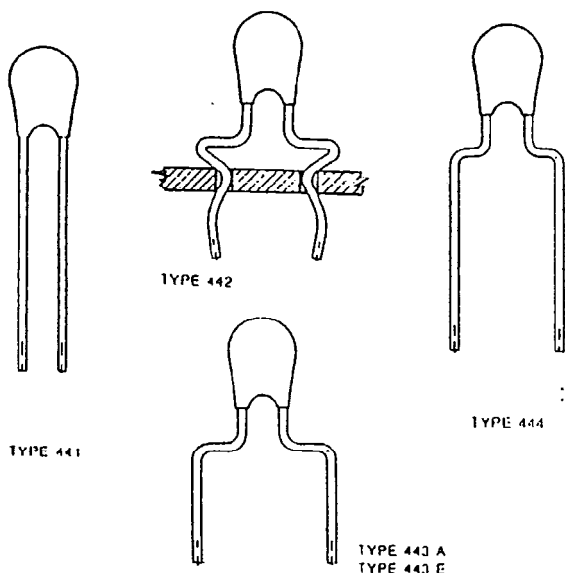


Specification available from: CECC General Secretariat	CEI-CCE 30 201-047 CECC 30 201-047 Issue 1-1990 Page 1 of 15 
ELECTRONIC COMPONENTS OF ASSESSED QUALITY - DETAIL SPECIFICATION IN ACCORDANCE WITH: CECC 30 000 Issue 3 1983,Amdts.1-5 CECC 30 200 Issue 2 1985,Amdts.1-5	MANUFACTURER'S TYPE NUMBERS 44. For ordering informations see Clause 1.6
Outline drawings:  See table 1 and drawings on page 2 for detailed dimensions	HARMONIZED DETAIL SPECIFICATION FOR FIXED TANTALUM CAPACITORS WITH SOLID ELECTROLYTE,POROUS ANODE (SUB-FAMILY 3) TYPICAL CONSTRUCTION: Polar Solid electrolyte Porous tantalum anode Resin dipped / non metallic case Radial leads Climatic category 55/85/21 Assessment Level E General Purpose Grade

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

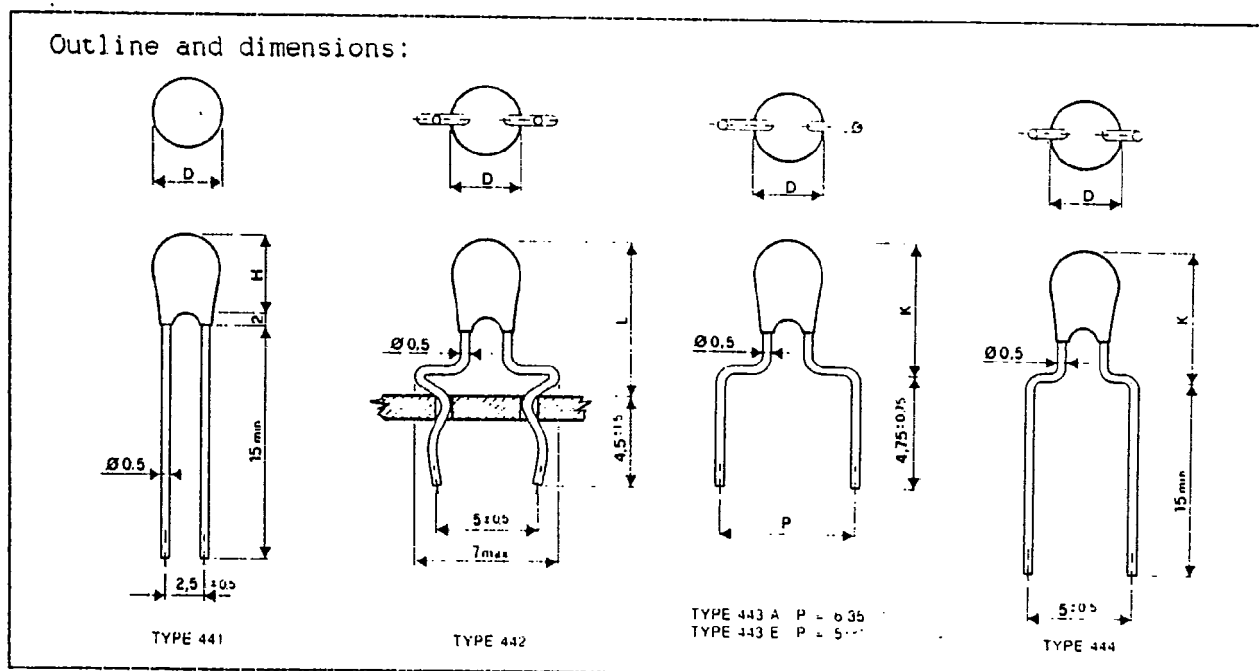
TABLE 1

DIMENSIONS RELATED TO CASE SIZE (in mm)

Case size reference	H max	D max	L max	K max
1	7.0	4.5	10.0	9.0
2	7.5	4.5	10.5	9.5
3	8.0	5.0	11.0	10.0
4	8.5	5.0	11.5	10.5
5	9.0	5.5	12.0	11.0
6	10.0	6.5	12.5	11.5
7	10.5	7.0	13.5	12.5
8	11.5	8.0	15.0	14.0
9	12.0	8.5	15.5	14.5

Note: The wire terminations of capacitors with leads less than 6 mm long are classed as rigid.

Outline and dimensions:



1 GENERAL DATA

1.1 Recommended Method of Mounting

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

1.2 Dimensions

See Table 1 and drawings on page 2.

1.3 Ratings and Characteristics

Capacitance range (E6 series)	0.1 to 220 μ F	See Table 2A
Capacitance tolerance - standard	+/- 20 %	
Rated Voltage U_r	3 to 50 V	See Table 2A
Category Voltage U_c	equal	rated voltage
Climatic category	55/85/21	
Rated Temperature	85°C	
Capacitance change with temperature		See Table 2B
Tangent of loss angle (-55°C to 85°C)		See Table 2B1
Leakage current (20°C and 85°C)		See Table 2B
Impedance at 10 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

CAPACITANCE AND VOLTAGE RELATED TO CASE SIZE

Rated Capacitance (μF)	Rated voltage (V d.c.) U_r							
	3	6.3	10	16	20+)	25	35+)	50+)
0.1							1	1
0.15							1	1
0.22							1	1
0.33							1	2
0.47							1	2
0.68							1	3
1.0						1	1	4
1.5					1	1	2	5
2.2				1	2	2	3	6
3.3			1	2	2	3	4	7
4.7		1	2	3	3	4	5	8
6.8	1	2	2	4	4	5	6	9
10	1	2	3	5	6	6	7	
15	2	3	5	6	6	7	8	
22	2	5	6	7	7	8		
33	3	6	7	8	8			
47	5	6	8	9				
68	6	7	9					
100	7	8						
150	8							
220	9							

+) Not-preferred voltages

TABLE 2B

CHARACTERISTICS AT HIGH AND LOW TEMPERATURE

Test temperature	Capacitance change (%)	Tangent of loss angle (%)	Leakage current (μA)
Room temperature $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$	Reference value	As Table 2B1	$0.02 \cdot \text{Cr} \cdot \text{Ur}$ or $1 \mu\text{A}$ whichever is greater
$-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$	-12 % max	As Table 2B1	N/A
$85^{\circ}\text{C} \pm 2^{\circ}\text{C}$	+15 % max	As Table 2B1	$0.20 \cdot \text{Cr} \cdot \text{Ur}$ or $1 \mu\text{A}$ whichever is greater

TABLE 2B1

MAXIMUM VALUES OF TANGENT OF LOSS ANGLE

Capacitance value (μF)	Tangent of loss angle		
	-55°C	20°C	85°C
$\text{Cr} \leq 1.5$	0.13	0.04	0.11
$2.2 \leq \text{Cr} \leq 6.8$	0.13	0.06	0.11
$10 \leq \text{Cr} \leq 68$	0.13	0.08	0.11
$\text{Cr} > 68$	0.13	0.10	0.12