INCH-POUND
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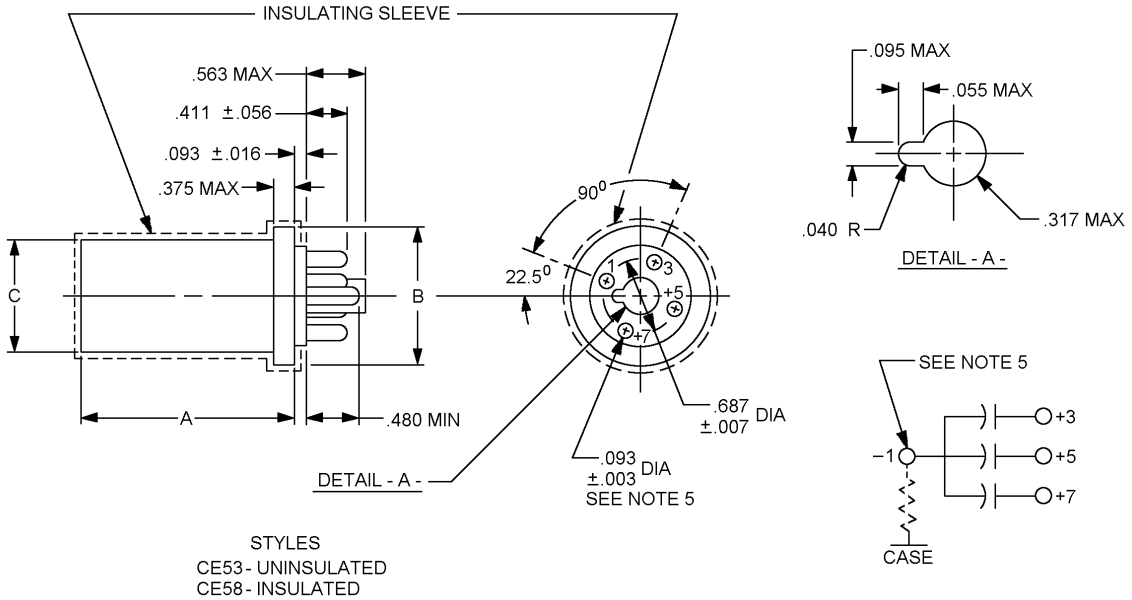
MILITARY SPECIFICATION SHEET

CAPACITORS, FIXED, ELECTROLYTIC
(DC, ALUMINUM, DRY ELECTROLYTE, POLARIZED)
STYLES CE53 AND CE58

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-C-62.

Inactive for new design
(For replacement purposes only)



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.040	1.02
.055	1.40
.056	1.42
.093	2.36
.095	2.41
.317	8.05
.375	9.53
.411	10.44
.480	12.90
.563	14.30
.687	17.45

NOTES:
1. Dimensions are in inches.
2. Unless otherwise specified, tolerances are ± .015 (.38 mm) on decimals and ± 0°30' on angles.
3. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.
4. Capacitors plug into a standard, medium octal socket (Family 4).
5. Number 1 terminal is negative. Pins are made of brass, nickel plated and polished with rounded edges. The capacitor never has less than four pin terminals.
6. There is an indeterminate resistance between the metal case and the negative terminal.

FIGURE 1. Dimensions and configuration.

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

TABLE I. Styles CE53 and CE58 capacitors.

PIN 1/	Capacitance 5/	DC rated voltage per section	DC leakage current per section	Maximum impedance at 120 +10 Hz - 5 at -40° +0° C -3°	Dissipation factor	Case dimensions 2/ 3/ A ±. 062 (1.57)	B +. 010 (0.25) -. 050 (1.27)	C +. 016 (0.41)
	µF	volts	µA	ohms	percent	Inches	Inches	Inches
CE5-C200J	20-20-20	150	82	440	12	2. 500 (63.50)	1. 250 4/ (31.75)	1.156 (29.36)
CE5-C360J	36-36-36	150	110	244	12	2. 500 (63.50)	1. 250 4/ (31.75)	1.156 (29.36)
CE5-C430J	43-43-43	150	120	205	12	2. 500 (63.50)	1. 250 4/ (31.75)	1.156 (29.36)
CE5-C620J	62-62-62	150	144	142	12	2. 500 (63.50)	1. 500 (38.10)	1.375 (34.93)
CE5-C101J	100-100-100	150	183	88	12	3. 500 (88.90)	1. 500 (38.10)	1.375 (34.93)
CE5-C151J	150-150-150	150	225	59	12	4.250 (107.95)	1. 500 (38.10)	1.375 (34.93)
CE5-C300K	30-30-30	200	116	293	12	2. 500 (63.50)	1. 250 4/ (31.75)	1.156 (29.36)
CE5-C470K	47-47-47	200	145	187	12	2. 500 (63.50)	1. 500 (38.10)	1.375 (34.93)
CE5-C620K	62-62-62	200	166	142	12	3. 000 (76.20)	1. 500 (38.10)	1.375 (34.93)
CE5-C750K	75-75-75	200	183	117	12	3. 000 (76.20	1. 500 (38.10)	1.375 (34.93)
CE5-C270M	27-27-27	250	123	326	12	2. 500 (63.50)	1. 250 4/ (31.75)	1.156 (29.36)
CE5-C360M	36-36-36	250	142	244	12	2. 500 (63.50)	1. 500 (38.10)	1.375 (34.93)
CE5-C470M	47-47-47	250	166	187	12	3. 000 (76.20)	1. 500 (38.10)	1.375 (34.93)
CE5-C680M	68-68-68	250	195	129	12	3. 250 (82.55)	1. 500 (38.10)	1.375 (34.93)
CE5-C101M	100-100-100	250	237	88	12	4.250 (107.95)	1. 500 (38.10)	1.375 (34.93)
CE5-C300N	30-30-30	300	142	293	12	2. 500 (63.50)	1.500 (38.10)	1.375 (34.93)
CE5-C330N	33-33-33	300	148	266	12	2. 750 (69.85)	1.500 (38.10)	1.375 (34.93)
CE5-C430N	43-43-43	300	170	205	12	3. 000 (76.20)	1.500 (38.10)	1.375 (34.93)
CE5-C470N	47-47-47	300	178	187	12	3. 500 (88.90)	1.500 (38.10)	1.375 (34.93)
CE5-C680N	68-68-68	300	214	129	12	4. 250 (107.95)	1.500 (38.10)	1.375 (34.93)
CE5-C100P	10-10-10	350	88	880	12	2. 500 (63.50)	1.250 4/ (31.75)	1.156 (29.36)
CE5-C150P	15-15-15	350	108	585	12	2. 500 (63.50)	1.250 4/ (31.75)	1.156 (29.36)
CE5-C200P	20-20-20	350	126	440	12	2. 500 (63.50)	1.500 (38.10)	1.156 (34.93)
CE5-C300P	33-33-33	350	161	266	12	3. 000 (76.20)	1.500 (38.10)	1.375 (34.93)
CE5-C470P	47-47-47	350	192	187	12	3. 750 (95.25)	1.500 (38.10)	1.375 (34.93)

See footnotes at end of table.

TABLE I. Styles CE53 and CE58 capacitors. (Continued)

PIN 1/	Capacitance 5/	DC rated voltage per section	DC leakage current per section	Maximum impedance at 120 +10 Hz - 5 at -40° +0° C -3°	Dissipation factor	Case dimensions 2/ 3/ A ±. 062 (1.57)	B +. 010 (0.25) -. 050 (1.27)	C +. 016 (0.41)
	µF	volts	µA	ohms	percernt	inches	Inches	inches
CE5-C100Q	10-10-10	400	94	1,480	17	2.500 (63.50)	1.250 4/ (31.75)	1.156 (29.36)
CE5-C120Q	12-12-12	400	104	1,230	17	2.500 (63.50)	1.250 4/ (31.75)	1.156 (29.36)
CE5-C150Q	15-15-15	400	116	986	17	2.500 (63.50)	1.500 (38.10)	1.375 (34.93)
CE5-C200Q	20-20-20	400	133	740	17	2.750 (69.85)	1.500 (38.10)	1.375 (34.93)
CE5-C300Q	30-30-30	400	163	493	17	3.250 (82.55)	1.500 (38.10)	1.375 (34.93)
CE5-C330Q	33-33-33	400	172	450	17	3.750 (95.25)	1.500 (38.10)	1.375 (34.93)
CE5-C100Q	10-10-10	450	100	2,200	17	2.500 (63.50)	1.250 4/ (31.75)	1.156 (29.36)
CE5-C120Q	12-12-12	450	110	1,835	17	2.500 (63.50)	1.500 (38.10)	1.375 (34.93)
CE5-C150Q	15-15-15	450	123	1,465	17	3.000 (76.20)	1.500 (38.10)	1.375 (34.93)
CE5-C200Q	20-20-20	450	142	1,100	17	3.250 (82.55)	1.500 (38.10)	1.375 (34.93)
CE5-C330Q	33-33-33	450	182	666	17	4.250 (107.95)	1.500 (38.10)	1.375 (34.93)

1/ Complete type designation shall include an additional digit to complete style.

2/ The dimensions shown are for style CE53; for style CE58, add .062 (1.57) ± . 062 (1.57) to the nominal dimension.

3/ Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.

4/ The tolerance for this dimension shall be .030 (0.76), -.050 (1.27) inch.

5/ There are three identical separate capacitors contained in each capacitor case.

REQUIREMENTS:

Dimensions and configuration: See figure 1 and table I.

Case type: Tubular, uninsulated (CE53) and insulated (CE58).

Capacitance value. See table I.

Capacitance tolerance:

At 200 volts, dc rated, and above: -10, + 50 percent.

At 150 volts, dc rated, and less: -10, +75 percent.

Operating temperature range: -40° C to +85°C.

Solderability: Not applicable.

DC leakage: See table I.

Capacitance: Method 305 of MIL-STD-202.

Dissipation factor: See table I.

Terminal strength: Not applicable.

Shock (specified pulse): Method 213, test condition I, MIL-STD-202.

Vibration, high frequency: Method 204, test condition B, MIL-STD-202.

Salt atmosphere (corrosion): Method 101, test condition B, MIL-STD-202.

Temperature cycling and immersion:

Temperature cycling: Method 102, test condition D, MIL-STD-202.

Immersion: Method 104, test condition C, MIL-STD-202.

DWV (insulating sleeves): Method 301 of MIL-STD-202. 4,000 volts dc applied.

DCL: Not more than 150 percent of initial measurement.

Capacitance change: 5 percent.

DF: See table I.

Corrosion: Not more than 10 percent.

Moisture resistance: Method 106 of MIL-STD-202.

Insulation resistance (insulating sleeve): Not less than 100 megohms.

DWV (insulating sleeves): Method 301 of MIL-STD-202. 4,000 volts dc applied.

DCL: Not more than 150 percent of initial requirement.

Capacitance change: 5 percent.

DF: See table I.

Corrosion: Not more than 10 percent.

Stability at low and high temperature: In accordance with MIL-C-62.

Step 1 (at +25°C):

DCL: See table I.

Capacitance: See table I.

DF: See table I.

Step 2 (at -40°C):

Impedance: See table I.

Step 3 (at +25°C):

DCL: See table I.

Capacitance: ±5 percent of initial value.

Step 4 (at + 85°C):

DCL: Not more than 10 times initial value, or meet initial 25° C requirement.

Capacitance: ± 20 percent of initial value.

DF: See table I.

Step 5 (at + 25°C):

DCL: See table I.

Capacitance: ± 5 percent of initial value.

DF: See table I.

Surge voltage: In accordance with MIL-C-62.

DCL: See table I.

Capacitance change: 6 percent.

DF: See table I.

Vent: Not applicable.

Life: Method 108, test condition F, MIL-STD-202.

DCL: See table I.

Capacitance change:

100 volts, dc rated, and less: -20, +15 percent.

DC rated voltage above 100 volts: ± 15 percent.

DF: Meet the initial requirement or not exceed 150 percent of the initial measurement.

Barometric pressure: Method 105 of MIL-STD-202.

Shelf life: in accordance with MIL-C-62.

Build factor: Not more than 4.0.

Shelf factor: Not more than 3.0.

DCL; Not more than 150 percent of initial value.

Capacitance change: 6 percent.

DF: Not more than 175 percent of initial requirement.

Application data:

All capacitors shall withstand an rms ripple current at 120 Hz and 85 ° C as determined from the formula:

$$I_r = k\sqrt{c}$$

Where:
I_r = rms ripple current in milliamps.
C = nominal capacitance in microfarads per section.
k = 45 for units rated at 0 to 150 volts dc, inclusive.
= 35 for units rated at 300 to 350 volts dc, inclusive.
= 30 for units rated at 300 to 350 volts dc, inclusive.
= 25 for units rated at 400 to 450 volts dc, inclusive.

Supersession data: See table II.

QUALIFICATION ASSURANCE PROVISIONS:

Qualification inspection: Not applicable.

Retention of qualification: Not applicable.

Conformance inspection: Group A inspection only.

TABLE II. Supersession data.

Superseded insulated PIN	Superseded uninsulated PIN	Recommended replacement style CE53 or CE58	Superseded insulated PIN	Superseded uninsulated PIN	Recommended replacement style CE53 or CE58
001	073	CE5-C100P	025	097	CE5-C300N
002	074	CE5-C200J	026	098	CE5-C330N
003	075	CE5-C360J	027	099	CE5-C430N
004	076	CE5-C430J	028	100	CE5-C470N
005	077	CE5-C620J	029	101	CE5-C680N
006	078	CE5-C750K	030	102	CE5-C100P
007	079	CE5-C101J	031	103	CE5-C150P
008	080	CE5-C151J	032	104	CE5-C150P
009	081	CE5-C100P	033	105	CE5-C200P
010	082	CE5-C270M	034	106	CE5-C330P
011	083	CE5-C300K	035	107	CE5-C330P
012	084	CE5-C470K	036	108	CE5-C470P
013	085	CE5-C620K	037	109	CE5-C100Q
014	086	CE5-C750K	038	110	CE5-C120Q
015	087	CE5-C101M	039	111	CE5-C150Q
016	088	CE5-C100P	040	112	CE5-C200Q
017	089	CE5-C270M	041	113	CE5-C300Q
018	090	CE5-C360M	042	114	CE5-C330Q
019	091	CE5-C430N	043	115	CE5-C100R
020	092	CE5-C470M	044	116	CE5-C120R
021	093	CE5-C680M	045	117	CE5-C150R
022	094	CE5-C100P	046	118	CE5-C200R
023	095	CE5-C150P	047	119	CE5-C330R
024	096	CE5-C200P			

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Review activities:
Army - AT, AV, CR4, MI
Navy - AS, MC, OS
Air Force - 19

Preparing activity:
DLA - CC

(Project 5910-2204-07)