

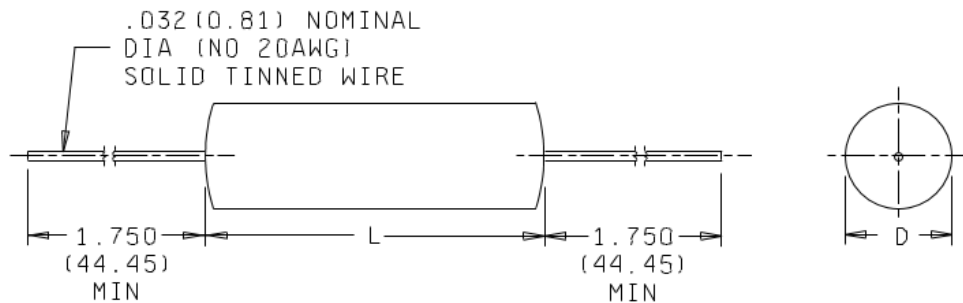
INCH-POUND
MIL-PRF-55514/10F
11 December 2023
SUPERSEDING
MIL-PRF-55514/10E
w/AMENDMENT 1
17 September 2018

PERFORMANCE SPECIFICATION SHEET

CAPACITOR, FIXED, PLASTIC DIELECTRIC, DC,
IN NONMETAL CASES, ESTABLISHED RELIABILITY,
STYLE CFR15

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

The requirements for acquiring the product described herein
shall consist of this specification sheet and [MIL-PRF-55514](#).



NOTES:

1. Dimensions are in inches.
2. Millimeters are in parentheses.
3. Metric equivalents are given for general information only.

FIGURE 1. Style CFR15 capacitors.



TABLE I. Capacitor characteristics.

Characteristic K, style CFR15 capacitors							
Part or identifying number (PIN) 1/	Capacitance (μF)	Capacitance tolerance available	DC Voltage at +105°C (volts)	Voltage at +85°C at 20 kHz (volts)	dv/dt volt/μs (volts)	D	L ± .062
CFR15AKC123--	.012	J, K, M	200	60	300	.179 (4.55) ± .047 (1.19)	.750 (19.05)
CFR15AKC153--	.015	J, K, M	200	60	300	.197 (5.00) ± .047 (1.19)	.750 (19.05)
CFR15AKC183--	.018	J, K, M	200	60	300	.212 (5.39) ± .047 (1.19)	.750 (19.05)
CFR15AKC223--	.022	J, K, M	200	60	300	.232 (5.89) ± .047 (1.19)	.750 (19.05)
CFR15AKC273--	.027	J, K, M	200	60	300	.251 (6.38) ± .062 (1.57)	.750 (19.05)
CFR15AKC333--	.033	J, K, M	200	60	300	.263 (6.68) ± .062 (1.57)	.750 (19.05)
CFR15AKC393--	.039	J, K, M	200	60	300	.242 (6.15) ± .062 (1.57)	.938 (23.83)
CFR15AKC473--	.047	J, K, M	200	60	300	.261 (6.63) ± .062 (1.57)	.938 (23.83)
CFR15AKC563--	.056	J, K, M	200	60	300	.270 (6.86) ± .062 (1.57)	.938 (23.83)
CFR15AKC683--	.068	J, K, M	200	60	300	.297 (7.54) ± .062 (1.57)	.938 (23.83)
CFR15AKC823--	.082	J, K, M	200	40	300	.259 (6.58) ± .062 (1.57)	1.250 (31.75)
CFR15AKC104--	.10	J, K, M	200	40	300	.284 (7.21) ± .062 (1.57)	1.250 (31.75)
CFR15AKC124--	.12	J, K, M	200	40	300	.310 (7.87) ± .062 (1.57)	1.250 (31.75)
CFR15AKC154--	.15	J, K, M	200	40	300	.345 (8.76) ± .062 (1.57)	1.250 (31.75)
CFR15AKC184--	.18	J, K, M	200	40	300	.377 (9.58) ± .062 (1.57)	1.250 (31.75)
CFR15AKC224--	.22	J, K, M	200	40	300	.416 (10.57) ± .062 (1.57)	1.250 (31.75)
CFR15AKC274--	.27	J, K, M	200	40	300	.389 (9.88) ± .062 (1.57)	1.688 (42.88)
CFR15AKC334--	.33	J, K, M	200	40	300	.427 (10.85) ± .062 (1.57)	1.688 (42.88)
CFR15AKC394--	.39	J, K, M	200	40	300	.462 (11.74) ± .062 (1.57)	1.688 (42.88)
CFR15AKC474--	.47	J, K, M	200	40	300	.501 (12.73) ± .093 (2.36)	1.688 (42.88)
CFR15AKC564--	.56	J, K, M	200	40	300	.635 (16.13) ± .093 (2.36)	1.688 (42.88)
CFR15AKC684--	.68	J, K, M	200	40	300	.706 (17.93) ± .093 (2.36)	1.688 (42.88)
CFR15AKC324--	.82	J, K, M	200	40	300	.675 (17.15) ± .093 (2.36)	2.063 (52.40)
CFR15AKC105--	1.00	J, K, M	200	40	300	.748 (19.00) ± .093 (2.36)	2.063 (52.40)
CFR15AKE682--	.0068	J, K, M	400	95	400	.217 (5.51) ± .047 (1.19)	.750 (19.05)
CFR15AKE822--	.0082	J, K, M	400	95	400	.230 (5.84) ± .047 (1.19)	.750 (19.05)
CFR15AKE103--	.01	J, K, M	400	95	400	.232 (5.89) ± .047 (1.19)	.750 (19.05)
CFR15AKE123--	.012	J, K, M	400	95	400	.250 (6.35) ± .047 (1.19)	.750 (19.05)
CFR15AKE153--	.015	J, K, M	400	95	400	.260 (6.60) ± .062 (1.57)	.750 (19.05)
CFR15AKE183--	.018	J, K, M	400	95	400	.243 (6.17) ± .047 (1.19)	.938 (23.83)
CFR15AKE223--	.022	J, K, M	400	95	400	.262 (6.66) ± .062 (1.57)	.938 (23.83)
CFR15AKE273--	.027	J, K, M	400	95	400	.275 (6.98) ± .062 (1.57)	.938 (23.83)
CFR15AKE333--	.033	J, K, M	400	95	400	.301 (7.65) ± .062 (1.57)	.938 (23.83)
CFR15AKE393--	.039	J, K, M	400	50	400	.261 (6.63) ± .062 (1.57)	1.250 (31.75)
CFR15AKE473--	.047	J, K, M	400	50	400	.284 (7.21) ± .062 (1.57)	1.250 (31.75)
CFR15AKE563--	.056	J, K, M	400	50	400	.307 (7.80) ± .062 (1.57)	1.250 (31.75)
CFR15AKE683--	.068	J, K, M	400	50	400	.336 (8.53) ± .062 (1.57)	1.250 (31.75)
CFR15AKE823--	.082	J, K, M	400	50	400	.367 (9.32) ± .062 (1.57)	1.250 (31.75)
CFR15AKE104--	.1	J, K, M	400	50	400	.404 (10.26) ± .062 (1.57)	1.250 (31.75)
CFR15AKE124--	.12	J, K, M	400	50	400	.441 (11.20) ± .062 (1.57)	1.250 (31.75)
CFR15AKE154--	.15	J, K, M	400	50	400	.491 (12.47) ± .062 (1.57)	1.250 (31.75)
CFR15AKE184--	.18	J, K, M	400	50	400	.456 (11.58) ± .062 (1.57)	1.688 (42.88)
CFR15AKE224--	.22	J, K, M	400	50	400	.500 (12.73) ± .062 (1.57)	1.688 (42.88)
CFR15AKE274--	.27	J, K, M	400	50	400	.533 (13.54) ± .093 (2.36)	1.688 (42.88)

See footnote at end of table.

TABLE I. Capacitor characteristics - Continued.

Characteristic K, style CFR15 capacitors							
PIN <u>1/</u>	Capacitance (μ F)	Capacitance tolerance available	DC Voltage at +105°C (volts)	Voltage at +85°C at 20 kHz (volts)	dv/dt volt/ μ s (volts)	D	L $\pm$.062
CFR15AKE334--	.33	J, K, M	400	50	400	.591 (15.01) $\pm$.093 (2.36)	1.688 (42.88)
CFR15AKE394--	.39	J, K, M	400	50	400	.643 (16.33) $\pm$.093 (2.36)	1.688 (42.88)
CFR15AKE474--	.47	J, K, M	400	50	400	.708 (17.98) $\pm$.093 (2.36)	1.688 (42.88)
CFR15AKE564--	.56	J, K, M	400	50	400	.749 (19.02) $\pm$.093 (2.36)	2.438 (61.93)
CFR15AKE684--	.68	J, K, M	400	50	400	.818 (20.78) $\pm$.093 (2.36)	2.438 (61.93)
CFR15AKE824--	.82	J, K, M	400	50	400	.901 (22.89) $\pm$.093 (2.36)	2.438 (61.93)
CFR15AKE105--	1.00	J, K, M	400	50	400	.998 (25.35) $\pm$.093 (2.36)	2.438 (61.93)
CFR15AKF102--	.001	J, K, M	600	110	500	.243 (6.17) $\pm$.047 (1.19)	.750 (19.05)
CFR15AKF122--	.0012	J, K, M	600	110	500	.253 (6.53) $\pm$.062 (1.57)	.750 (19.05)
CFR15AKF152--	.0015	J, K, M	600	110	500	.261 (6.63) $\pm$.062 (1.57)	.750 (19.05)
CFR15AKF182--	.0018	J, K, M	600	110	500	.299 (7.60) $\pm$.062 (1.57)	.750 (19.05)
CFR15AKF222--	.0022	J, K, M	600	110	500	.257 (6.53) $\pm$.062 (1.57)	.750 (19.05)
CFR15AKF272--	.0027	J, K, M	600	110	500	.265 (6.73) $\pm$.062 (1.57)	.750 (19.05)
CFR15AKF332--	.0033	J, K, M	600	110	500	.240 (6.10) $\pm$.047 (1.19)	.750 (19.05)
CFR15AKF392--	.0039	J, K, M	600	110	500	.253 (6.43) $\pm$.062 (1.57)	.750 (19.05)
CFR15AKF472--	.0047	J, K, M	600	110	500	.258 (6.55) $\pm$.062 (1.57)	.750 (19.05)
CFR15AKF562--	.0056	J, K, M	600	110	500	.265 (6.73) $\pm$.062 (1.57)	.750 (19.05)
CFR15AKF682--	.0068	J, K, M	600	110	500	.268 (6.81) $\pm$.062 (1.57)	.750 (19.05)
CFR15AKF822--	.0082	J, K, M	600	110	500	.257 (6.53) $\pm$.062 (1.57)	.938 (23.83)
CFR15AKF103--	.01	J, K, M	600	110	500	.267 (6.78) $\pm$.062 (1.57)	.938 (23.83)
CFR15AKF123--	.012	J, K, M	600	110	500	.290 (7.37) $\pm$.062 (1.57)	.938 (23.83)
CFR15AKF153--	.015	J, K, M	600	110	500	.320 (8.13) $\pm$.062 (1.57)	.938 (23.83)
CFR15AKF183--	.018	J, K, M	600	110	500	.347 (8.81) $\pm$.062 (1.57)	.938 (23.83)
CFR15AKF223--	.022	J, K, M	600	110	500	.381 (9.68) $\pm$.062 (1.57)	.938 (23.83)
CFR15AKF273--	.027	J, K, M	600	110	500	.328 (8.33) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKF333--	.033	J, K, M	600	110	500	.358 (9.09) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKF393--	.039	J, K, M	600	65	500	.387 (9.83) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKF473--	.047	J, K, M	600	65	500	.421 (10.69) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKF563--	.056	J, K, M	600	65	500	.457 (11.61) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKF683--	.068	J, K, M	600	65	500	.501 (12.73) $\pm$.093 (2.36)	1.250 (31.75)
CFR15AKF823--	.082	J, K, M	600	65	500	.516 (13.11) $\pm$.093 (2.36)	1.250 (31.75)
CFR15AKF104--	.1	J, K, M	600	65	500	.571 (14.50) $\pm$.093 (2.36)	1.250 (31.75)
CFR15AKF124--	.12	J, K, M	600	65	500	.501 (12.73) $\pm$.093 (2.36)	1.688 (42.88)
CFR15AKF154--	.15	J, K, M	600	65	500	.559 (14.20) $\pm$.093 (2.36)	1.688 (42.88)
CFR15AKF184--	.18	J, K, M	600	65	500	.613 (15.57) $\pm$.093 (2.36)	1.688 (42.88)
CFR15AKF224--	.22	J, K, M	600	65	500	.677 (17.20) $\pm$.093 (2.36)	1.688 (42.88)
CFR15AKF274--	.27	J, K, M	600	60	500	.706 (17.93) $\pm$.093 (2.36)	2.063 (52.40)
CFR15AKF334--	.33	J, K, M	600	60	500	.783 (19.89) $\pm$.093 (2.36)	2.063 (52.40)
CFR15AKF394--	.39	J, K, M	600	60	500	.854 (21.69) $\pm$.093 (2.36)	2.063 (52.40)
CFR15AKF474--	.47	J, K, M	600	60	500	.939 (23.85) $\pm$.093 (2.36)	2.063 (52.40)
CFR15AKF564--	.56	J, K, M	600	60	500	.908 (23.06) $\pm$.093 (2.36)	2.438 (61.93)
CFR15AKF684--	.68	J, K, M	600	60	500	1.003 (25.48) $\pm$.093 (2.36)	2.438 (61.93)
CFR15AKF824--	.82	J, K, M	600	60	500	1.005 (28.07) $\pm$.093 (2.36)	2.438 (61.93)
CFR15AKF105--	1.00	J, K, M	600	60	500	1.223 (31.06) $\pm$.093 (2.36)	2.438 (61.93)

See footnote at end of table.

TABLE I. Capacitor characteristics - Continued.

Characteristic K, style CFR15 capacitors							
PIN <u>1</u> /	Capacitance (μ F)	Capacitance tolerance available	DC Voltage at +105°C (volts)	Voltage at +85°C at 20 kHz (volts)	dv/dt volt/ μ s (volts)	D	L $\pm$.062
CFR15AKL562--	.0056	J, K, M	800	405	600	.201 (5.10) $\pm$.047 (1.19)	1.250 (31.75)
CFR15AKL682--	.0068	J, K, M	800	405	600	.217 (5.51) $\pm$.047 (1.19)	1.250 (31.75)
CFR15AKL822--	.0082	J, K, M	800	405	600	.236 (5.99) $\pm$.047 (1.19)	1.250 (31.75)
CFR15AKL103--	.01	J, K, M	800	405	600	.251 (6.38) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKL123--	.012	J, K, M	800	405	600	.264 (6.71) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKL153--	.015	J, K, M	800	405	600	.294 (7.47) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKL183--	.018	J, K, M	800	405	600	.321 (8.15) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKL223--	.022	J, K, M	800	405	600	.354 (8.99) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKL273--	.027	J, K, M	800	405	600	.392 (9.96) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKL333--	.033	J, K, M	800	405	600	.433 (11.00) $\pm$.062 (1.57)	1.250 (31.75)
CFR15AKL393--	.039	J, K, M	800	140	600	.380 (9.65) $\pm$.062 (1.57)	1.688 (42.88)
CFR15AKL473--	.047	J, K, M	800	140	600	.414 (10.51) $\pm$.062 (1.57)	1.688 (42.88)
CFR15AKL563--	.056	J, K, M	800	140	600	.451 (11.46) $\pm$.062 (1.57)	1.688 (42.88)
CFR15AKL683--	.068	J, K, M	800	140	600	.501 (12.73) $\pm$.093 (2.36)	1.688 (42.88)
CFR15AKL823--	.082	J, K, M	800	140	600	.523 (13.28) $\pm$.093 (2.36)	1.688 (42.88)
CFR15AKL104--	.1	J, K, M	800	140	600	.579 (14.71) $\pm$.093 (2.36)	1.688 (42.88)
CFR15AKL124--	.12	J, K, M	800	85	600	.582 (14.78) $\pm$.093 (2.36)	2.063 (52.40)
CFR15AKL154--	.15	J, K, M	800	85	600	.652 (16.56) $\pm$.093 (2.36)	2.063 (52.40)
CFR15AKL184--	.18	J, K, M	800	85	600	.716 (18.19) $\pm$.093 (2.36)	2.063 (52.40)
CFR15AKL224--	.22	J, K, M	800	85	600	.793 (20.14) $\pm$.093 (2.36)	2.063 (52.40)
CFR15AKL274--	.27	J, K, M	800	85	600	.779 (19.79) $\pm$.093 (2.36)	2.438 (61.93)
CFR15AKL334--	.33	J, K, M	800	85	600	.863 (21.42) $\pm$.093 (2.36)	2.438 (61.93)
CFR15AKL394--	.39	J, K, M	800	85	600	.940 (23.88) $\pm$.093 (2.36)	2.438 (61.93)
CFR15AKL474--	.47	J, K, M	800	85	600	1.034 (26.26) $\pm$.093 (2.36)	2.438 (61.93)
CFR15AKL564--	.56	J, K, M	800	85	600	1.131 (28.73) $\pm$.093 (2.36)	2.438 (61.93)

1/ The complete PIN will include additional symbols to indicate capacitance tolerance and product level (C, M, P, R, and S).

REQUIREMENTS:

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

Case: Non-hermetic.

Dielectric: Normally polypropylene, foil.

Capacitance (cap.) value: See [table I](#).

Cap. Tolerance: See [table I](#).

Rated voltage: See [table I](#).

dv/dt: See [table I](#).

Operating temperature range: -55°C to +105°C for dc operation.

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Product level: Non-established reliability - C; Established reliability - M, P, R or S.

Preconditioning: Not applicable.

Burn-in: In accordance with MIL-PRF-55514, except for the following conditions:

DC burn-in voltage shall be 140 percent of the dc rated voltage applied for 48 hours, minimum at +105°C, +4°C, -0°C.

AC burn-in: Not applicable.

Dielectric withstanding voltage (DWV): In accordance with MIL-PRF-55514, except the charge time shall be 2 minutes, maximum at 200 percent of the rated dc voltage.

Insulation resistance: In accordance with MIL-PRF-55514, except the test voltage shall be 100 V dc.

Dissipation factor (DF): Not more than 0.1 percent when measured in accordance with MIL-PRF-55514.

Low temperature conditioning and capacitance change with temperature: In accordance with MIL-PRF-55514.

Resistance to soldering heat: In accordance with MIL-STD-202-210, condition B.

Δ Cap: ± 0.25 percent, maximum.

Life (at +105°C): In accordance with MIL-PRF-55514.

Accelerated condition: 140 percent of the +105°C rated voltage.

Rated condition: 100 percent of the +105°C rated voltage.

IR (at +25°C terminal to terminal): Not less than 50.0 percent of the initial requirement.

Δ Cap (at +25°C): 2.0 percent, maximum.

DF (at +25°C) after life: .12 percent, maximum.

AC conditioning: In accordance with MIL-PRF-55514. The following details shall apply:

Qualification: Rated ac voltage at +85°C and 20 kHz on test samples in accordance with table II herein at 12-month intervals.

TABLE II. AC conditioning test samples.

DC rated voltage (volts)	Sample size	Cap range for selection of sample <u>1</u> / (μ F)
200	24	.012 to 1.0
400	24	.0068 to 1.0
600	24	.001 to 1.0
800	24	.0056 to 0.56

1/ Each test sample shall contain at least one capacitor of the highest and lowest capacitance value of each voltage group manufactured during the 12-month period.

Changes from previous issue: The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Referenced documents. In addition to [MIL-PRF-55514](#), this document references [MIL-STD-202-210](#).

Custodians:

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

Preparing activity:
DLA - CC

(Project 5910-2024-007)

Review activities:

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>.