



## FUNCTIONAL COMPARISON BETWEEN WINBOND W49V002F & SST SST49LF002A

### GENERAL DESCRIPTION

Even though most of functions are the same between Winbond W49V002F and SST SST49LF002A, there are still some differences between these two parts. This application note will explain the difference. Meanwhile, some recommendations to system designers for these differences will also be stated.

### DETAIL DESCRIPTION

The difference between Winbond W49V002F and SST SST49LF002A is as following:

#### Pin Assignment Differences

##### Programming Mode:

Table 1. 32L-PLCC Pin Assignment

| PART NO. | Winbond<br>W49V002FP | SST<br>SST49LF002A | PART NO.                     | Winbond<br>W49V002FP | SST<br>SST49LF002A |
|----------|----------------------|--------------------|------------------------------|----------------------|--------------------|
| Pin1     | NC                   | NC                 | Pin17                        | DQ3                  | DQ3                |
| Pin2     | RESET#               | RESET#             | Pin18                        | DQ4                  | DQ4                |
| Pin3     | A9                   | A9                 | Pin19                        | DQ5                  | DQ5                |
| Pin4     | A8                   | A8                 | Pin20                        | DQ6                  | DQ6                |
| Pin5     | A7                   | A7                 | Pin21                        | DQ7                  | DQ7                |
| Pin6     | A6                   | A6                 | Pin22                        | NC                   | NC                 |
| Pin7     | A5                   | A5                 | Pin23                        | WE#                  | WE#                |
| Pin8     | A4                   | A4                 | Pin24                        | OE#                  | OE#                |
| Pin9     | A3                   | A3                 | Pin25                        | VDD                  | VDD                |
| Pin10    | A2                   | A2                 | <b>Pin26<sup>Note1</sup></b> | <b>GND</b>           | <b>NC</b>          |
| Pin11    | A1                   | A1                 | Pin27                        | NC                   | NC                 |
| Pin12    | A0                   | A0                 | Pin28                        | GND                  | GND                |
| Pin13    | DQ0                  | DQ0                | Pin29                        | IC                   | IC                 |
| Pin14    | DQ1                  | DQ1                | Pin30                        | A10                  | A10                |
| Pin15    | DQ2                  | DQ2                | Pin31                        | R/C#                 | R/C#               |
| Pin16    | GND                  | GND                | Pin32                        | VDD                  | VDD                |

Notes:

1. In Intel 82802AB/AC, the Pin26 is a GND pin.
2. Different pin assignment has been highlighted in bold font.

# FUNCTIONAL COMPARISON BETWEEN WINBOND W49V002F & SST SST49LF002A



Table 2. 32L-ST SOP Pin Assignment

| PART NO. | <i>Winbond</i><br>W49V002FQ | <i>SST</i><br>SST49LF002A | PART NO. | <i>Winbond</i><br>W49V002FQ | <i>SST</i><br>SST49LF002A |
|----------|-----------------------------|---------------------------|----------|-----------------------------|---------------------------|
| Pin1     | NC                          | NC                        | Pin17    | A3                          | A3                        |
| Pin2     | NC                          | NC                        | Pin18    | A2                          | A2                        |
| Pin3     | NC                          | NC                        | Pin19    | A1                          | A1                        |
| Pin4     | GND                         | GND                       | Pin20    | A0                          | A0                        |
| Pin5     | IC                          | IC                        | Pin21    | DQ0                         | DQ0                       |
| Pin6     | A10                         | A10                       | Pin22    | DQ1                         | DQ1                       |
| Pin7     | R/C#                        | R/C#                      | Pin23    | DQ2                         | DQ2                       |
| Pin8     | VDD                         | VDD                       | Pin24    | GND                         | GND                       |
| Pin9     | NC                          | NC                        | Pin25    | DQ3                         | DQ3                       |
| Pin10    | RESET#                      | RESET#                    | Pin26    | DQ4                         | DQ4                       |
| Pin11    | A9                          | A9                        | Pin27    | DQ5                         | DQ5                       |
| Pin12    | A8                          | A8                        | Pin28    | DQ6                         | DQ6                       |
| Pin13    | A7                          | A7                        | Pin29    | DQ7                         | DQ7                       |
| Pin14    | A6                          | A6                        | Pin30    | NC                          | VDD                       |
| Pin15    | A5                          | A5                        | Pin31    | WE#                         | WE#                       |
| Pin16    | A4                          | A4                        | Pin32    | OE#                         | OE#                       |

Note: Different pin assignment has been highlighted in bold font.

## Firmware Hub Mode

Table 3. 32L-PLCC Pin Assignment

| PART NO. | <i>Winbond</i><br>W49V002FP | <i>SST</i><br>SST49LF002A | PART NO.               | <i>Winbond</i><br>W49V002FP | <i>SST</i><br>SST49LF002A |
|----------|-----------------------------|---------------------------|------------------------|-----------------------------|---------------------------|
| Pin1     | NC                          | NC                        | Pin17                  | FWH3                        | FWH3                      |
| Pin2     | RESET#                      | RESET#                    | Pin18                  | RSV                         | RSV                       |
| Pin3     | FGPI3                       | FGPI3                     | Pin19                  | RSV                         | RSV                       |
| Pin4     | FGPI2                       | FGPI2                     | Pin20                  | RSV                         | RSV                       |
| Pin5     | FGPI1                       | FGPI1                     | Pin21                  | RSV                         | RSV                       |
| Pin6     | FGPI0                       | FGPI0                     | Pin22                  | NC                          | NC                        |
| Pin7     | RSV                         | WP#                       | Pin23                  | FWH4                        | FWH4                      |
| Pin8     | RSV                         | TBL#                      | Pin24                  | INIT#                       | INIT#                     |
| Pin9     | ID3                         | ID3                       | Pin25                  | VDD                         | VDD                       |
| Pin10    | ID2                         | ID2                       | Pin26 <sup>Note1</sup> | GND                         | NC                        |
| Pin11    | ID1                         | ID1                       | Pin27                  | NC                          | NC                        |
| Pin12    | ID0                         | ID0                       | Pin28                  | GND                         | GND                       |
| Pin13    | FWH0                        | FWH0                      | Pin29                  | IC                          | IC                        |
| Pin14    | FWH1                        | FWH1                      | Pin30                  | FGPI4                       | FGPI4                     |
| Pin15    | FWH2                        | FWH2                      | Pin31                  | CLK                         | CLK                       |
| Pin16    | GND                         | GND                       | Pin32                  | VDD                         | VDD                       |

Notes:

1. In Intel 82802AB/AC, the Pin26 is a GND pin.
2. Different pin assignment has been highlighted in bold font.

# FUNCTIONAL COMPARISON BETWEEN WINBOND W49V002F & SST SST49LF002A



Table 4. 32L-STSOP Pin Assignment

| <b>PART NO.</b> | <b>Winbond<br/>W49V002FQ</b> | <b>SST<br/>SST49LF002A</b> | <b>PART NO.</b> | <b>Winbond<br/>W49V002FQ</b> | <b>SST<br/>SST49LF002A</b> |
|-----------------|------------------------------|----------------------------|-----------------|------------------------------|----------------------------|
| Pin1            | NC                           | NC                         | Pin17           | ID3                          | ID3                        |
| Pin2            | NC                           | NC                         | Pin18           | ID2                          | ID2                        |
| Pin3            | NC                           | NC                         | Pin19           | ID1                          | ID1                        |
| Pin4            | GND                          | GND                        | Pin20           | ID0                          | ID0                        |
| Pin5            | IC                           | IC                         | Pin21           | FWH0                         | FWH0(LAD0)                 |
| Pin6            | FGPI4                        | FGPI4                      | Pin22           | FWH1                         | FWH1(LAD1)                 |
| Pin7            | CLK                          | CLK                        | Pin23           | FWH2                         | FWH2(LAD2)                 |
| Pin8            | VDD                          | VDD                        | Pin24           | GND                          | GND                        |
| Pin9            | NC                           | NC                         | Pin25           | FWH3                         | FWH3(LAD3)                 |
| Pin10           | RESET#                       | RESET#                     | Pin26           | RSV                          | RSV                        |
| Pin11           | FGPI3                        | FGPI3                      | Pin27           | RSV                          | RSV                        |
| Pin12           | FGPI2                        | FGPI2                      | Pin28           | RSV                          | RSV                        |
| Pin13           | FGPI1                        | FGPI1                      | Pin29           | RSV                          | RSV                        |
| Pin14           | FGPI0                        | FGPI0                      | Pin30           | NC                           | VDD                        |
| Pin15           | RSV                          | WP#                        | Pin31           | FWH4                         | FWH4                       |
| Pin16           | RSV                          | TBL#                       | Pin32           | INIT#                        | INIT#                      |

Note: Different pin assignment has been highlighted in bold font.

## 1. Function/Feature differences:

There are two major function differences between Winbond and SST parts. One is "Block R/W Lock Control by Registers" and the other is "WP# and TBL# Hardware Protect" features. The main goal of these two features is to provide a better data protection from any illegal write such as virus attack. The detail information will be stated in the following description.

## 2. The impact from the differences:

- a. For Power/GND pins difference, Winbond recommend system designers wire maximum Power/GND pins for maximum flexibility; e.g. you can wire Pin16, 26 and 28 as GND pins for 32L-PLCC, even though Pin26 is a NC Pin in SST 32L\_PLCC. For 32L\_TSOP, system designer can connect the pin 8 and 30 as VDD pins for 32L\_TSOP. Although the system can still work properly under normal situation, we still recommend system designer to wire maximum Power/GND pins for optimal system stability.
- b. The SST Pin7(WP#) is used as a hardware Main Block data write protection. However, customer might be aware that the enable of WP# will inhibit the PnP feature from storing data into Flash.
- c. The SST Pin8(TBL#) is used as a hardware Boot Block data write protection. For this feature, Winbond offers an additional Boot Block Lockout command to lock the Top Boot Block.
- d. For SST "Block R/W Lock Control by Register," Winbond does not support this feature.

# FUNCTIONAL COMPARISON BETWEEN WINBOND W49V002F & SST SST49LF002A



## CONCLUSION

Except for the TBL# and WP#, Winbond can offer a functional compatible to the competitors. As for these two pins, if customers don't need this feature, there is no issue to drop-in replacement. For customers who use SST SST49LF002A, they can still use Winbond W49V002F as an alternative without any hardware change.



### Headquarters

No. 4, Creation Rd. III,  
Science-Based Industrial Park,  
Hsinchu, Taiwan  
TEL: 886-3-5770066  
FAX: 886-3-5665577  
<http://www.winbond.com.tw/>

### Taipei Office

9F, No.480, Rueiguang Rd.,  
Neihu Chiu, Taipei, 114,  
Taiwan, R.O.C.  
TEL: 886-2-8177-7168  
FAX: 886-2-8751-3579

### Winbond Electronics Corporation America

2727 North First Street, San Jose,  
CA 95134, U.S.A.  
TEL: 1-408-9436666  
FAX: 1-408-5441798

### Winbond Electronics Corporation Japan

7F Daini-ueno BLDG, 3-7-18  
Shinyokohama Kohoku-ku,  
Yokohama, 222-0033  
TEL: 81-45-4781881  
FAX: 81-45-4781800

### Winbond Electronics (Shanghai) Ltd.

27F, 2299 Yan An W. Rd. Shanghai,  
200336 China  
TEL: 86-21-62365999  
FAX: 86-21-62365998

### Winbond Electronics (H.K.) Ltd.

Unit 9-15, 22F, Millennium City,  
No. 378 Kwun Tong Rd.,  
Kowloon, Hong Kong  
TEL: 852-27513100  
FAX: 852-27552064

*Please note that all data and specifications are subject to change without notice.  
All the trade marks of products and companies mentioned in this data sheet belong to their respective owners.*