

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 FIXES AU
TANTALE A ELECTROLYTE
SOLIDE, A ANODE POREUSE
(SOUS-FAMILLE 3)

Harmonized System of Quality Assessment for
Electronic Components

DETAIL SPECIFICATION:

FIXED TANTALUM CAPACITORS
WITH SOLID ELECTROLYTE,
POROUS ANODE
(SUB-FAMILY 3)

Harmonisiertes Gütebestätigungssystem für
Bauelemente der Elektronik

BAUARTSPEZIFIKATION:

TANTAL-FESTKONDENSATOREN
MIT FESTEM ELEKTROLYT
UND SINTERANODE
(UNTERFAMILIE 3)



1

Edition
Issue
Ausgabe

CECC 30 201-803

1989



Documents

Document Sharing Hub

Cette page bleue doit être insérée après la page de garde de la CECC 30 201-803 Edition 1 (1989)	This blue page should be inserted after the title page of CECC 30 201-803 Issue 1 (1989)	Dieses blaue Blatt ist nach dem Titelblatt der CECC 30 201-803 Ausgabe 1 (1989) einzufügen
AMENDEMENT 2 A LA CECC 30 201-803: SPECIFICATION PARTICULIERE: CONDENSATEURS FIXES AUTANTALE A ELECTROLYTE SOLIDE, A ANODE POREUSE (SOUS-FAMILIE 3)	AMENDMENT 2 TO CECC 30 201-803: DETAIL SPECIFICATION: FIXED TANTALUM CAPACITORS WITH SOLID ELECTROLYTE, POROUS ANODE (SUB-FAMILY 3)	ÄNDERUNG 2 ZU CECC 30 201-803: BAUARTSPEZIFIKATION: TANTAL-FESTKONDENSATOREN MIT FESTEM ELEKTROLYT UND SINTERANODE (UNTERFAMILIE 3)
Supprimer les pages 3/4 et insérer les nouvelles pages 3/4. (Le titre du paragraphe 1.1 a été supprimé et le nouveau titre a été inséré). Enregistrer cette modification sur la feuille jaune "Enregistrement des modifications". Le texte de cette modification a été soumis au vote du CECC dans le document indiqué ci-dessous et a été ratifié par le Président du CECC pour être publié.	Remove pages 3/4 and insert the new pages 3/4. (The title of clause 1.1 has been deleted and the new title inserted). Enter this amendment on the yellow "Record of amendments" sheet. The text of this amendment was circulated to the CECC for voting in the document indicated below and was ratified by the President of the CECC for publication.	Die Seiten 3/4 sind herauszunehmen und durch die neuen Seiten 3/4 zu ersetzen. (Der Titel von Abschnitt 1.1 wurde durch den neuen Titel ersetzt). Diese Änderung ist auf dem gelben Blatt "Verzeichnis der Änderungen" einzutragen. Der Text dieser Änderung wurde dem CECC mit dem unten aufgeführten Schriftstück zur Abstimmung vorgelegt und vom Präsidenten des CECC zur Veröffentlichung freigegeben.
Document: CECC(Secrétariat)2491 Date de vote: Février 1990 Rapport de vote: CECC(Secrétariat)2653	Document: CECC(Secretariat)2491 Date of voting: February 1990 Report on the voting: CECC(Secretariat)2653	Schriftstück: CECC(Sekretariat)2491 Abstimmungsdatum: Februar 1990 Abstimmbericht: CECC(Sekretariat)2653
CECC 30 201-803 Edition 1 Amendement 2 (1991)	CECC 30 201-803 Issue 1 Amendment 2 (1991)	CECC 30 201-803 Ausgabe 1 Änderung 2 (1991)

This blue page should be inserted after the title page of CECC 30 201- 803 Issue 1 (1989):

**Detail Specification for
Fixed Tantalum Capacitors with Solid Electrolyte, Porous Anode
(Sub-Family 3)**

AMENDMENT 1

1) Remove pages 3/4 and 7/8 and insert the new pages 3/4 and 7/8

The following corrections have been made:

Page 3 : In the heading to Table 1B Index "i" to "L" has been deleted and substituted by Index "1" to read L₁.

Page 8 : In Table 2C a maximum value of impedance of "8" has been inserted for 1,5 μ F/20 V.

Remark of the Secretary of CECC WG 3:

Corrections 1 and 2 are based on CECC/WG 3(Gouvernelle)4 and have been discussed at the meeting of CECC WG 3 in Paris in October 1989 (see minutes CECC/WG 3(Secretariat)202, item 7.3).

Please enter this amendment on the yellow "Record of amendments" sheet.

CECC 30 201-803 Issue 1 Amendment 1 (1990)

Information about the System may be obtained from:



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and
CECC General Secretariat
Stresemannallee 15
D-6000 Frankfurt/Main 70
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Telex 4-12871 vdetz d
Telefax Int.+ (49) 69 6 30 82 83 (Gr. 2/3)
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 CECC Specifications of the FEN and National Specifications for the System
- 3 CECC 00 200: Qualified Products List (QPL)
- 4 CECC 00 300: CECC Publications and their related national documents

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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 specification 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 **FIXED TANTALUM CAPACITORS WITH SOLID ELECTROLYTE, POROUS ANODE (SUB-FAMILY 3)**. It 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 detail specification (DS) was prepared by CECC Working Group 3: "Capacitors".

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

The text of this detail specification was circulated to the members of CECC WG 3 and was approved for publication under the accelerated procedure for the acceptance of detail specifications in accordance with Decision 10 of the minutes of the CECC CD in document (Secretariat)1838.

Secretariat Note:

This detail specification was originally drafted and discussed as document CECC/WG 3 (Petrick)2A and CECC/WG 3 (Petrick)2B by WG 3 at its meetings in Scheveningen, Bologna and Munich with the decision to publish a revised version without voting.

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.

CECC 30 201-803 Issue 1

Specification available from:
CECC General Secretariat

CECC 30 201-803
Issue 1 - 1989
Page 1 of 18



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

CECC 30 000 Issue 3 1983, Amdts. 1 - 5

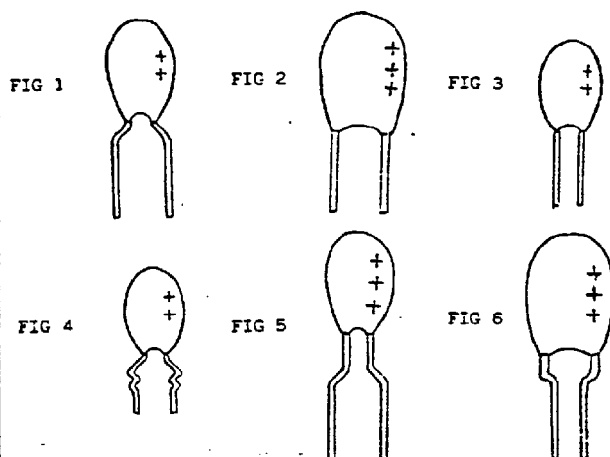
CECC 30 200 Issue 2 1985, Amdts. 1 - 5

MANUFACTURERS' TYPE NUMBERS:

See CECC 00 200

For ordering information see
Clause 1.6

Outline drawings



See Table 1A, 1B and drawings on page 2
for detailed dimensions
Marking information - see Clause 1.5

HARMONIZED DETAIL
SPECIFICATION FOR FIXED
TANTALUM CAPACITORS WITH
SOLID ELECTROLYTE, POROUS
ANODE (SUB-FAMILY 3)

Polar
Resin Dipped
Unidirectional terminations
Climatic Category 55/125/56

Assessment Level E
Long Life Grade

Information about manufacturers who have components qualified to this
detail specification is available in the current CECC 00 200:
Qualified Products List

It is intended that this specification should replace national specifications.
Relevant numbers will be submitted by the national committees and published
under issue 2 of this specification.

- 1 -

CECC 30 201-803 Issue 1

TABLE 1A

DIMENSIONS RELATED TO CASE SIZE (in mm)

Case size Reference	Suffix C, G, H or SP	L Max.		D Max.	Typical Weight (g)	Case Size Reference	Suffix C or H	L Max.		D Max.	Typical Weight (g)
		Suffix F	Suffix B					Suffix F			
2	9,0	10,5	11,5	4,5	0,2	10	14,0	15,5	8,5	0,6	
4	10,0	11,5	12,5	5,0	0,2	12	14,5	16,0	9,0	1,0	
5	11,0	12,5	13,5	5,5	0,3	13	16,0	17,5	9,5	1,5	
6	11,5	13,0	14,0	6,0	0,3	14	17,0	18,5	10,0	2,0	
7	12,0	13,5	14,5	6,5	0,4	15	18,5	20,0	10,0	3,0	
8	12,5	14,0	15,0	7,5	0,5	16	21,0	22,5	10,0	4,5	
9	13,5	15,0	16,0	8,0	0,5						

Note: The leads of capacitors with the F suffix are designed to plug directly into the printed circuit boards and are classed as rigid

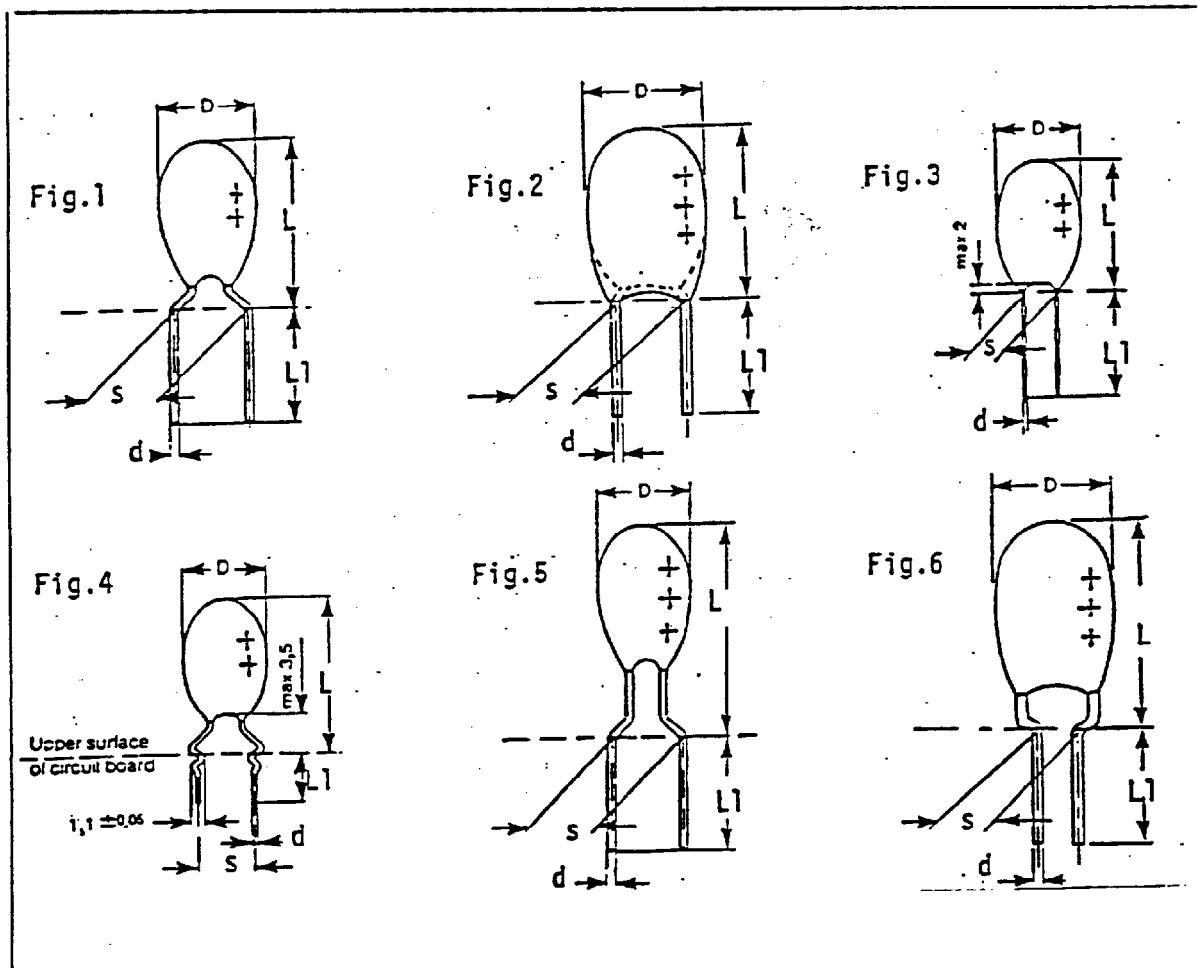


TABLE 1B

Detailed Dimensions (in mm)

Suffix	Figure Number	L ₁	s	d
B	Fig. 5	16,0 ± 4,0	5,0 ± 1,0	0,5 ± 0,05
C	Shouldered leads Fig. 1	16,0 ± 4,0	5,0 ± 1,0	0,5 ± 0,05
	Non shouldered leads Fig. 2			
F	Fig. 4	4,5 ± 1,5	5,0 + 1,0 - 0,5	0,5 ± 0,05
G	Fig. 6	16,0 ± 4,0	3,18 ± 0,5	0,5 ± 0,05
H	Fig. 1	16,0 ± 4,0	6,35 ± 1,0	0,5 ± 0,05
SP	Fig. 3	16,0 ± 4,0	2,5 ± 0,5	0,5 ± 0,05

Note: Lead lengths may be supplied to tolerances other than those above and should be specified in the ordering information.

1 GENERAL DATA

1.1 Method of mounting for vibration and bump or shock tests

For shock and vibration testing, capacitors shall be mounted by clamping the body and the terminations.

(See 1.3.2 of CECC 30 200 Issue 2).

1.2 Dimensions

See Table 1A and Table 1B.

1.3 Ratings and Characteristics

Capacitance range	See Table 2A
Capacitance tolerance	$\pm 10\%$, $\pm 20\%$
Rated Voltage U_R	See Table 2A
Category Voltage U_C	See Table 2A
Climatic Category	55/125/56
Surge Voltage	See Table 2D
Rated Temperature	85 °C
Capacitance change with temperature	-55 °C: $\leq 10\%$ 85 °C: $\leq 12\%$ 125 °C: $\leq 15\%$
Tangent of loss angle (-55 °C to 125 °C)	See Table 2B1
Leakage current at 20 °C	See Table 2B2
Leakage current at 85 °C	10 x the requirement } of Table
Leakage current at 125 °C (U_C)	12,5 x the requirement } 2B2
Impedance at 100 kHz and 20 °C	See Table 2C
Surge Voltage	See Table 2D
Vibration severity	10-2000 Hz, 0,75 mm or 98 m/s ²
Shock severity	981 m/s ² , 6 ms

TABLE 2A

Values of rated capacitance and rated voltage U_R related to case size

Rated Voltage (V d.c.) U_R Category Voltage (V d.c.) U_C	6,3 4	10 7	16 10	20 +) 13	25 17	35 +) 23	50 +) 33
Rated Capacitance (μF)	Case size						
0,1 0,15 0,22						2 2 2	2 2 2
0,33 0,47 0,68						2 2 2	2 2 2
1,0 1,5 2,2			2	2 2	2 2 2	2 2 2	4 5 5
3,3 4,7 6,8	2 2	2 2 2	2 2 4	2 4 5	2 4 5	4 5 6	7 8 8
10 15 22	2 4 5	4 5 6	5 6 7	6 7 8	6 7 9	7 9 10	9 10 13
33 47 68	6 7 8	7 8 9	7 9 10	9 10 13	10 12 13	12 14	
100 150 220	9 10 12	10 13 14	13 13 15	13			
330 470 680	14 15 16	15					

Note: E12 values of capacitance are also available but are not preferred.
The case size for E12 values is that of the next highest E6 value.

+) Non-preferred voltages

TABLE 2B1Maximum values of tangent of loss angle

Rated capacitance (μF)		Tangent of loss angle	
		- 55 to 85 °C	125 °C
	$C_R < 2,2$	0,04	0,06
2,2	$\leq C_R < 10$	0,06	0,08
10	$\leq C_R < 100$	0,08	0,08
	$C_R \geq 100$	0,10	0,10

TABLE 2B2

Maximum values of leakage current (uA) at 20 °C

Rated Capacitance (μF) \ Rated Voltage U_R V d.c.	6,3	10	16	20 +)	25	35 +)	50 +)
0,1 0,15 0,22						0,5 0,5 0,5	0,5 0,5 0,5
0,33 0,47 0,68						0,5 0,5 0,5	0,5 0,5 0,5
1,0 1,5 2,2			0,5	0,5 0,5	0,5 0,5 0,5	0,5 0,5 1,0	0,5 1,0 1,0
3,3 4,7 6,8	0,5 0,5	0,5 0,5 1,0	0,5 1,0 1,0	0,5 1,0 1,5	1,0 1,0 1,5	1,0 1,5 2,5	1,5 2,5 3,5
10 15 22	1,0 1,0 1,5	1,0 1,5 2,5	1,5 2,5 3,5	2,0 3,0 4,5	2,5 4,0 5,5	3,5 5,0 7,5	5,0 7,5 10
33 47 68	2,0 3,0 4,5	3,5 4,5 7,0	5,0 7,5 10	6,5 9,5 13,5	8,5 10 15	10 10	
100 150 220	6,5 9,5 14	10 15 20	15 20 20	20			
330 470 680	20 20 25	20					

+) Non-preferred voltages

TABLE 2C

Maximum values of impedance in hms at 100 kHz ($\geq 0,68 \mu\text{F}$ only) and 20 °C

Rated Capacitance (μF) \backslash Rated Voltage U_R V d.c.	6,3	10	16	20 +)	25	35 +)	50 +)
0,1						na	na
0,15						na	na
0,22						na	na
0,33						na	na
0,47						na	na
0,68						10,0	10,0
1,0					9,0	8,0	8,0
1,5				8,0	7,5	6,0	6,0
2,2			7,0	6,5	6,0	5,0	4,5
3,3		6,5	6,0	5,2	4,5	3,5	3,5
4,7	6,0	5,0	4,5	3,8	3,2	2,5	2,5
6,8	5,0	4,0	3,2	2,8	2,5	2,0	2,0
10	4,0	3,2	2,5	2,2	2,0	1,6	1,6
15	3,2	2,5	2,0	1,8	1,6	1,2	1,2
22	2,5	2,0	1,6	1,4	1,2	1,0	1,0
33	2,0	1,6	1,2	1,1	1,0	0,8	
47	1,6	1,2	1,0	0,9	0,8	0,6	
68	1,2	1,0	0,8	0,7	0,6		
100	1,0	0,8	0,6	0,5			
150	0,8	0,6	0,5				
220	0,6	0,5	0,4				
330	0,5	0,5					
470	0,5						
680	0,5						

+) Non-preferred voltages
na = Not applicable