# EEPROM Serial 64-Kb I$^2$C - Auto Grade

# CAV24C64

**SOIC−8**
**W SUFFIX**
**CASE 751BD**

**WLCSP−4**
**C4C SUFFIX**
**CASE 567JY**

**TSSOP−8**
**Y SUFFIX**
**CASE 948AL**

**SOIC−8 WIDE**
**X SUFFIX**
**CASE 751BE**

## Description

The CAV24C64 is a EEPROM Serial 64−Kb I$^2$C − Auto Grade device, internally organized as 8192 words of 8 bits each.

It features a 32−byte page write buffer and supports the Standard (100 kHz) and Fast (400 kHz) I$^2$C protocol.

External address pins make it possible to address up to eight CAV24C64 devices on the same bus.

## Features

- Automotive AEC−Q100 Grade 1 (−40°C to +125°C) Qualified
- Supports Standard and Fast I$^2$C Protocol
- 2.5 V to 5.5 V Supply Voltage Range, 1.8 V to 5.5 V Supply Voltage Range for CAV24C64C4CTR
- 32−Byte Page Write Buffer
- Hardware Write Protection for Entire Memory
- CAV Prefix for Automotive and Other Applications Requiring Site and Change Control
- Schmitt Triggers and Noise Suppression Filters on I$^2$C Bus Inputs (SCL and SDA)
- Low Power CMOS Technology
- 1,000,000 Program/Erase Cycles
- 100 Year Data Retention
- SOIC, TSSOP 8−lead, and WLCSP 4−Ball Packages
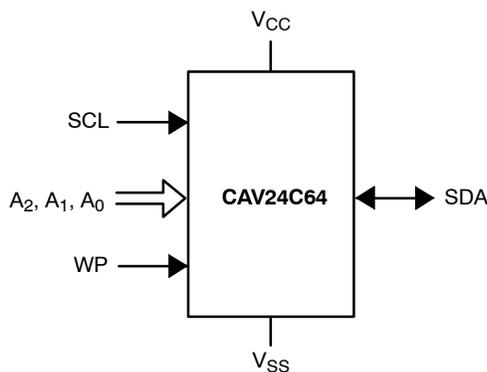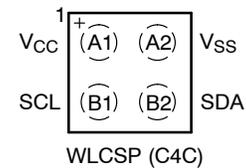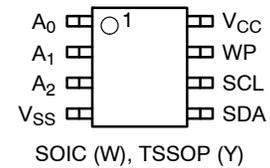- This Device is Pb−Free, Halogen Free/BFR Free, and RoHS Compliant

## PIN CONFIGURATIONS (Top Views)

| $A_0$ | 1 | $V_{CC}$ |
| $A_1$ | | WP |
| $A_2$ | | SCL |
| $V_{SS}$ | | SDA |

SOIC (W), TSSOP (Y)

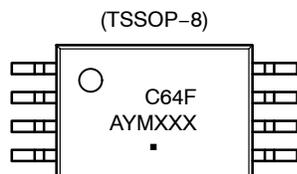| $V_{CC}$ | (A1) (A2) | $V_{SS}$ |
| SCL | (B1) (B2) | SDA |

WLCSP (C4C)

## PIN FUNCTION

| Pin Name | Function |
|---|---|
| $A_0$, $A_1$, $A_2$ | Device Address Input |
| SDA | Serial Data Input/Output |
| SCL | Serial Clock Input |
| WP | Write Protect Input |
| $V_{CC}$ | Power Supply |
| $V_{SS}$ | Ground |

## ORDERING INFORMATION

$V_{CC}$

SCL →

$A_2$, $A_1$, $A_0$ →  **CAV24C64**  ← → SDA

WP →

$V_{SS}$

**Figure 1. Functional Symbol**

# CAV24C64

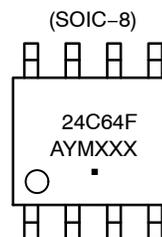## DEVICE MARKINGS

(TSSOP−8)

```
    C64F
   AYMXXX
```

C64F = Specific Device Code
A = Assembly Location
Y = Production Year (Last Digit)
M = Production Month (1−9, O, N, D)
XXX = Last Three Digits of Assembly Lot Number
■ = Pb−Free Package

(WLCSP−4)

```
 +   A
    YW
```

For the location of Pin 1, please consult the corresponding package drawing.

A = Specific Device Code
YW = Production Date Code

(SOIC−8)

```
   24C64F
   AYMXXX
```

24C64F = Specific Device Code
A = Assembly Location
Y = Production Year (Last Digit)
M = Production Month (1−9, O, N, D)
XXX = Last Three Digits of Assembly Lot Number
■ = Pb−Free Package

## Table 1. ABSOLUTE MAXIMUM RATINGS

| Parameters | Ratings | Units |
|---|---|---|
| Storage Temperature | −65 to +150 | °C |
| Voltage on Any Pin with Respect to Ground (Note 1) | −0.5 to +6.5 | V |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. During input transitions, voltage undershoot on any pin should not exceed −1 V for more than 20 ns. Voltage overshoot on pins $A_0$, $A_1$, $A_2$ and WP should not exceed $V_{CC}$ + 1 V for more than 20 ns, while voltage on the $I^2C$ bus pins, SCL and SDA, should not exceed the absolute maximum ratings, irrespective of $V_{CC}$.

## Table 2. RELIABILITY CHARACTERISTICS (Note 2)

| Symbol | Parameter | Min | Units |
|---|---|---|---|
| $N_{END}$ (Note 3) | Endurance | 1,000,000 | Program/Erase Cycles |
| $T_{DR}$ | Data Retention | 100 | Years |

2. These parameters are tested initially and after a design or process change that affects the parameter according to appropriate AEC−Q100 and JEDEC test methods.
3. Page Mode, $V_{CC}$ = 5 V, 25°C.

## Table 3. D.C. OPERATING CHARACTERISTICS
($V_{CC}$ = 2.5 V to 5.5 V, $V_{CC}$ = 1.8 V to 5.5 V for CAV24C64C4CTR, $T_A$ = −40°C to +125°C, unless otherwise specified.)

| Symbol | Parameter | Test Conditions | | Min | Max | Units |
|---|---|---|---|---|---|---|
| $I_{CCR}$ | Read Current | Read, $f_{SCL}$ = 400 kHz | | | 1 | mA |
| $I_{CCW}$ | Write Current | Write, $f_{SCL}$ = 400 kHz | | | 2 | mA |
| $I_{SB}$ | Standby Current | All I/O Pins at GND or $V_{CC}$ | $T_A$ = −40°C to +125°C | | 5 | μA |
| $I_L$ | I/O Pin Leakage | Pin at GND or $V_{CC}$ | | | 2 | μA |
| $V_{IL}$ | Input Low Voltage | | | −0.5 | 0.3 x $V_{CC}$ | V |
| $V_{IH}$ | Input High Voltage | $A_0$, $A_1$, $A_2$ and WP | | 0.7 x $V_{CC}$ | $V_{CC}$ + 0.5 | V |
| | | SCL and SDA | | 0.7 x $V_{CC}$ | 5.5 | |
| $V_{OL}$ | Output Low Voltage | $V_{CC}$ > 2.5 V, $I_{OL}$ = 3 mA | | | 0.4 | V |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

Share Feedback
Your Opinion Matters

**Table 4. PIN IMPEDANCE CHARACTERISTICS**
($V_{CC}$ = 2.5 V to 5.5 V, $V_{CC}$ = 1.8 V to 5.5 V for CAV24C64C4CTR, $T_A$ = −40°C to +125°C, unless otherwise specified.)

| Symbol | Parameter | Conditions | Max | Units |
|---|---|---|---|---|
| $C_{IN}$ (Note 4) | SDA I/O Pin Capacitance | $V_{IN}$ = 0 V, $T_A$ = 25°C | 8 | pF |
| $C_{IN}$ (Note 4) | Input Capacitance (other pins) | $V_{IN}$ = 0 V, $T_A$ = 25°C | 6 | pF |
| $I_{WP}$ (Note 5) | WP Input Current | $V_{IN} < V_{IH}$, $V_{CC}$ = 5.5 V | 130 | μA |
| | | $V_{IN} < V_{IH}$, $V_{CC}$ = 3.3 V | 120 | |
| | | $V_{IN} < V_{IH}$, $V_{CC} \leq$ 2.5 V | 80 | |
| | | $V_{IN} > V_{IH}$ | 2 | |
| $I_A$ (Note 5) | Address Input Current (A0, A1, A2) Product Rev F | $V_{IN} < V_{IH}$, $V_{CC}$ = 5.5 V | 50 | μA |
| | | $V_{IN} < V_{IH}$, $V_{CC}$ = 3.3 V | 35 | |
| | | $V_{IN} < V_{IH}$, $V_{CC} \leq$ 2.5 V | 25 | |
| | | $V_{IN} > V_{IH}$ | 2 | |

4. These parameters are tested initially and after a design or process change that affects the parameter according to appropriate AEC−Q100 and JEDEC test methods.
5. When not driven, the WP, A0, A1 and A2 pins are pulled down to GND internally. For improved noise immunity, the internal pull−down is relatively strong; therefore the external driver must be able to supply the pull−down current when attempting to drive the input HIGH. To conserve power, as the input level exceeds the trip point of the CMOS input buffer (~ 0.5 x $V_{CC}$), the strong pull−down reverts to a weak current source.

**Table 5. A.C. CHARACTERISTICS**
($V_{CC}$ = 2.5 V to 5.5 V, $V_{CC}$ = 1.8 V to 5.5 V for CAV24C64C4CTR, $T_A$ = −40°C to +125°C, unless otherwise specified.) (Note 6)

| Symbol | Parameter | Standard | | Fast | | Units |
|---|---|---|---|---|---|---|
| | | Min | Max | Min | Max | |
| $F_{SCL}$ | Clock Frequency | | 100 | | 400 | kHz |
| $t_{HD:STA}$ | START Condition Hold Time | 4 | | 0.6 | | μs |
| $t_{LOW}$ | Low Period of SCL Clock | 4.7 | | 1.3 | | μs |
| $t_{HIGH}$ | High Period of SCL Clock | 4 | | 0.6 | | μs |
| $t_{SU:STA}$ | START Condition Setup Time | 4.7 | | 0.6 | | μs |
| $t_{HD:DAT}$ | Data In Hold Time | 0 | | 0 | | μs |
| $t_{SU:DAT}$ | Data In Setup Time | 250 | | 100 | | ns |
| $t_R$ | SDA and SCL Rise Time | | 1000 | | 300 | ns |
| $t_F$ (Note 6) | SDA and SCL Fall Time | | 300 | | 300 | ns |
| $t_{SU:STO}$ | STOP Condition Setup Time | 4 | | 0.6 | | μs |
| $t_{BUF}$ | Bus Free Time Between STOP and START | 4.7 | | 1.3 | | μs |
| $t_{AA}$ | SCL Low to Data Out Valid | | 3.5 | | 0.9 | μs |
| $t_{DH}$ | Data Out Hold Time | 100 | | 100 | | ns |
| $T_i$ (Note 6) | Noise Pulse Filtered at SCL and SDA Inputs | | 100 | | 100 | ns |
| $t_{SU:WP}$ | WP Setup Time | 0 | | 0 | | μs |
| $t_{HD:WP}$ | WP Hold Time | 2.5 | | 2.5 | | μs |
| $t_{WR}$ | Write Cycle Time | | 5 | | 5 | ms |
| $t_{PU}$ (Notes 7, 8) | Power−up to Ready Mode | | 1 | | 1 | ms |

6. Test conditions according to "AC Test Conditions" table.
7. Tested initially and after a design or process change that affects this parameter.
8. $t_{PU}$ is the delay between the time $V_{CC}$ is stable and the device is ready to accept commands.

**Table 6. A.C. TEST CONDITIONS**

| Input Levels | 0.2 x $V_{CC}$ to 0.8 x $V_{CC}$ |
|---|---|
| Input Rise and Fall Times | ≤ 50 ns |
| Input Reference Levels | 0.3 x $V_{CC}$, 0.7 x $V_{CC}$ |
| Output Reference Levels | 0.5 x $V_{CC}$ |
| Output Load | Current Source: $I_{OL}$ = 3 mA; $C_L$ = 100 pF |

Share Feedback
Your Opinion Matters

## POWER−ON RESET (POR)

Each CAV24C64 incorporates Power−On Reset (POR) circuitry which protects the internal logic against powering up in the wrong state. The device will power up into Standby mode after $V_{CC}$ exceeds the POR trigger level and will power down into Reset mode when $V_{CC}$ drops below the POR trigger level. This bi−directional POR behavior protects the device against 'brown−out' failure following a temporary loss of power.

## PIN DESCRIPTION

**SCL:** The Serial Clock input pin accepts the clock signal generated by the Master.

**SDA:** The Serial Data I/O pin accepts input data and delivers output data. In transmit mode, this pin is open drain. Data is acquired on the positive edge, and is delivered on the negative edge of SCL.

**$A_0$, $A_1$ and $A_2$:** The Address inputs set the device address that must be matched by the corresponding Slave address bits. The Address inputs are hard−wired HIGH or LOW allowing for up to eight devices to be used (cascaded) on the same bus. When left floating, these pins are pulled LOW internally.

**WP:** When pulled HIGH, the Write Protect input pin inhibits all write operations. When left floating, this pin is pulled LOW internally.

## FUNCTIONAL DESCRIPTION

The CAV24C64 supports the Inter−Integrated Circuit ($I^2C$) Bus protocol. The protocol relies on the use of a Master device, which provides the clock and directs bus traffic, and Slave devices which execute requests. The CAV24C64 operates as a Slave device. Both Master and Slave can transmit or receive, but only the Master can assign those roles.

## $I^2C$ Bus Protocol

The 2−wire $I^2C$ bus consists of two lines, SCL and SDA, connected to the $V_{CC}$ supply via pull−up resistors. The Master provides the clock to the SCL line, and either the Master or the Slaves drive the SDA line. A '0' is transmitted by pulling a line LOW and a '1' by letting it stay HIGH. Data transfer may be initiated only when the bus is not busy (see A.C. Characteristics). During data transfer, SDA must remain stable while SCL is HIGH.

## START/STOP Condition

An SDA transition while SCL is HIGH creates a START or STOP condition (Figure 2). The START consists of a HIGH to LOW SDA transition, while SCL is HIGH. Absent the START, a Slave will not respond to the Master. The STOP completes all commands, and consists of a LOW to HIGH SDA transition, while SCL is HIGH.

## Device Addressing

The Master addresses a Slave by creating a START condition and then broadcasting an 8−bit Slave address. For the CAV24C64, the first four bits of the Slave address are set to 1010 (Ah); the next three bits, $A_2$, $A_1$ and $A_0$, must match the logic state of the similarly named input pins. The R/$\overline{W}$ bit tells the Slave whether the Master intends to read (1) or write (0) data (Figure 3).

## Acknowledge

During the 9th clock cycle following every byte sent to the bus, the transmitter releases the SDA line, allowing the receiver to respond. The receiver then either acknowledges (ACK) by pulling SDA LOW, or does not acknowledge (NoACK) by letting SDA stay HIGH (Figure 4). Bus timing is illustrated in Figure 5.
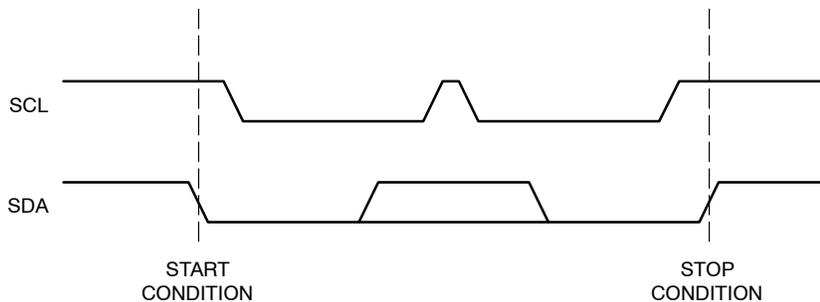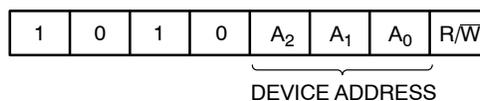


**Figure 2. Start/Stop Timing**



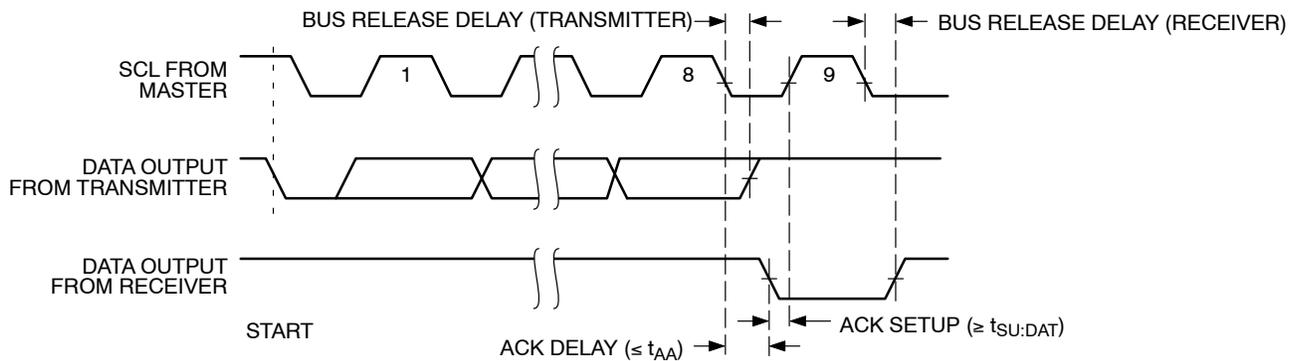**Figure 3. Slave Address Bits**

# CAV24C64
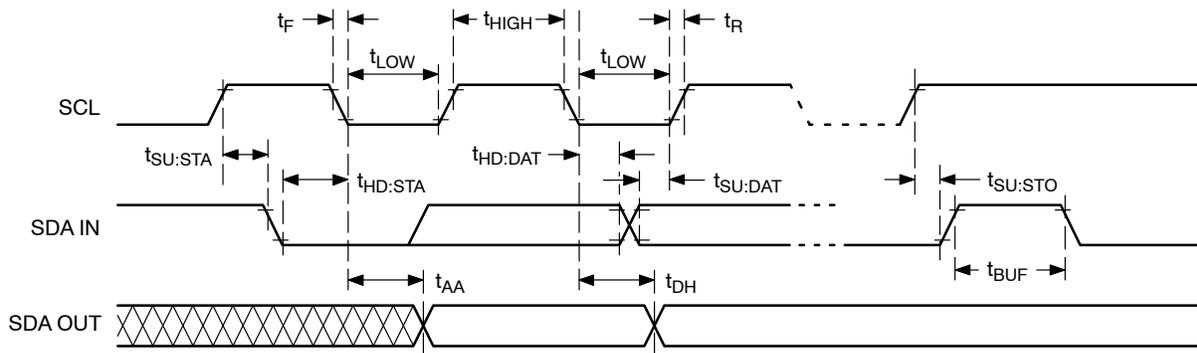


Figure 4. Acknowledge Timing



Figure 5. Bus Timing

## WRITE OPERATIONS

**Byte Write**

To write data to memory, the Master creates a START condition on the bus and then broadcasts a Slave address with the R/$\overline{W}$ bit set to '0'. The Master then sends two address bytes and a data byte and concludes the session by creating a STOP condition on the bus. The Slave responds with ACK after every byte sent by the Master (Figure 6). The STOP starts the internal Write cycle, and while this operation is in progress ($t_{WR}$), the SDA output is tri−stated and the Slave does not acknowledge the Master (Figure 7).

**Page Write**

The Byte Write operation can be expanded to Page Write, by sending more than one data byte to the Slave before issuing the STOP condition (Figure 8). Up to 32 distinct data bytes can be loaded into the internal Page Write Buffer starting at the address provided by the Master. The page address is latched, and as long as the Master keeps sending data, the internal byte address is incremented up to the end of page, where it then wraps around (within the page). New data can therefore replace data loaded earlier. Following the STOP, data loaded during the Page Write session will be written to memory in a single internal Write cycle ($t_{WR}$).

**Acknowledge Polling**

As soon (and as long) as internal Write is in progress, the Slave will not acknowledge the Master. This feature enables the Master to immediately follow−up with a new Read or Write request, rather than wait for the maximum specified Write time ($t_{WR}$) to elapse. Upon receiving a NoACK response from the Slave, the Master simply repeats the request until the Slave responds with ACK.

**Hardware Write Protection**

With the WP pin held HIGH, the entire memory is protected against Write operations. If the WP pin is left floating or is grounded, it has no impact on the Write operation. The state of the WP pin is strobed on the last falling edge of SCL immediately preceding the 1st data byte (Figure 9). If the WP pin is HIGH during the strobe interval, the Slave will not acknowledge the data byte and the Write request will be rejected.

**Delivery State**

The CAV24C64 is shipped erased, i.e., all bytes are FFh.

Share Feedback
Your Opinion Matters

# CAV24C64



*$a_{15} - a_{13}$ are don't care bits.
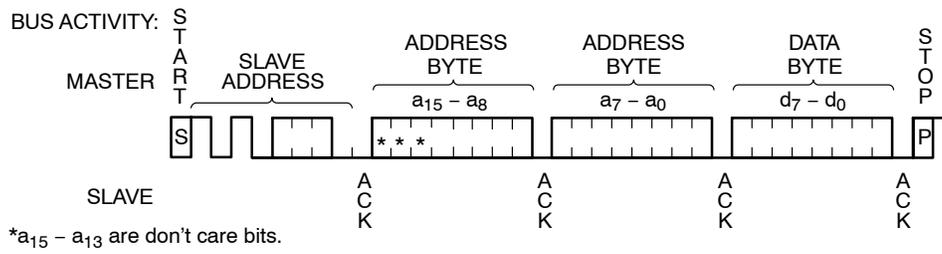
**Figure 6. Byte Write Sequence**
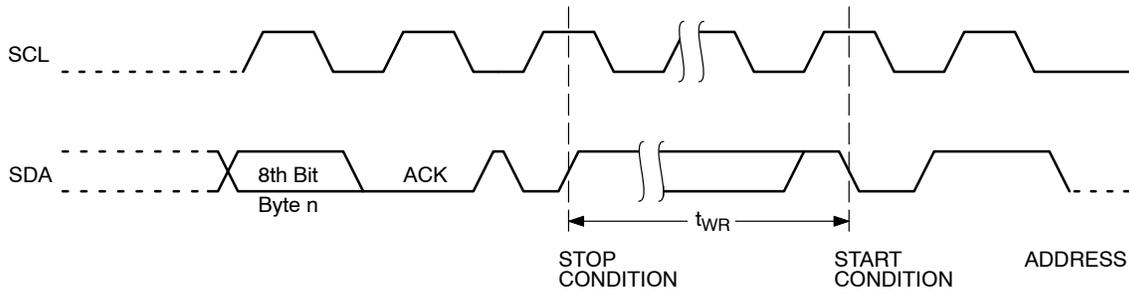


**Figure 7. Write Cycle Timing**
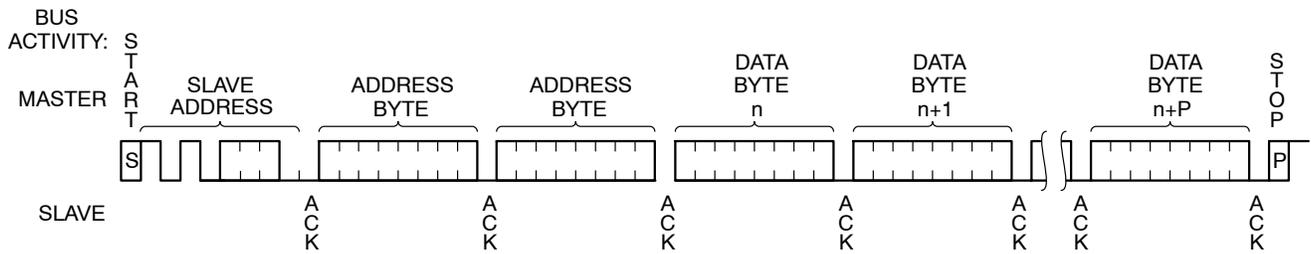


**Figure 8. Page Write Sequence**



**Figure 9. WP Timing**

# CAV24C64
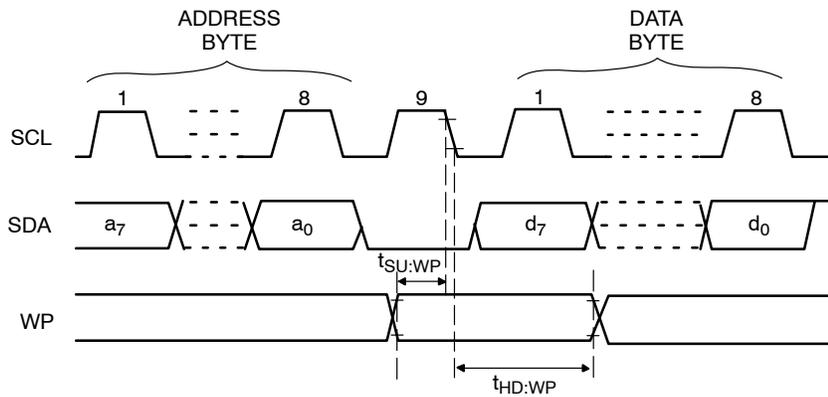
## READ OPERATIONS

### Immediate Read

To read data from memory, the Master creates a START condition on the bus and then broadcasts a Slave address with the R/$\overline{W}$ bit set to '1'. The Slave responds with ACK and starts shifting out data residing at the current address. After receiving the data, the Master responds with NoACK and terminates the session by creating a STOP condition on the bus (Figure 10). The Slave then returns to Standby mode.

### Selective Read

To read data residing at a specific address, the selected address must first be loaded into the internal address register. This is done by starting a Byte Write sequence, whereby the Master creates a START condition, then broadcasts a Slave address with the R/$\overline{W}$ bit set to '0' and then sends two address bytes to the Slave. Rather than completing the Byte

Write sequence by sending data, the Master then creates a START condition and broadcasts a Slave address with the R/$\overline{W}$ bit set to '1'. The Slave responds with ACK after every byte sent by the Master and then sends out data residing at the selected address. After receiving the data, the Master responds with NoACK and then terminates the session by creating a STOP condition on the bus (Figure 11).

### Sequential Read

If, after receiving data sent by the Slave, the Master responds with ACK, then the Slave will continue transmitting until the Master responds with NoACK followed by STOP (Figure 12). During Sequential Read the internal byte address is automatically incremented up to the end of memory, where it then wraps around to the beginning of memory.
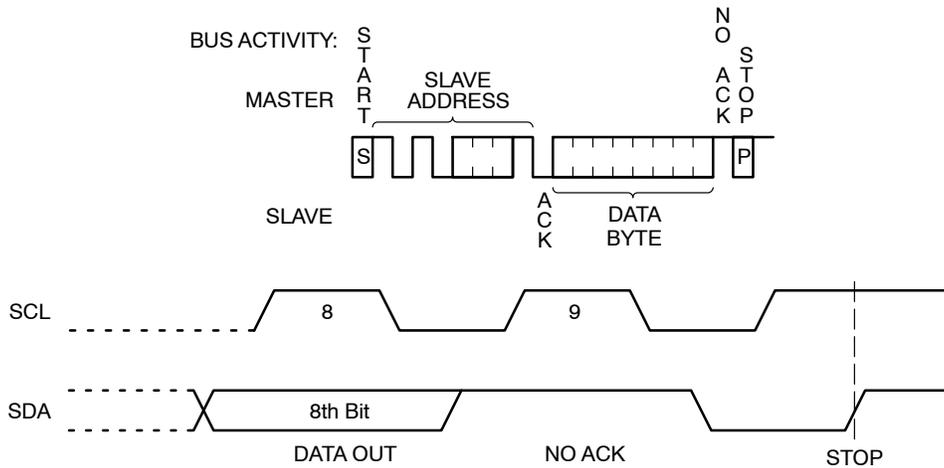
Figure 10. Immediate Read Sequence and Timing
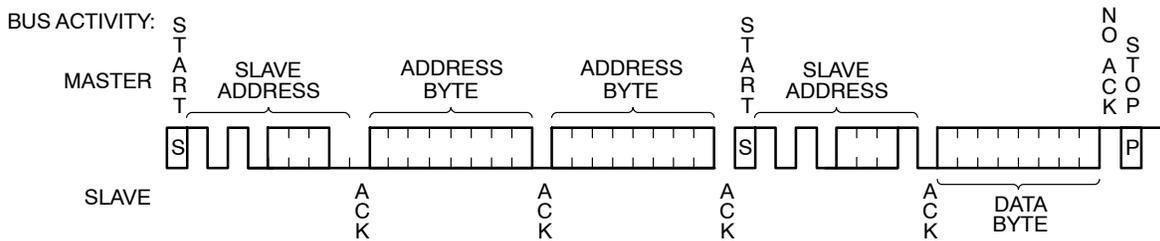
Figure 11. Selective Read Sequence
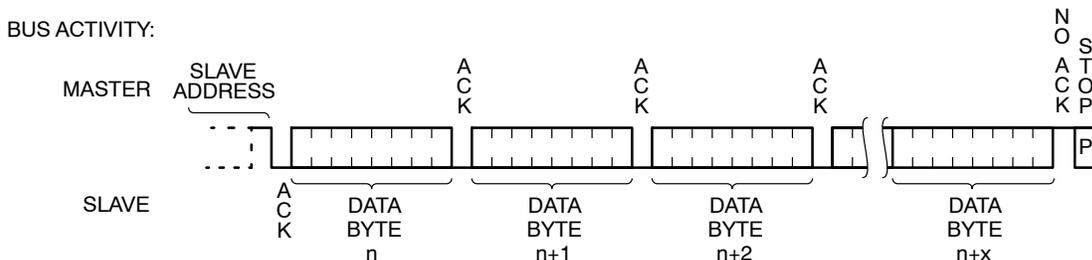
Figure 12. Sequential Read Sequence

# CAV24C64

## ORDERING INFORMATION

| Device Order Number | Specific Device Marking | Package Type | Lead Finish | Shipping† |
|---|---|---|---|---|
| CAV24C64YE−GT3 | C64F | TSSOP−8 | NiPdAu | Tape & Reel, 3,000 Units / Reel |
| CAV24C64YE−G (Note 9) | C64F | TSSOP−8 | NiPdAu | Tube, 100 Units / Tube |
| CAV24C64WE−GT3 | 24C64F | SOIC−8, JEDEC | NiPdAu | Tape & Reel, 3,000 Units / Reel |
| CAV24C64C4CTR (Note 9) | A | WLCSP4 | SnAgCu | Tape & Reel, 5,000 Units / Reel |
| CAV24C64XE−T2 (Note 9) | TBD | SOIC−8, EIAJ | Matte−Tin | Tape & Reel, 2,000 Units / Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.
9. Please contact your nearest **onsemi** Sales office for availability.

**onsemi** is licensed by the Philips Corporation to carry the I2C bus protocol.

# CAV24C64

## PACKAGE DIMENSIONS

**SOIC−8, 208 mils**
CASE 751BE−01
ISSUE O

PIN#1 IDENTIFICATION
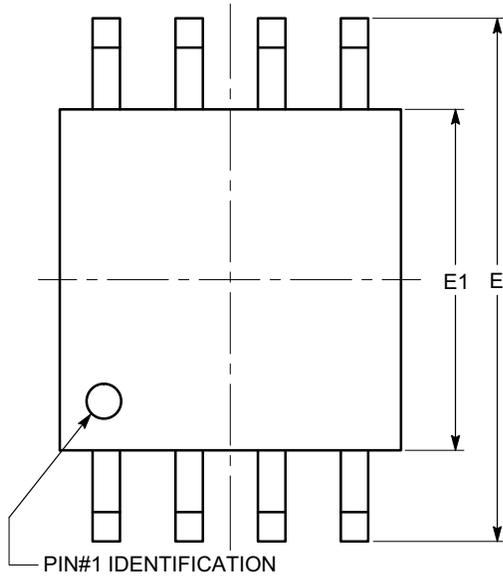
**TOP VIEW**

| SYMBOL | MIN | NOM | MAX |
|--------|-----|-----|-----|
| A | | | 2.03 |
| A1 | 0.05 | | 0.25 |
| b | 0.36 | | 0.48 |
| c | 0.19 | | 0.25 |
| D | 5.13 | | 5.33 |
| E | 7.75 | | 8.26 |
| E1 | 5.13 | | 5.38 |
| e | | 1.27 BSC | |
| L | 0.51 | | 0.76 |
| θ | 0º | | 8º |
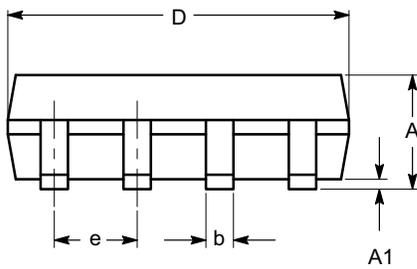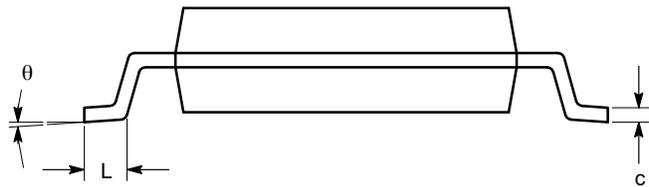


**SIDE VIEW**



**END VIEW**

**Notes:**
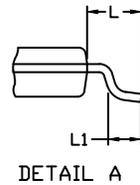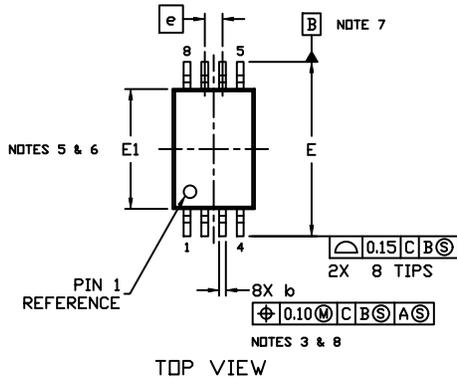(1) All dimensions are in millimeters. Angles in degrees.
(2) Complies with EIAJ EDR-7320.

1. ALL DIMENSIONS ARE IN MILLIMETERS.

Share Feedback
Your Opinion Matters

**WLCSP4, 0.77x0.77**
CASE 567JY
ISSUE C

**SCALE 4:1**

DATE 07 MAR 2017

**TOP VIEW**

PIN A1 REFERENCE

E  A  B

D

**SIDE VIEW**

DETAIL A

0.05 C

0.05 C

NOTE 4  A1

A2

A

C  SEATING PLANE  NOTE 3

**DETAIL A**

NOTE 6

DIE COAT (OPTIONAL)

A3

A2

**BOTTOM VIEW**

NOTE 5

4X ⌀ b

0.05 C A B

0.03 C

B

A

1  2

e

e

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DATUM C, THE SEATING PLANE, IS DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS.
4. COPLANARITY APPLIES TO SPHERICAL CROWNS OF THE SOLDER BALLS.
5. DIMENSION b IS MEASURED AT THE MAXIMUM CONTACT BALL DIAMETER PARALLEL TO DATUM C.
6. BACKSIDE COATING IS OPTIONAL.

| DIM | MILLIMETERS | | |
|-----|-----|-----|-----|
|  | MIN | NOM | MAX |
| A | --- | --- | 0.35 |
| A1 | 0.04 | 0.06 | 0.08 |
| A2 | 0.23 REF | | |
| A3 | 0.025 REF | | |
| b | 0.15 | 0.155 | 0.16 |
| D | 0.75 | 0.77 | 0.79 |
| E | 0.75 | 0.77 | 0.79 |
| e | 0.40 BSC | | |

**GENERIC MARKING DIAGRAM***

X
YW

X = Specific Device Code
Y = Year
W = Work Week

*This information is generic. Please refer to device data sheet for actual part marking. Pb–Free indicator, "G" or microdot " ▪", may or may not be present.

**RECOMMENDED SOLDERING FOOTPRINT***

1

A

PACKAGE OUTLINE

0.40 PITCH

0.40 PITCH

4X ⌀ 0.16
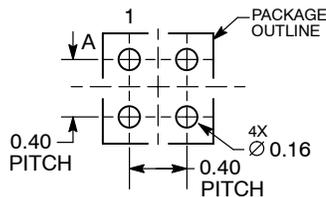
DIMENSIONS: MILLIMETERS

*For additional information on our Pb–Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

| DOCUMENT NUMBER: | 98AON85186F | Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red. | |
|---|---|---|---|
| DESCRIPTION: | WLCSP4, 0.77X0.77 | | PAGE 1 OF 1 |

**SOIC−8, 150 mils**
CASE 751BD
ISSUE O

DATE 19 DEC 2008
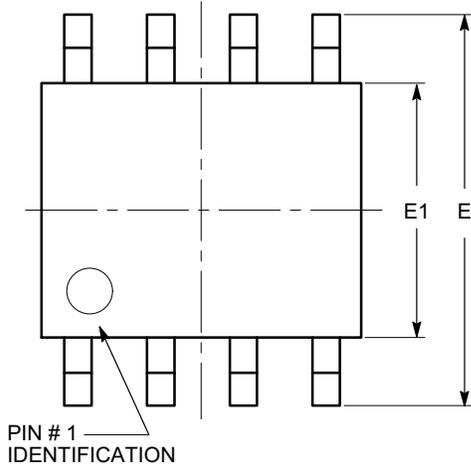
| SYMBOL | MIN | NOM | MAX |
|--------|-----|-----|-----|
| A | 1.35 | | 1.75 |
| A1 | 0.10 | | 0.25 |
| b | 0.33 | | 0.51 |
| c | 0.19 | | 0.25 |
| D | 4.80 | | 5.00 |
| E | 5.80 | | 6.20 |
| E1 | 3.80 | | 4.00 |
| e | | 1.27 BSC | |
| h | 0.25 | | 0.50 |
| L | 0.40 | | 1.27 |
| θ | 0° | | 8° |
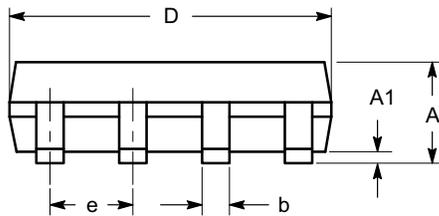
PIN # 1
IDENTIFICATION

**TOP VIEW**

**SIDE VIEW**
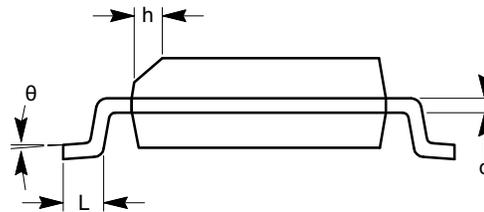
**END VIEW**

**Notes:**
(1) All dimensions are in millimeters. Angles in degrees.
(2) Complies with JEDEC MS-012.

| DOCUMENT NUMBER: | 98AON34272E | Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red. | |
|---|---|---|---|
| DESCRIPTION: | SOIC−8, 150 MILS | | PAGE 1 OF 1 |

**onsemi**

**TSSOP8, 4.4x3.0, 0.65P**
CASE 948AL
ISSUE A

DATE 20 MAY 2022

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE PROTRUSION SHALL NOT BE 0.15 IN EXCESS OF MAXIMUM MATERIAL CONDITION.
4. DIMENSION D DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS OR GATE BURRS SHALL NOT EXCEED 0.15 PER SIDE.
5. DIMENSION E1 DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.25 PER SIDE.
6. THE PACKAGE TOP MAY BE SMALLER THAN THE PACKAGE BOTTOM. DIMENSIONS D AND E1 ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY AT DATUM PLANE H.
7. DATUMS A AND B ARE TO BE DETERMINED AT DATUM H.
8. DIMENSIONS b AND c APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.10 AND 0.25 FROM THE LEAD TIP.
9. A1 IS DEFINED AS THE LOWEST VERTICAL DISTANCE FROM THE SEATING PLANE TO THE LOWEST POINT ON THE PACKAGE BODY.

TOP VIEW

SIDE VIEW

DETAIL A

END VIEW
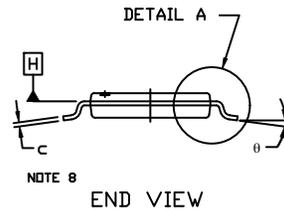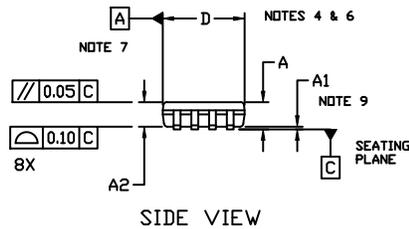
| DIM | MILLIMETERS | | |
|-----|------|------|------|
| | MIN. | NOM. | MAX. |
| A | --- | --- | 1.20 |
| A1 | 0.05 | --- | 0.15 |
| A2 | 0.80 | 0.90 | 1.05 |
| b | 0.19 | --- | 0.30 |
| c | 0.09 | --- | 0.20 |
| D | 2.90 | 3.00 | 3.10 |
| E | 6.30 | 6.40 | 6.50 |
| E1 | 4.30 | 4.40 | 4.50 |
| e | 0.65 BSC | | |
| L | 1.00 REF | | |
| L1 | 0.50 | 0.60 | 0.70 |
| θ | 0° | --- | 8° |

**GENERIC MARKING DIAGRAM\***

XXX
YWW
A■
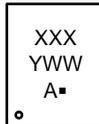
XXX = Specific Device Code
Y = Year
WW = Work Week
A = Assembly Location
■ = Pb−Free Package

\*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, "G" or microdot "■", may or may not be present. Some products may not follow the Generic Marking.

8X 1.15
8X 0.42
6.70
0.65 PITCH
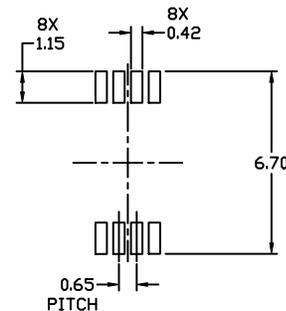
RECOMMENDED MOUNTING FOOTPRINT✳

✳ For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

| DOCUMENT NUMBER: | 98AON34428E | | |
|---|---|---|---|
| DESCRIPTION: | TSSOP8, 4.4X3.0, 0.65P | | PAGE 1 OF 1 |

## ADDITIONAL INFORMATION

◊

# Mouser Electronics

Authorized Distributor


Click to View Pricing, Inventory, Delivery & Lifecycle Information:


[onsemi](#):


[CAV24C64WE-GT3](#)  [CAV24C64YE-GT3](#)