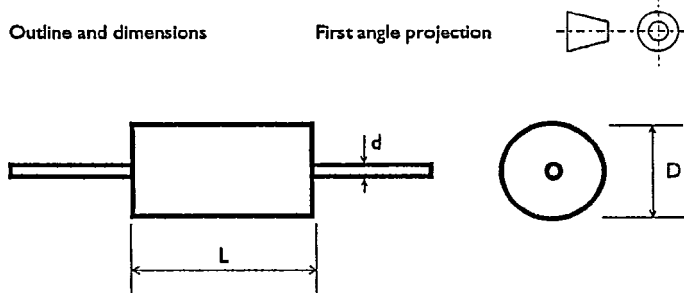


BRITISH STANDARDS INSTITUTION 2 PARK STREET, LONDON	BS CECC 30 501-030 
Specification available from: AS SHOWN IN PD 9002, CECC 00200 and  I.C.W.Ltd Miners Road Llay Industrial Estate WREXHAM Clwyd LL12 0PJ	ISSUE 1 MAY 1992
ELECTRONIC COMPONENTS OF ASSESSED QUALITY DETAIL SPECIFICATION IN ACCORDANCE WITH BS CECC 30 000: 1984 BS CECC 30 500: 1989	MANUFACTURER'S TYPE NUMBER PCCMAR/AMTC
Outline and dimensions First angle projection  Lead lengths 30 minimum All dimensions in mm Marking information: see clause 1.5	SEE PD 9002 AND CECC 00 200 For ordering information see clause 1.6 FIXED METALLIZED POLY-CARBONATE FILM DIELECTRIC D.C. CAPACITOR TYPICAL CONSTRUCTION: CYLINDRICAL INSULATED METAL CASE, AXIAL TERMINATIONS
	ASSESSMENT LEVEL E

QUICK REFERENCE DATA

Capacitance range	10 nF to 22 μ F
Capacitance tolerance	$\pm 1\%$, $\pm 2\%$, $\pm 5\%$, $\pm 10\%$, $\pm 20\%$
Rated voltage ranges	63 V d.c. to 400 V d.c.
Climatic category	55/100/56
Performance grade	I (Long life)

Refer to Qualified Products List PD 9002 and/or CECC 00 200 for details of manufacturers approved to this specification

1. General data**1.1 Method of mounting for vibration and bump tests**

Each capacitor shall be mounted on a printed circuit board, the body being pressed firmly against the mounting surface and fixed by soldering the leads, which shall be bent through 90° at a point 6 mm to 6.5 mm from the point of emergence of the termination. Units of mass of 3g or greater shall also have their bodies clamped.

1.2 Dimensions

Table 1

Case size reference	L max	D max	d min	d max
1	18,0	7,5	0,55	0,77
2	20,5	8,0	0,55	0,77
3	23,0	7,5	0,55	0,77
4	23,0	8,0	0,55	0,77
5	24,5	9,0	0,55	0,77
6	23,0	10,0	0,55	0,77
7	23,0	11,0	0,55	0,77
8	23,0	12,0	0,75	1,00
9	31,0	12,0	0,75	1,00
10	27,4	14,5	0,75	1,00
11	31,0	14,5	0,75	1,00
12	36,0	9,5	0,75	1,00
13	36,0	11,0	0,75	1,00
14	36,0	12,0	0,75	1,00
15	36,0	14,5	0,75	1,00
16	36,0	16,5	0,75	1,00
17	36,0	18,5	0,75	1,00
18	36,0	22,0	0,75	1,00

1.3 Ratings and characteristics

Capacitance range	10 nF to 22 μ F Preferably selected from the E6 values of IEC 63 (See Table 2). Where the use of other values is essential they shall be chosen from that document		
Tolerance on rated capacitance	$\pm 1\%$, $\pm 2\%$, $\pm 5\%$, $\pm 10\%$, $\pm 20\%$		
Rated voltage	63 Vd.c., 160 Vd.c., 250 Vd.c., 400 Vd.c. (See Table 2)		
Climatic category	55/100/56		
Rated temperature	85 °C		
Tangent of the loss angle (@ 1 kHz)	$C_R \leq 1 \mu\text{F}$ $C_R > 1 \mu\text{F}$	$\leq 30 \times 10^{-4}$ $\leq 50 \times 10^{-4}$	
Insulation resistance: Measuring point 1a (between terminations)	$C_R \leq 330 \text{ nF}$ $C_R > 330 \text{ nF}$	$U_R \leq 100 \text{ V}$ $U_R > 100 \text{ V}$ $U_R \leq 100 \text{ V}$ $U_R > 100 \text{ V}$	$\geq 15 \text{ GOhm}$ $\geq 30 \text{ GOhm}$ $\geq 5 \text{ ks}$ $\geq 10 \text{ ks}$
Measuring point 1c (between terminations connected together and foil or V-block)	$\geq 30 \text{ GOhm}$		

Table 2
Values of capacitance related to voltages and case sizes

Rated voltage (V @ 85°C)	63	160	250	400
Category voltage (V @ 100°C)	50	128	200	320
Rated capacitance	Case size reference			
10 nF		1	1	1
15 nF		1	1	2
22 nF		1	3	4
33 nF	2	2	3	4
47 nF	2	3	5	6
68 nF	2	3	5	6
100 nF	2	3	5	7
150 nF	2	4	7	9
220 nF	2	5	8	11
330 nF	4	9	10	12
470 nF	4	9	10	15
680 nF	6	11	12	16
1,0 µF	7	11	15	17
1,5 µF	9	12	16	18
2,2 µF	9	14	17	
3,3 µF	11	16	18	
4,7 µF	14	17		
6,8 µF	15	18		
10 µF	16	18		
15 µF	18			
22 µF	18			

Note: Numbers shown in columns 2 to 5 are preferred case size reference numbers.

The preferred case size reference for values of rated capacitance lying between those given above is that corresponding to the next higher value.

1.4 Related documents

IEC 63 (BS 2488)	Schedule of preferred numbers for the resistance of resistors and the capacitance of capacitors for telecommunication equipment
IEC 68 (BS 2011)	Basic environmental testing procedures
IEC 410 (BS 6001)	Sampling procedures and tables for inspection by attributes
BS CECC 30 000	Generic specification for fixed capacitors
BS CECC 30 500	Sectional specification: Fixed metallized polycarbonate film dielectric capacitors for direct current
PD 9002	BS 9000 component selection guide
CECC 00 200	Qualified products list

1.5 Marking

The following information will be marked on the capacitor:

- 1) Rated capacitance
- 2) Rated voltage
- 3) Tolerance on rated capacitance (%)
- 4) Week and year of manufacture
- 5) Type number

The package containing the capacitor(s) shall be clearly marked with all the information listed in 1) to 5) above, together with the following:

- 6) Manufacturer's name
- 7) Climatic category
- 8) Category voltage
- 9) Reference to this detail specification
- 10) CECC Mark

1.6 Ordering information

Orders for components to this specification shall contain the following minimum information:

- 1) Quantity
- 2) Manufacturer's type number
- 3) Rated capacitance
- 4) Tolerance on rated capacitance
- 5) Rated d.c voltage
- 6) This specification number, issue and date
- 7) Case size reference, if not the preferred size, see Table 2
- 8) Lead length, if required to be greater than 30 mm

Example: 100 off {Manufacturer's type number} 110 nF $\pm$ 10% 250 V d.c. to
BS CECC 30 501-030, Issue 1 May 1992

1.7 Certified test records

Not required

1.8 Additional information (not for inspection purposes)

1.8.1 Recommended methods of mounting for normal use

The full vibration and bump performance may not be available if mounting methods other than those specified in sub-clause 1.1 of this specification are used.

1.8.2 This specification is intended to replace:

BS 9076 F0006, BS 9076 F0007, BS 9076 F0008, BS 9076 F0016, BS 9076 F0026,
BS 9076 F0031, BS 9076 F0040, BS CECC 30 501-013.