

# **JEDEC STANDARD**

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## **Guidelines for Supplier Performance Rating**

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### **JEP146A**

(Revision of JEP146, June 2003)

**JANUARY 2009**

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**JEDEC SOLID STATE TECHNOLOGY ASSOCIATION**



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## **GUIDELINES FOR SUPPLIER PERFORMANCE RATING**

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### **Introduction**

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Manufacturing operations often require the use of suppliers and subcontractors for materials, piece parts, manufacturing, test, and finish operations. Semiconductor suppliers are using semiconductor fabrication, package assembly, test, and finish subcontractors. Users of semiconductor products are relying on PCB (Printed Circuit Board) fabrication subcontractors and PCB assembly subcontractors for these operations as well as reliance on distributors of electronic components for inventory management and stock room functions. With the increasing reliance on second or third parties to assist in the manufacture of goods, there exists a need to measure and rate suppliers based on consistent criteria that can be measured. There is also a need for suppliers to be measured uniformly by their customer base so that suppliers who market to a broad base of customers can understand the data presented and translate that understanding into meaningful preventive or corrective actions. This document provides a vehicle to accomplish the task of measuring suppliers in a consistent manner.



## GUIDELINES FOR SUPPLIER PERFORMANCE RATING

(From JEDEC Board Ballot JCB-08-59, formulated under the cognizance of the JC-14.4 Subcommittee on Quality Processes and Methods.)

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### 1 Scope

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The intent of this document is to establish guidelines and provide examples by which customers can measure their suppliers based on mutually agreed upon objective criteria. These results can then be used to improve communications between customers and suppliers. The document applies to supplier / customer interfaces. Subcontractors used by suppliers are not addressed separately but are included in the rating of the supplier.

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### 2 Reference Documents

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ISO 9000

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### 3 Terms and definitions

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**corrective action request:** A formal request from a customer to a supplier requiring an investigation into the root cause of a specific problem and the steps taken to prevent recurrence.

**delivery and lead time rating:** An assessment of the metrics established to evaluate delivery of product.

**metric:** A quantitative measure of an activity, results, and/or reaction.

**quality rating:** An assessment of the metrics established to evaluate the quality.

**service rating:** An assessment of the metrics established to evaluate the supplier's commitment to servicing the customer.

**subcontractor:** An individual or business firm contracting to perform part or all of another's contract.

**supplier:** An individual or business firm that provides goods or services to another.

### 3 Terms and definitions (cont'd)

**supplier performance rating:** An assessment of the metrics established to evaluate a supplier's performance.

**supplier report card:** A document that conveys to a supplier an evaluation of their performance based on criteria as defined by the customer and agreed to by the supplier.

NOTE The report should contain the rating for each item.

**technology rating:** An assessment of the metrics established to evaluate technology attributes.

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## 4 Measurements of Supplier Performance

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Customers should maintain performance metrics for at least their key suppliers. Items such as quality, reliability, delivery, technology, and value should be measured. It is recommended that the supplier be included in the discussions on what to measure and how the measurement will be accomplished and reported.



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## 5 Procedure

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- a) A rating system should be established that will rank and differentiate suppliers. All metrics defined may apply to all suppliers rated and ranked together. Metrics should be quantitatively determined and agreed to between supplier and customer.
- b) A supplier report card should be generated on an agreed upon schedule. It is recommended that this report should be issued quarterly. Annex A shows an example of an approach to a supplier report card.
- c) The customer should assume responsibility for the following:
  - 1) Engage the supplier in meaningful dialogue to set expectations and obtain supplier agreement;
  - 2) Maintain records of the supplier report card;
  - 3) Present and explain the supplier report card to the supplier on an agreed schedule;
  - 4) Discuss each metric in the supplier rating system that falls below expectations with the supplier;
  - 5) Document agreed upon preventative or corrective actions;
  - 6) Issue formal supplier corrective action requests (SCAR) if warranted or applicable. It is recommended that such a request accompany the supplier report card in the event the information is mailed to a supplier;
  - 7) Customers should determine the relative importance of each item in the areas of quality, delivery, technology, value, and service if using annex A;
  - 8) Customers should group suppliers into meaningful categories for comparison purposes. For example: Suppliers of memory product compared to other memory suppliers.
- d) The supplier should assume the following responsibilities:
  - 1) Discuss expectations with the customer.
  - 2) Review and maintain records of the supplier report card
  - 3) Utilize the feedback of the supplier report card as part of the management review process.
  - 4) Highlight any inaccuracies or concerns with the supplier report card to the customer in a timely manner.
  - 5) Document and communicate to the customer any preventative or corrective actions required by the supplier report card or supplier corrective action requests

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## **Annex A: Example of a Supplier Rating System**

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Guideline on how to use the rating tables:

- 1) Define weight of main items (see summary, e.g. quality)
- 2) Define weight of sub criterion per item. Define 0-to-100 scale for sub criteria with quantitative measures.
- 3) Measure performance by using the corresponding measure. In case of qualitative assessment choose rating table at the bottom of the template.
- 4) Calculate weighted mean rating value per main item
- 5) Calculate weighted mean rating value (Totals)

Explanation of headers in the rating tables:

- 1) Description of sub criteria contributing to performance
- 2) Measure to be used for measuring the performance (column gives some suggestions)
- 3) Weight of the sub criteria within the main item
- 4) Value of the measure
- 5) Comment to explain the rating in further detail

QUALITY	Measure *	Weight of sub criterion %	Supplier performance	Comments/Goals Strengths/ Weaknesses
<b>Defects</b> <ul style="list-style-type: none"> <li>Incoming quality</li> <li>Manufacturing line quality</li> </ul> Quality of Quantities, labels, invoices	<i>Rejection Rate at Incoming / lot acceptance rate / Average Outgoing Quality with resp. to quantity received</i>			
<b>Disruptions</b> <ul style="list-style-type: none"> <li>Frequency of line-downs or inventory purges caused by technical problems (e.g. defects of material).</li> </ul>				
<b>Reliability</b> <ul style="list-style-type: none"> <li>Field failure rate</li> <li>Timely Reliability data.</li> </ul>	<i>In fit or ppm Depends on commitment</i>			
<b>Failure Analysis</b> <ul style="list-style-type: none"> <li>Response time</li> <li>Root cause analysis and corrective actions.</li> <li>Containment and Recovery actions.</li> </ul>	<i>Cycle time target vs actual Quality of 8D (fulfillment rate according to agreed checklist)</i>			
<b>Other</b> <ul style="list-style-type: none"> <li>Traceability</li> </ul>				
<b>Other (per Customer)</b>				

\* Some suggestions are given

Weight means rating value

in percent

value      **Supplier Performance**

100      Excellent

75      good

50      medium

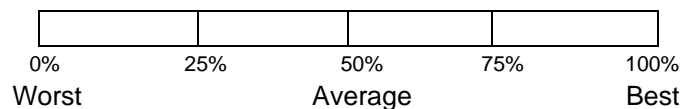
25      Poor

0      Unacceptable

**QUALITY Ranking vs. Similar Suppliers:**

# \_\_\_\_\_ of # \_\_\_\_\_ suppliers

or:



## Annex A Example of a Supplier Rating System (cont'd)

DELIVERY	Measure*	Weight of Sub Criterion %	Supplier performance	Comments/Goals Strengths/ Weaknesses
<b>On-time</b> <ul style="list-style-type: none"> <li>Line items received by commitment date.</li> </ul>	<b>On time rate</b>			
<b>Support</b> <ul style="list-style-type: none"> <li>Meeting lead-time needs.</li> <li>Communication of order status.</li> </ul>	<b>Measures against customer request</b>			
<b>Flexibility</b> <ul style="list-style-type: none"> <li>Response to upsides or delays.</li> <li>Support for end-of-life products.</li> </ul>				
<b>Other</b> <ul style="list-style-type: none"> <li>Product identification (e.g. labeling)</li> </ul>				
<b>Other (per Customer)</b> <ul style="list-style-type: none"> <li></li> </ul>				

\* Some suggestions are given

Weight means rating value

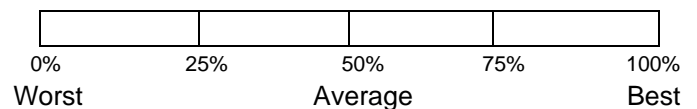
in percent

value	Supplier Performance
100	Excellent
75	good
50	medium
25	Poor
0	Unacceptable

**QUALITY Ranking vs. Similar Suppliers:**

# \_\_\_\_\_ of # \_\_\_\_\_ suppliers

or:



## Annex A Example of a Supplier Rating System (cont'd)

TECHNOLOGY	Measure	Weight of sub criterion %	Supplier performance	Comments/Goals Strengths/Weaknesses
<b>New Technology</b> <ul style="list-style-type: none"> <li>Alignment with customer roadmap.</li> <li>Communication and knowledge sharing.</li> </ul>				
<b>Product Development</b> <ul style="list-style-type: none"> <li>Design involvement and engineering support.</li> <li>Expertise and tools support.</li> </ul>				
<b>Product Release</b> <ul style="list-style-type: none"> <li>Involvement in short-term schedule.</li> <li>Prototype availability.</li> </ul>				
<b>Continuous Support</b> <ul style="list-style-type: none"> <li>Share leading-edge concepts</li> <li>Support older technologies.</li> </ul>				
<b>Other (per Customer)</b> <ul style="list-style-type: none"> <li></li> </ul>				

Weight means  
rating value

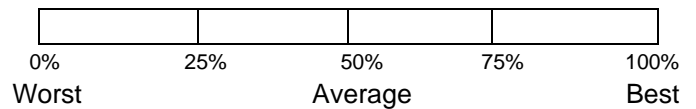
in percent

value	Supplier Performance
100	Excellent
75	good
50	medium
25	Poor
0	Unacceptable

**QUALITY Ranking vs. Similar Suppliers:**

# \_\_\_\_\_ of # \_\_\_\_\_ suppliers

or:



## Annex A Example of a Supplier Rating System (cont'd)

VALUE	Measure	Weight of sub criterion %	Supplier performance	Comments/Goals Strengths/ Weaknesses
<b>Cost</b> <ul style="list-style-type: none"> <li>Terms and conditions.</li> <li>Pricing accuracy and timeliness.</li> </ul>				
<b>Cooperation</b> <ul style="list-style-type: none"> <li>Share market information</li> <li>Share pricing trends</li> </ul>				
<b>Environmental</b> <ul style="list-style-type: none"> <li>Meeting environmental requirements.</li> <li>Coordination in meeting future requirements.</li> </ul>				
<b>Other</b> <ul style="list-style-type: none"> <li>Social responsibility</li> <li></li> </ul>				
<b>Other (per Customer)</b> <ul style="list-style-type: none"> <li></li> </ul>				

Weight means  
rating value

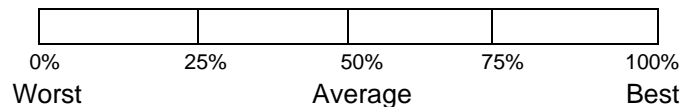
in percent

value      **Supplier Performance**  
100      Excellent  
75      good  
50      medium  
25      Poor  
0      Unacceptable

**QUALITY Ranking vs. Similar Suppliers:**

# \_\_\_\_\_ of # \_\_\_\_\_ suppliers

or:



## Annex A Example of a Supplier Rating System (cont'd)

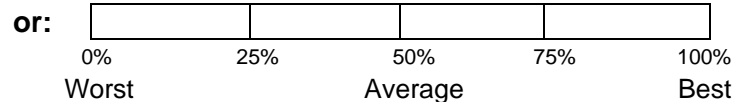
SERVICE	Measure	Weight of sub criterion %	Supplier performance	Comments/Goals Strengths/Weaknesses
<b>Marketing Support</b> <ul style="list-style-type: none"> <li>Response to quote requests.</li> <li>Product documentation.</li> <li>Flexibility regarding requirements.</li> </ul>				
<b>Product/Process Changes</b> <ul style="list-style-type: none"> <li>Product or process change notification.</li> <li>Communication of change details and results.</li> <li>Participation in decisions.</li> <li>Knowledgeable experts/contacts.</li> </ul>				
<b>Communication</b> <ul style="list-style-type: none"> <li>Easy access</li> <li>Participation in Business Reviews</li> </ul>				
<b>Other (per Customer)</b> <ul style="list-style-type: none"> <li></li> </ul>				

Weight means  
rating value

in percent

value	Supplier Performance
100	Excellent
75	good
50	medium
25	Poor
0	Unacceptable
# _____ of # _____ suppliers	

**QUALITY Ranking vs. Similar Suppliers:**



## Annex A Example of a Supplier Rating System (cont'd)

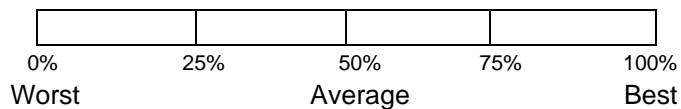
### Summary

Main Items	Weight* of criterion [%]	Supplier Rating *[%]
QUALITY		
DELIVERY		
TECHNOLOGY		
VALUE		
SERVICE		
Totals	100	

QUALITY Ranking vs. Similar Suppliers:

# \_\_\_\_\_ of # \_\_\_\_\_ suppliers

or:



	Top 3 Strengths
1	
2	
3	

	Top 3 Weaknesses
1	
2	
3	

Completed by: \_\_\_\_\_

Position: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Date: \_\_\_\_\_

\* weight means rating values



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**Annex B (informative): Difference between JEP146 and JEP146A**

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This table briefly describes most of the changes made to entries that appear in this publication, JEP146A, compared to its predecessor, JEP146 (June 2003).

<b>Clause</b>	<b>Description of change</b>
1	<b>Scope:</b> has been extended by last two sentences
3	<b>Terms and definitions:</b> definition updated and extended
5	<b>Procedure:</b> change of sequence
<b>Annex A</b>	<b>Example of a Supplier Rating System</b>
	Guideline and explanation of tables added
	Introduction of weight
	Content more detailed





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**Standard Improvement Form****JEDEC JEP146A**

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1. I recommend changes to the following:

☐ Requirement, clause number \_\_\_\_\_

☐ Test method number \_\_\_\_\_ Clause number \_\_\_\_\_

The referenced clause number has proven to be:

☐ Unclear ☐ Too Rigid ☐ In Error

☐ Other \_\_\_\_\_

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2. Recommendations for correction:

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3. Other suggestions for document improvement:

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Submitted by

Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Company: \_\_\_\_\_

E-mail: \_\_\_\_\_

Address: \_\_\_\_\_

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Date: \_\_\_\_\_

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