

Förderverein für Elektrotechnische Normung (FEN) e. V.  
Cenelec Electronic Components Committee

# CECC

Système Harmonisé d'Assurance de la Qualité  
des Composants Electroniques

SPECIFICATION PARTICULIERE:

CONDENSATEURS ELECTROLYTIQUES  
A L'ALUMINIUM A ELECTROLYTE  
NON SOLIDE

Harmonized System of Quality Assessment for  
Electronic Components

DETAIL SPECIFICATION:

ALUMINIUM ELECTROLYTIC  
CAPACITORS WITH NON-SOLID  
ELECTROLYTE

Harmonisiertes Gütebestätigungssystem für  
Bauelemente der Elektronik

BAUARTSPEZIFIKATION:

ALUMINIUM-ELEKTROLYT-  
KONDENSATOREN MIT FLÜSSIGEN  
ELEKTROLYTEN



**2** Edition  
Issue  
Ausgabe

## CECC 30 301-805

1992



**Documents**  
Document Sharing Hub

Information about the System may be obtained from:



FEN e.V. Secretariat  
and  
CECC General Secretariat  
Gartenstraße 179  
D - 6000 Frankfurt am Main 70  
Telephone: Int. + 49 69 639171  
Telex: 4 032 175 cecc d  
Telefax: Int. + 49 69 639427

or from the National Authorized Institutions  
of the participating countries listed  
who can supply copies of:

- 1 The Internal Regulations of the FEN e.V.
- 2 The Rules of Procedure of the System
- 3 CECC Specifications of the FEN and National Specifications for the System
- 4 CECC 00 200: Qualified Products List (QPL)
- 5 CECC 00 300: List of CECC European Standards (ENs), CECC Publications and related national documents
- 6 CECC 00 301: List of CECC Specifications and related Detail Specifications
- 7 Other CECC Publications and publicity documents

#### AUSTRIA

Osterreichischer Verband für Elektrotechnik (ÖVE)  
Eschenbachgasse 9  
A-1010 VIENNA

#### BELGIUM

Comité Electrotechnique Belge  
Galerie Ravenstein 28 (Boîte 2)  
B-1000 BRUSSELS

#### DENMARK

Dansk Elektroteknisk Komite  
Strandgade 36  
DK-1401 COPENHAGEN K

#### FINLAND

Finnish Electrotechnical Standards Association (SESKO)  
P.O. Box 134  
SF-00211 HELSINKI 21

#### FRANCE

Union technique de l'Electricité  
Participation française au CECC  
F-92052 PARIS La Défense Cedex 64

#### GERMANY

Deutsche Elektrotechnische Kommission im DIN und VDE (DKE)  
Stresemannallee 15  
D-6000 FRANKFURT/Main 70

#### IRELAND

EOLAS - The Irish Science and Technology Agency  
Glasnevin  
IRL-DUBLIN 9

#### ITALY

Comitato Elettrotecnico Italiano (CEI)  
Viale Monza, 259  
I-20126 MILAN

#### NETHERLANDS

Nederlands Elektrotechnisch Comité (NEC)  
Kalfjeslaan 2  
P.O. Box 5059  
NL-2600 GB DELFT

#### NORWAY

Norsk Elektroteknisk Komite (NEK)  
P.O. Box 280  
Skøyen  
N-0212 OSLO 2

#### PORTUGAL

Instituto Português da Qualidade  
Rua José Estevão, 83A  
P-1199 LISBOA CODEX

#### SPAIN

New Spanish Member  
to be determined.

#### SWEDEN

Svenska Elektriska Kommissionen (SEK)  
Box 1284  
S-16428 KISTA-STOCKHOLM

#### SWITZERLAND

Schweizerischer Elektrotechnischer Verein (SEV)  
Postfach  
CH-8034 ZÜRICH

#### UNITED KINGDOM

UK Electronic Components Policy Council  
Electrical Department  
British Standards Institution  
2, Park Street  
GB-LONDON W1A 2BS

## FOREWORD

The CENELEC Electronic Components Committee (CECC) is composed of those member countries of the European Committee for Electrotechnical Standardization (CENELEC) who wish to take part in a harmonized System for electronic components of assessed quality.

The object of the System is to facilitate international trade by the harmonization of the specifications and quality assessment procedures for electronic components, and by the grant of an internationally recognized Mark, or Certificate, of Conformity. The components produced under the System are thereby acceptable in all member countries without further testing.

This specification should be read in conjunction with the current regulations for the CECC System.

At the date of printing of this specification, the member countries of the CECC are Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom, and copies of it can be obtained from the addresses shown on the blue fly sheet.

## PREFACE

This specification was prepared by CECC WG3: "Capacitors".

It is based, wherever possible, on the Publications of the International Electrotechnical Commission.

The text of this specification was circulated to the members of CECC WG3 and was approved for publication under the accelerated procedure for the acceptance of detail specifications in accordance with Decisions 10, 11 and 12 of the minutes of the CECC CD meeting in document CECC(Sec)1838.

This second issue of CECC 30 301-805 shall become effective for all new qualification approvals on **1st November 1992**. Issue 1 will continue to remain effective to cover all past approvals.

### Secretariat Note:

This detail specification is a revision of the former Issue 1 of CECC 30 301-805, and is based on proposals of CEMEC WG PC 1A concerning some editorial corrections and improvements. These proposals have been discussed at the 1991 meeting of CECC WG3, held in Brussels. It was decided to accept the proposed amendments and to publish a revised version without voting as stated in the minutes of the Brussels meeting:

CECC WG3(Secretariat)224, items 16.1, 16.2 and 16.3.

To allow early publication, this detail specification is issued initially in English only. Corresponding versions in French and German will follow on request of ONHs.

Specification available from:  
CECC General Secretariat

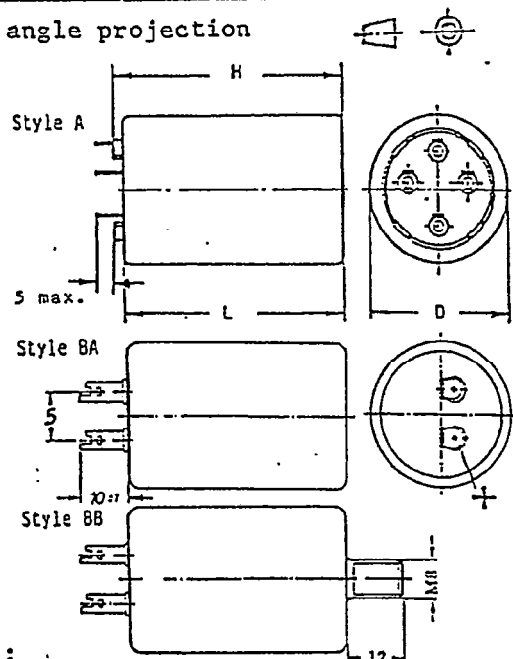
CECC 30 301-805  
(Issue 2) 1992



ELECTRONIC COMPONENTS OF ASSESSED  
QUALITY - DETAIL SPECIFICATION IN  
ACCORDANCE WITH:

CECC 30 000 Issue 3, Amdts. 1 to 8  
CECC 30 300 Issue 2, Amdts. 1 to 4

First angle projection



Notes:

- all dimensions in mm
- pressure relief device mandatory
- for D, L, H and S, see Table 1
- the polarity must be clearly indicated.

WG DETAIL SPECIFICATION FOR  
FIXED ALUMINIUM ELECTROLYTIC  
CAPACITORS WITH NON-SOLID  
ELECTROLYTE

Cylindrical  
Metallic case  
Insulating sleeve  
Rigid terminations

Style A: Solder pins for use  
in printed circuits

Style BA: Solder tags;  
clamp mounting

Style BB: Solder tags;  
stud mounting

Assessment level E

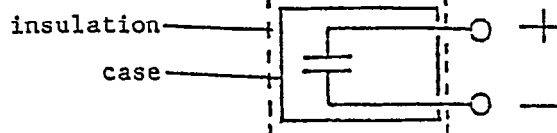
QUICK REFERENCE DATA:

Rated capacitance range ( $C_R$ ): 22  $\mu$ F to 68 000  $\mu$ F  
Capacitance tolerance: -10 %/+30 %  
Rated voltage range ( $U_R$ ): 10 V to 450 V d.c.  
Climatic category: 40/085/56  
Performance grade: long-life grade 2000 h

Circuit diagram

Note:

contact of minus pole  
to metallic case not defined



Information about manufacturers who have components qualified to this  
detail specification is available in the current CECC 00 200: Register of  
Firms, Products, and Services Approved under the CECC System.

It is intended that this specification should replace national specifications.  
Relevant numbers will be submitted by the national committees and published  
under Issue 3 of this specification.

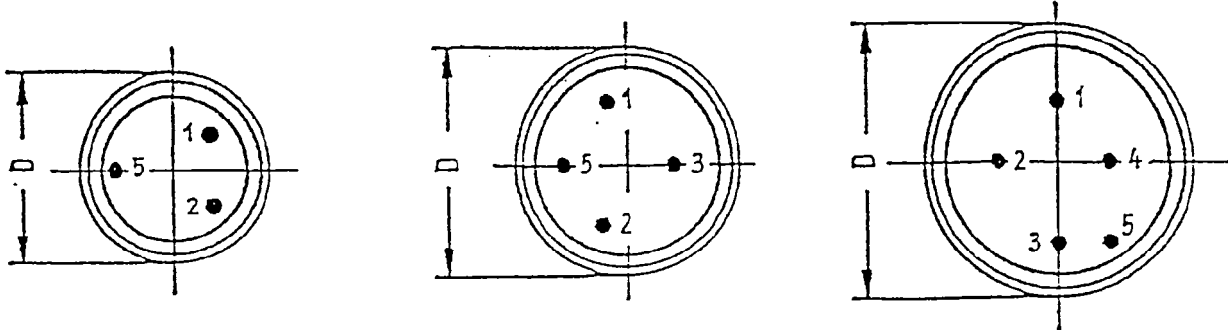
For Style A only:

PIN CONFIGURATIONS FOR NOMINAL CASE DIAMETERS

Ø 25 mm

Ø 30 and 35 mm

Ø 40 mm

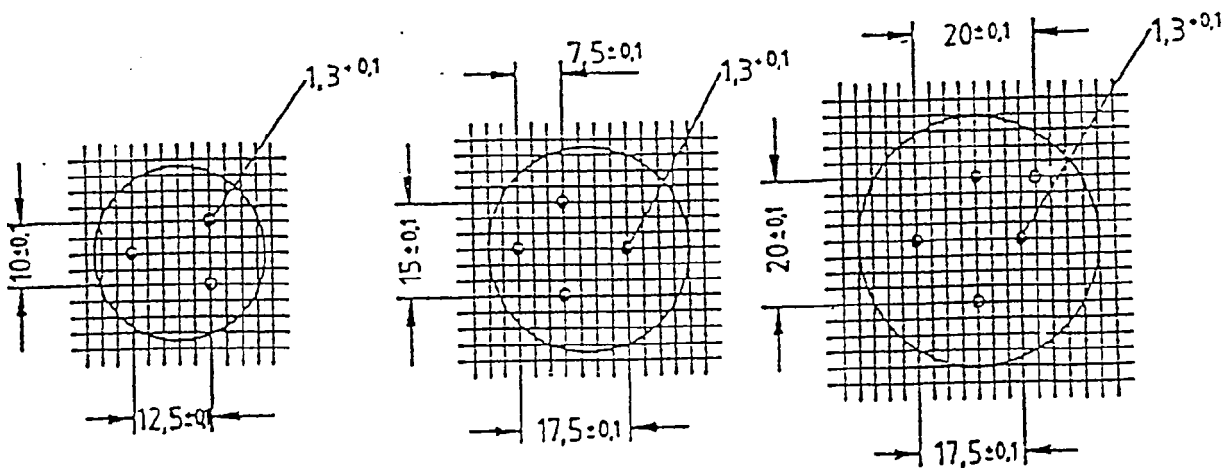


Mounting holes corresponding to pin configurations below

Pin 1 positive, Pin 5 negative, in all cases.

The remaining pins are for mounting purposes only and are not necessarily insulated from the negative terminal due to the presence of electrolyte.

Dimensions in millimetres.



Piercing diagrams viewed from mounted side

1. GENERAL DATA1.1 METHOD OF MOUNTING FOR VIBRATION AND SHOCK TESTS

The capacitor is to be mounted by its body which shall be rigidly clamped to the work surface. See 1.3.2 of CECC 30 300, Issue 2.

1.2 DIMENSIONS

Table 1

| Case size<br>reference | Dimensions in mm |         |         |         |          |
|------------------------|------------------|---------|---------|---------|----------|
|                        | D                |         | L       | H       | s        |
|                        | nominal          | max. 1) | max. 1) | max. 1) |          |
| 1                      | 25               | 26,5    | 38      | 42      | 10       |
| 2                      | 25               | 26,5    | 48      | 52      | 10       |
| 3                      | 30               | 31,5    | 48      | 52      | 10       |
| 4                      | 35               | 36,5    | 48      | 52      | 10       |
| 5                      | 35               | 36,5    | 58      | 62      | 10       |
| 6                      | 40               | 41,5    | 48      | 52      | 10 or 20 |
| 7                      | 40               | 41,5    | 58      | 62      | 10 or 20 |
| 8                      | 40               | 41,5    | 78      | 82      | 10 or 20 |
| 9                      | 40               | 41,5    | 108     | 112     | 10 or 20 |

1) including insulation sleeve

1.3 RATINGS AND CHARACTERISTICS

|                                    |                                 |
|------------------------------------|---------------------------------|
| Rated capacitance range ( $C_R$ )  | 22 $\mu$ F to 68 000 $\mu$ F    |
| Tolerance on rated capacitance     | -10 %/+30 %                     |
| Rated voltage range ( $U_R$ )      | 10 V to 450 V d.c.              |
| Category voltage ( $U_C$ )         | rated voltage                   |
| Climatic category                  | 40/085/56                       |
| Rated temperature                  | 85 °C                           |
| Rated ripple current               | see Table 2B                    |
| Equivalent series resistance (ESR) | see Table 2B and sub-clause 1.8 |
| Leakage current                    | see Table 2B                    |
| Impedance                          | see Table 2B                    |

Table 2A

Values of capacitance and voltage related to case sizes (see Table 1)

| Rated voltage<br>(V d.c.)       | 10                  | 16     | 25     | 40     | 63     | 100    | 200<br>or 250 | 385<br>or 400 | 450    |
|---------------------------------|---------------------|--------|--------|--------|--------|--------|---------------|---------------|--------|
| Rated<br>capacitance ( $\mu$ F) | Case size reference |        |        |        |        |        |               |               |        |
| 22                              |                     |        |        |        |        |        |               |               | 1      |
| 33                              |                     |        |        |        |        |        |               |               | 1      |
| 47                              |                     |        |        |        |        |        |               | 1             | 1      |
| 68                              |                     |        |        |        |        |        |               | 2             | 2      |
| 100                             |                     |        |        |        |        |        | 1             | 3             | 3      |
| 150                             |                     |        |        |        |        |        | 2             | 4             | 5 or 6 |
| 220                             |                     |        |        |        |        |        | 3             | 5 or 6        | 7      |
| 330                             |                     |        |        |        |        |        | 4             | 7             | 8      |
| 470                             |                     |        |        |        |        | 1      | 5 or 6        | 8             | 9      |
| 680                             |                     |        |        |        |        | 2      | 7             | 9             |        |
| 1 000                           |                     |        |        |        | 1      | 3      | 8             |               |        |
| 1 500                           |                     |        |        | 1      | 2      | 4      | 9             |               |        |
| 2 200                           |                     |        | 1      | 2      | 3      | 5 or 6 |               |               |        |
| 3 300                           |                     | 1      | 2      | 3      | 4      | 7      |               |               |        |
| 4 700                           | 1                   | 2      | 3      | 4      | 5 or 6 | 8      |               |               |        |
| 6 800                           | 2                   | 3      | 4      | 5 or 6 | 7      | 9      |               |               |        |
| 10 000                          | 3                   | 4      | 5 or 6 | 7      | 8      |        |               |               |        |
| 15 000                          | 4                   | 5 or 6 | 7      | 8      | 9      |        |               |               |        |
| 22 000                          | 5 or 6              | 7      | 8      | 9      |        |        |               |               |        |
| 33 000                          | 7                   | 8      | 9      |        |        |        |               |               |        |
| 47 000                          | 8                   | 9      |        |        |        |        |               |               |        |
| 68 000                          | 9                   |        |        |        |        |        |               |               |        |