

European Committee for Electrotechnical Standardization (CENELEC)
Cenelec Electronic Components Committee

CECC



Système Harmonisé d'Assurance de la Qualité
des Composants Electroniques

SPECIFICATION PARTICULIERE CADRE:

**CONDENSATEURS
ELECTROLYTIQUES
A L'ALUMINIUM
A ELECTROLYTE SOLIDE**

Harmonized System of Quality Assessment for
Electronic Components

BLANK DETAIL SPECIFICATION:

**ALUMINIUM ELECTROLYTIC
CAPACITORS WITH
SOLID ELECTROLYTE**

Harmonisiertes Gütebestätigungssystem für
Bauelemente der Elektronik

VORDRUCK FÜR
BAUARTSPEZIFIKATION:

**ALUMINIUM-ELEKTROLYT-
KONDENSATOREN
MIT TROCKENEM ELEKTROLYT**

1 Edition
Issue
Ausgabe

CECC 30302

1978

**Documents**

Document Sharing Hub

Cette page bleue doit être insérée après la
page de garde de la CECC 30 302 (Edition 1)

PREMIERE MODIFICATION A LA CECC 30 302 :

SPECIFICATION PARTICULIERE CADRE :

CONDENSATEURS ELECTROLYTIQUES A L'ALUMINIUM
A ELECTROLYTE SOLIDE

Les modifications suivantes doivent être effectuées
à la main à l'Edition 1 (1978) de la CECC 30 302 :

Compléter et modifier le Tableau 4 comme suit :

Ea : Chocs	4.10.5.1	Si requis, sévérité	Variation de capacité, si différente de 5 %
	4.10.5.2	Si requis, sévérité	

This blue page should be inserted after the
title page of CECC 30 302 (Issue 1)

1ST AMENDMENT TO CECC 30 302 :

BLANK DETAIL SPECIFICATION :

ALUMINIUM ELECTROLYTIC CAPACITORS WITH
SOLID ELECTROLYTE

The following amendments to Issue 1 (1978) of
CECC 30 302 should be made in manuscript :

Table 4 to be completed and amended as follows :

Ea : Shock	4.10.5.1	If required, severity	Capacitance change, if different from 5 %
	4.10.5.2	If required, severity	

Dieses blaue Blatt ist nach dem Titelblatt
der CECC 30 302 (Ausgabe 1) einzusetzen

1. ERGÄNZUNG ZU CECC 30 302 :

VORDRUCK FÜR BAUARTSPEZIFIKATION :

ALUMINIUM-ELEKTROLYT-KONDENSATOREN MIT
FESTEM ELEKTROLYT

Titel auf Deckblatt und Titelblatt ist wie folgt
abzuändern :

..... " MIT FESTEM ELEKTROLYT " ... anstatt "TROCKENEM"
Bei der Ausgabe 1 (1978) der CECC 30 302 sind weitere
Änderungen handschriftlich vorzunehmen :

Tabelle 4 ist wie folgt zu ergänzen und zu ändern :

Ea : Schocken	4.10.5.1	Falls verlangt, Scharfegrad	Kapazität- änderung, falls abweichend von 5 %
	4.10.5.2	Falls verlangt, Scharfegrad	

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 accepted by all member countries without further testing.

This document has been formally approved by the CECC, and has been prepared for those countries taking part in the System who wish to issue national harmonized specifications for ALUMINIUM ELECTROLYTIC CAPACITORS WITH SOLID ELECTROLYTE. It should be read in conjunction with document CECC 00 100 : Basic Rules (1974).

At the date of printing of this document the member countries of the CECC are Belgium, Denmark, Germany, France, Ireland, Italy, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom, and copies of it can be obtained from the National Committees of the CENELEC in these countries.

PREFACE

This blank detail specification was prepared by CECC Working Group 3 : "Capacitors".

It is one of a series of blank detail specifications for aluminium electrolytic capacitors, all relating to the sectional specification printed as CECC 30 300.

In accordance with the requirements of document CECC 00 100, it is based, wherever possible, on the Publications of the International Electrotechnical Commission.

The text of this specification was circulated to the CECC for voting in document CECC (Secretariat) 586 in February 1977, and was ratified by the CECC for printing as a CECC Specification.

KEY FOR PAGE 3

The numbers between square brackets on page 3 correspond to the following indications which should be given :

Identification of the harmonized detail specification

- [1] The name of the National Standards Organization under whose authority the detail specification is drafted
- [2] The CECC Symbol and the number allotted by the CECC General Secretariat to the completed detail specification
- [3] The number and issue number of the national generic and sectional specifications
- [4] The national number of the detail specification, date of issue and any further information required by the national system, together with any amendment numbers, if issued.

Identification of the capacitor

- [5] A short description of the type of capacitor
- [6] Information on typical construction (see examples given on page 3)
- [7] Outline drawing with main dimensions which are of importance for interchangeability and/or reference to the national or international documents for outlines
- [8] Quick reference data (see examples given on page 3) and level of quality assessment
- [9] Circuit diagram (if applicable).

(NATIONAL STANDARDS ORGANIZATION) [1]	 [2]
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH : (Number of national generic and sectional specification) [3]	(National number of detail specification, date of issue, National type number, if any) [4]
DETAIL SPECIFICATION FOR ALUMINIUM ELECTROLYTIC CAPACITORS WITH SOLID ELECTROLYTE [5]	
TYPICAL CONSTRUCTION : cylindrical / rectangular (Examples) polar / bi-polar metallic case / non metallic case insulated / non insulated case axial / radial terminations (wire, tag etc) intended / not intended for printed circuits [6]	
OUTLINE DRAWING [7]	QUICK REFERENCE DATA : RATED CAP. RANGE CAPACITANCE TOLERANCE RATED VOLTAGE RANGE CLIMATIC CATEGORY GRADE (long life use/ general use) ASSESSMENT LEVEL [8]
Circuit diagram (if applicable) [9]	
See the relevant Qualified Products List for the availability of components made to this detail specification.	

1. DimensionsTable 1

CASE SIZE REFERENCE	DIMENSIONS ¹⁾					
	ϕ_{max}	L_{max}	H_{max}	$d \pm tol.$	2)	2)

1) Body dimensions should preferably be expressed as maxima but, where necessary, be nominal with tolerance.

2) Other important dimensions should be included as additional information.

2. Specified method of mounting for vibration and bump testing

3. Ratings, characteristics

Grade

Capacitance range

Capacitance tolerance(s) in percent

Rated voltage range

(See Table 2A)

Category voltage (if applicable)

(See Table 2A)

Rated temperature

Rated ripple current

(See Table 2B)

Tangent of loss angle

(See Table 2B)

Leakage current

Impedance

(See Table 2B)

Reverse voltage (if applicable)

Climatic category

Note : Information on the above characteristics may be given in tabular form, if necessary.

Table 2A

Values of capacitance and of voltage
related to case sizes

	Case size reference				
Rated voltage (V)					
Category voltage ¹⁾					
Rated capacitance (in μF)					

1) If different from the rated voltage

Table 2B

$\text{Tan}\delta$, Impedance
and rated ripple current

U_R (V)	C_R (μF)	Tangent of the loss angle at ... (Hz)	Impedance (Ω) at ... (Hz) (if applicable)	Rated ripple current (A)

Table 3

Other characteristics

This table is to be used for defining characteristics which are additional to or tighter than those given in the sectional specification.

4. Related documents

Generic specification :	CECC 30 000
Sectional specification :	CECC 30 300

5. Marking

The following information selected from the list in 1.4 of CECC 30 300 by the specification writer is to be marked on the capacitor.

6. Ordering information

Detail specification number
 Rated capacitance
 Tolerance on rated capacitance
 Rated voltage

Other information to identify a specific size, constructional details, etc. as necessary.

An example of ordering information shall be given.

7. Qualification approval and quality conformance inspection

For qualification approval test and quality conformance inspection the test schedule, severities and requirements, given in the sectional specification, apply.

In addition Table 4 specifies the tests, severities and requirements that have to be given in the detail specification.

Note : additional tests
 additional or more severe requirements
 may also be specified in this table.

8. Certified test records

As required in accordance with CECC 30 300.

Table 4

Inspection	Paragraph of CECC 30 300	Test method and severity	Performance Requirements
Leakage current	4.4	Protective resistor value if other than in the sec- tional specification	
Capacitance	4.5	Frequency if different from 100 to 120 Hz	
Impedance at lower category temperature	4.7	Frequency if different from 100 to 120 Hz	
Case insulation	4.8	V-Block method, if applicable	
Tb:Resistance to soldering heat	4.9.3	Method	
T :Solderability	4.10.2	Method Points of application ¹⁾	Time limit ¹⁾
Na:Rapid change of temperature	4.10.3	Duration of exposure t_1	
Fo:Vibration	4.10.4	Severity	Capacitance change if different from 5 %
Ea:Shock	4.10.5.1	If required, severity	Capacitance change if different from 5 %
Eb:Bump	4.10.5.2	If required, severity	
Ba:Dry heat	4.11.1	Duration	
Aa:Cold	4.11.2	Duration	
M :Low air pressure	4.11.3	If required	
Endurance	4.13	Applied voltage if different from category voltage. Superimposed a.c. if required	
Surge	4.14	Recovery, if applicable	
Reverse voltage	4.15	If required, voltage	
Pressure relief	4.16	If required, method	
Characteristics at high and low temperatures	4.19		Capacitance(required/ not required) tan δ (required/ not required)
Charge and discharge	4.20	If required, Number of cycles for $U_R > 160 \text{ V}$	

1) For solder globule method only