CHIPNEXT

CN24C64PL
Low Cost I^{2}C (2-Wire) Serial E^{2}PROM 64-Kbits (8192 x 8)

Description

The CN24C64PL is an industrial standard electrically erasable programmable read only memory (E^{2}PROM) device that utilizes the industrial standard 2-wire interface for communications. The CN24C64PL contains a memory array of 64K bits (8,192x8), which is organized in 32-byte per page.

The E^{2}PROM operates in a wide voltage range from 1.7V to 5.5V, which fits most application. The product provides low-power operations and low standby current. The CN24C64PL is compatible to the standard 2-wire bus protocol. The simple bus consists of Serial Clock (SCL) and Serial Data (SDA) signals, and the device I2C Address is Software Programmable and Lockable via 3 configuration bits. The CN24C64PL also has a Software Write Protect function to cease from overwriting the data stored inside the full or partial memory array.

In order to refrain the state machine from entering into a wrong state during power-up sequence or a power toggle on-off condition, a POR circuit is embedded. During power-up, the device does not respond to any instructions until the supply voltage (V$_{CC}$) has reached an acceptable stable level above the reset threshold voltage. Once V$_{CC}$ drops below the POR threshold, the device is reset and enters into the Standby mode. This would also avoid any inadvertent Write operations during power-up stage. During power-down process, the device will enter into standby mode, once V$_{CC}$ drops below the POR threshold voltage. In addition, the device will be in standby mode after receiving the Stop command, provided that no internal write operation is in progress. Nevertheless, it is illegal to send a command unless the V$_{CC}$ is within its operating level.

Features

● Compatible with all I²C bi-directional data transfer protocol

● Memory Array:
  – 64 Kbits (8Kbytes) of E^{2}PROM
  – Page size: 32 bytes
  – Additional Write lockable ID page

● Single Supply Voltage and High Speed:
  – 1.7V-5.5V
  – 400KHz clock from 1.7V to 2.5V
  – 1MHz clock from 2.5V to 5.5V

● Random and Sequential Read Modes

● Page Write Mode, Partial Page Write Allowed:

● Partial Software Write Protection (PSWP)
  ✧ Upper 1/4 Array
  ✧ Upper 1/2 Array
  ✧ Upper 3/4 Array
  ✧ Whole Array
● Software Programmable Device ID Configuration
  – 3 BIT DSC Register
  – Lockable

● Schmitt Trigger, Filtered Inputs for Noise Suppression

● High-reliability
  – Endurance: 1 Million Write Cycles
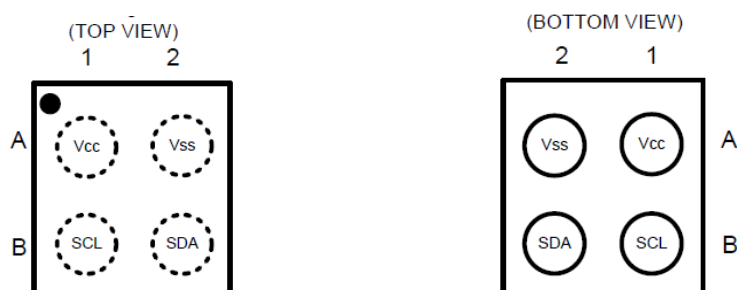 – Data Retention: 100 Years

Package:

● 4-balls WLCSP. Ball Pitch 400umx400um
● 4-balls WLCSP. Ball Pitch 350umx350um

1. Pin Information

◆ **Pin Configuration**

Fig. 2.1 4-balls WLCSP

◆ **Pin Definition**

Table 1-1 Pin Definition for 4-ball WLCSP Packages

Pin Name	Pin Number	Type	Description
VCC	A1	Power	Power Supply
VSS	A2	Ground	Ground
SCL	B1	Input	Serial Clock Input
SDA	B2	I/O	Serial Data Input/Output

2. Ordering Information

Table 2-1 Ordering information

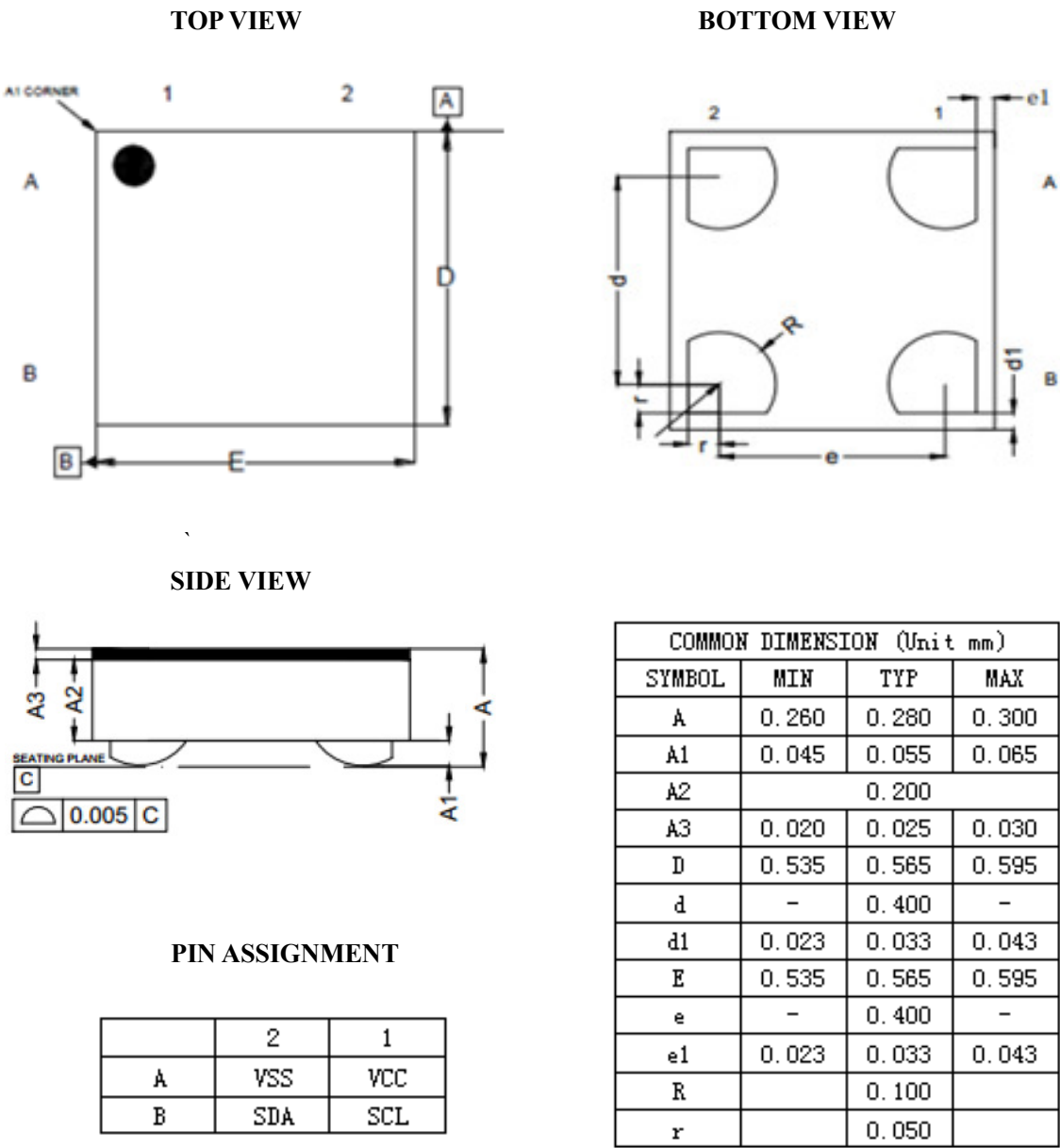| Order Part Number	Top Marking	Pb-Free	T$_A$	Package
CN24C64PL-MIR	4P	Yes	-40 to +85°C	WLCSP, 0.4mm*0.4mm Ball Pitch
CN24C64PL-S-MIR	4S	Yes	-40 to +85°C	WLCSP 0.35mm*0.35mm Ball Pitch

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3. Block Diagram

Fig. 3.1 Top-Level Block Diagram
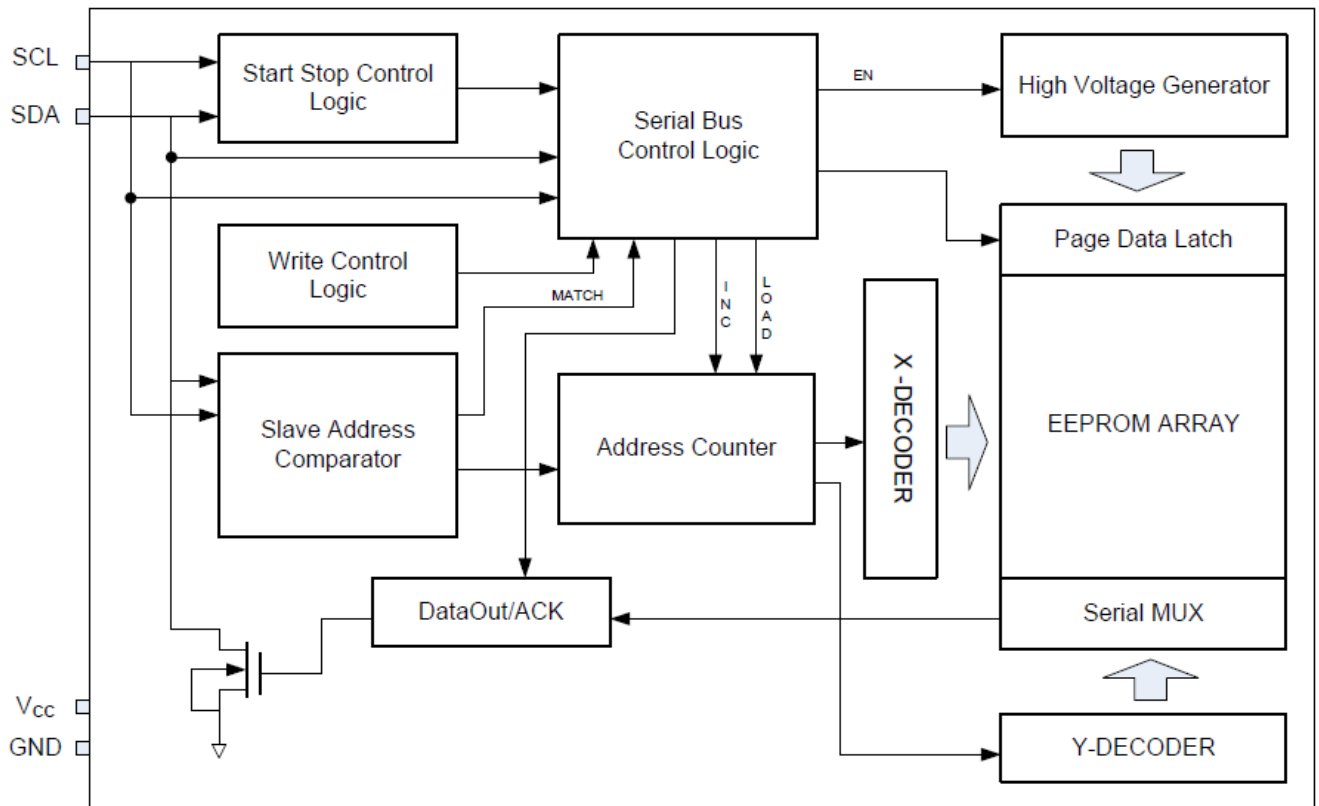
CN24C64PL

7 Package information

7.1 4-Balls WLCSP (400um*400um Ball Pitch)

TOP VIEW

BOTTOM VIEW

SIDE VIEW

PIN ASSIGNMENT

	2	1
A	VSS	VCC
B	SDA	SCL

COMMON DIMENSION (Unit mm)			
SYMBOL	MIN	TYP	MAX
A	0.260	0.280	0.300
A1	0.045	0.055	0.065
A2		0.200	
A3	0.020	0.025	0.030
D	0.535	0.565	0.595
d	–	0.400	–
d1	0.023	0.033	0.043
E	0.535	0.565	0.595
e	–	0.400	–
e1	0.023	0.033	0.043
R		0.100	
r		0.050	

<Tape and Reel information>

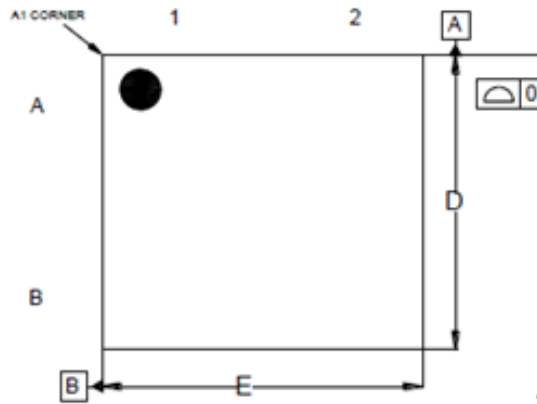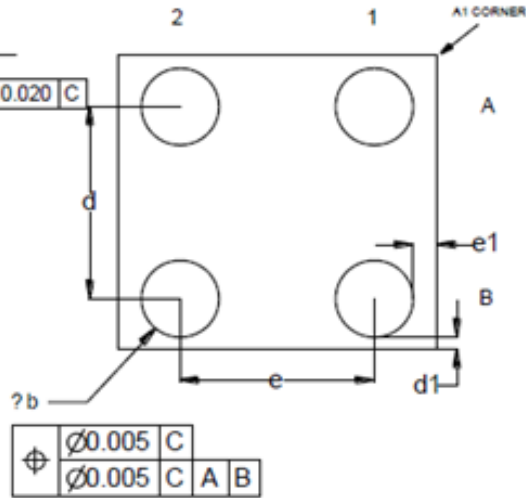| Tape	embossed carrier tape
Quantity	5000pcs
Direction of feed	(The direction is the 1pin of product is at the upper left when you hold reel on the left hand and you pull out the tape on the right hand)

Reel 1pin Direction of feed

Order quantity needs to be multiple of the minimum quantity   S

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7.2   4-Balls WLCSP{ (350um*500um Ball Pitch)

TOP VIEW   **BOTTOM VIEW**
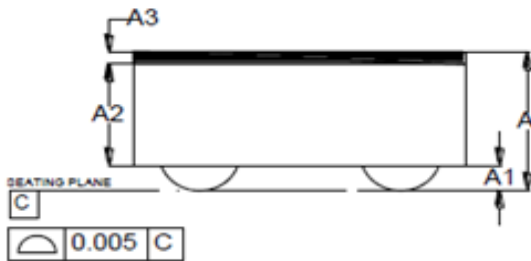
SIDE VIEW

COMMON DIMENSION (Unit mm)			
SYMBOL	MIN	TYP	MAX
A	0.260	0.280	0.300
A1	0.045	0.055	0.065
A2		0.200	
A3	0.020	0.025	0.030
D	0.535	0.565	0.595
d	–	0.350	–
d1	0.023	0.033	0.043
E	0.535	0.565	0.595
e	–	0.350	–
e1	0.023	0.033	0.043
b	0.145	0.160	0.175

PIN ASSIGNMENT

	2	1
A	VSS	VCC
B	SDA	SCL

<Tape and Reel information>

Tape	embossed carrier tape
Quantity	5000pcs
Direction of feed	(The direction is the 1pin of product is at the upper left when you hold reel on the left hand and you pull out the tape on the right hand)

Order quantity needs to be multiple of the minimum quantity