

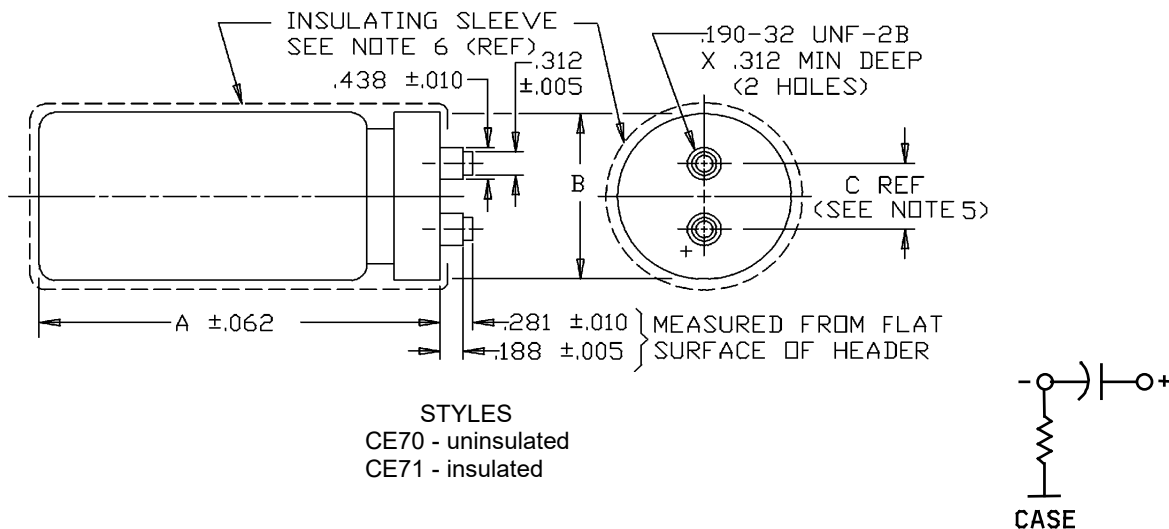
PERFORMANCE SPECIFICATION SHEET

CAPACITOR, FIXED, ELECTROLYTIC
(DC, ALUMINUM, DRY ELECTROLYTE, POLARIZED),
STYLES CE70 AND CE71

INACTIVE FOR NEW DESIGN
AFTER 1 JULY 1998

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:

- Dimensions are in inches.
- Metric equivalents are given for general information only.
- Capacitors (Family 6 (see [MIL-PRF-62](#))) are mounted by means of a wraparound, footed-type bracket.
- There is an indeterminate resistance between the metal case and negative terminal.
- "C" dimensions is .500 inch (12.70 mm) for case diameter 1.375 inches (34.93 mm); .875 inch (22.23 mm) for case diameter 2.000 inches (50.80 mm); 1.125 inches (28.58 mm) for case diameter 2.500 inches (63.50 mm) and 1.250 inches (31.75 mm) for case diameter 3.000 inches (76.20 mm).
- Style CE71 insulating sleeve thickness shall not exceed .016 inches (.41 mm) and shall lap over the ends of the capacitor body.

Inches	mm
.005	0.13
.010	0.25
.062	1.57
.188	4.78
.190	4.83
.281	7.14
.312	7.92
.438	11.13

FIGURE 1. Dimensions and configuration.



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TABLE I. Styles CE70 and CE71 capacitors.

Part or identifying number (PIN) 1/	Capacitance	DC rated voltage	DC leakage	Maximum impedance at 120 +10, -5 Hz, -40°C +0°C, -3°C	Dissipation factor	Case dimensions 2/	
						A	B
						± .062 (1.57)	± .031 (0.79)
	μf	Volts	μa	Ohms	Percent	Inches (mm)	Inches (mm)
CE7-C622C	6200	5	264	9.7	105	2.125 (53.98)	1.375 (34.93)
CE7-C123C	12000	5	367	5	105	3.125 (79.38)	1.375 (34.93)
CE7-C183C	18000	5	450	3.3	105	4.125 (104.78)	1.375 (34.93)
CE7-C243C	24000	5	519	2.5	105	5.125 (130.18)	1.375 (34.93)
CE7-C413C	41000	5	679	1.95	130	4.125 (104.78)	2.000 (50.80)
CE7-C473C	47000	5	717	1.92	130	3.125 (79.38)	2.500 (63.50)
CE7-C563C	56000	5	793	1.43	130	5.125 (130.18)	2.000 (50.80)
CE7-C683C	68000	5	874	1.30	160	4.125 (104.78)	2.500 (63.50)
CE7-C823C	82000	5	960	1.10	160	4.625 (117.48)	2.500 (63.50)
CE7-C104C	100000	5	1060	.90	160	5.625 (142.88)	2.500 (63.50)
CE7-C154C	150000	5	1299	.67	210	5.625 (142.88)	3.000 (76.20)
CE7-C822D	8200	10	429	6.1	75	3.125 (79.38)	1.375 (34.93)
CE7-C123D	12000	10	519	4.2	75	4.125 (104.78)	1.375 (34.93)
CE7-C203D	20000	10	670	2.5	75	5.625 (142.88)	1.375 (34.93)
CE7-C303D	30000	10	822	2.0	90	4.125 (104.78)	2.000 (50.80)
CE7-C333D	33000	10	861	1.8	90	4.625 (117.48)	2.000 (50.80)
CE7-C473D	47000	10	1029	1.3	100	4.125 (104.78)	2.500 (63.50)
CE7-C683D	68000	10	1236	1.0	100	5.125 (130.18)	2.500 (63.50)
CE7-C823D	82000	10	1359	.90	150	4.625 (117.48)	3.000 (76.20)
CE7-C104D	100000	10	1500	.80	150	5.625 (142.88)	3.000 (76.20)
CE7-C332E	3300	15	333	18	60	2.125 (53.98)	1.375 (34.93)
CE7-C622E	6200	15	457	9.7	60	3.125 (79.38)	1.375 (34.93)
CE7-C113E	11000	15	609	5.5	60	4.625 (117.48)	1.375 (34.93)
CE7-C153E	15000	15	711	4	60	5.625 (142.88)	1.375 (34.93)
CE7-C183E	18000	15	779	3.3	70	4.125 (104.78)	2.000 (50.80)
CE7-C223E	22000	15	861	2.7	70	4.125 (104.78)	2.000 (50.80)
CE7-C333E	33000	15	1055	1.8	70	4.125 (104.78)	3.000 (76.20)
CE7-C393E	39000	15	1147	1.5	80	4.125 (104.78)	2.500 (63.50)
CE7-C473E	47000	15	1260	1.3	80	5.125 (130.18)	2.500 (63.50)
CE7-C683E	68000	15	1530	.9	110	5.125 (130.18)	3.000 (76.20)
CE7-C823E	82000	15	1663	.73	110	5.625 (142.88)	3.000 (76.20)
CE7-C152F	1500	25	291	16	40	2.125 (53.98)	1.375 (34.93)
CE7-C332F	3300	25	438	7.3	40	3.125 (79.38)	1.375 (34.93)
CE7-C512F	5100	25	535	4.9	40	4.125 (104.78)	1.375 (34.93)
CE7-C682F	6800	25	618	3.7	40	4.125 (104.78)	2.000 (50.80)
CE7-C113F	11000	25	786	2.3	45	4.125 (104.78)	2.000 (50.80)
CE7-C183F	18000	25	1006	1.4	50	4.125 (104.78)	2.500 (63.50)
CE7-C203F	20000	25	1060	1.2	50	4.125 (104.78)	2.500 (63.50)
CE7-C303F	30000	25	1297	0.8	70	4.125 (104.78)	3.000 (76.20)
CE7-C333F	33000	25	1362	0.75	70	4.625 (117.48)	3.000 (76.20)
CE7-C433F	43000	25	1555	0.58	70	5.625 (142.88)	3.000 (76.20)
CE7-C162G	1600	50	424	9.2	25	3.125 (79.38)	1.375 (34.93)
CE7-C202G	2000	50	474	7.5	25	2.125 (53.98)	2.000 (50.80)
CE7-C272G	2700	50	551	5.6	25	4.125 (104.78)	2.000 (50.80)
CE7-C472G	4700	50	727	3.2	30	4.125 (104.78)	2.000 (50.80)
CE7-C562G	5600	50	793	2.7	30	4.125 (104.78)	2.000 (50.80)
CE7-C682G	6800	50	874	2.2	30	3.125 (79.38)	2.500 (63.50)
CE7-C103G	10000	50	1060	1.5	30	4.125 (104.78)	2.500 (63.50)
CE7-C153G	15000	50	1299	1.0	30	5.625 (142.88)	2.500 (63.50)
CE7-C223G	22000	50	1573	0.7	45	5.625 (142.88)	3.000 (76.20)

See footnotes at end of table.

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TABLE I. Styles CE70 and CE71 capacitors - Continued.

PIN 1/	Capacitance	DC rated voltage	DC leakage	Maximum impedance at 120 +10, -5 Hz, -40°C +0°C, -3°C	Dissipation factor	Case dimensions 2/	
						A	B
						± .062 (1.57)	± .031 (0.79)
	<u>μf</u>	<u>Volts</u>	<u>μa</u>	<u>Ohms</u>	<u>Percent</u>	<u>Inches (mm)</u>	<u>Inches (mm)</u>
CE7-C471H	470	100	325	21	18	3.125 (79.38)	1.375 (34.93)
CE7-C681H	680	100	391	15	18	4.125 (104.78)	1.375 (34.93)
CE7-C102H	1000	100	474	10	18	4.125 (104.78)	1.375 (34.93)
CE7-C182H	1800	100	636	5.5	18	4.125 (104.78)	2.000 (50.80)
CE7-C202H	2000	100	670	5.0	18	3.125 (79.38)	2.500 (63.50)
CE7-C272H	2700	100	779	3.7	18	4.125 (104.78)	2.000 (50.80)
CE7-C332H	3300	100	861	3.0	18	4.125 (104.78)	2.500 (63.50)
CE7-C472H	4700	100	1029	2.1	19	4.125 (104.78)	3.000 (76.20)
CE7-C682H	6800	100	1237	1.5	20	5.625 (142.88)	3.000 (76.20)
CE7-C151J	150	150	225	60	17	2.125 (53.98)	1.375 (34.93)
CE7-C331J	330	150	332	27	17	3.125 (79.38)	1.375 (34.93)
CE7-C681J	680	150	479	13	17	4.125 (104.78)	1.375 (34.93)
CE7-C122J	1200	150	636	7.5	17	4.125 (104.78)	2.000 (50.80)
CE7-C152J	1500	150	711	6.0	17	5.125 (139.18)	2.000 (50.80)
CE7-C202J	2000	150	822	4.5	17	4.125 (104.78)	2.500 (63.50)
CE7-C332J	3300	150	1056	2.7	18	4.125 (104.78)	3.000 (76.20)
CE7-C472J	4700	150	1260	1.9	20	5.625 (142.88)	3.000 (76.20)
CE7-C151K	150	200	260	60	17	2.125 (53.98)	1.375 (34.93)
CE7-C331K	330	200	385	27	17	2.125 (53.98)	2.000 (50.80)
CE7-C471K	470	200	460	19	17	4.125 (104.78)	1.375 (34.93)
CE7-C102K	1000	200	670	9.0	17	4.125 (104.78)	2.000 (50.80)
CE7-C332K	3300	200	1218	2.7	19	5.125 (130.18)	3.000 (76.20)
CE7-C392K	3900	200	1324	2.3	20	5.625 (142.88)	3.000 (76.20)
CE7-C101M	100	250	237	90	15	2.125 (53.98)	1.375 (34.93)
CE7-C221M	220	250	352	41	15	2.125 (53.98)	2.000 (50.80)
CE7-C301M	300	250	411	30	15	4.125 (104.78)	1.375 (34.93)
CE7-C471M	470	250	514	19	15	3.125 (79.38)	2.000 (50.80)
CE7-C681M	680	250	618	13	15	4.125 (104.78)	2.000 (50.80)
CE7-C152M	1500	250	918	6.0	15	4.125 (104.78)	2.500 (63.50)
CE7-C222M	2200	250	1113	4.0	18	4.125 (104.78)	3.000 (76.20)
CE7-C272M	2700	250	1233	3.2	19	5.625 (142.88)	3.000 (76.20)
CE7-C151N	150	300	318	60	14	3.125 (79.38)	1.375 (34.93)
CE7-C271N	270	300	427	33	14	4.125 (104.78)	1.375 (34.93)
CE7-C561N	560	300	615	16	14	4.125 (104.78)	2.000 (50.80)
CE7-C681N	680	300	678	13	14	3.125 (79.38)	2.500 (63.50)
CE7-C102N	1000	300	822	9.0	14	4.125 (104.78)	2.500 (63.50)
CE7-C152N	1500	300	1006	6.0	15	4.125 (104.78)	3.000 (76.20)
CE7-C222N	2200	300	1218	4.0	17	5.625 (142.88)	3.000 (76.20)
CE7-C620P	62	350	221	145	14	2.125 (53.98)	1.375 (34.93)
CE7-C151P	150	350	343	60	14	2.125 (53.98)	2.000 (50.80)
CE7-C201P	200	350	397	45	14	4.125 (104.78)	1.375 (34.93)
CE7-C471P	470	350	609	19	14	4.125 (104.78)	2.000 (50.80)
CE7-C751P	750	350	768	12	14	4.125 (104.78)	2.500 (63.50)
CE7-C102P	1000	350	888	9.0	14	5.125 (130.18)	2.500 (63.50)
CE7-C122P	1200	350	972	7.5	14	4.125 (104.78)	3.000 (76.20)
CE7-C152P	1500	350	1080	6.0	16	5.125 (130.18)	3.000 (76.20)
CE7-C182P	1800	350	1191	5.0	17	5.625 (142.88)	3.000 (76.20)
CE7-C470Q	47	400	206	320	15	2.125 (53.98)	1.375 (34.93)
CE7-C101Q	100	400	300	150	15	3.125 (79.38)	1.375 (34.93)
CE7-C151Q	150	400	367	100	15	4.125 (104.78)	1.375 (34.93)
CE7-C241Q	240	400	465	64	15	3.125 (79.38)	2.000 (50.80)

See footnotes at end of table.

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TABLE I. Styles CE70 and CE71 capacitors - Continued.

PIN <u>1/</u>	Capacitance	DC rated voltage	DC leakage	Maximum impedance at 120 +10, -5 Hz, -40°C +0°C, -3°C	Dissipation factor	Case dimensions <u>2/</u>	
						A	B
						± .062 (1.57)	± .031 (0.79)
	<u>μf</u>	<u>Volts</u>	<u>μa</u>	<u>Ohms</u>	<u>Percent</u>	<u>Inches (mm)</u>	<u>Inches (mm)</u>
CE7-C331Q	330	400	545	45	15	4.125 (104.78)	2.000 (50.80)
CE7-C681Q	680	400	783	22	14	4.125 (104.78)	2.500 (63.50)
CE7-C102Q	1000	400	948	15	16	4.125 (104.78)	3.000 (76.20)
CE7-C122Q	1200	400	1039	12	18	5.625 (142.88)	3.000 (76.20)
CE7-C330R	33	450	182	455	16	2.125 (53.98)	1.375 (34.93)
CE7-C680R	68	450	263	220	16	3.125 (79.38)	1.375 (34.93)
CE7-C101R	100	450	318	150	16	4.125 (104.78)	1.375 (34.93)
CE7-C151R	150	450	390	100	16	4.125 (104.78)	1.375 (34.93)
CE7-C271R	270	450	523	55	16	3.125 (79.38)	2.500 (63.50)
CE7-C331R	330	450	577	45	16	4.125 (104.78)	2.000 (50.80)
CE7-C681R	680	450	829	22	16	4.125 (104.78)	2.500 (63.50)
CE7-C102R	1000	450	1006	15	18	4.125 (104.78)	3.000 (76.20)

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

2/ Metric equivalents are given for general information only.

REQUIREMENTS:

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

Case type: Tubular, uninsulated (CE70) and insulated (CE71).

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: Test conditions A and B of [MIL-STD-202-211](#) as specified in [MIL-PRF-62](#).

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.

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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.

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 measured 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](#).

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

DCL: See [table I](#).

Capacitance change: 6 percent.

DF: See [table I](#).

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

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 measured value whichever is greater.

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 requirement.

Capacitance change: 6 percent.

DF: Not more than 175 percent of initial requirement.

Application data:

All capacitors shall withstand an rms ripple current of 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.

k = 15 for units rated at 5 to 15 volts dc, inclusive.

= 30 for units rated at 25 and 50 volts.

= 55 for units rated at 100 to 450 volts dc, inclusive.

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

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TABLE II. Supersession data.

Insulated PIN M62/12-	Uninsulated PIN M62/12-	Recommended replacement PIN (style CE70 or CE71)	Insulated PIN M62/12-	Uninsulated PIN M62/12-	Recommended replacement PIN (style CE70 or CE71)
001	107	CE7-C123C	042	148	CE7-C471K
002	108	CE7-C183C	043	149	CE7-C471K
003	109	CE7-C303D	044	150	CE7-C681M
004	110	CE7-C413C	045	151	CE7-C102K
005	111	CE7-C473C	046	152	CE7-C152M
006	112	CE7-C683C	047	153	CE7-C222M
007	113	CE7-C822D	048	154	CE7-C301M
008	114	CE7-C123D	049	155	CE7-C471M
009	115	CE7-C183E	050	156	CE7-C681M
010	116	CE7-C303D	051	157	CE7-C102N
011	117	CE7-C393E	052	158	CE7-C152M
012	118	CE7-C512F	053	159	CE7-C152M
013	119	CE7-C622E	054	160	CE7-C222M
014	120	CE7-C183E	055	161	CE7-C271N
015	121	CE7-C223E	056	162	CE7-C331Q
016	122	CE7-C333F	057	163	CE7-C471P
017	123	CE7-C393E	058	164	CE7-C561N
018	124	CE7-C332F	059	165	CE7-C681N
019	125	CE7-C512F	060	166	CE7-C102N
020	126	CE7-C682F	061	167	CE7-C152N
021	127	CE7-C113F	062	168	CE7-C201P
022	128	CE7-C183F	063	169	CE7-C331Q
023	129	CE7-C303F	064	170	CE7-C471P
024	130	CE7-C162G	065	171	CE7-C681Q
025	131	CE7-C272G	066	172	CE7-C751P
026	132	CE7-C472G	067	173	CE7-C122P
027	133	CE7-C562G	068	174	CE7-C151Q
028	134	CE7-C562G	069	175	CE7-C241Q
029	135	CE7-C682G	070	176	CE7-C331Q
030	136	CE7-C103G	071	177	CE7-C681Q
031	137	CE7-C681J	072	178	CE7-C681Q
032	138	CE7-C102H	073	179	CE7-C681Q
033	139	CE7-C182H	074	180	CE7-C102Q
034	140	CE7-C272H	075	181	CE7-C101R
035	141	CE7-C332H	076	182	CE7-C151R
036	142	CE7-C472H	077	183	CE7-C331R
037	143	CE7-C471K	078	184	CE7-C331R
038	144	CE7-C681J	079	185	CE7-C681R
039	145	CE7-C122J	080	186	CE7-C681R
040	146	CE7-C202J	081	187	CE7-C102R
041	147	CE7-C332J			

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Referenced documents. In addition to [MIL-PRF-62](#), this document references the following:

[MIL-STD-202-211](#)

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 5910-2020-027)

Review activities:

Army - AR, AT, AV, CR4, MI
Navy - AS, MC, OS, SH
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 the ASSIST Online database at <https://assist.dla.mil/>