

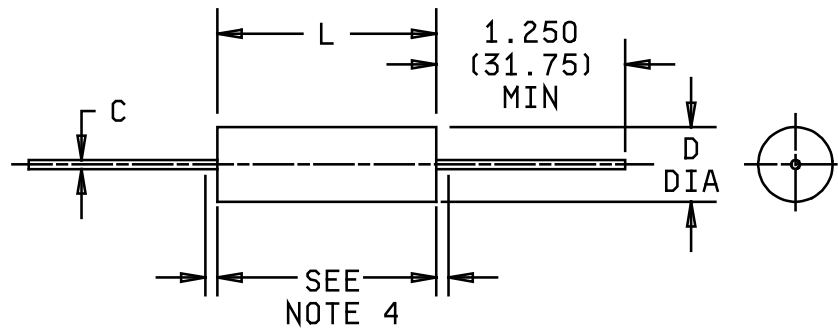
MILITARY SPECIFICATION SHEET

CAPACITOR, FIXED, CERAMIC DIELECTRIC (GENERAL PURPOSE),
STYLES CK12, CK13, CK14, CK15, AND CK16

INACTIVE FOR NEW DESIGN
after 28 September 1970. For new design use [MIL-PRF-39014/5](#).

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

The requirements for acquiring the capacitors described herein
shall consist of this specification sheet and [MIL-C-11015](#).



Style	Dimensions		
	L Inches (mm)	D Inches (mm)	C Inches (mm)
CK12	.160 ± .010 (4.06 ± 0.25)	.090 ± .010 (2.29 ± 0.25)	.016 + .006, -.001 (0.41 + 0.15, - 0.03)
CK13	.250 ± .010 (6.35 ± 0.25)	.090 ± .010 (2.29 ± 0.25)	.016 + .006, -.001 (0.41 + 0.15, - 0.03)
CK14	.390 ± .010 (9.91 ± 0.25)	.140 ± .010 (3.56 ± 0.25)	.025 + .004, -.001 (0.64 + 0.10, - 0.03)
CK15	.500 ± .020 (12.70 ± 0.51)	.250 ± .015 (6.35 ± 0.38)	.025 + .004, -.001 (0.64 + 0.10, - 0.03)
CK16	.690 ± .030 (17.53 ± 0.76)	.350 ± .020 (8.89 ± 0.51)	.025 + .004, -.001 (0.64 + 0.10, - 0.03)

NOTES:

1. Dimensions are in inches.
2. Millimeters are in parentheses.
3. Metric equivalents are in millimeters and are given for general information only.
4. Non-conductive material shall not extend beyond .010 inch (0.25 mm) from end of capacitor body.
5. Lead length may be a minimum of one inch long for use in tape and reel automatic insertion equipment, when specified in the ordering data.

FIGURE 1. Dimensions and configuration.

AMSC N/A

DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.

FSC 5910



TABLE I. Styles CK12, CK13, CK14, CK15, and CK16 characteristics.

Part or identifying number (PIN) 1/	Rated voltage (V _{dc})	Rated temperature and voltage temperature limits	Capacitance (pF)	Capacitance tolerance
CK12BX100-	100	BX	10	K, M
CK12BX120K	100	BX	12	K
CK12BX150-	100	BX	15	K, M
CK12BX180K	100	BX	18	K
CK12BX220-	100	BX	22	K, M
CK12BX270K	100	BX	27	K
CK12BX330-	100	BX	33	K, M
CK12BX390K	100	BX	39	K
CK12BX470-	100	BX	47	K, M
CK12BX560K	100	BX	56	K
CK12BX680-	100	BX	68	K, M
CK12BX820K	100	BX	82	K
CK12BX101-	100	BX	100	K, M
CK12BX121K	100	BX	120	K
CK12BX151-	100	BX	150	K, M
CK12BX181K	100	BX	180	K
CK12BX221-	100	BX	220	K, M
CK12BX271K	100	BX	270	K
CK12BX331-	100	BX	330	K, M
CK12BX391K	100	BX	390	K
CK12BX471-	100	BX	470	K, M
CK12BX561K	100	BX	560	K
CK12BX681-	100	BX	680	K, M
CK12BX821K	100	BX	820	K
CK12BX102-	100	BX	1,000	K, M
CK12BX122K	100	BX	1,200	K
CK12BX152-	100	BX	1,500	K, M
CK12BX182K	100	BX	1,800	K
CK12BX222-	100	BX	2,200	K, M
CK12BX272K	100	BX	2,700	K
CK12BX332-	100	BX	3,300	K, M
CK12BX392K	100	BX	3,900	K
CK12BX472-	100	BX	4,700	K, M
CK12BX562K	50	BX	5,600	K
CK12BX682-	50	BX	6,800	K, M
CK12BX822K	50	BX	8,200	K
CK12BX103-	50	BX	10,000	K, M
CK13BX562K	100	BX	5,600	K
CK13BX682-	100	BX	6,800	K, M
CK13BX822K	100	BX	8,200	K
CK13BX103-	100	BX	10,000	K, M
CK13BX123K	50	BX	12,000	K
CK13BX153-	50	BX	15,000	K, M
CK13BX183K	50	BX	18,000	K
CK13BX223-	50	BX	22,000	K, M
CK13BR273K	50	BR	27,000	K
CK13BR333-	50	BR	33,000	K, M
CK13BR393K	50	BR	39,000	K
CK13BR473-	50	BR	47,000	K, M

See footnote at end of table.

TABLE I. Styles CK12, CK13, CK14, CK15, and CK16 characteristics - Continued.

PIN <u>1/</u>	Rated Voltage (V _{dc})	Rated temperature and voltage temperature limits	Capacitance (pF)	Capacitance tolerance
CK14BX123K	100	BX	12,000	K
CK14BX153-	100	BX	15,000	K, M
CK14BX183K	100	BX	18,000	K
CK14BX223-	100	BX	22,000	K, M
CK14BX273K	100	BX	27,000	K
CK14BX333-	100	BX	33,000	K, M
CK14BX393K	100	BX	39,000	K
CK14BX473-	100	BX	47,000	K, M
CK14BR563K	100	BR	56,000	K
CK14BR683-	100	BR	68,000	K, M
CK14BR823K	100	BR	82,000	K
CK14BR104-	100	BR	100,000	K, M
CK14BR124K	50	BR	120,000	K
CK14BR154-	50	BR	150,000	K, M
CK14BR184K	50	BR	180,000	K
CK14BR224-	50	BR	220,000	K, M
CK14BR274K	50	BR	270,000	K
CK15BX104-	100	BX	100,000	K, M
CK15BR124K	100	BR	120,000	K
CK15BR154-	100	BR	150,000	K, M
CK15BR184K	100	BR	180,000	K
CK15BR224-	100	BR	220,000	K, M
CK15BR274K	100	BR	270,000	K
CK15BR334-	100	BR	330,000	K, M
CK15BR474-	50	BR	470,000	K, M
CK15BR105-	50	BR	1,000,000	K, M
CK16BR474-	100	BR	470,000	K, M
CK16BR105-	100	BR	1,000,000	K, M
CK16BR225-	50	BR	2,200,000	K, M
CK16BR335-	50	BR	3,300,000	K, M

1/ Where applicable, the complete PIN will include an additional symbol to indicate capacitance tolerance.

REQUIREMENTS:

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

Case type: Tubular molded or preformed plastic encapsulated with axial leads.

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

Capacitance tolerance: ± 10 percent (K) or ± 20 percent (M) as shown in [table I](#).

Rated temperature: -55°C to +125°C

Dielectric withstanding voltage (DWV): In accordance with [MIL-C-11015](#).

Dielectric:

Test voltage - 250 percent of rated voltage.

Body insulation: Not applicable.

Barometric pressure (reduced): In accordance with [MIL-C-11015](#) and [MIL-STD-202-105](#), test condition D (100,000 ft) (0.315 inch (8.00 mm) of mercury).

Test potential: 150 percent of rated voltage.

Insulation resistance (IR): In accordance with [MIL-C-11015](#); rated voltage applied.

100,000 megohms, min or 1,000 megohm-microfarads, min, whichever is less.

Dissipation factor (DF): 2.5 percent, max.

Vibration, high frequency: In accordance with [MIL-C-11015](#) and [MIL-STD-202-204](#), condition D (20 g's).

Thermal shock and immersion: In accordance with [MIL-C-11015](#).

DWV: 250 percent of rated voltage.

IR: Not less than 50 percent of initial 25°C requirement.

Cap.: Within ± 10 percent of initial measured value.

DF: 2.5 percent, max.

Salt atmosphere (corrosion): Not applicable.

Terminal strength: In accordance with [MIL-C-11015](#)

CK12 and CK13: 3 pounds.

CK14, CK15, and CK16: 5 pounds.

Moisture resistance: In accordance with [MIL-C-11015](#).

DWV: 250 percent of rated voltage.

IR: Not less than 10 percent of initial requirement.

Cap.: Within ± 10 percent of initial measured value.

Solderability: In accordance with [MIL-C-11015](#); 2 terminals.

Resistance to soldering heat: In accordance with [MIL-C-11015](#).

IR: 100,000 megohms, min or 1,000 megohm-microfarads, min, whichever is less.

Δ Cap.: +15, -5 percent of initial measurement.

DF: 2.5 percent, max.

Voltage-temperature limits: In accordance with [MIL-C-11015](#).

Life (at elevated ambient temperature): In accordance with [MIL-C-11015](#).

Test potential - 200 percent of rated voltage.

IR: 5,000 megohms, min or 50 megohm-microfarads, min, whichever is less (at +125°C), and not less than 15 percent of initial requirement (at +25°C).

DF: 2.5 percent, max (at +25°C).

MIL-C-11015/20E

Marking: In accordance with [MIL-C-11015](#).

Inactivated styles: For new design, units of [MIL-PRF-39014/5](#) should be used as listed in [table II](#). Although [table II](#) lists only the highest failure rate level, lower failure rate levels may be considered. For substitutability of the inactivated styles, established reliability capacitors in [MIL-PRF-39014/5](#) of the same capacitance value, tolerance, rated voltage, and temperature coefficient can be used regardless of the failure rate designation.

TABLE II. Cross reference of inactivated styles.

From inactivated MIL-C-11015/20	To MIL-PRF-39014/5 M(1.0) M39014/05-	From inactivated MIL-C-11015/20	To MIL-PRF-39014/5 M(1.0) M39014/05-
CK12BX100K	2601	CK12BX182K	2642
CK12BX100M	2602	CK12BX222K	2643
CK12BX120K	2603	CK12BX222M	2644
CK12BX150K	2604	CK12BX272K	2645
CK12BX150M	2605	CK12BX332K	2646
CK12BX180K	2606	CK12BX332M	2647
CK12BX220K	2607	CK12BX392K	2648
CK12BX220M	2608	CK12BX472K	2649
CK12BX270K	2609	CK12BX472M	2650
CK12BX330K	2610	CK12BX562K	2651
CK12BX330M	2611	CK12BX682K	2652
CK12BX390K	2612	CK12BX682M	2653
CK12BX470K	2613	CK12BX822K	2654
CK12BX470M	2614	CK12BX103K	2655
CK12BX560K	2615	CK12BX103M	2656
CK12BX680K	2616	CK13BX562K	2657
CK12BX680M	2617	CK13BX682K	2658
CK12BX820K	2618	CK13BX682M	2659
CK12BX101K	2619	CK13BX822K	2660
CK12BX101M	2620	CK13BX103K	2661
CK12BX121K	2621	CK13BX103M	2662
CK12BX151K	2622	CK13BX123K	2663
CK12BX151M	2623	CK13BX153K	2664
CK12BX181K	2624	CK13BX153M	2665
CK12BX221K	2625	CK13BX183K	2666
CK12BX221M	2626	CK13BX223K	2667
CK12BX271K	2627	CK13BX223M	2668
CK12BX331K	2628	CK13BR273K	2669
CK12BX331M	2629	CK13BR333K	2670
CK12BX391K	2630	CK13BR333M	2671
CK12BX471K	2631	CK13BR393K	2672
CK12BX471M	2632	CK13BR473K	2673
CK12BX561K	2633	CK13BR473M	2674
CK12BX581K	2634	CK14BX123K	2675
CK12BX681M	2635	CK14BX153K	2676
CK12BX821K	2636	CK14BX153M	2677
CK12BX102K	2637	CK14BX183K	2678
CK12BX102M	2638	CK14BX223K	2679
CK12BX122K	2639	CK14BX223M	2680
CK12BX152K	2640	CK14BX273K	2681
CK12BX152M	2641	CK14BX333K	2682

TABLE II. Cross reference of inactivated styles.

From inactivated MIL-C-11015/20	To MIL-PRF-39014/5 M(1.0) M39014/05-	From inactivated MIL-C-11015/20	To MIL-PRF-39014/5 M(1.0) M39014/05-
CK14BX333M	2683	CK15BR154K	2713
CK14BX393K	2684	CK15BR154M	2714
CK14BX473K	2685	CK15BR184K	2715
CK14BX473M	2686	CK15BR224K	2716
CK14BR563K	2693	CK15BR224M	2717
CK14BR683K	2694	CK15BR274K	2718
CK14BR683M	2695	CK15BR334K	2719
CK14BR823K	2696	CK15BR334M	2720
CK14BR104K	2697	CK15BR474K	2721
CK14BR104M	2698	CK15BR474M	2722
CK14BR124K	2699	CK15BR105K	2725
CK14BR154K	2700	CK15BR105M	2726
CK14BR154M	2701	CK16BR474K	2727
CK14BR184K	2702	CK16BR474M	2728
CK14BR224K	2703	CK16BR105K	2731
CK14BR224M	2704	CK16BR105M	2732
CK14BR274K	2705	CK16BR225K	2733
CK15BX104K	2710	CK16BR225M	2734
CK15BX104M	2711	CK16BR335K	2735
CK15BR124K	2712	CK16BR335M	2736

Referenced documents: In addition to [MIL-C-11015](#), this document references the following:

[MIL-PRF-39014/5](#)
[MIL-STD-202-105](#)
[MIL-STD-202-204](#)

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.

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(Project 5910-2021-033)

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