

# IS62WV2568ALL IS62WV2568BLL



## 256K x 8 LOW VOLTAGE, ULTRA LOW POWER CMOS STATIC RAM

JANUARY 2010

### FEATURES

- High-speed access time: 45ns, 55ns, 70ns
- CMOS low power operation
  - 36 mW (typical) operating
  - 9  $\mu$ W (typical) CMOS standby
- TTL compatible interface levels
- Single power supply
  - 1.65V--2.2V  $V_{CC}$  (62WV2568ALL)
  - 2.5V--3.6V  $V_{CC}$  (62WV2568BLL)
- Fully static operation: no clock or refresh required
- Three state outputs
- Industrial temperature available
- Lead-free available

### DESCRIPTION

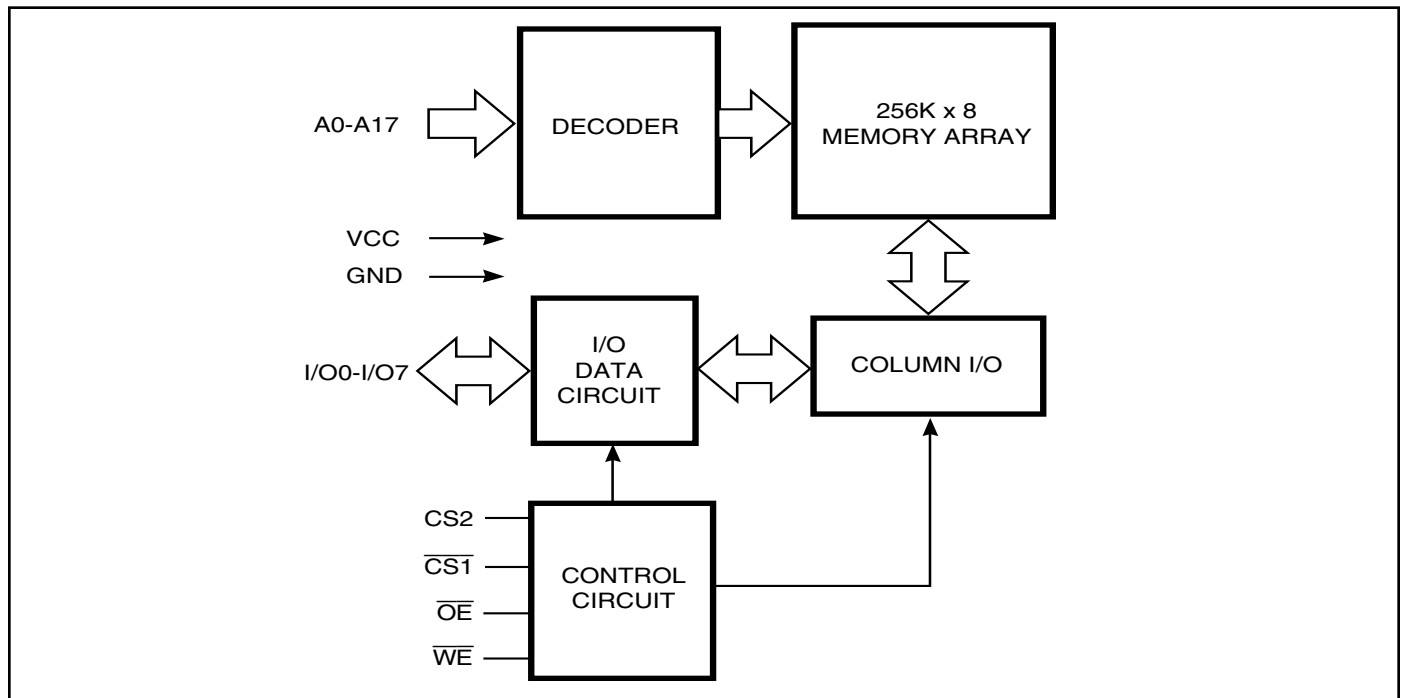
The *ISSI* IS62WV2568ALL / IS62WV2568BLL are high-speed, 2M bit static RAMs organized as 256K words by 8 bits. It is fabricated using *ISSI*'s high-performance CMOS technology. This highly reliable process coupled with innovative circuit design techniques, yields high-performance and low power consumption devices.

When  $\overline{CS1}$  is HIGH (deselected) or when CS2 is LOW (deselected), the device assumes a standby mode at which the power dissipation can be reduced down with CMOS input levels.

Easy memory expansion is provided by using Chip Enable and Output Enable inputs. The active LOW Write Enable ( $\overline{WE}$ ) controls both writing and reading of the memory.

The IS62WV2568ALL and IS62WV2568BLL are packaged in the JEDEC standard 32-pin TSOP (TYPE I), sTSOP (TYPE I), and 36-pin mini BGA.

### FUNCTIONAL BLOCK DIAGRAM



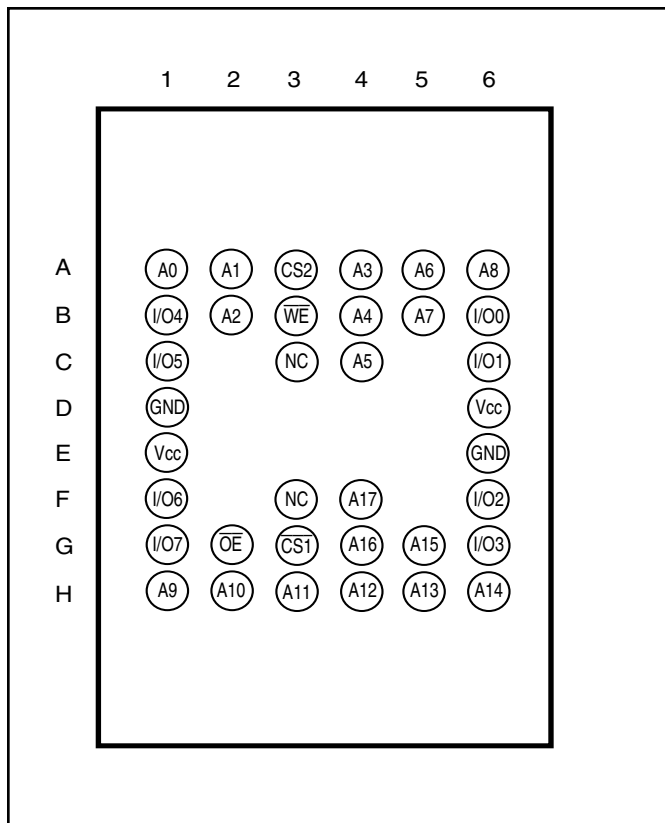
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**PIN DESCRIPTIONS**

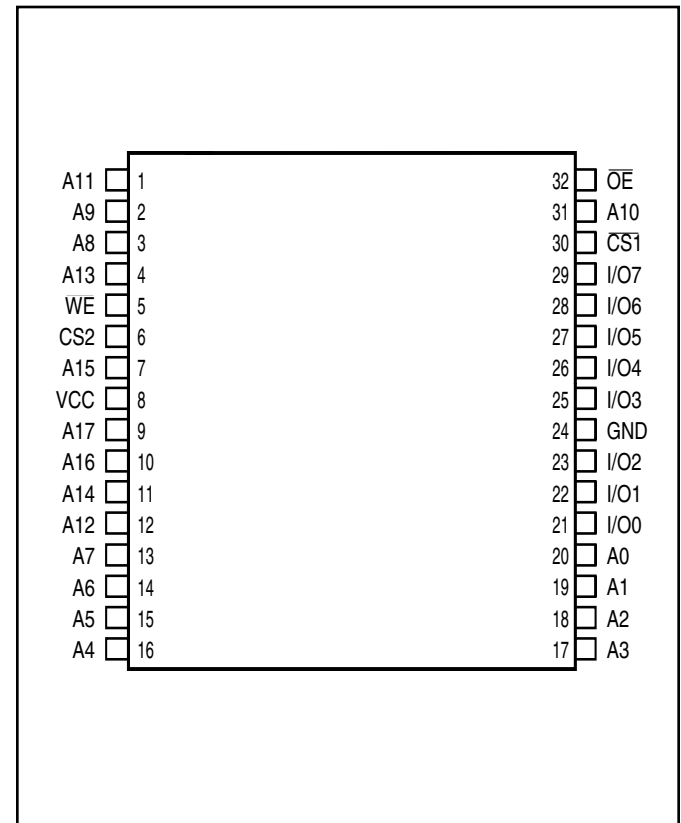
|                  |                     |
|------------------|---------------------|
| A0-A17           | Address Inputs      |
| $\overline{CS1}$ | Chip Enable 1 Input |
| CS2              | Chip Enable 2 Input |
| $\overline{OE}$  | Output Enable Input |
| $\overline{WE}$  | Write Enable Input  |
| I/O0-I/O7        | Input/Output        |
| NC               | No Connection       |
| Vcc              | Power               |
| GND              | Ground              |

**PIN CONFIGURATION**

**36-pin mini BGA (B) (6mm x 8mm)**



**32-pin TSOP (TYPE I), sTSOP (TYPE I)**



**ABSOLUTE MAXIMUM RATINGS<sup>(1)</sup>**

| Symbol            | Parameter                            | Value                        | Unit |
|-------------------|--------------------------------------|------------------------------|------|
| V <sub>TERM</sub> | Terminal Voltage with Respect to GND | -0.2 to V <sub>CC</sub> +0.3 | V    |
| T <sub>STG</sub>  | Storage Temperature                  | -65 to +150                  | °C   |
| P <sub>T</sub>    | Power Dissipation                    | 1.0                          | W    |

**Note:**

1. Stress greater than those listed under ABSOLUTE MAXIMUM RATINGS may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

**OPERATING RANGE (V<sub>CC</sub>)**

| Range      | Ambient Temperature | IS62WV2568ALL | IS62WV2568BLL |
|------------|---------------------|---------------|---------------|
| Commercial | 0°C to +70°C        | 1.65V - 2.2V  | 2.5V - 3.6V   |
| Industrial | -40°C to +85°C      | 1.65V - 2.2V  | 2.5V - 3.6V   |

**DC ELECTRICAL CHARACTERISTICS (Over Operating Range)**

| Symbol                         | Parameter           | Test Conditions   | V <sub>CC</sub> | Min. | Max.                  | Unit |
|--------------------------------|---------------------|---|-----------------|------|-----------------------|------|
| V <sub>OH</sub>                | Output HIGH Voltage | I <sub>OH</sub> = -0.1 mA<br>I <sub>OH</sub> = -1 mA        | 1.65-2.2V       | 1.4  | —                     | V    |
|                                |                     |   | 2.5-3.6V        | 2.2  | —                     | V    |
| V <sub>OL</sub>                | Output LOW Voltage  | I <sub>OL</sub> = 0.1 mA<br>I <sub>OL</sub> = 2.1 mA        | 1.65-2.2V       | —    | 0.2                   | V    |
|                                |                     |   | 2.5-3.6V        | —    | 0.4                   | V    |
| V <sub>IH</sub>                | Input HIGH Voltage  |   | 1.65-2.2V       | 1.4  | V <sub>CC</sub> + 0.2 | V    |
|                                |                     |   | 2.5-3.6V        | 2.2  | V <sub>CC</sub> + 0.3 | V    |
| V <sub>IL</sub> <sup>(1)</sup> | Input LOW Voltage   |   | 1.65-2.2V       | -0.2 | 0.4                   | V    |
|                                |                     |   | 2.5-3.6V        | -0.2 | 0.6                   | V    |
| I <sub>LI</sub>                | Input Leakage       | GND ≤ V <sub>IN</sub> ≤ V <sub>CC</sub>                     |                 | -1   | 1                     | μA   |
| I <sub>LO</sub>                | Output Leakage      | GND ≤ V <sub>OUT</sub> ≤ V <sub>CC</sub> , Outputs Disabled |                 | -1   | 1                     | μA   |

**Notes:**

1. Undershoot: -1.0V for pulse width less than 10ns. Not 100% tested.
2. Overshoot: V<sub>DD</sub> + 1.0V for pulse width less than 10ns. Not 100% tested.

**CAPACITANCE<sup>(1)</sup>**

| Symbol           | Parameter                | Conditions            | Max. | Unit |
|------------------|--------------------------|-----------------------|------|------|
| C <sub>IN</sub>  | Input Capacitance        | V <sub>IN</sub> = 0V  | 8    | pF   |
| C <sub>OUT</sub> | Input/Output Capacitance | V <sub>OUT</sub> = 0V | 10   | pF   |

**Note:**

1. Tested initially and after any design or process changes that may affect these parameters.

**AC TEST CONDITIONS**

| Parameter                                   | 62WV2568ALL<br>(Unit)         | 62WV2568BLL<br>(Unit)         |
|---|-------------------------------|-------------------------------|
| Input Pulse Level                           | 0.4V to V <sub>CC</sub> -0.2V | 0.4V to V <sub>CC</sub> -0.3V |
| Input Rise and Fall Times                   | 5 ns                          | 5ns                           |
| Input and Output Timing and Reference Level | V <sub>REF</sub>              | V <sub>REF</sub>              |
| Output Load                                 | See Figures 1 and 2           | See Figures 1 and 2           |

|                  | 1.65-2.2V | 2.5V - 3.6V |
|------------------|-----------|-------------|
| R1(Ω)            | 3070      | 3070        |
| R2(Ω)            | 3150      | 3150        |
| V <sub>REF</sub> | 0.9V      | 1.5V        |
| V <sub>TM</sub>  | 1.8V      | 2.8V        |

**AC TEST LOADS**

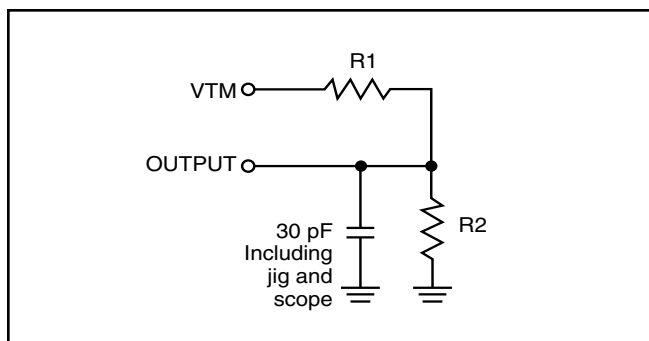


Figure 1

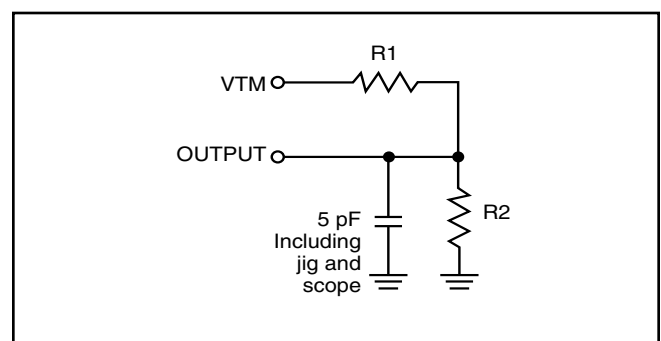


Figure 2

**POWER SUPPLY CHARACTERISTICS<sup>(1)</sup>** (Over Operating Range)

**62WV2568ALL** (1.65V - 2.2V)

| Symbol           | Parameter  | Test Conditions  |              | Max.<br>70ns | Unit |
|------------------|--|--|--------------|--------------|------|
| I <sub>CC</sub>  | V <sub>CC</sub> Dynamic Operating Supply Current | V <sub>CC</sub> = Max.,<br>I <sub>OUT</sub> = 0 mA, f = f <sub>MAX</sub>   | Com.<br>Ind. | 15<br>15     | mA   |
| I <sub>CC1</sub> | Operating Supply Current                         | V <sub>CC</sub> = Max.,<br>I <sub>OUT</sub> = 0 mA, f = 0  | Com.<br>Ind. | 3<br>3       | mA   |
| I <sub>SB1</sub> | TTL Standby Current (TTL Inputs)                 | V <sub>CC</sub> = Max.,<br>V <sub>IN</sub> = V <sub>IH</sub> or V <sub>IL</sub> ,<br>$\overline{CS1} = V_{IH}$ , CS2 = V <sub>IL</sub> ,<br>f = 1 MHz            | Com.<br>Ind. | 0.3<br>0.3   | mA   |
| I <sub>SB2</sub> | CMOS Standby Current (CMOS Inputs)               | V <sub>CC</sub> = Max.,<br>$\overline{CS1} \geq V_{CC} - 0.2V$ ,<br>CS2 ≤ 0.2V,<br>V <sub>IN</sub> ≥ V <sub>CC</sub> - 0.2V, or<br>V <sub>IN</sub> ≤ 0.2V, f = 0 | Com.<br>Ind. | 5<br>10      | μA   |

**Note:**

1. At f = f<sub>MAX</sub>, address and data inputs are cycling at the maximum frequency, f = 0 means no input lines change.

**POWER SUPPLY CHARACTERISTICS<sup>(1)</sup>** (Over Operating Range)

**62WV2568BLL** (2.5V - 3.6V)

| Symbol           | Parameter  | Test Conditions  |              | Max.<br>45ns | Max.<br>55ns | Max.<br>70ns | Unit |
|------------------|--|--|--------------|--------------|--------------|--------------|------|
| I <sub>CC</sub>  | V <sub>CC</sub> Dynamic Operating Supply Current | V <sub>CC</sub> = Max.,<br>I <sub>OUT</sub> = 0 mA, f = f <sub>MAX</sub>   | Com.<br>Ind. | 35<br>40     | 30<br>35     | 25<br>30     | mA   |
| I <sub>SB1</sub> | TTL Standby Current (TTL Inputs)                 | V <sub>CC</sub> = Max.,<br>V <sub>IN</sub> = V <sub>IH</sub> or V <sub>IL</sub> ,<br>$\overline{CS1} = V_{IH}$ , CS2 = V <sub>IL</sub> ,<br>f = 1 MHz            | Com.<br>Ind. | 0.3<br>0.3   | 0.3<br>0.3   | 0.3<br>0.3   | mA   |
| I <sub>SB2</sub> | CMOS Standby Current (CMOS Inputs)               | V <sub>CC</sub> = Max.,<br>$\overline{CS1} \geq V_{CC} - 0.2V$ ,<br>CS2 ≤ 0.2V,<br>V <sub>IN</sub> ≥ V <sub>CC</sub> - 0.2V, or<br>V <sub>IN</sub> ≤ 0.2V, f = 0 | Com.<br>Ind. | 10<br>10     | 10<br>10     | 10<br>10     | μA   |

**Note:**

1. At f = f<sub>MAX</sub>, address and data inputs are cycling at the maximum frequency, f = 0 means no input lines change.

# IS62WV2568ALL, IS62WV2568BLL

## READ CYCLE SWITCHING CHARACTERISTICS<sup>(1)</sup> (Over Operating Range)

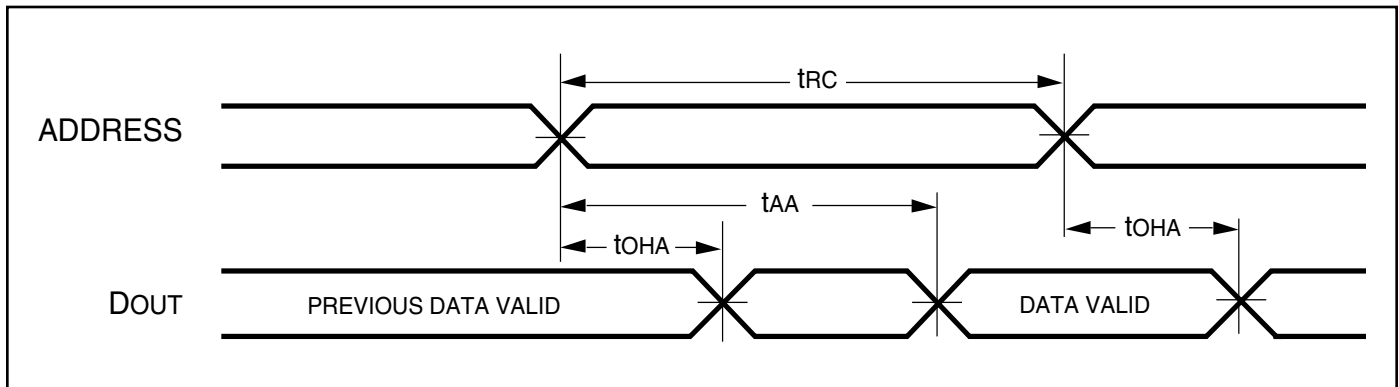
| Symbol  | Parameter                              | 45ns |      | 55ns |      | 70ns |      | Unit |
|---|--|------|------|------|------|------|------|------|
|   |  | Min. | Max. | Min. | Max. | Min. | Max. |      |
| t <sub>RC</sub>                                       | Read Cycle Time                        | 45   | —    | 55   | —    | 70   | —    | ns   |
| t <sub>AA</sub>                                       | Address Access Time                    | —    | 45   | —    | 55   | —    | 70   | ns   |
| t <sub>OHA</sub>                                      | Output Hold Time                       | 10   | —    | 10   | —    | 10   | —    | ns   |
| t <sub>ACS1</sub> /t <sub>ACS2</sub>                  | $\overline{CS1}$ /CS2 Access Time      | —    | 45   | —    | 55   | —    | 70   | ns   |
| t <sub>DOE</sub>                                      | $\overline{OE}$ Access Time            | —    | 20   | —    | 25   | —    | 35   | ns   |
| t <sub>HZOE</sub> <sup>(2)</sup>                      | $\overline{OE}$ to High-Z Output       | —    | 15   | —    | 20   | —    | 25   | ns   |
| t <sub>LZOE</sub> <sup>(2)</sup>                      | $\overline{OE}$ to Low-Z Output        | 5    | —    | 5    | —    | 5    | —    | ns   |
| t <sub>HZCS1</sub> /t <sub>HZCS2</sub> <sup>(2)</sup> | $\overline{CS1}$ /CS2 to High-Z Output | 0    | 15   | 0    | 20   | 0    | 25   | ns   |
| t <sub>LZCS1</sub> /t <sub>LZCS2</sub> <sup>(2)</sup> | $\overline{CS1}$ /CS2 to Low-Z Output  | 10   | —    | 10   | —    | 10   | —    | ns   |

### Notes:

1. Test conditions assume signal transition times of 5 ns or less, timing reference levels of 0.9V, input pulse levels of 0.4 to 1.4V and output loading specified in Figure 1.
2. Tested with the load in Figure 2. Transition is measured  $\pm 500$  mV from steady-state voltage. Not 100% tested.

## AC WAVEFORMS

### READ CYCLE NO. 1<sup>(1,2)</sup> (Address Controlled) ( $\overline{CS1} = \overline{OE} = V_{IL}$ , $CS2 = \overline{WE} = V_{IH}$ )



**AC WAVEFORMS**

**READ CYCLE NO. 2<sup>(1,3)</sup>** ( $\overline{CS1}$ ,  $CS2$ ,  $\overline{OE}$  Controlled)



**Notes:**

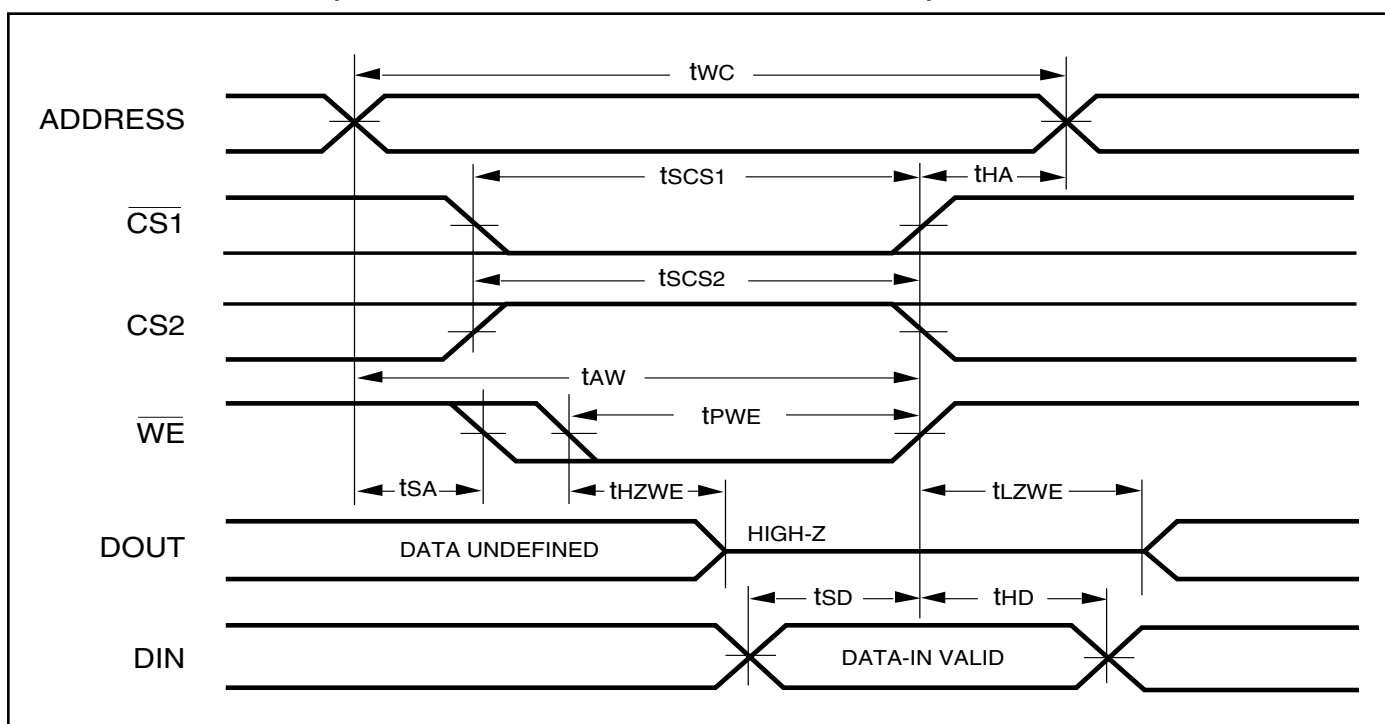
1.  $\overline{WE}$  is HIGH for a Read Cycle.
2. The device is continuously selected.  $\overline{OE}$ ,  $\overline{CS1} = V_{IL}$ .  $CS2 = \overline{WE} = V_{IH}$ .
3. Address is valid prior to or coincident with  $\overline{CS1}$  LOW and  $CS2$  HIGH transition.

**WRITE CYCLE SWITCHING CHARACTERISTICS<sup>(1,2)</sup>** (Over Operating Range)

| Symbol                               | Parameter                            | 45ns |      | 55ns |      | 70ns |      | Unit |
|--------------------------------------|--------------------------------------|------|------|------|------|------|------|------|
|                                      |                                      | Min. | Max. | Min. | Max. | Min. | Max. |      |
| t <sub>WC</sub>                      | Write Cycle Time                     | 45   | —    | 55   | —    | 70   | —    | ns   |
| t <sub>scs1</sub> /t <sub>scs2</sub> | $\overline{CS1}$ /CS2 to Write End   | 35   | —    | 45   | —    | 60   | —    | ns   |
| t <sub>AW</sub>                      | Address Setup Time to Write End      | 35   | —    | 45   | —    | 60   | —    | ns   |
| t <sub>HA</sub>                      | Address Hold from Write End          | 0    | —    | 0    | —    | 0    | —    | ns   |
| t <sub>SA</sub>                      | Address Setup Time                   | 0    | —    | 0    | —    | 0    | —    | ns   |
| t <sub>PWE</sub>                     | $\overline{WE}$ Pulse Width          | 35   | —    | 40   | —    | 50   | —    | ns   |
| t <sub>SD</sub>                      | Data Setup to Write End              | 20   | —    | 25   | —    | 30   | —    | ns   |
| t <sub>HD</sub>                      | Data Hold from Write End             | 0    | —    | 0    | —    | 0    | —    | ns   |
| t <sub>HZWE</sub>                    | $\overline{WE}$ LOW to High-Z Output | —    | 20   | —    | 20   | —    | 20   | ns   |
| t <sub>LZWE</sub>                    | $\overline{WE}$ HIGH to Low-Z Output | 5    | —    | 5    | —    | 5    | —    | ns   |

**Notes:**

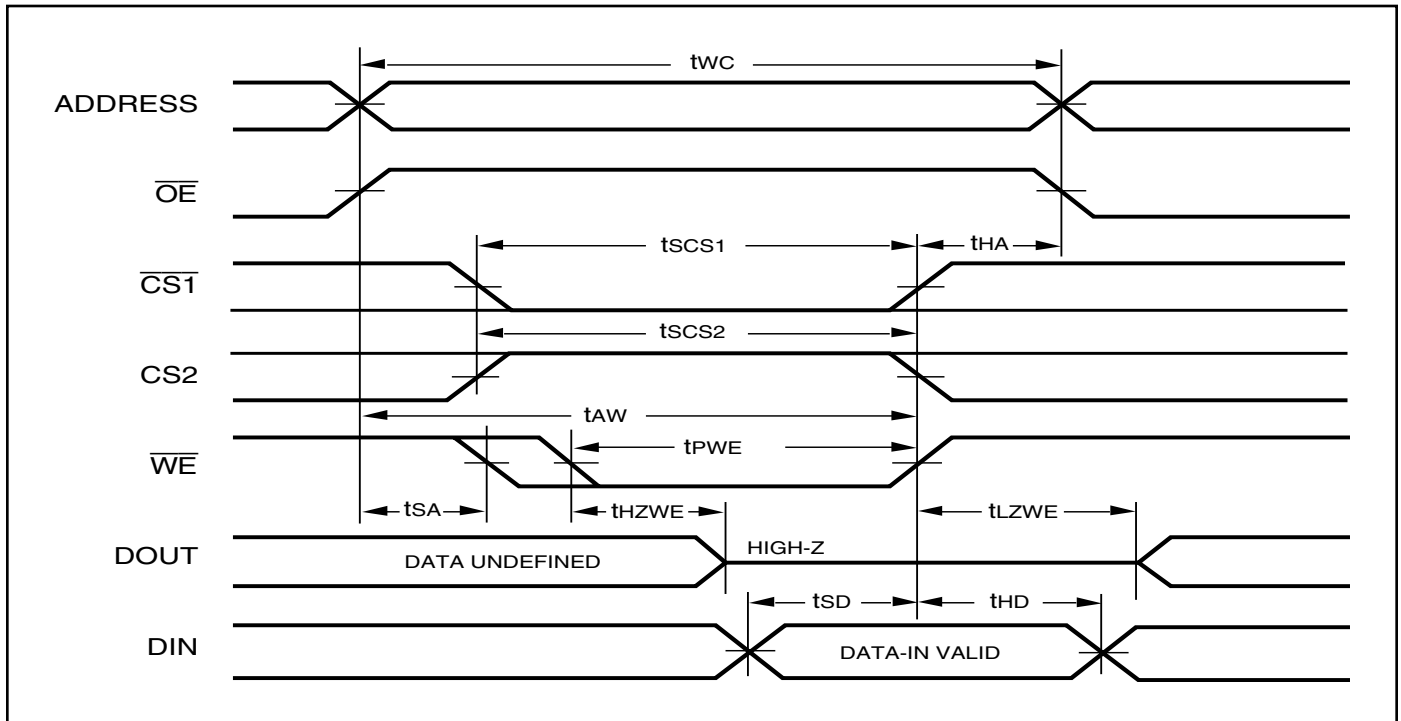
1. Test conditions assume signal transition times of 5 ns or less, timing reference levels of 0.9V, input pulse levels of 0.4V to 1.4V and output loading specified in Figure 1.
2. The internal write time is defined by the overlap of  $\overline{CS1}$  LOW, CS2 HIGH and  $\overline{WE}$  LOW. All signals must be in valid states to initiate a Write, but any one can go inactive to terminate the Write. The Data Input Setup and Hold timing are referenced to the rising or falling edge of the signal that terminates the write.
3. Tested with the load in Figure 2. Transition is measured  $\pm 500$  mV from steady-state voltage. Not 100% tested.

**AC WAVEFORMS**
**WRITE CYCLE NO. 1** ( $\overline{CS1}$ /CS2 Controlled,  $\overline{OE}$  = HIGH or LOW)


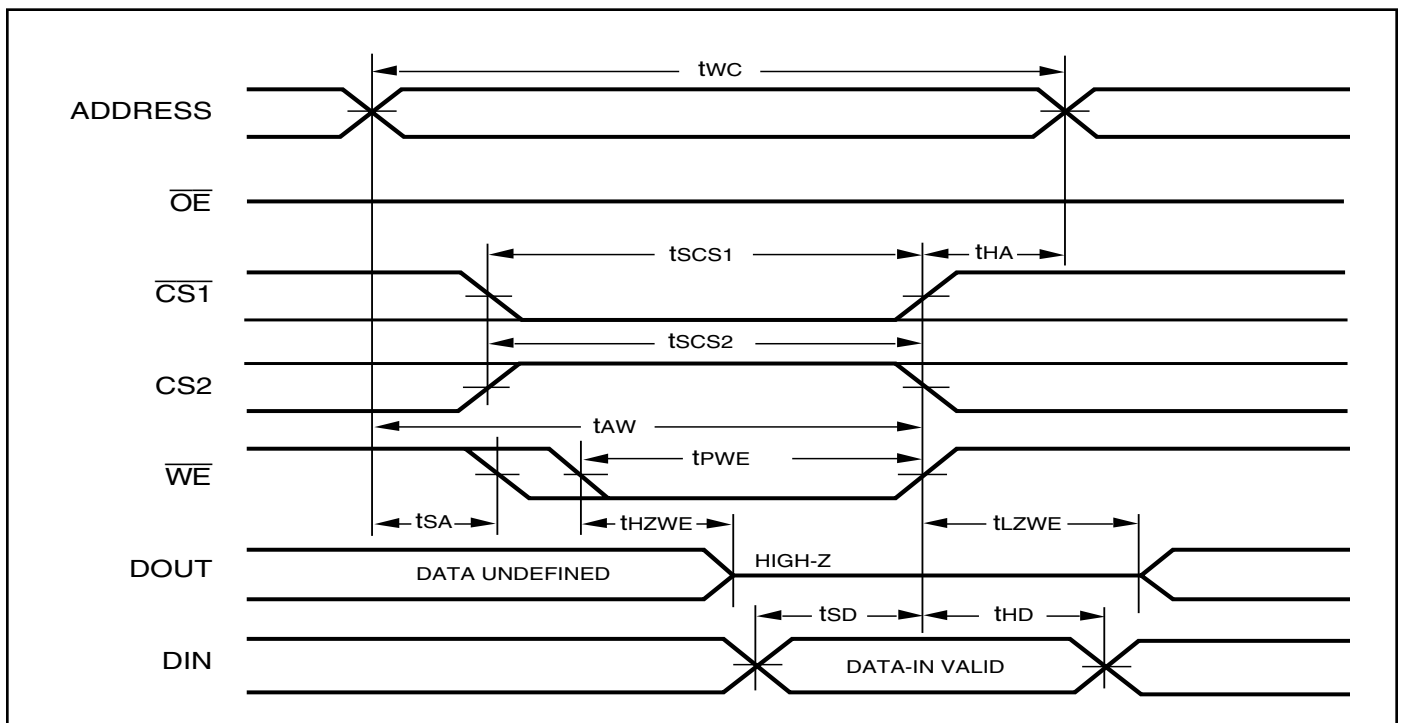


**AC WAVEFORMS**

**WRITE CYCLE NO. 2** ( $\overline{WE}$  Controlled:  $\overline{OE}$  is HIGH During Write Cycle)



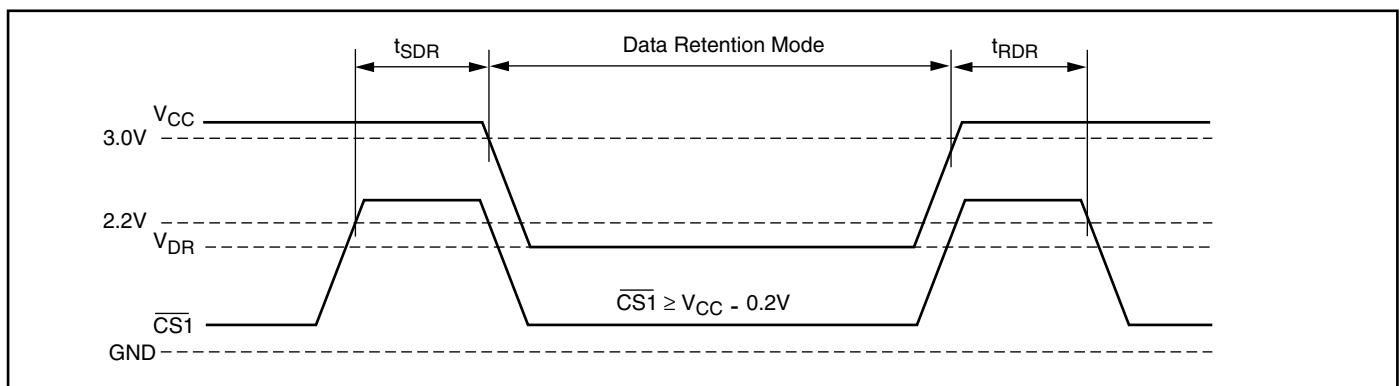
**WRITE CYCLE NO. 3** ( $\overline{WE}$  Controlled:  $\overline{OE}$  is LOW During Write Cycle)



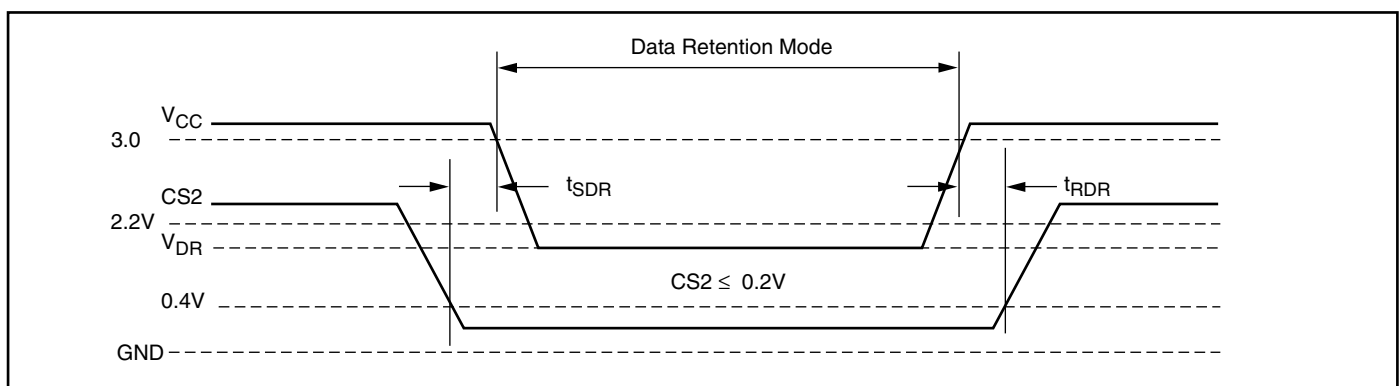
**DATA RETENTION SWITCHING CHARACTERISTICS**

| Symbol           | Parameter                          | Test Condition  | Min.            | Max. | Unit |
|------------------|------------------------------------|---|-----------------|------|------|
| V <sub>DR</sub>  | V <sub>CC</sub> for Data Retention | See Data Retention Waveform                                 | 1.0             | 3.6  | V    |
| I <sub>DR</sub>  | Data Retention Current             | V <sub>CC</sub> = 1.0V, $\overline{CS1} \geq V_{CC} - 0.2V$ | —               | 10   | μA   |
| t <sub>SDR</sub> | Data Retention Setup Time          | See Data Retention Waveform                                 | 0               | —    | ns   |
| t <sub>RDR</sub> | Recovery Time                      | See Data Retention Waveform                                 | t <sub>RC</sub> | —    | ns   |

**DATA RETENTION WAVEFORM ( $\overline{CS1}$  Controlled)**



**DATA RETENTION WAVEFORM (CS2 Controlled)**



## IS62WV2568ALL, IS62WV2568BLL

### ORDERING INFORMATION

#### IS62WV2568ALL (1.65V - 2.2V)

##### Commercial Range: 0°C to +70°C

| Speed (ns) | Order Part No.    | Package       |
|------------|-------------------|---------------|
| 70         | IS62WV2568ALL-70T | TSOP, TYPE I, |

##### Industrial Range: -40°C to +85°C

| Speed (ns) | Order Part No.      | Package                         |
|------------|---------------------|---------------------------------|
| 70         | IS62WV2568ALL-70TI  | TSOP, TYPE I                    |
| 70         | IS62WV2568ALL-70TLI | TSOP, TYPE I, Lead-free         |
| 70         | IS62WV2568ALL-70BI  | mini BGA (6mm x 8mm)            |
| 70         | IS62WV2568ALL-70BLI | mini BGA (6mm x 8mm), Lead-free |
| 70         | IS62WV2568ALL-70HI  | sTSOP, TYPE I                   |
| 70         | IS62WV2568ALL-70HLI | sTSOP, TYPE I, Lead-free        |

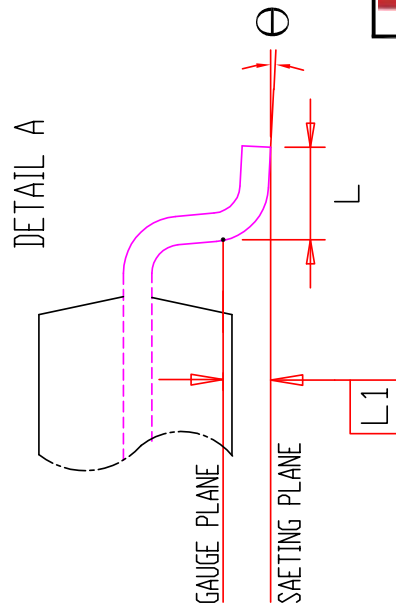
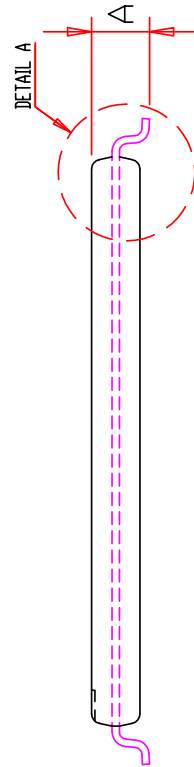
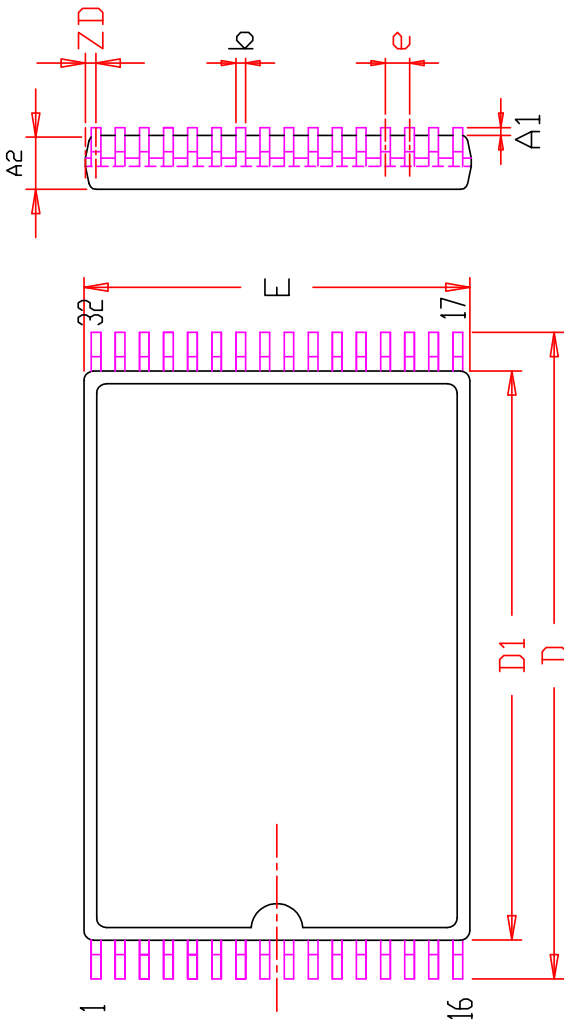
#### IS62WV2568BLL (2.5V - 3.6V)

##### Commercial Range: 0°C to +70°C

| Speed (ns) | Order Part No.    | Package              |
|------------|-------------------|----------------------|
| 70         | IS62WV2568BLL-70T | TSOP, TYPE I         |
| 70         | IS62WV2568BLL-70B | mini BGA (6mm x 8mm) |
| 70         | IS62WV2568BLL-70H | sTSOP, TYPE I        |

##### Industrial Range: -40°C to +85°C

| Speed (ns) | Order Part No.      | Package                         |
|------------|---------------------|---------------------------------|
| 45         | IS62WV2568BLL-45HLI | sTSOP, TYPE I                   |
| 45         | IS62WV2568BLL-45TLI | TSOP, TYPE I, Lead-free         |
| 55         | IS62WV2568BLL-55TI  | TSOP, TYPE I                    |
| 55         | IS62WV2568BLL-55TLI | TSOP, TYPE I, Lead-free         |
| 55         | IS62WV2568BLL-55BI  | mini BGA (6mm x 8mm)            |
| 55         | IS62WV2568BLL-55BLI | mini BGA (6mm x 8mm), Lead-free |
| 55         | IS62WV2568BLL-55HI  | sTSOP, TYPE I                   |
| 55         | IS62WV2568BLL-55HLI | sTSOP, TYPE I, Lead-free        |
| 70         | IS62WV2568BLL-70TI  | TSOP, TYPE I                    |
| 70         | IS62WV2568BLL-70BI  | mini BGA (6mm x 8mm)            |
| 70         | IS62WV2568BLL-70HI  | sTSOP, TYPE I                   |



| SYMBOL | DIMENSION IN MM |       |       | DIMENSION IN INCH |       |       |
|--------|-----------------|-------|-------|-------------------|-------|-------|
|        | MIN             | NOM   | MAX   | MIN               | NOM   | MAX   |
| A      | 0.95            |       | 1.25  | 0.037             |       | 0.049 |
| A1     | 0.05            |       | 0.15  | 0.002             |       | 0.008 |
| A2     | 0.90            |       | 1.05  | 0.035             |       | 0.041 |
| b      | 0.16            |       | 0.27  | 0.006             |       | 0.011 |
| D      | 13.10           | 13.40 | 13.70 | 0.516             | 0.528 | 0.539 |
| D1     | 11.70           | 11.80 | 11.90 | 0.461             | 0.465 | 0.469 |
| E      | 7.90            | 8.00  | 8.10  | 0.311             | 0.315 | 0.319 |
| e      | 0.50 BSC.       |       |       | 0.020 BSC.        |       |       |
| L      | 0.30            | 0.50  | 0.70  | 0.012             | 0.020 | 0.028 |
| L1     | 0.25 BSC.       |       |       | 0.010 BSC.        |       |       |
| ZD     | 0.25 REF.       |       |       | 0.010 REF.        |       |       |
| Θ      | 0               | 3°    | 5°    | 0                 | 3°    | 5°    |

**NOTE :**

1. CONTROLLING DIMENSION : MM
2. DIMENSION D1 AND E DO NOT INCLUDE MOLD PROTRUSION.
3. DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION/INTRUSION.
4. Reference Document : JEDEC MO-183



TITLE

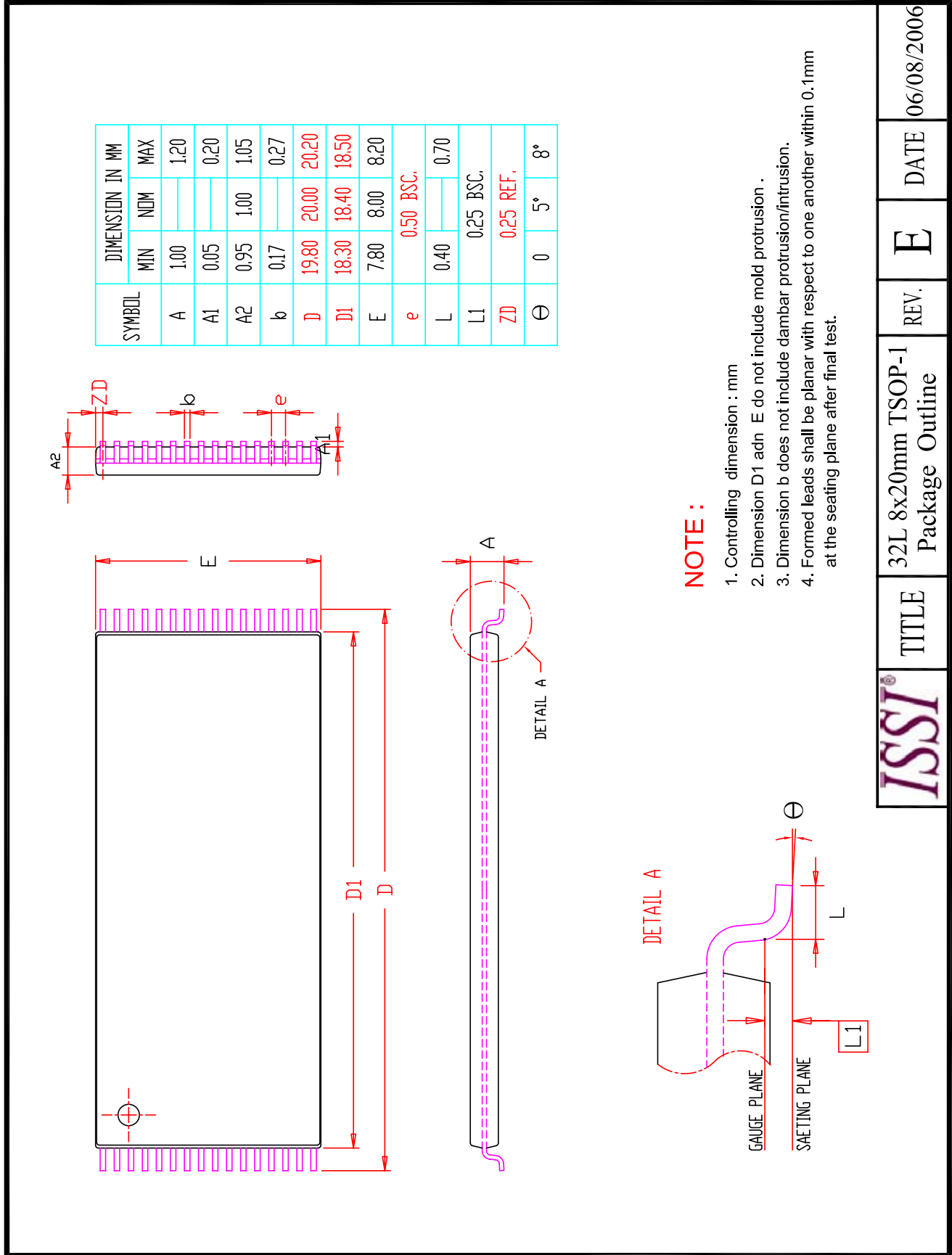
32L 8x13.4mm TSOP-1  
Package Outline

REV.

E

DATE

04/24/2009



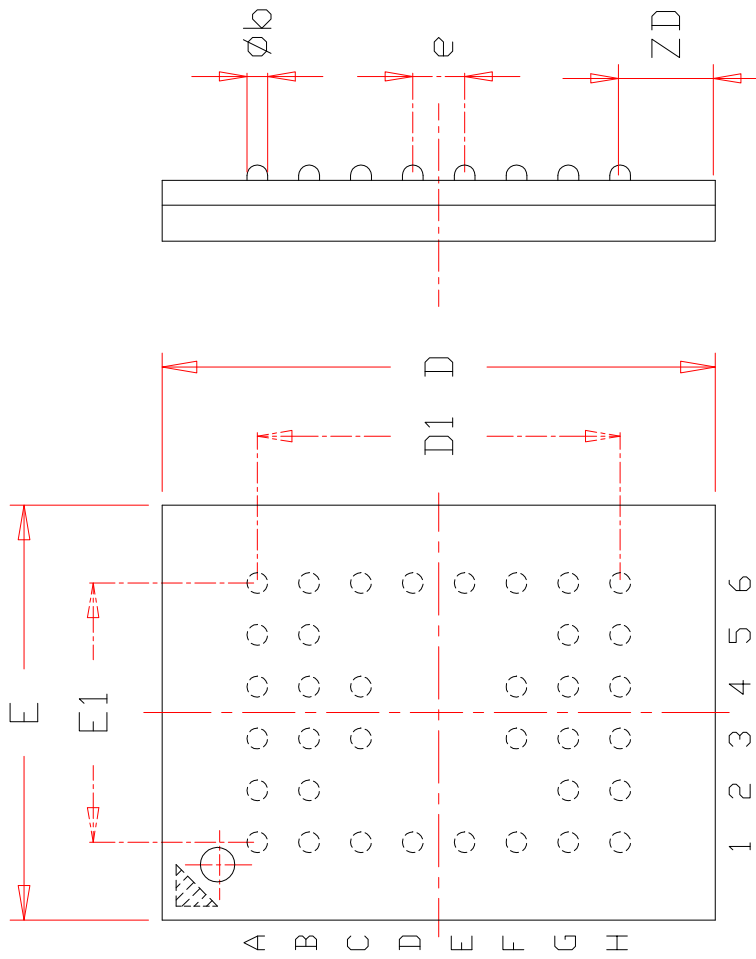
ISSI®

TITLE  
32L 8x20mm TSOP-1  
Package Outline

REV. E

DATE 06/08/2006

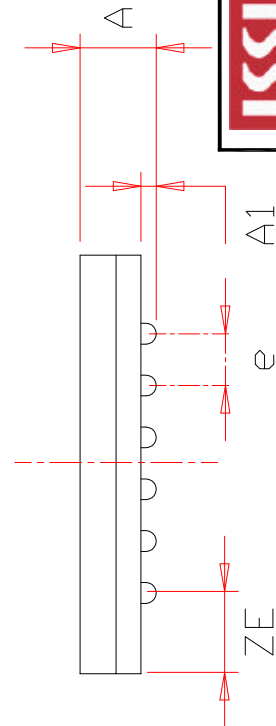
TOP VIEW



**NOTE :**

1. CONTROLLING DIMENSION : MM .
2. Reference document : JEDEC MO-207

| SYMBOL   | DIMENSION IN MM |      |      | DIMENSION IN INCH |       |       |
|----------|-----------------|------|------|-------------------|-------|-------|
|          | MIN.            | NOM. | MAX. | MIN.              | NOM.  | MAX.  |
| A        |                 |      | 1.20 |                   |       | 0.047 |
| A1       | 0.20            |      | 0.30 | 0.008             |       | 0.012 |
| $\phi b$ | 0.30            | 0.35 | 0.40 | 0.012             | 0.014 | 0.016 |
| D        | 7.90            | 8.00 | 8.10 | 0.311             | 0.315 | 0.319 |
| D1       | 5.25 BSC.       |      |      | 0.207 BSC.        |       |       |
| E        | 5.90            | 6.00 | 6.10 | 0.232             | 0.236 | 0.240 |
| E1       | 3.75 BSC.       |      |      | 0.148 BSC.        |       |       |
| e        | 0.75 BSC.       |      |      | 0.030 BSC.        |       |       |
| ZD       | 1.375 REF.      |      |      | 0.054 REF.        |       |       |
| ZE       | 1.125 REF.      |      |      | 0.044 REF.        |       |       |



|  |       |                                     |      |   |      |            |
|--|-------|-------------------------------------|------|---|------|------------|
|  | TITLE | 36/48L 6x8mm TF-BGA Package Outline | REV. | E | DATE | 08/12/2008 |
|--|-------|-------------------------------------|------|---|------|------------|

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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