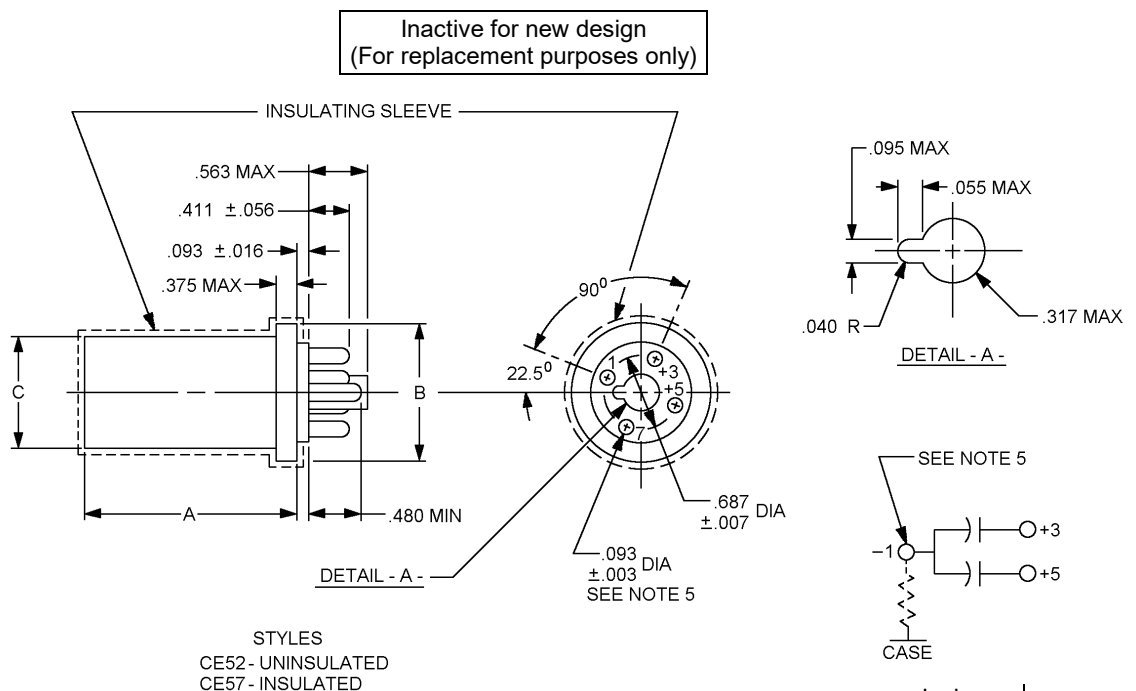


PERFORMANCE SPECIFICATION SHEET

CAPACITOR, FIXED, ELECTROLYTIC (DC, ALUMINUM, DRY ELECTROLYTE, POLARIZED), STYLES CE52 AND CE57

This specification sheet 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-PRF-62](#).



NOTES:

1. Dimensions are in inches.
2. Unless otherwise specified, tolerances are $\pm .015$ inch (0.38 mm) on decimals and $\pm 0^{\circ}30'$ on angles.
3. Metric equivalents are given for general information only.
4. Capacitors plug into a standard, medium octal socket (Family 4 (see [MIL-PRF-62](#))).
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.

Inches	mm
.003	0.08
.007	0.18
.016	0.41
.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	12.19
.563	14.30
.687	17.45



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TABLE I. Styles CE52 and CE57 capacitors.

Part or identifying number (PIN) <u>1/</u>	Capacitance <u>5/</u>	DC rated voltage per section	DC leakage current per section	Maximum impedance per section at 120 +10, -5 Hz, -40°C +0, -3°C	Dissipation factor per section	Case dimensions <u>2/</u> <u>3/</u>		
						A	B	C
						± .062 (1.57)	+ .010 (0.25), - .050 (1.27)	± .016 (0.41)
	<u>μf</u>	<u>Volts</u>	<u>μa</u>	<u>Ohms</u>	<u>Percent</u>	<u>Inches (mm)</u>	<u>Inches (mm)</u>	<u>Inches (mm)</u>
CE5-C150J	15-15	150	71	585	12	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C220J	22-22	150	86	400	12	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C330J	33-33	150	106	266	12	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C470J	47-47	150	126	187	12	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C151J	150-150	150	225	59	12	3.000 (76.20)	1.500 (38.10)	1.375 (34.93)
CE5-C221J	220-220	150	273	40	12	3.750 (95.25)	1.500 (38.10)	1.375 (34.93)
CE5-C680K	68-68	200	175	129	12	2.500 (63.50)	1.500 (38.10)	1.375 (34.93)
CE5-C750K	75-75	200	183	117	12	2.500 (63.50)	1.500 (38.10)	1.375 (34.93)
CE5-C101K	100-100	200	211	88	12	2.750 (69.85)	1.500 (38.10)	1.375 (34.93)
CE5-C151K	150-150	200	260	59	12	3.250 (82.55)	1.500 (38.10)	1.375 (34.93)
CE5-C150M	15-15	250	92	585	12	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C330M	33-33	250	136	266	12	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C470M	47-47	250	166	187	12	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C560M	56-56	250	178	157	12	2.500 (63.50)	1.500 (38.10)	1.375 (34.93)
CE5-C680M	68-68	250	195	129	12	2.750 (69.85)	1.500 (38.10)	1.375 (34.93)
CE5-C750M	75-75	250	206	117	12	3.000 (76.20)	1.500 (38.10)	1.375 (34.93)
CE5-C101M	100-100	250	237	88	12	3.250 (82.55)	1.500 (38.10)	1.375 (34.93)
CE5-C151M	150-150	250	290	59	12	3.250 (82.55)	1.500 (38.10)	1.375 (34.93)
CE5-C300N	30-30	300	142	293	12	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C360N	36-36	300	156	244	12	2.500 (63.50)	1.500 (38.10)	1.375 (34.93)
CE5-C680N	68-68	300	214	129	12	3.250 (82.55)	1.500 (38.10)	1.375 (34.93)
CE5-C101N	100-100	300	260	88	12	4.250 (107.95)	1.500 (38.10)	1.375 (34.93)
CE5-C100P	10-10	350	88	880	12	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C200P	20-20	350	126	440	12	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C270P	27-27	350	145	326	12	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C330P	33-33	350	161	266	12	2.500 (63.50)	1.500 (38.10)	1.375 (34.93)
CE5-C470P	47-47	350	192	187	12	2.750 (69.85)	1.500 (38.10)	1.375 (34.93)
CE5-C560P	56-56	350	210	157	12	3.000 (76.20)	1.500 (38.10)	1.375 (34.93)
CE5-C680P	68-68	350	232	129	12	3.750 (95.25)	1.500 (38.10)	1.375 (34.93)
CE5-C100Q	10-10	400	94	1,480	17	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C150Q	15-15	400	116	986	17	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C220Q	22-22	400	141	670	17	2.500 (63.50)	1.500 (38.10)	1.375 (34.93)
CE5-C330Q	33-33	400	172	450	17	3.000 (76.20)	1.500 (38.10)	1.375 (34.93)
CE5-C470Q	47-47	400	206	314	17	3.500 (88.90)	1.500 (38.10)	1.375 (34.93)
CE5-C100R	10-10	450	100	2,200	17	2.500 (63.50)	1.250 (31.75) <u>4/</u>	1.156 (29.36)
CE5-C150R	15-15	450	123	1,465	17	2.500 (63.50)	1.500 (38.10)	1.375 (34.93)
CE5-C200R	20-20	450	142	1,100	17	2.500 (63.50)	1.500 (38.10)	1.375 (34.93)
CE5-C270R	27-27	450	168	815	17	3.000 (76.20)	1.500 (38.10)	1.375 (34.93)
CE5-C330R	33-33	450	182	666	17	3.500 (88.90)	1.500 (38.10)	1.375 (34.93)
CE5-C470R	47-47	450	217	468	17	4.250 (107.95)	1.500 (38.10)	1.375 (34.93)

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

2/ The dimensions shown are for style CE52; for style CE57, add .062 inch (1.57 mm) ± .062 inch (1.57 mm) to the nominal dimension.

3/ Metric equivalents are given for general information only.

4/ Tolerance for this dimension shall be +.030 inch (0.76 mm), - .050 (1.27 mm).

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

REQUIREMENTS:

Dimensions and configuration: See [figure 1](#) and [table I](#).

Case type: Tubular, uninsulated (CE52) and insulated (CE57).

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 (DCL): See [table I](#).

Dissipation factor (DF): See [table I](#).

Terminal strength: Not applicable.

Thermal shock and immersion:

Thermal shock: In accordance with [MIL-PRF-62](#).

Immersion: In accordance with [MIL-PRF-62](#).

Dielectric withstanding voltage (DWV) (insulating sleeves): In accordance with [MIL-PRF-62](#).

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: In accordance with [MIL-PRF-62](#).

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

DWV (insulating sleeves): In accordance with [MIL-PRF-62](#).

DCL: Not more than 150 percent of initial requirement.

Capacitance change: 5 percent.

DF: See [table I](#).

Corrosion: Not more than 10 percent.

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Stability at low and high temperature: In accordance with [MIL-PRF-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.

DF: See [table I](#).

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-PRF-62](#).

DCL: See [table I](#).

Capacitance change: 6 percent.

DF: See [table I](#).

Vent: Not applicable.

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Life: In accordance with [MIL-PRF-62](#).

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.

Shelf life: In accordance with [MIL-PRF-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 = normal capacitance in microfarads per section.

k = 30 for units rated at 15 to 300 volts dc, inclusive, for case diameter 1.156 inches (29.36 mm).
= 25 for units rated at 350 to 450 volts dc, inclusive, for case diameter 1.156 inches (29.36 mm).
= 50 for units rated at 15 to 250 volts dc, inclusive, for case diameter 1.375 inches (34.93 mm).
= 40 for units rated at 300 to 350 volts dc, inclusive, for case diameter 1.375 inches (34.93 mm).
= 30 for units rated at 400 to 450 volts dc, inclusive, for case diameter 1.375 inches (34.93 mm).

Supersession data: See [table II](#).

TABLE II. Supersession data.

Superseded insulated PIN: M62/09-	Superseded uninsulated PIN: M62/09-	Recommended replacement PIN (style CE51 or CE56)	Superseded insulated PIN: M62/09-	Superseded uninsulated PIN: M62/09-	Recommended replacement PIN (style CE51 or CE56)
001	079	CE5-C100P	028	106	CE5-C100P
002	080	CE5-C150J	029	107	CE5-C200P
003	081	CE5-C220J	030	108	CE5-C300N
004	082	CE5-C330J	031	109	CE5-C360N
005	083	CE5-C470J	032	110	CE5-C470P
006	084	CE5-C680K	033	111	CE5-C560P
007	085	CE5-C101K	034	112	CE5-C680N
008	086	CE5-C151J	035	113	CE5-C101N
009	087	CE5-C221J	036	114	CE5-C100P
010	088	CE5-C100P	037	115	CE5-C200P
011	089	CE5-C270P	038	116	CE5-C270P
012	090	CE5-C330P	039	117	CE5-C330P
013	091	CE5-C470M	040	118	CE5-C470P
014	092	CE5-C680K	041	119	CE5-C560P
015	093	CE5-C750K	042	120	CE5-C680P
016	094	CE5-C101K	043	121	CE5-C100Q
017	095	CE5-C151K	044	122	CE5-C150Q
018	096	CE5-C100P	045	123	CE5-C220Q
019	097	CE5-C150M	046	124	CE5-C330Q
020	098	CE5-C270M	047	125	CE5-C470Q
021	099	CE5-C330M	048	126	CE5-C100R
022	100	CE5-C470M	049	127	CE5-C150R
023	101	CE5-C560M	050	128	CE5-C200R
024	102	CE5-C680M	051	129	CE5-C270R
025	103	CE5-C750M	052	130	CE5-C330R
026	104	CE5-C101M	053	131	CE5-C470R
027	105	CE5-C151M			

Changes from previous issue: Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:

Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:

DLA - CC

(Project 5910-2020-024)

Review activities:

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

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using ASSIST Online database at <https://assist.dla.mil/>.