

DETAIL SPECIFICATION

CECC 30 701-802

SPÉCIFICATION PARTICULIÈRE

BAUARTSPEZIFIKATION

September 1995

English version

**Detail Specification:**  
**Fixed capacitors of ceramic dielectric, Class 2F4**



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 30 700:1989 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 30 701-802:1995 E

PREFACE

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

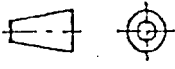
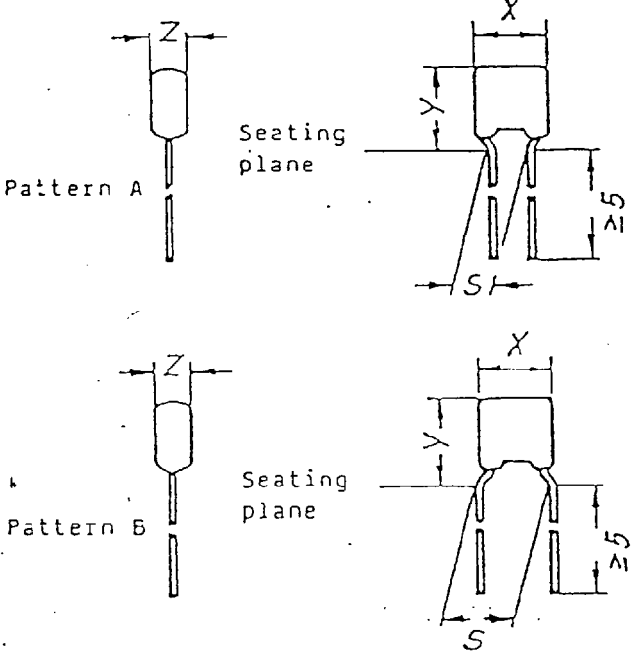
It is based, wherever possible, on the Publications of the International Electrotechnical Commission.

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 WG3(West)145B by WG3 at their meeting in Graz in October 1994 with the decision to published it without voting (see minutes CECC WG3(Sec)285, item 15.1.2).

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.

|                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <p>Specification available from:<br/>National Authorized Institution</p>                                                                                                                                                                                                                                                                                                                                                       | <p>CECC 30 701-802</p> <p>ISSUE 1 1995</p>                                                                             |
| <p>ELECTRONIC COMPONENTS OF ASSESSED QUALITY<br/>DETAIL SPECIFICATION IN ACCORDANCE WITH:</p> <p>EN 130000:1993<br/>CECC 30 700 Issue 2 to Amendment 3</p>                                                                                                                                                                                                                                                                     | <p>MANUFACTURER'S TYPE NUMBERS<br/>See CECC 00 200<br/>For ordering information<br/>see 1.6</p>                        |
| <p>First angle projection</p>  <p>Outline drawing and dimensions</p>  <p>Pattern A</p> <p>Seating plane</p> <p>Pattern B</p> <p>Seating plane</p> <p>All dimensions are in mm, see Table 1.<br/>Other shapes permitted within<br/>the dimensions given.</p> | <p>DETAIL SPECIFICATION FOR<br/>FIXED CAPACITORS OF<br/>CERAMIC DIELECTRIC<br/>CLASS 2F4</p>                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>Conformal coating, or in<br/>non-metallic case<br/>Insulated<br/>Radial terminations</p> <p>ASSESSMENT LEVEL: E</p> |

REFERENCE DATA: Rated capacitance range: 10 nF to 27  $\mu$ F  
 Capacitance tolerance:  $\pm 10\%$ ,  $\pm 20\%$   
 d.c. rated voltage range: 50 V, 63 V, 100 V  
 Climatic category: 55/125/56

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).

This specification is intended to replace the following detail specifications:  
CECC 30 701-006

## 1 - GENERAL DATA

## 1.1 Method of mounting for vibration and bump or shock tests

The capacitors shall be mounted on a printed wiring board with the seating plane coincident with the top surface of the board.

## 1.2 Dimensions

Table 1

| Case size reference | Pattern reference | Maximum dimensions (4) |       |     | Wire diameter (3) |            | S<br>(1) |
|---------------------|-------------------|------------------------|-------|-----|-------------------|------------|----------|
|                     |                   | X                      | Y (2) | Z   | Preferred         | Permitted  |          |
| D1                  | A                 | 3,2                    | 3,6   | 2,5 | 0,5               | 0,4        | 2,54     |
| D2                  | A                 | 3,8                    | 5,3   | 2,5 | 0,5               | 0,4 or 0,6 | 2,54     |
| D3                  | B                 | 3,8                    | 5,8   | 2,5 | 0,5               | 0,4 or 0,6 | 5,08     |
| D4                  | A                 | 3,8                    | 6,4   | 2,5 | 0,5               | 0,4 or 0,6 | 2,54     |
| D5                  | B                 | 3,8                    | 6,4   | 2,5 | 0,5               | 0,4 or 0,6 | 5,08     |
| D6                  | A                 | 5,1                    | 6,5   | 3,2 | 0,5               | 0,6        | 2,54     |
| D7                  | B                 | 5,1                    | 7,6   | 3,2 | 0,5               | 0,6        | 5,08     |
| D8                  | A                 | 5,1                    | 8,3   | 3,2 | 0,5               | 0,6        | 2,54     |
| D9                  | A                 | 6,5                    | 5,5   | 3,5 | 0,5               | 0,6        | 5,08     |
| D10                 | A                 | 7,6                    | 9,6   | 3,8 | 0,5               | 0,6        | 5,08     |
| D11                 | A                 | 7,6                    | 10,8  | 3,8 | 0,5               | 0,6        | 5,08     |
| D12                 | B                 | 7,6                    | 10,8  | 3,8 | 0,5               | 0,6        | 10,16    |
| D13                 | B                 | 10,2                   | 12,1  | 5,1 | 0,5               | 0,6        | 10,16    |
| D14                 | A                 | 12,7                   | 14,2  | 5,1 | 0,5               | 0,6        | 10,16    |
| D15                 | A                 | 10,2                   | 11,7  | 3,8 | 0,5               | 0,6        | 5,08     |

## NOTES

- (1) Dimension S is measured at the seating plane with a gauge according to sub-clause 3.2.1 of IEC 717.
- (2) Capacitors may be supplied with pre-shaped terminations, in which case dimension Y shall be increased by 3,0 mm. The specific shape may be agreed between user and manufacturer.
- (3) For additional information on tolerances see IEC 310.
- (4) For the measurement of dimensions X, Y and Z gauges may be set up to 0,05 mm larger than the value in the table, to accommodate capacitors originally designed to inch dimensions.

## 1.3 Ratings and characteristics

|                                           |                                                                       |
|-------------------------------------------|-----------------------------------------------------------------------|
| Capacitance range                         | See Table 2                                                           |
| Tolerance on rated capacitance            | $\pm 10\%$ , $\pm 20\%$                                               |
| Rated voltage                             | See Table 2                                                           |
| Category voltage                          | As rated voltage                                                      |
| Climatic category                         | 25/85/56                                                              |
| Rated temperature                         | 85 °C                                                                 |
| Tangent of loss angle                     | $\leq 0,025$                                                          |
| Insulation resistance                     | Test point 1a: $\geq 10\text{ G}\Omega$ or 100 s<br>whichever is less |
|                                           | Test point 1c: $\geq 5\text{ G}\Omega$                                |
| Voltage proof                             | $2,5 U_R$                                                             |
| Temperature characteristic of capacitance | 2F4 (see Table 2A)                                                    |

Table 2

Values of capacitance in nF related to case sizes and rated voltages

| Case Size | Rated voltage |               |               |
|-----------|---------------|---------------|---------------|
|           | 50 V          | 63 V          | 100 V         |
| D1        | 10 to 270     | 10 to 270     | 10 to 220     |
| D2        | 10 to 330     | 10 to 330     | 10 to 220     |
| D3        | 10 to 330     | 10 to 330     | 10 to 220     |
| D4        | 10 to 330     | 10 to 330     | 10 to 220     |
| D5        | 10 to 330     | 10 to 330     | 10 to 220     |
| D6        | 10 to 1200    | 10 to 1200    | 10 to 1000    |
| D7        | 10 to 1200    | 10 to 1200    | 10 to 1000    |
| D8        | 10 to 1200    | 10 to 1200    | 10 to 1000    |
| D9        | 10 to 1200    | 10 to 1200    | 10 to 1000    |
| D10       | 100 to 2200   | 100 to 2200   | 100 to 1200   |
| D11       | 100 to 5600   | 100 to 5600   | 100 to 4700   |
| D12       | 100 to 5600   | 100 to 5600   | 100 to 4700   |
| D13       | 1000 to 10000 | 1000 to 10000 | 1000 to 6800  |
| D14       | 2200 to 27000 | 2200 to 27000 | 2200 to 22000 |
| D15       | 1000 to 15000 | 1000 to 15000 | 1000 to 12000 |

## NOTES

- (1) Individual capacitance values should preferably be selected from the E12 series of IEC 63.
- (2) Capacitance values are for guidance only. Values outside these ranges but within these case sizes may be approved. See CECC 00 200 for individual manufacturers' ranges.