

## STANDARD PROCEDURES AND PRACTICES

NUMBER: **SPP-010, Issue B**

SUBJECT: **Grid Array Terminal Position Numbering**

EFFECTIVE DATE: **May 2014**

ITEM NUMBER: **11.2-889**

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### **BACKGROUND**

The description of the numbering practice for grid array packages in JEP95 is not clear in its description of the viewing direction with respect to the seating plane. This lack of clarity has led to some confusion during discussions both within JC-11 and with international standards organizations.

### **PRACTICE**

All JEDEC registered or standard outlines for grid array packages shall use an alphanumeric system for designating pin or terminal locations. The required alphanumeric system is as illustrated in the accompanying figures for pin grid array packages. Array packages using this system shall have a uniquely identified corner which shall be known as the pin or terminal A1 corner.

### **APPLICATION INFORMATION**

A row-column grid system is used to designate the terminal positions on grid array packages of a leaded or leadless variety having 3 or more rows or columns of terminals. The numbering system will use a unique alphanumeric identification for each terminal position on such packages, e.g., A1, D12.

- Figure 1 – The orientation of the grid system when the package is viewed in the as-mounted condition.  
Figure 2 – The orientation of the grid system when the package is viewed from the terminal or pin side.  
Figure 3 – The orientation of the staggered grid system when the package is viewed from the terminal pin side.  
Figure 4 – The orientation of the multi grid system when the package is viewed from the terminal or pin side.

When a package is viewed as in Figure 1 with the A1 corner in the upper left position, terminal rows are lettered from top to bottom starting with A and terminal columns are numbered from left to right starting with 1. The letters I, O, Q, S, X and Z are not used in order to avoid mutual confusion or confusion with the numerals 1, 2, 5 and 0. For packages with greater than 20 rows (i.e., following rows W and Y), the 21st row is designated AA and subsequent rows are designated AB, AC, etc. An A1 corner identification feature must be present, but the type of such identification is optional and may take the form of chamfers, notches, special pins or other forms of marking.

This grid array system designates terminal positions. Row or column locations that lack a physical terminal are designated as if terminals were present (i.e., unused locations are not omitted in the numbering order).

This SPP is an explication of the existing JEP95 definition of the grid designation system and does not change any feature of that system.

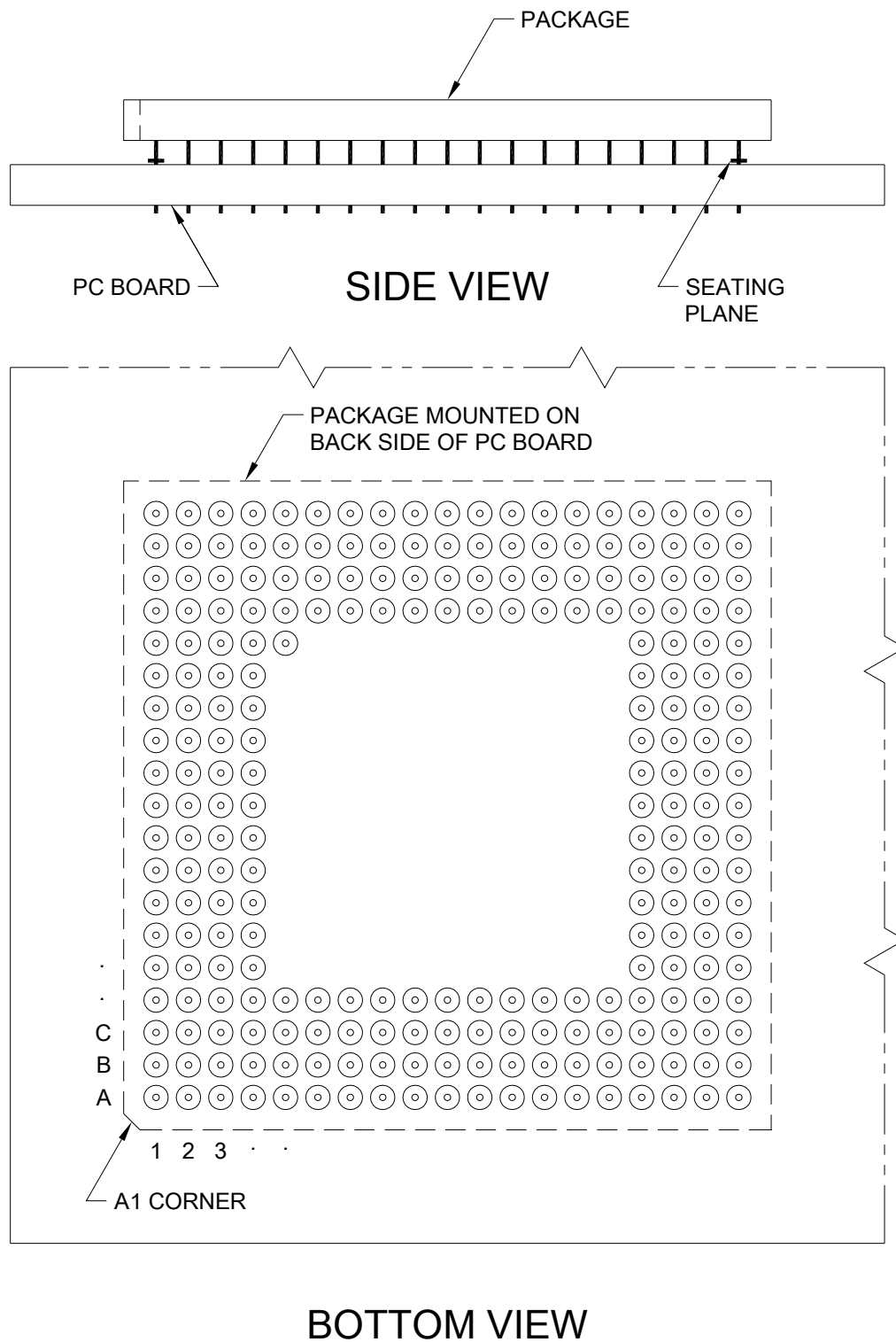
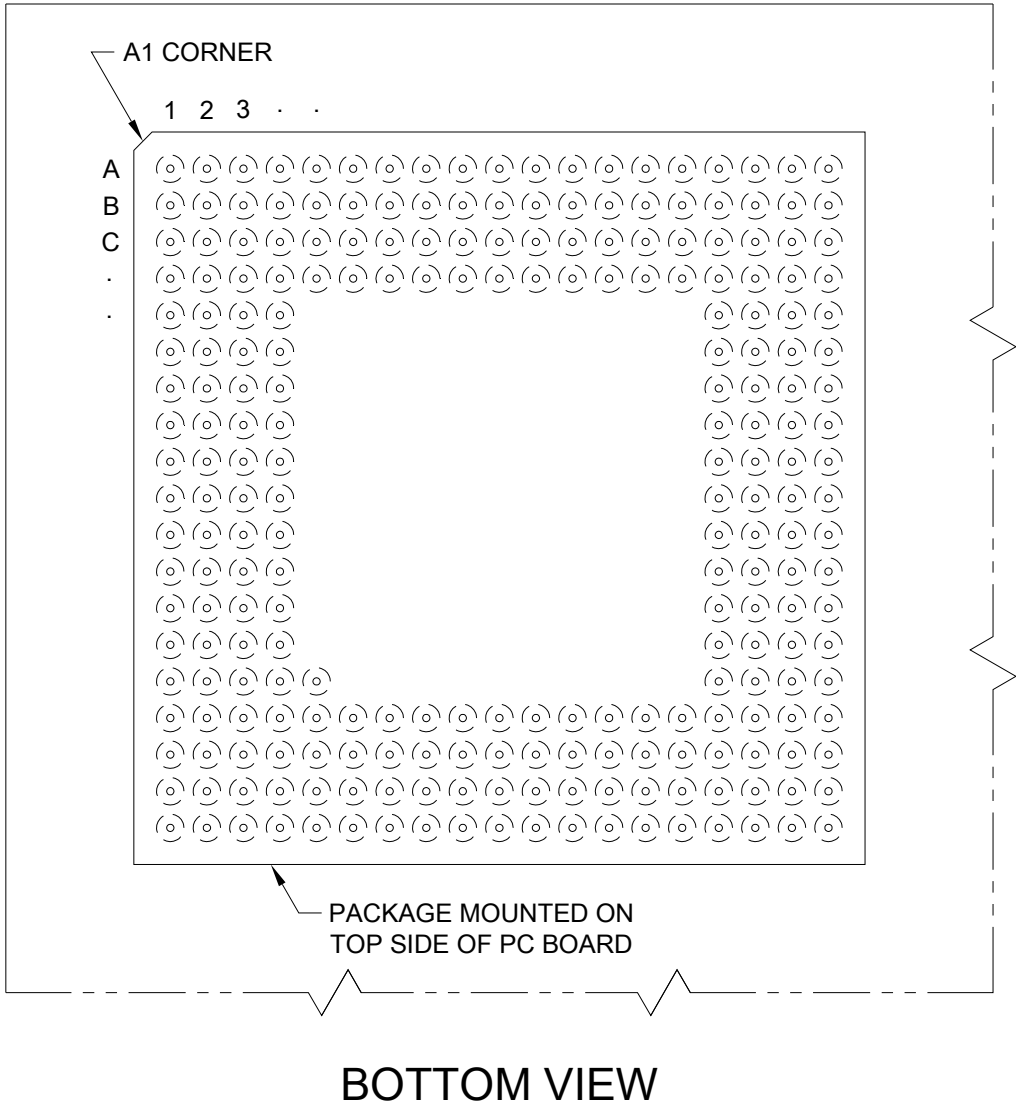
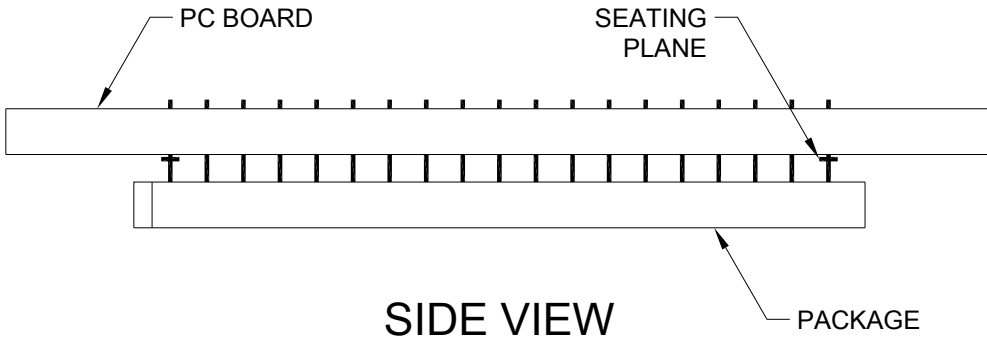
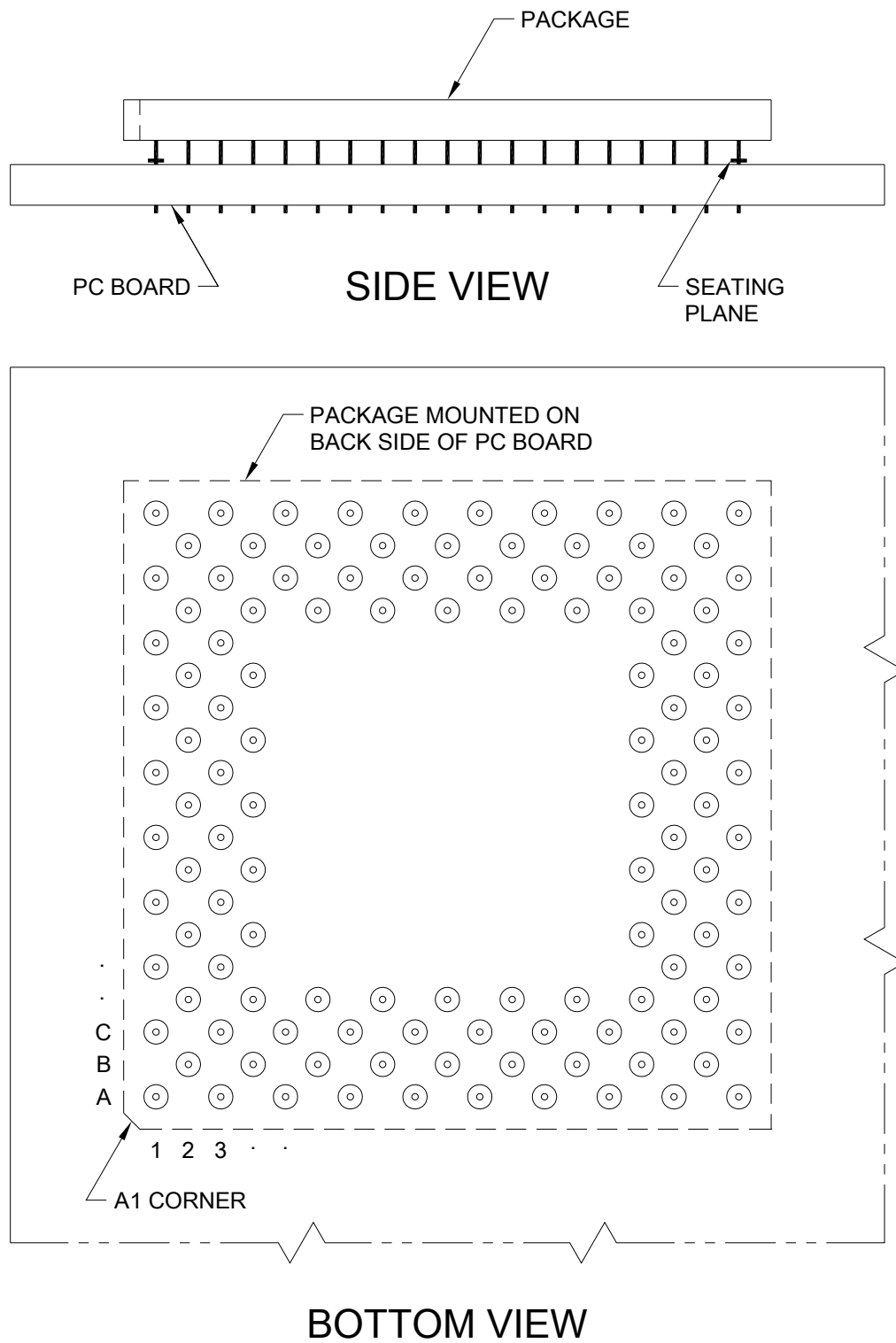


FIGURE 1



**FIGURE 2**



**FIGURE 3**

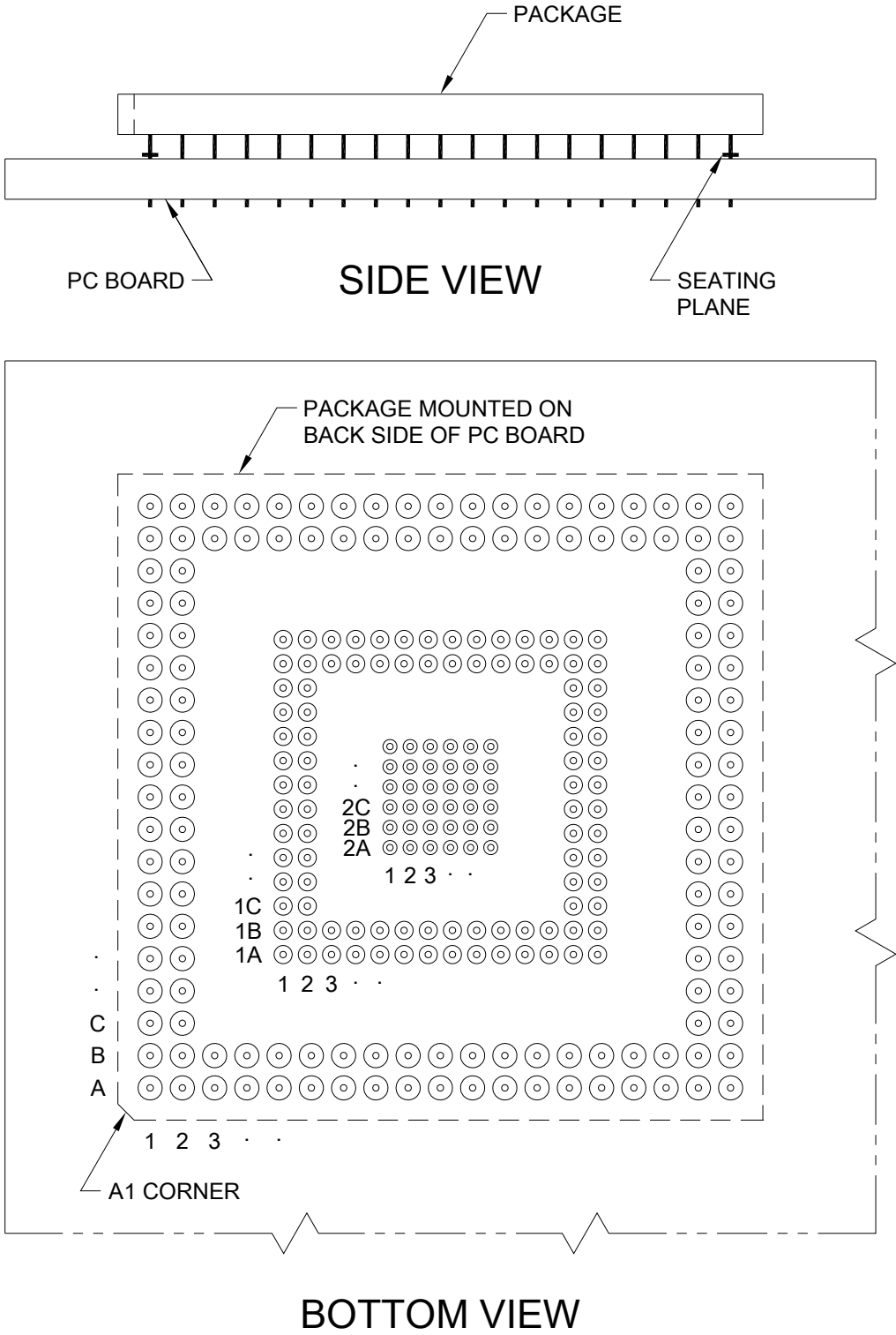


FIGURE 4

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**Annex A (informative) Change Record History**

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If the change involves any words added or deleted (excluding deletion of accidentally repeated words), the change is included. Punctuation changes may or may not be included.

Initial Issue: A	Date: September 1991	Item Number: None
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<b>Change Record History</b>
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<b>Issue: B</b>	<b>Date: June 2014</b>	<b>Item Number: 11.2-889</b>
Location	Changed from	Changed to
Page 1	Added figure 4	Updated to current format Broke out figure definitions
Page 2-4		Redrew figures 1 thru 3 to correct third angle orientation and to match MO drawings.
Page 5	Added multi grid figure	
Page 6	Added change record history	

<b>Issue: -</b>	<b>Date: -</b>	<b>Item Number: -</b>
Location	Changed from	Changed to