

DETAIL SPECIFICATION

CECC 30 801-805

SPÉCIFICATION PARTICULIÈRE

BAUARTSPEZIFIKATION

September 1995

English version

**Detail Specification:
Fixed tantalum surface mounting capacitors
with solid electrolyte, porous anode
Low ESR range**



This CECC Detail Specification was approved on 1995-05-04.

Up-to-date lists and bibliographical references of other detail specifications relating to EN 130000:1993 and CECC 30 800:1990 may be obtained on application to the Central Secretariat or to any CENELEC member.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Ref. No. CECC 30 801-805:1995 E

PREFACE

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

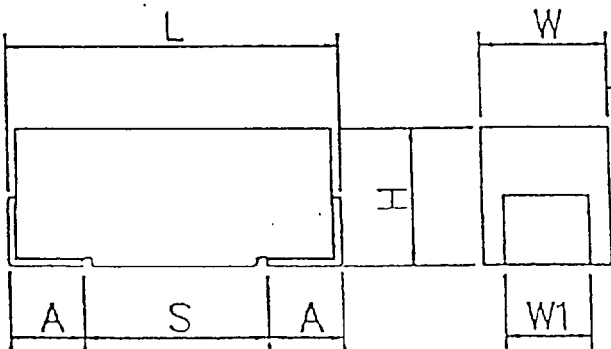
It is based, wherever possible, on the Publications of the International Electrotechnical Commission.

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 with Decisions 10,11 and 12 of the minutes of the CECC CD meeting in document CECC(Sec)1813.

Secretariat Note:

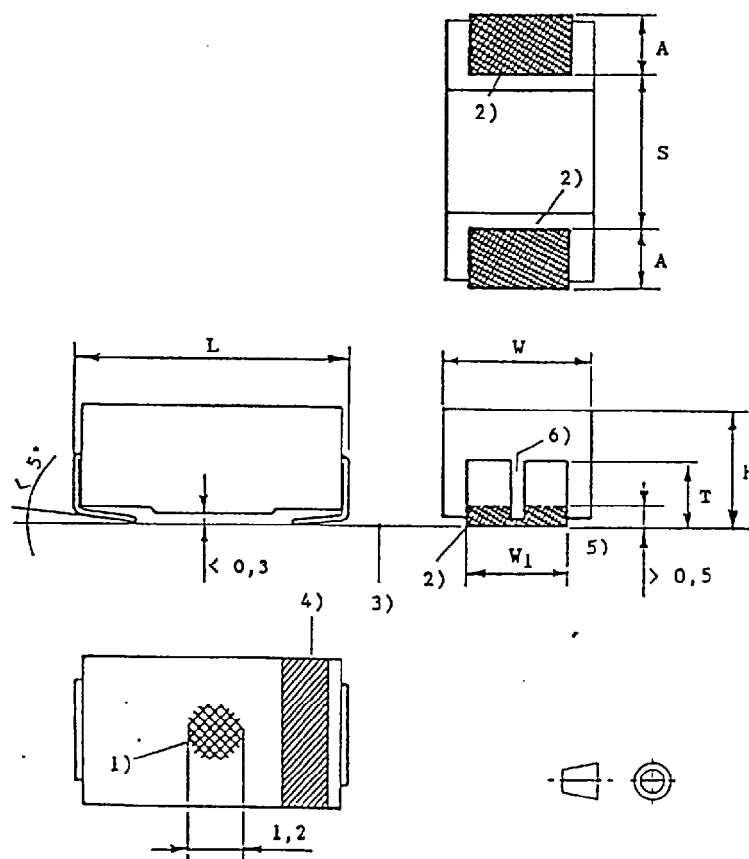
The document was originally drafted by members of CECC WG3 and discussed as document CECC 30 801-AAA (Draft), December 1994, by WG3 at their meeting in London in May 1995 with the decision to publish it without voting (see minutes TC/CECC WG3(Sec)289, item 14.1).

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.

HARMONISED DETAIL SPECIFICATION	CECC 30 801-805
Specification available from: National Authorized Institution	
ELECTRONIC COMPONENTS OF ASSESSED QUALITY DETAIL SPECIFICATION IN ACCORDANCE WITH: EN 130 000:1993 CECC 30 800 Issue 2 1990	MANUFACTURER'S TYPE NUMBERS See CECC 00 200 For ordering information see 1.6
Outline and dimensions First angle projection  Figure 1 (Other shapes are permitted within the dimensions given) Marking information: See 1.5 For details see Figure 2 and Table 1	DETAIL SPECIFICATION FOR FIXED TANTALUM SURFACE MOUNTING CAPACITORS WITH SOLID ELECTROLYTE, POROUS ANODE LOW ESR RANGE
	POLAR SOLID ELECTROLYTE METALLIC TERMINATIONS STYLE I - PROTECTED FOR SURFACE MOUNTING
	ASSESSMENT LEVEL: EZ

QUICK REFERENCE DATA:	Rated capacitance range (C_R) Capacitance tolerance Rated voltage range (U_R) Climatic category Performance grade	3,3 μ F to 330 μ F $\pm 10\%$, $\pm 20\%$ 6,3 to 35 V d.c. 55/125/56 Long life
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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 CECC System (Register of Approvals).

Figure 2

Notes:

- For detailed dimensions see Table 1
- Dimensions in mm

- 1) Area on upper surface of the capacitor to allow vacuum pick-up
- 2) Area to be examined after solderability test
- 3) Substrate
- 4) Area for polarity mark
- 5) Dimension W1 applies to the A dimension only
- 6) This notch is an optional feature

1 General data

1.1 Methods of mounting

For normal use the capacitors may be mounted by hand soldering, infrared soldering, wave soldering or condensation soldering.

For tests carried out in accordance with Table 4B Group C3 the mounting shall be in accordance with 4.3 of CECC 30 800 using glass-epoxy FR4 printed board 1,6 mm thick.

1.2 Dimensions

Table 1

Case Size	Dimensions (in mm)						
Reference	L	W	H	W ₁	A	S _{min.}	T _{min.}
C	6,0±0,3	3,2±0,3	2,5±0,3	2,2±0,1	1,3±0,3	2,9	1,0
D	7,3±0,3	4,3±0,3	2,8±0,3	2,4±0,1	1,3±0,3	4,1	1,0
E	7,3±0,3	4,3±0,3	4,1±0,3	2,4±0,1	1,3±0,3	4,4	1,0

Notes: Dimension W₁ applies to the A dimension only.

The minimum value specified for S implies that the full ranges of tolerances for L and A may not be simultaneously available.

1.3 Ratings and characteristics

Capacitance range	See Table 2A
Tolerance on rated capacitance	± 10%, ± 20%
Rated voltage	See Table 2A
Category voltage	See Table 2A
Recommended operating voltage in circuits with series impedance < 0,1 Ω	≤ 50% U _R
Climatic category	55/125/56
Rated temperature	85°C
Variation of capacitance with temperature	See Table 2B
Tangent of loss angle	See Table 2B
Leakage current (μA) max.	See Table 2B
Equivalent series resistance (ESR) at 100 kHz	See Table 2C
Surge voltage	1,3 U _R or 1,3 U _C as applicable

Table 2A
Values of capacitance and voltage related to case size

Rated voltage U_R (V)	6,3	10	16	20	25	35
Category voltage U_C (V)	4	6,3	10	13	16	23
Rated capacitance (μF)	Case size					
3,3						C
4,7					C	D
6,8				C		D/E
10			C	C		D/E
15		C	C		D	D/E
22	C	C		D	D/E	E
33	C		D	D/E	E	
47		D	D	E		
68	D	D	E	E		
100	D	D/E	E			
150	E	E				
220	E	E				
330	E					

Note: Units may be operated at voltages less than their rated / category voltage.

Table 2B
Characteristics at low and high temperatures

U _R (V)	C _R (μF)	Maximum values									
		Capacitance change *			Tangent of loss angle *				Leakage current *		
		(%)							(μA)		
		-55°C	85°C	125°C	-55°C	20°C	85°C	125°C	20°C	85°C	125°C ¹⁾
6,3	22	≤ 0, ≥ -10	≥ 0, ≤ 10	≥ 0, ≤ 12	0,09	0,06	0,09	0,12	1,4	14	17
	33				↓	↓	↓	↓	2,1	21	26
	68								4	40	50
	100				0,11	0,08	0,11	0,14	6	60	75
	150				↓	↓	↓	↓	9,5	95	120
	220				↓	↓	↓	↓	13,9	139	174
	330				↓	↓	↓	↓	19,8	198	248
10	15				0,09	0,06	0,09	0,12	1,5	15	19
	22				↓	↓	↓	↓	2,2	22	28
	47				↓	↓	↓	↓	5	50	62
	68				↓	↓	↓	↓	7	70	87
	100				0,11	0,08	0,11	0,14	10	100	125
	150				↓	↓	↓	↓	15	150	188
	220				↓	↓	↓	↓	22	220	275
16	10				0,09	0,06	0,09	0,12	1,6	16	20
	15				↓	↓	↓	↓	2,4	24	30
	33				↓	↓	↓	↓	5	50	62
	47				↓	↓	↓	↓	7,5	75	94
	68				↓	↓	↓	↓	10,9	109	136
	100				0,11	0,08	0,11	0,14	16,0	160	200
20	6,8				0,09	0,06	0,09	0,12	1,4	14	17
	10				↓	↓	↓	↓	2,0	20	25
	22				↓	↓	↓	↓	4,4	44	55
	33				↓	↓	↓	↓	6,6	66	83
	47				↓	↓	↓	↓	9,4	94	118
	68				↓	↓	↓	↓	13,6	136	170
25	4,7				0,09	0,06	0,09	0,12	1,2	12	15
	15				↓	↓	↓	↓	4,0	40	50
	22				↓	↓	↓	↓	5,5	55	69
	33				↓	↓	↓	↓	8,3	83	104
35	3,3				0,09	0,06	0,09	0,12	1,2	12	14
	4,7				↓	↓	↓	↓	1,6	16	20
	6,8				↓	↓	↓	↓	2,4	24	30
	10				↓	↓	↓	↓	3,5	35	44
	15				↓	↓	↓	↓	5,3	53	66
	22				↓	↓	↓	↓	7,7	77	96

1) Measured at category voltage

* See clause 1.9