



**CY7C1021B**  
**CY7C10211B**

## 1-Mbit (64K x 16) Static RAM

### Features

- **Temperature Ranges**
  - Commercial: 0°C to 70°C
  - Industrial: -40°C to 85°C
  - Automotive: -40°C to 125°C
- **High speed**
  - $t_{AA} = 10$  ns (Commercial & Industrial)
  - $t_{AA} = 15$  ns (Automotive)
- **CMOS for optimum speed/power**
- **Low active power**
  - 825 mW (max.)
- **Automatic power-down when deselected**
- **Independent control of upper and lower bits**
- **Available in 44-pin TSOP II and 400-mil SOJ**
- **Also available in Lead (Pb)-Free 44-pin TSOP II**

### Functional Description<sup>[1]</sup>

The CY7C1021B/10211B is a high-performance CMOS static RAM organized as 65,536 words by 16 bits. This device has an automatic power-down feature that significantly reduces power consumption when deselected.

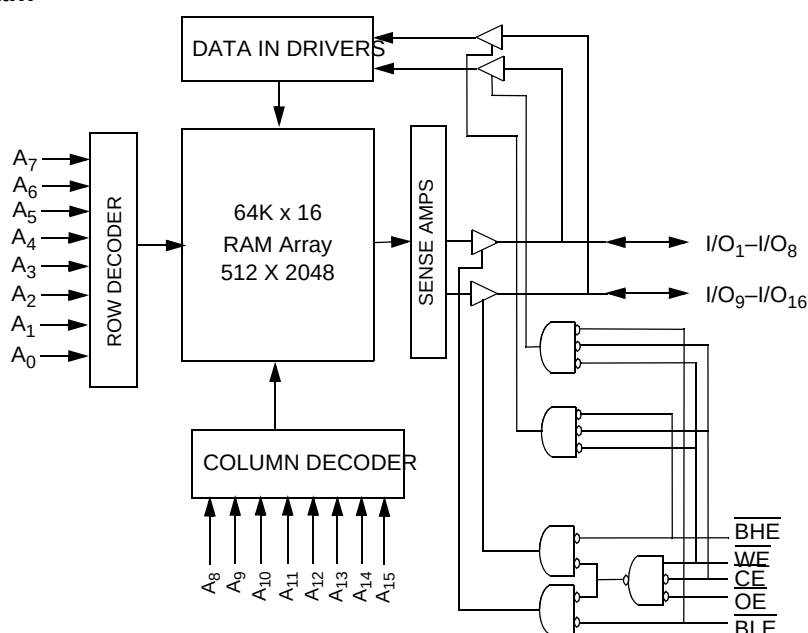
Writing to the device is accomplished by taking Chip Enable ( $\overline{CE}$ ) and Write Enable ( $\overline{WE}$ ) inputs LOW. If Byte Low Enable ( $\overline{BLE}$ ) is LOW, then data from I/O pins ( $I/O_1$  through  $I/O_8$ ), is written into the location specified on the address pins ( $A_0$  through  $A_{15}$ ). If Byte High Enable ( $\overline{BHE}$ ) is LOW, then data from I/O pins ( $I/O_9$  through  $I/O_{16}$ ) is written into the location specified on the address pins ( $A_0$  through  $A_{15}$ ).

Reading from the device is accomplished by taking Chip Enable ( $\overline{CE}$ ) and Output Enable ( $\overline{OE}$ ) LOW while forcing the Write Enable ( $\overline{WE}$ ) HIGH. If Byte Low Enable ( $\overline{BLE}$ ) is LOW, then data from the memory location specified by the address pins will appear on  $I/O_1$  to  $I/O_8$ . If Byte High Enable ( $\overline{BHE}$ ) is LOW, then data from memory will appear on  $I/O_9$  to  $I/O_{16}$ . See the truth table at the back of this data sheet for a complete description of read and write modes.

The input/output pins ( $I/O_1$  through  $I/O_{16}$ ) are placed in a high-impedance state when the device is deselected ( $\overline{CE}$  HIGH), the outputs are disabled ( $\overline{OE}$  HIGH), the  $\overline{BHE}$  and  $\overline{BLE}$  are disabled ( $\overline{BHE}$ ,  $\overline{BLE}$  HIGH), or during a write operation ( $\overline{CE}$  LOW, and  $\overline{WE}$  LOW).

The CY7C1021B/10211B is available in standard 44-pin TSOP Type II and 400-mil-wide SOJ packages. Customers should use part number CY7C10211B when ordering parts with 10-ns  $t_{AA}$ , and CY7C1021B when ordering 12- and 15-ns  $t_{AA}$ .

### Logic Block Diagram



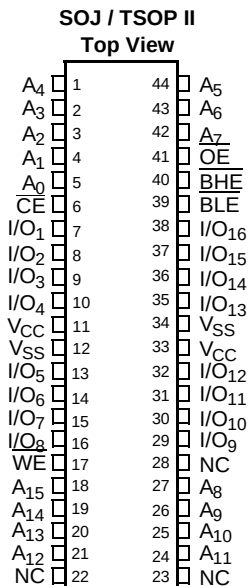
#### Note:

1. For best-practice recommendations, please refer to the Cypress application note "System Design Guidelines" on <http://www.cypress.com>.

## Selection Guide

|                                   |               | 7C10211B-10 | 7C1021B-12 | 7C1021B-15 |
|-----------------------------------|---------------|-------------|------------|------------|
| Maximum Access Time (ns)          |               | 10          | 12         | 15         |
| Maximum Operating Current (mA)    | Com'I / Ind'I | 150         | 140        | 130        |
|                                   | Automotive    | -           | -          | 150        |
| Maximum CMOS Standby Current (mA) | Com'I / Ind'I | 10          | 10         | 10         |
|                                   | Automotive    | -           | -          | 15         |
|                                   | L Version     | 0.5         | 0.5        | 0.5        |

## Pin Configurations



## Pin Definitions

| Pin Name                                          | SOJ, TSOP-Pin Number      | I/O Type      | Description                                                                                                                                                                                                     |
|---------------------------------------------------|---------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A <sub>0</sub> –A <sub>15</sub>                   | 1–5, 18–21, 24–27, 42–44  | Input         | <b>Address Inputs</b> used to select one of the address locations.                                                                                                                                              |
| I/O <sub>1</sub> –I/O <sub>16</sub>               | 7–10, 13–16, 29–32, 35–38 | Input/Output  | <b>Bidirectional Data I/O lines.</b> Used as input or output lines depending on operation.                                                                                                                      |
| NC                                                | 22, 23, 28                | No Connect    | <b>No Connects.</b> Not connected to the die.                                                                                                                                                                   |
| $\overline{\text{WE}}$                            | 17                        | Input/Control | <b>Write Enable Input, active LOW.</b> When selected LOW, a Write is conducted. When deselected HIGH, a Read is conducted.                                                                                      |
| $\overline{\text{CE}}$                            | 6                         | Input/Control | <b>Chip Enable Input, active LOW.</b> When LOW, selects the chip. When HIGH, deselects the chip.                                                                                                                |
| $\overline{\text{BHE}}$ , $\overline{\text{BLE}}$ | 39, 40                    | Input/Control | <b>Byte Write Select Inputs, active LOW.</b> $\overline{\text{BLE}}$ controls I/O <sub>8</sub> –I/O <sub>1</sub> , $\overline{\text{BHE}}$ controls I/O <sub>16</sub> –I/O <sub>9</sub> .                       |
| $\overline{\text{OE}}$                            | 41                        | Input/Control | <b>Output Enable, active LOW.</b> Controls the direction of the I/O pins. When LOW, the I/O pins are allowed to behave as outputs. When deasserted HIGH, I/O pins are three-stated, and act as input data pins. |
| V <sub>SS</sub>                                   | 12, 34                    | Ground        | <b>Ground for the device.</b> Should be connected to ground of the system.                                                                                                                                      |
| V <sub>CC</sub>                                   | 11, 33                    | Power Supply  | <b>Power Supply inputs to the device.</b>                                                                                                                                                                       |

## Maximum Ratings

(Above which the useful life may be impaired. For user guidelines, not tested.)

Storage Temperature ..... -65°C to +150°C

Ambient Temperature with Power Applied ..... -55°C to +125°C

Supply Voltage on  $V_{CC}$  to Relative GND<sup>[2]</sup> .... -0.5V to +7.0V

DC Voltage Applied to Outputs in High Z State<sup>[2]</sup> ..... -0.5V to  $V_{CC}+0.5V$

DC Input Voltage<sup>[2]</sup> ..... -0.5V to  $V_{CC}+0.5V$

Current into Outputs (LOW) ..... 20 mA

Static Discharge Voltage..... >2001V  
(per MIL-STD-883, Method 3015)

Latch-Up Current..... >200 mA

## Operating Range

| Range      | Ambient Temperature ( $T_A$ ) <sup>[3]</sup> | $V_{CC}$     |
|------------|----------------------------------------------|--------------|
| Commercial | 0°C to +70°C                                 | 5V $\pm$ 10% |
| Industrial | -40°C to +85°C                               | 5V $\pm$ 10% |
| Automotive | -40°C to +125°C                              | 5V $\pm$ 10% |

## Electrical Characteristics Over the Operating Range

| Parameter | Description                                 | Test Conditions                                                                                                    | 7C10211B-10 |      | 7C1021B-12 |      | 7C1021B-15 |      | Unit          |
|-----------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------|------|------------|------|------------|------|---------------|
|           |                                             |                                                                                                                    | Min.        | Max. | Min.       | Max. | Min.       | Max. |               |
| $V_{OH}$  | Output HIGH Voltage                         | $V_{CC} = \text{Min.}, I_{OH} = -4.0 \text{ mA}$                                                                   | 2.4         |      | 2.4        |      | 2.4        |      | V             |
| $V_{OL}$  | Output LOW Voltage                          | $V_{CC} = \text{Min.}, I_{OL} = 8.0 \text{ mA}$                                                                    |             | 0.4  |            | 0.4  |            | 0.4  | V             |
| $V_{IH}$  | Input HIGH Voltage                          |                                                                                                                    | 2.2         | 6.0  | 2.2        | 6.0  | 2.2        | 6.0  | V             |
| $V_{IL}$  | Input LOW Voltage <sup>[2]</sup>            |                                                                                                                    | -0.5        | 0.8  | -0.5       | 0.8  | -0.5       | 0.8  | V             |
| $I_{IX}$  | Input Load Current                          | $GND \leq V_I \leq V_{CC}$                                                                                         | -1          | +1   | -1         | +1   | -1         | +1   | $\mu\text{A}$ |
|           |                                             | Automotive                                                                                                         |             |      |            |      | -4         | +4   | $\mu\text{A}$ |
| $I_{OZ}$  | Output Leakage Current                      | $GND \leq V_I \leq V_{CC}$ , Output Disabled                                                                       | -1          | +1   | -1         | +1   | -1         | +1   | $\mu\text{A}$ |
|           |                                             | Automotive                                                                                                         |             |      |            |      | -4         | +4   | $\mu\text{A}$ |
| $I_{OS}$  | Output Short Circuit Current <sup>[4]</sup> | $V_{CC} = \text{Max.}, V_{OUT} = GND$                                                                              |             | -300 |            | -300 |            | -300 | mA            |
| $I_{CC}$  | $V_{CC}$ Operating Supply Current           | $V_{CC} = \text{Max.}, I_{OUT} = 0 \text{ mA}, f = f_{MAX} = 1/t_{RC}$                                             |             | 150  |            | 140  |            | 130  | mA            |
|           |                                             | Automotive                                                                                                         |             |      |            |      |            | 150  | mA            |
| $I_{SB1}$ | Automatic CE Power-Down Current—TTL Inputs  | Max. $V_{CC}$ , $\overline{CE} \geq V_{IH}$ , $V_{IN} \geq V_{IH}$ or $V_{IN} \leq V_{IL}$ , $f = f_{MAX}$         |             | 40   |            | 40   |            | 40   | mA            |
|           |                                             | Automotive                                                                                                         |             |      |            |      |            | 50   | mA            |
| $I_{SB2}$ | Automatic CE Power-Down Current—CMOS Inputs | Max. $V_{CC}$ , $\overline{CE} \geq V_{CC} - 0.3V$ , $V_{IN} \geq V_{CC} - 0.3V$ , or $V_{IN} \leq 0.3V$ , $f = 0$ |             | 10   |            | 10   |            | 10   | mA            |
|           |                                             | Automotive                                                                                                         |             |      |            |      |            | 15   | mA            |
|           |                                             | L Version                                                                                                          |             | 0.5  |            | 0.5  |            | 0.5  | mA            |

## Thermal Resistance<sup>[5]</sup>

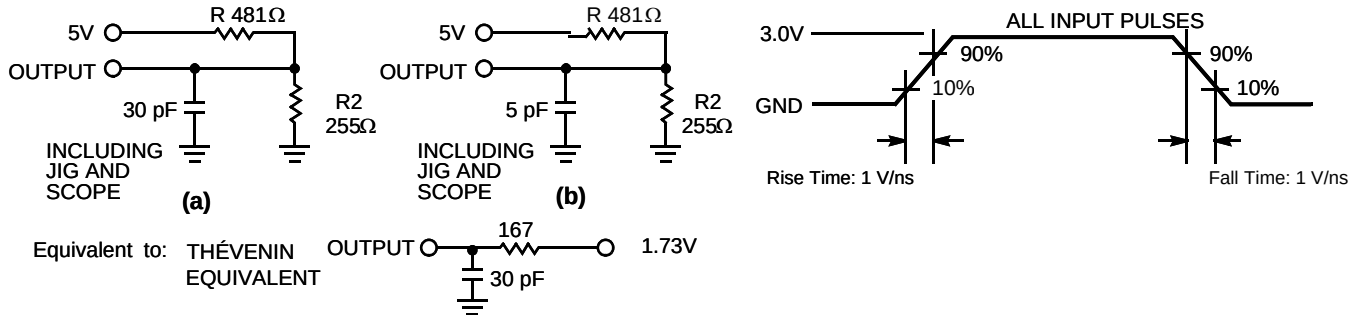
| Parameter     | Description                              | Test Conditions                                                                                                | 44-lead SOJ | 44-lead TSOP-II | Unit |
|---------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------|-----------------|------|
| $\Theta_{JA}$ | Thermal Resistance (Junction to Ambient) | Test conditions follow standard test methods and procedures for measuring thermal impedance, per EIA / JESD51. | 64.32       | 76.89           | °C/W |
| $\Theta_{JC}$ | Thermal Resistance (Junction to Case)    |                                                                                                                | 31.03       | 14.28           | °C/W |

### Notes:

- $V_{IL}(\text{min.}) = -2.0V$  and  $V_{IH}(\text{max.}) = V_{CC} + 0.5V$  for pulse durations of less than 20 ns.
- $T_A$  is the "Instant On" case temperature.
- Not more than one output should be shorted at one time. Duration of the short circuit should not exceed 30 seconds.
- Tested initially and after any design or process changes that may affect these parameters.

**Capacitance<sup>[5]</sup>**

| Parameter        | Description        | Test Conditions                                             | Max. | Unit |
|------------------|--------------------|-------------------------------------------------------------|------|------|
| C <sub>IN</sub>  | Input Capacitance  | T <sub>A</sub> = 25°C, f = 1 MHz,<br>V <sub>CC</sub> = 5.0V | 8    | pF   |
| C <sub>OUT</sub> | Output Capacitance |                                                             | 8    | pF   |

**AC Test Loads and Waveforms**

**Switching Characteristics<sup>[6]</sup> Over the Operating Range**

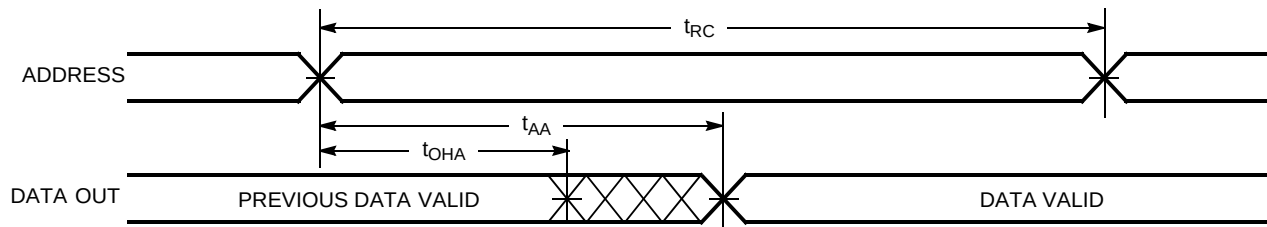
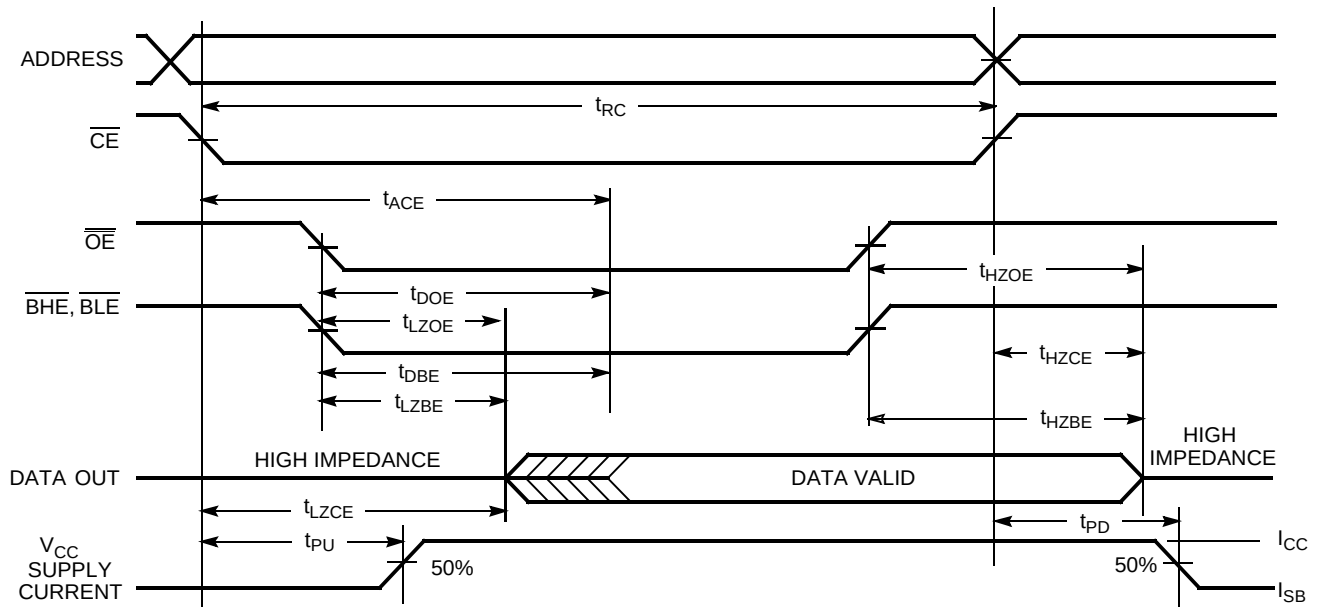
| Parameter                  | Description                                             | 7C10211B-10 |      | 7C1021B-12 |      | 7C1021B-15 |      | Unit |
|----------------------------|---------------------------------------------------------|-------------|------|------------|------|------------|------|------|
|                            |                                                         | Min.        | Max. | Min.       | Max. | Min.       | Max. |      |
| Read Cycle                 |                                                         |             |      |            |      |            |      |      |
| t <sub>RC</sub>            | Read Cycle Time                                         | 10          |      | 12         |      | 15         |      | ns   |
| t <sub>AA</sub>            | Address to Data Valid                                   |             | 10   |            | 12   |            | 15   | ns   |
| t <sub>OHA</sub>           | Data Hold from Address Change                           | 3           |      | 3          |      | 3          |      | ns   |
| t <sub>ACE</sub>           | $\overline{\text{CE}}$ LOW to Data Valid                |             | 10   |            | 12   |            | 15   | ns   |
| t <sub>DOE</sub>           | $\overline{\text{OE}}$ LOW to Data Valid                |             | 5    |            | 6    |            | 7    | ns   |
| t <sub>LZOE</sub>          | $\overline{\text{OE}}$ LOW to Low Z <sup>[7]</sup>      | 0           |      | 0          |      | 0          |      | ns   |
| t <sub>HZOE</sub>          | $\overline{\text{OE}}$ HIGH to High Z <sup>[7, 8]</sup> |             | 5    |            | 6    |            | 7    | ns   |
| t <sub>LZCE</sub>          | $\overline{\text{CE}}$ LOW to Low Z <sup>[7]</sup>      | 3           |      | 3          |      | 3          |      | ns   |
| t <sub>HZCE</sub>          | $\overline{\text{CE}}$ HIGH to High Z <sup>[7, 8]</sup> |             | 5    |            | 6    |            | 7    | ns   |
| t <sub>PU</sub>            | $\overline{\text{CE}}$ LOW to Power-Up                  | 0           |      | 0          |      | 0          |      | ns   |
| t <sub>PD</sub>            | $\overline{\text{CE}}$ HIGH to Power-Down               |             | 10   |            | 12   |            | 15   | ns   |
| t <sub>DBE</sub>           | Byte Enable to Data Valid                               |             | 5    |            | 6    |            | 7    | ns   |
| t <sub>LZBE</sub>          | Byte Enable to Low Z                                    | 0           |      | 0          |      | 0          |      | ns   |
| t <sub>HZBE</sub>          | Byte Disable to High Z                                  |             | 5    |            | 6    |            | 7    | ns   |
| Write Cycle <sup>[9]</sup> |                                                         |             |      |            |      |            |      |      |
| t <sub>WC</sub>            | Write Cycle Time                                        | 10          |      | 12         |      | 15         |      | ns   |
| t <sub>SCE</sub>           | $\overline{\text{CE}}$ LOW to Write End                 | 8           |      | 9          |      | 10         |      | ns   |
| t <sub>AW</sub>            | Address Set-Up to Write End                             | 7           |      | 8          |      | 10         |      | ns   |
| t <sub>HA</sub>            | Address Hold from Write End                             | 0           |      | 0          |      | 0          |      | ns   |
| t <sub>SA</sub>            | Address Set-Up to Write Start                           | 0           |      | 0          |      | 0          |      | ns   |
| t <sub>SD</sub>            | Data Set-Up to Write End                                | 5           |      | 6          |      | 8          |      | ns   |

**Notes:**

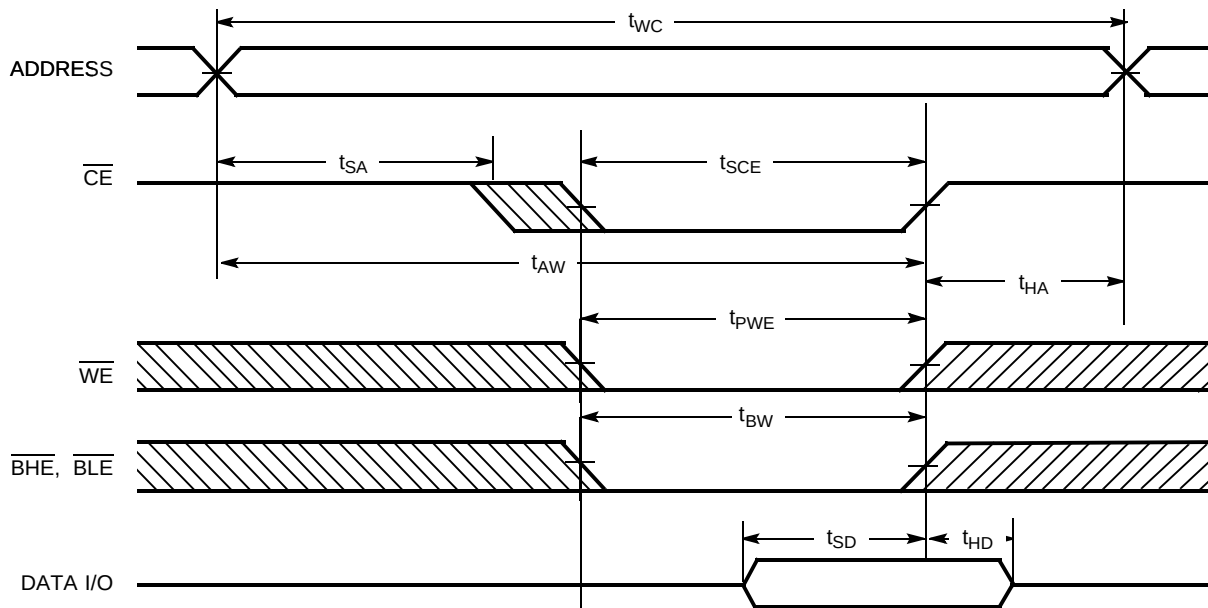
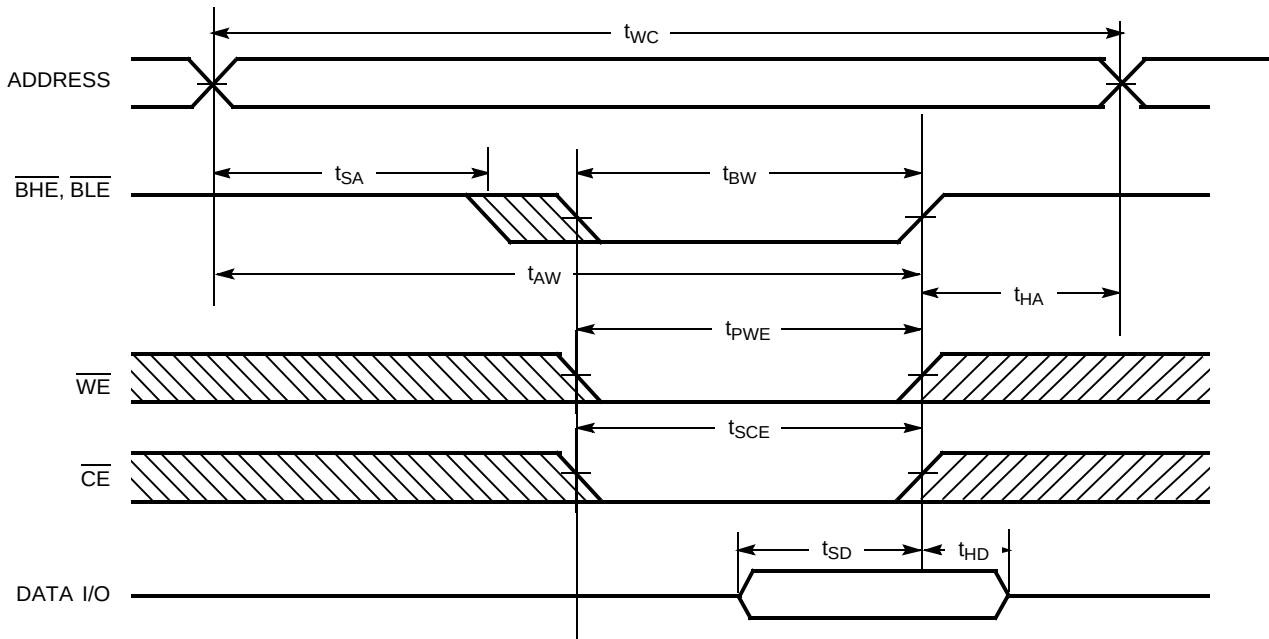
- Test conditions assume signal transition time of 3 ns or less, timing reference levels of 1.5V, input pulse levels of 0 to 3.0V, and output loading of the specified I<sub>OL</sub>/I<sub>OH</sub> and 30-pF load capacitance.
- At any given temperature and voltage condition, t<sub>HZCE</sub> is less than t<sub>LZCE</sub>, t<sub>HZOE</sub> is less than t<sub>LZOE</sub>, and t<sub>HZWE</sub> is less than t<sub>LZWE</sub> for any given device.
- t<sub>HZOE</sub>, t<sub>HZBE</sub>, t<sub>HZCE</sub>, and t<sub>HZWE</sub> are specified with a load capacitance of 5 pF as in part (b) of AC Test Loads. Transition is measured ±500 mV from steady-state voltage.
- The internal write time of the memory is defined by the overlap of CE LOW, WE LOW and BHE / BLE LOW. CE, WE and BHE / BLE must be LOW to initiate a write, and the transition of these signals can terminate the write. The input data set-up and hold timing should be referenced to the leading edge of the signal that terminates the write.

**Switching Characteristics<sup>[6]</sup> Over the Operating Range (continued)**

| Parameter  | Description                                     | 7C10211B-10 |      | 7C1021B-12 |      | 7C1021B-15 |      | Unit |
|------------|-------------------------------------------------|-------------|------|------------|------|------------|------|------|
|            |                                                 | Min.        | Max. | Min.       | Max. | Min.       | Max. |      |
| $t_{HD}$   | Data Hold from Write End                        | 0           |      | 0          |      | 0          |      | ns   |
| $t_{LZWE}$ | $\overline{WE}$ HIGH to Low Z <sup>[7]</sup>    | 3           |      | 3          |      | 3          |      | ns   |
| $t_{HZWE}$ | $\overline{WE}$ LOW to High Z <sup>[7, 8]</sup> |             | 5    |            | 6    |            | 7    | ns   |
| $t_{BW}$   | Byte Enable to End of Write                     | 7           |      | 8          |      | 9          |      | ns   |

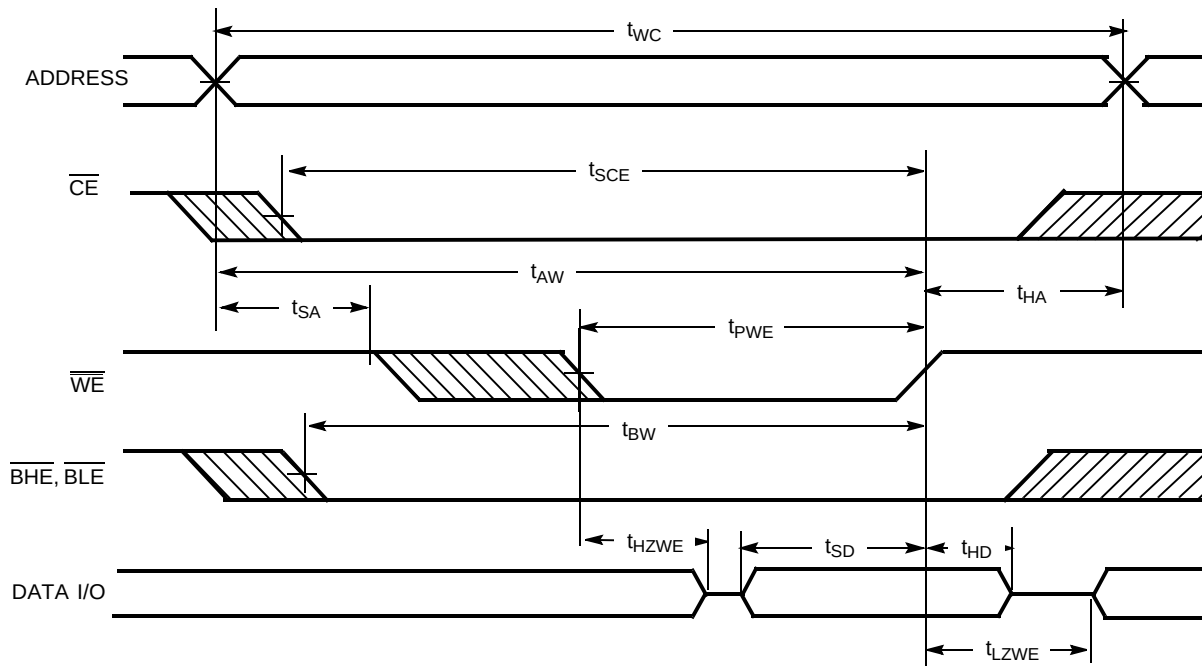
**Switching Waveforms**
**Read Cycle No. 1<sup>[10, 11]</sup>**

**Read Cycle No. 2 ( $\overline{OE}$  Controlled)<sup>[11, 12]</sup>**

**Notes:**

10. Device is continuously selected.  $\overline{OE}$ ,  $\overline{CE}$ ,  $\overline{BHE}$  and/or  $\overline{BLE}$  =  $V_{IL}$ .  
 11.  $\overline{WE}$  is HIGH for read cycle.

**Switching Waveforms (continued)**
**Write Cycle No. 1 ( $\overline{\text{CE}}$  Controlled)<sup>[13, 14]</sup>**

**Write Cycle No. 2 ( $\overline{\text{BLE}}$  or  $\overline{\text{BHE}}$  Controlled)**

**Notes:**

12. Address valid prior to or coincident with  $\overline{\text{CE}}$  transition LOW.
13. Data I/O is high impedance if  $\overline{\text{OE}}$  or  $\overline{\text{BHE}}$  and/or  $\overline{\text{BLE}} = V_{IH}$ .
14. If  $\overline{\text{CE}}$  goes HIGH simultaneously with  $\overline{\text{WE}}$  going HIGH, the output remains in a high-impedance state.

**Switching Waveforms** (continued)

**Write Cycle No. 3 (WE Controlled, OE LOW)**

**Truth Table**

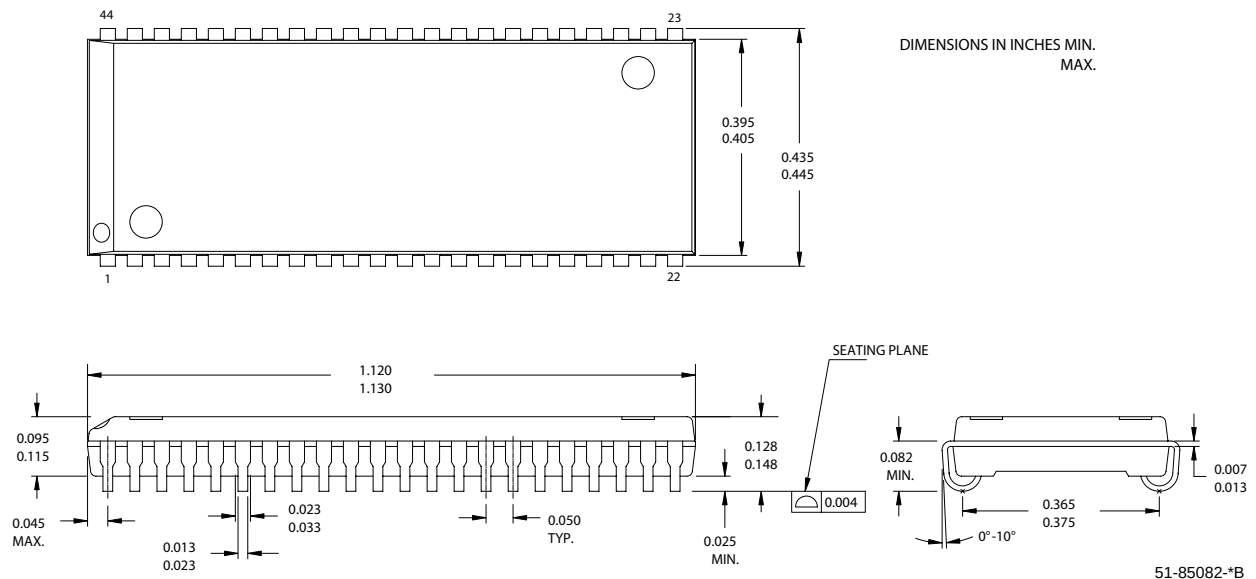
| CE | OE | WE | BLE | BHE | I/O <sub>1</sub> -I/O <sub>8</sub> | I/O <sub>9</sub> -I/O <sub>16</sub> | Mode                       | Power                |
|----|----|----|-----|-----|------------------------------------|-------------------------------------|----------------------------|----------------------|
| H  | X  | X  | X   | X   | High Z                             | High Z                              | Power-Down                 | Standby ( $I_{SB}$ ) |
| L  | L  | H  | L   | L   | Data Out                           | Data Out                            | Read - All bits            | Active ( $I_{CC}$ )  |
|    |    |    | L   | H   | Data Out                           | High Z                              | Read - Lower bits only     | Active ( $I_{CC}$ )  |
|    |    |    | H   | L   | High Z                             | Data Out                            | Read - Upper bits only     | Active ( $I_{CC}$ )  |
| L  | X  | L  | L   | L   | Data In                            | Data In                             | Write - All bits           | Active ( $I_{CC}$ )  |
|    |    |    | L   | H   | Data In                            | High Z                              | Write - Lower bits only    | Active ( $I_{CC}$ )  |
|    |    |    | H   | L   | High Z                             | Data In                             | Write - Upper bits only    | Active ( $I_{CC}$ )  |
| L  | H  | H  | X   | X   | High Z                             | High Z                              | Selected, Outputs Disabled | Active ( $I_{CC}$ )  |
| L  | X  | X  | H   | H   | High Z                             | High Z                              | Selected, Outputs Disabled | Active ( $I_{CC}$ )  |

**Ordering Information**

| Speed (ns) | Ordering Code    | Package Name | Package Type                           | Operating Range |
|------------|------------------|--------------|----------------------------------------|-----------------|
| 10         | CY7C10211B-10VC  | V34          | 44-Lead (400-Mil) Molded SOJ           | Commercial      |
|            | CY7C10211B-10ZC  | Z44          | 44-Lead TSOP Type II                   | Commercial      |
|            | CY7C10211BL-10ZC | Z44          | 44-Lead TSOP Type II                   | Commercial      |
| 12         | CY7C1021B-12VC   | V34          | 44-Lead (400-Mil) Molded SOJ           | Commercial      |
|            | CY7C1021B-12VXC  | V34          | 44-Lead (400-Mil) Molded SOJ (Pb-Free) | Commercial      |
|            | CY7C1021B-12VI   | V34          | 44-Lead (400-Mil) Molded SOJ           | Industrial      |
|            | CY7C1021B-12VXI  | V34          | 44-Lead (400-Mil) Molded SOJ (Pb-Free) | Industrial      |
|            | CY7C1021BL-12VC  | V34          | 44-Lead (400-Mil) Molded SOJ           | Commercial      |
|            | CY7C1021B-12ZC   | Z44          | 44-Lead TSOP Type II                   | Commercial      |
|            | CY7C1021B-12ZXC  | Z44          | 44-Lead TSOP Type II (Pb-Free)         | Commercial      |

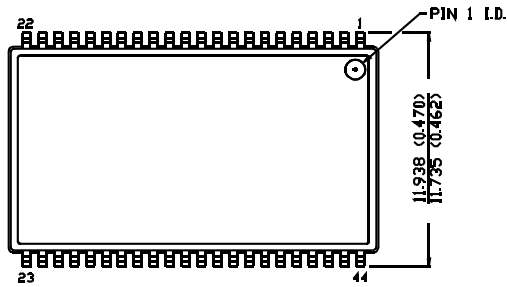
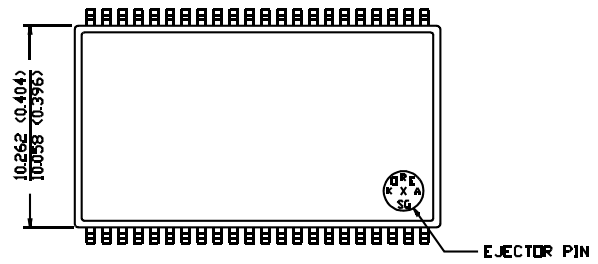
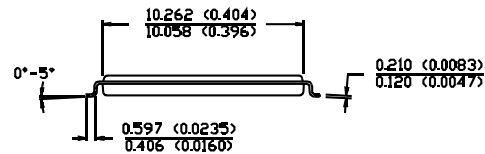
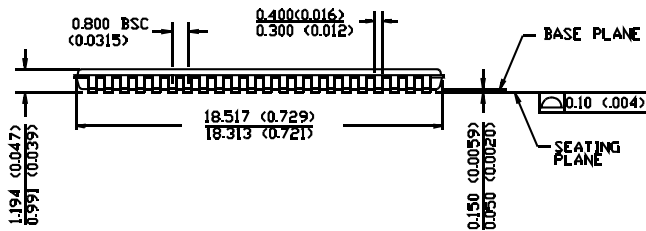
**Ordering Information** (continued)

| Speed (ns) | Ordering Code    | Package Name | Package Type                          | Operating Range |
|------------|------------------|--------------|---------------------------------------|-----------------|
| 12         | CY7C1021B-12ZI   | Z44          | 44-Lead TSOP Type II                  | Industrial      |
|            | CY7C1021BL-12ZC  | Z44          | 44-Lead TSOP Type II                  | Commercial      |
| 15         | CY7C1021B-15VC   | V34          | 44-pin (400-Mil) Molded SOJ           | Commercial      |
|            | CY7C1021B-15VXC  | V34          | 44-pin (400-Mil) Molded SOJ (Pb-Free) | Commercial      |
|            | CY7C1021B-15VI   | V34          | 44-pin (400-Mil) Molded SOJ           | Industrial      |
|            | CY7C1021B-15VXI  | V34          | 44-pin (400-Mil) Molded SOJ (Pb-Free) | Industrial      |
|            | CY7C1021BL-15VC  | V34          | 44-pin (400-Mil) Molded SOJ           | Commercial      |
|            | CY7C1021BL-15VXC | V34          | 44-pin (400-Mil) Molded SOJ (Pb-Free) | Commercial      |
|            | CY7C1021B-15VE   | V34          | 44-pin (400-Mil) Molded SOJ           | Automotive      |
|            | CY7C1021B-15VXE  | V34          | 44-pin (400-Mil) Molded SOJ (Pb-Free) | Automotive      |
|            | CY7C1021B-15ZC   | Z44          | 44-pin TSOP Type II                   | Commercial      |
|            | CY7C1021B-15ZXC  | Z44          | 44-pin TSOP Type II (Pb-Free)         | Commercial      |
|            | CY7C1021B-15ZI   | Z44          | 44-pin TSOP Type II                   | Industrial      |
|            | CY7C1021B-15ZXI  | Z44          | 44-pin TSOP Type II (Pb-Free)         | Industrial      |
|            | CY7C1021BL-15ZC  | Z44          | 44-pin TSOP Type II                   | Commercial      |
|            | CY7C1021BL-15ZXC | Z44          | 44-pin TSOP Type II (Pb-Free)         | Commercial      |
|            | CY7C1021B-15ZE   | Z44          | 44-pin TSOP Type II                   | Automotive      |
|            | CY7C1021B-15ZSXE | Z44          | 44-pin TSOP Type II (Pb-Free)         | Automotive      |

**Package Diagrams**
**44-Lead (400-Mil) Molded SOJ V34**




**Package Diagrams (continued)**
**44-Pin TSOP II Z44**

 DIMENSION IN MM (INCH)  
 MAX  
 RPL

**TOP VIEW**

**BOTTOM VIEW**


51-85087-\*A

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**Document History Page**

| <b>Document Title: CY7C1021B/CY7C10211B (64K x 16) Static RAM</b><br><b>Document Number: 38-05145</b> |                |                   |                        |                                                                                                         |
|-------------------------------------------------------------------------------------------------------|----------------|-------------------|------------------------|---------------------------------------------------------------------------------------------------------|
| <b>REV.</b>                                                                                           | <b>ECN NO.</b> | <b>Issue Date</b> | <b>Orig. of Change</b> | <b>Description of Change</b>                                                                            |
| **                                                                                                    | 109889         | 09/22/01          | SZV                    | Change from Spec number: 38-00951 to 38-05145                                                           |
| *A                                                                                                    | 238454         | See ECN           | RKF                    | 1) Added Automotive Specs to Data Sheet<br>2) Added Pb-Free device offering in the Ordering Information |
| *B                                                                                                    | 361795         | See ECN           | SYT                    | Added Pb-Free offerings in the Ordering Information                                                     |