



Minutes of P-4 Committee on Mechanical Outlines of Passive Components

Wednesday, 21 April, 2004 Hilton Tampa Westshore Tampa, FL

Scope of the P-4 Committee on Mechanical Outlines of Passive Components –
Provide standardization, administration, and circulation of mechanical outline drawings of electronic parts formatted per PDP-100 provided by industry participants.

Attendees:

NAME	COMPANY
Terry D. Charles	Panasonic
Ted Coler	Vishay
Dan Giblin	Cooper Bussmann
William Gisseler	TDK
Michael Griffith	KOA
Nick Holmberg	Intel Corporation
Matt Joiner	Cooper Bussmann
Carl Lindquist	San-O-Industrial Corp
Laird Macomber	Cornell Dubilier
Len Metzger	Panasonic Industrial Co.
Steve Olster	Mini-Systems Inc.
Brian Piscitelli	KOA Speer Electronics
Liwu Wang	AEM

1.0 Introductions

Chairman **Carl Lindquist** called the meeting to order at **10:18 AM**. A quorum was present.

2.0 Introductions and Attendance

An attendance sheet was circulated and self-introductions were made.

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<u>Member Organizations Present</u>	<u>Present at this meeting</u>	<u>Present at previous meeting?</u>	<u>Present at meeting prior to previous?</u>
AEM	Y	N	Y
Cooper Bussmann	Y	N	Y
Cornell Dubilier	Y	N	Y
Intel Corporation*	Y	n/a	n/a
KOA Speer Electronics	Y	Y	Y
Mini-Systems Inc.*	Y	n/a	n/a
Panasonic	Y	Y	Y
San-O-Industrial Corp	Y	Y	Y
TDK	Y	Y	N
Vishay	Y	Y	N

*Indicates activated as member of committee

<u>Member Organizations Absent</u>	<u>Present at This Meeting?</u>	<u>Present at previous meeting?</u>	<u>Present at meeting prior to previous?</u>
DSCC	N	Y	N
IBM	N	Y	Y
Kemet	N	Y	N
SEI Electronics	N	Y	N
Maxwell Technologies	N	N	Y

* Indicates not used in determination of quorum due to record of non-attendance

<u>Other Organizations Present</u>
EIA/ECA

3.0 Review and Approve Agenda and Previous Meeting Minutes

3.1 Approval of Agenda

The Subcommittee unanimously accepted the Agenda without change.

3.2 Approval of Previous Meeting Minutes

The Subcommittee unanimously accepted the October, 2003 San Antonio, TX Meeting Minutes without change.

4.0 General Discussion

4.1 Items to be added to New Business

None

4.2 Approval of Agenda

Hard copies of the Mechanical Outlines Numbering System (Draft) document and Agenda were provided to attendees. The Agenda, as presented was accepted unanimously.

4.3 Opening Comments

The meeting was opened with a brief description of the purpose of the Mechanical Outlines and what our primary objectives were for this meeting. Copies of the Mechanical Outlines Numbering System (Draft) document and a separate Draft copy of Preparation and Procedures for new ECA PDP-100 drawings were distributed to attendees.

A discussion during the meeting centered around making the P-4 Subcommittee meeting always fall on a Wednesday afternoon to give committee members an opportunity to review new proposals within their own Subcommittees prior to the P-4 meeting. Ed Mikoski agreed that this could be arranged.

4.3.1 Database Development and Upgrades

It was explained to the participants that a preliminary database program had been generated and placed on the EC-Central.Org Web Site on the P-4 Subcommittee page, but this would have to be modified to incorporate the new 10 digit Mechanical Outline numbering system formally accepted at the last P-4 meeting. Since this database will be employed on the EC-Central.Org Web Site, it will be the ECA IT Group that will be responsible for modification and periodic maintenance of the initial program to permit proper searching by characteristic. The final proposal for the database search program will be presented to the members of the P-4 Subcommittee for review and comment prior to placing it on the public site. This review will be necessary to insure that all parties agree to the search procedures employed. Initial demonstration of the database may require that it be placed on the EC-Central.Org Web Site with password protection to limit its viewing to members of the P-4 Subcommittee for a comment period.

There was a suggestion that a time limit be set for ECA IT Staff to post approved outlines. We will seek such a time limit from the ECA IT Staff when they begin to participate in the P-4 activities.

4.3.2 Database Content Maintenance

The actual Mechanical Outlines will be maintained by member company representatives on the P-4 Subcommittee. Each type of passive component Mechanical Outline (e.g. capacitor, resistor, inductor, fuse, etc.) will be generated and updated by a volunteer Working Group of specialists in the related field. These specialists will be assigned by their respective Subcommittees. Decisions on whether or not a new outline should be developed, or an existing outline should be modified or removed, will be made at the recommendation of a Working Group with final responsibility residing with the P-4 Subcommittee members. A draft proposal for this entire procedure has been documented and is attached.

There was discussion of procedures for inclusion of array vs. single component (i.e. capacitor arrays vs. capacitors). It was decided that we not introduce the array variable at this time. We can keep these potential applications in mind while developing the outline drawing codes, but we will proceed with the basic components initially to prevent becoming bogged down.

4.3.3 Phase-in schedule for On-Line Mechanical Outline Database

Participants were advised that the initial package of Mechanical Outlines for fuses had been generated and refined over the past few meetings. This entire package has now been provided to representatives of another fuse manufacturer – Cooper Bussmann – for review and expansion to include additional devices. A copy of these files has also been provided to the ECA – Ed Mikoski. There was a proposal from several involved with the P-3 Committee, inductors, and they will proceed with generation of Mechanical Outlines for their products. While they had provided a great deal of mechanical data in a spreadsheet format, this data must now be used to generate actual Mechanical Outlines that can be added to the database search tool.

The only issue holding up posting of the existing Mechanical Outlines on the ECA Web Site is the final revision of the database to handle the ten digit numbering system. When this database is available, the existing Mechanical Outlines may be placed on-line – preferably with password protection for an initial period of review.

4.3.4 Web Site Disclaimer

It was recommended that a disclaimer be placed on the Mechanical Outline Web Site indicating that these are only Mechanical Outlines and additional information associated with electrical, as well as other parameters, may be acquired from the specific manufacturer's Web Site. This issue will be left to the ECA IT representatives.

5.0 Mechanical Outlines

5.1 Review of Guidelines for preparing Registered Outlines – Publication 100, April 2004 (Draft)

A new draft document covering procedures to be employed to submit mechanical outlines to the P-4 Subcommittee was projected for the participants to view. This document was reviewed line-by-line with the attendees. A question was raised regarding PROCEDURE, STAGE 1.2 “The sponsor may be an individual ECA member company, an active ECA Subcommittee, an active ECA Working Group or any ECA Ad Hoc Group”. The question related to the term “may”. It was noted that this was the proposed language, but we will discuss this further with Ed Mikoski, ECA, to get a decision on actual acceptability of the wording.

5.2 Review of Mechanical Outline Numbering System Proposal (Draft)

The Mechanical Outline Numbering System had been discussed at length during past meetings. This final proposal was placed in a written format and presented again at this meeting. It was agreed that the Numbering System should be included as part of the Guidelines – Publication 100 being addressed in the previous item. This was agreed upon and a request went out to the attendees for a volunteer to merge the two documents.

5.3 Drawing File Formats

There was some discussion as to what CAD file type will be employed as a standard when receiving revisions that must be used for upgrading the existing Mechanical Outlines. Use of AutoCAD files was recommended because of the widespread availability of this CAD package. Several attendees noted that AutoCAD is not used by their companies. Some companies use Visio for drawing simple components. While Visio will accomplish most of the needs, file standardization and dimensioning may become problems. It was strongly recommended by the Chair that a CAD program be used. This can be any CAD program, as long as files can be exported as Acrobat PDF files and AutoCAD files can be imported and exported. AutoCAD LT can be employed and it is relatively inexpensive.

We will continue to use AutoCAD as the default pending further input from other members of the P-4 Committee. It is essential that the files be maintained in a commonly accepted file format to insure that all participants can generate new Mechanical Outlines to be added, and edit existing outlines, for an ongoing system. The P-4 Subcommittee Secretary will be responsible for maintaining all of the latest outlines in an editable file format. A request for a volunteer for this position was made by the Chair.

5.3.1 Acceptable Drawing Layouts

An acceptable drawing layout was reviewed as part of the main presentation during this meeting. Each item in the drawing was labeled to reference a statement in the Draft Procedures. This document is available on the EC-Central.org Web Site under the P-4 Committee. A second document, also available on the EC-Central.org Web Site, was mentioned which provides detailed information on the Outline numbering system for the various passive components. This has been updated since the last meeting to include much smaller devices (e.g. 0.01 X 0.005 inch) by adding a new multiplier letter.

It was noted earlier in the meeting that the latter document should be incorporated in the "Procedures for Mechanical Outline Approval", noted above. Steve Olster volunteered to carry out this merger of the two documents. Word file copies of both documents were provided to Steve after the meeting. Steve has already completed his task and the resulting merged document is attached.

There were questions raised during the presentation of the proposed procedures, but they were answered with no negative implications. Therefore, it was agreed that we would proceed with merging the two documents and reviewing the resulting single document again at the next meeting.

5.3.2 Acceptable File Formats

As noted at prior meetings, Adobe Acrobat 5.0 or later will be the required format for Mechanical Outlines to be placed on the EIA / ECA Web Site. Use of this format will permit linking of the "Variation" and "Drawing Number" to remote sites. Earlier versions of this same software (e.g. Adobe Acrobat 4.0 and earlier) do not support this function. It is of no interest to the P-4 Subcommittee how a new Mechanical Outline drawing is generated. This may be accomplished using any of several CAD programs or other means. We only require that the final Mechanical Outline submitted for acceptance appear correctly when viewed in Adobe Acrobat Reader, and that it be provided in a file format to be opened and edited by other members for adding new component variations. The default file format for now will be AutoCAD.

5.4 Assignments Associated With Various Passive Components

5.4.1 Working Groups

Data on several new proposed outlines associated with inductors were submitted just prior to this meeting by the P-3 Subcommittee. While most of the needed information was available, it will require significant effort to organize the data into a format similar to that shown in our Draft Committee Procedures. Mike Griffith agreed to revisit the data and organize it into an acceptable format for submission at the next meeting. It was emphasized that this will be an ongoing effort and there is no need to accomplish everything by the next meeting. In fact, it may be better to limit the effort to perhaps 10 outlines to insure that we have a working search mechanism (database) prior to investing a tremendous amount of time with all of the possible outlines. We also understand that, if this system works

properly, there should be additions and deletions of mechanical outlines as a part of regular maintenance of the Web Site.

5.4.2 Chairs and Secretaries

Since the Mechanical Outline effort will be significant, it was reiterated that a Chair and Secretary should be identified for each Subcommittee Working Group responsible for reviewing Mechanical Outlines to be submitted to P-4. A Secretary for the P-4 Subcommittee will be needed to coordinate Working Group efforts and maintain master outline drawings.

6.0 Mechanical Outline Web Site Development and Maintenance

6.1 General Discussion

Development and maintenance of the ECA Mechanical Outlines will be retained in the P-4 Subcommittee and rely totally on support of the ECA IT personnel for database development and maintenance. Input from members of each component Subcommittee will be essential to maintaining this database. This was mentioned again to Ed Mikoski during this meeting and he suggested that we speak about the details after the meeting. It was recommended by the chair that the ECA provide an IT specialist for the next meeting to insure that the outlines being generated can be placed on-line. The initial demonstration site can be password protected to permit P-4 members adequate access for comment.

6.2 Drawing Numbering System

The basic Drawing Number System for the following components has been initially developed. Actual Mechanical Outlines updated with the new numbering system are as noted.

6.2.1 Fuses - Twenty-nine (29) Mechanical Outlines are ready for placement on a limited access Web Site to finish work on linking to Member Web Sites and EIA / ECA Document references. Representatives of Cooper-Bussmann were given copies of the Mechanical Outline files in AutoCAD format to permit them to expand on the content.

6.2.2 Resistors - Awaiting input from Subcommittee

6.2.3 Capacitors - Awaiting input from Subcommittee(s)

6.2.4 Inductors - Data has been provided. Initial proposed Mechanical Outlines should be ready for the Fall, 2004 Meeting.

6.2.5 Integrated Passive Devices (IPD's) – Awaiting input from Subcommittee

6.3 Database Development Status

The basic database has been developed. P4 Members will continue to work with EIA / ECA IT System personnel as the program expands and improves.

6.4 Proposed New Outlines For Approval

None

6.5 Assignments Associated With Various Passive Components

6.5.1 Working Groups

Representatives of the P-14 (Overcurrent Protection Devices) and P-3 (Inductors) Committees have volunteered to provide Mechanical Outlines for submission at the next P-4 meeting. The volunteers were Matt Joiner – Cooper Bussmann – and Mike Griffith – Koa Speer Electronics – respectively.

6.5.2 Chairs and Secretaries

Each Passive Component Committee should identify those willing to serve as Working Group representatives on the P-4 Subcommittee as they present new Mechanical Outlines.

7.0 New Business

None

8.0 Old Business

None

9.0 Announcements

None

10.0 Next Meeting

The next meeting is scheduled to be held during the ECA Fall Engineering Summit October 4-7 Holiday Inn On-the-Bay, San Diego, CA.

11.0 Adjournment

Meeting adjourned at **11:39 AM** .

This meeting was conducted in accordance with the EIA Legal Guidelines and the Manual of Organization and Procedures.

Carl Lindquist
Chairperson

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Secretary