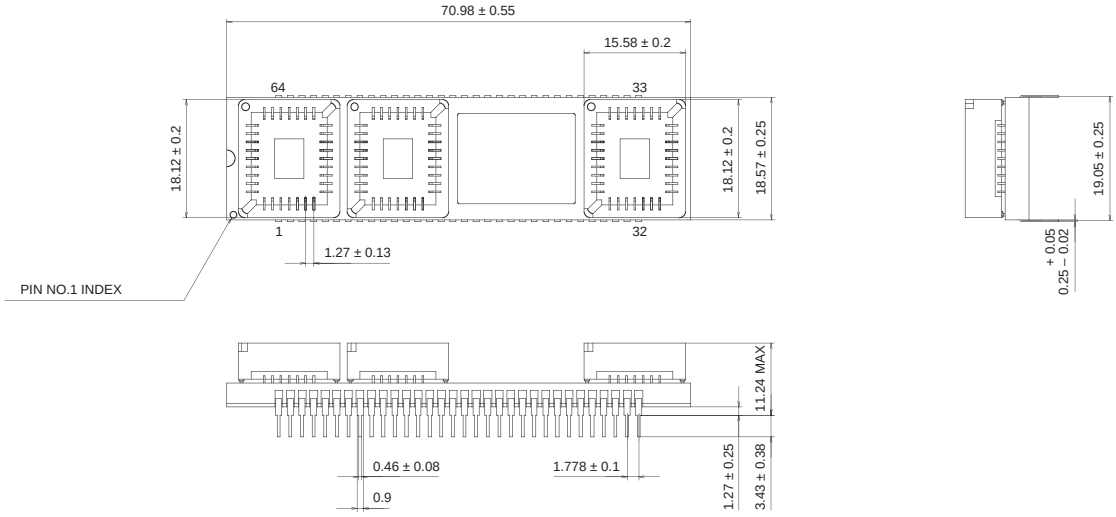


PACKAGE STRUCTURE

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)



PACKAGE STRUCTURE

SONY CODE	PSDIP-64C-02
EIAJ CODE	ADIP064-C-0750-B
JEDEC CODE	

PACKAGE MATERIAL	CERAMIC
LEAD TREATMENT	GOLD PLATING
LEAD MATERIAL	42 ALLOY
PACKAGE WEIGHT	22.8g