

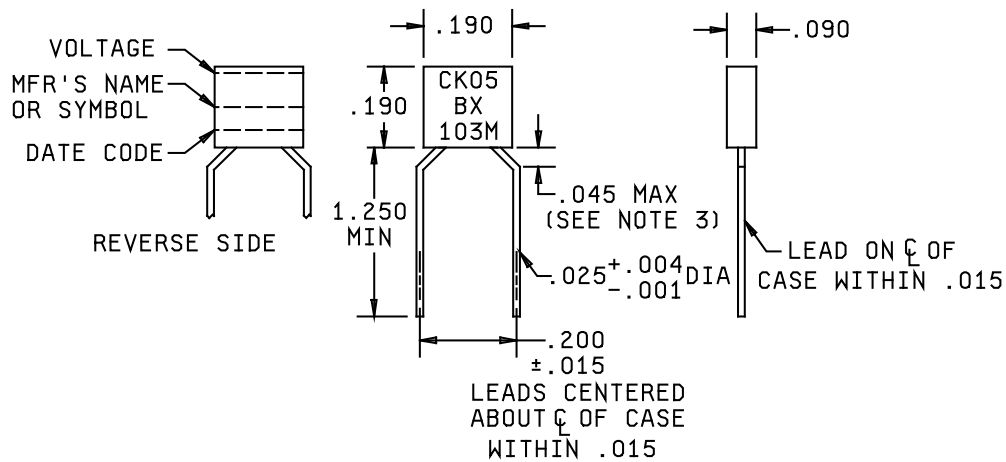
MILITARY SPECIFICATION SHEET

CAPACITOR, FIXED, CERAMIC DIELECTRIC (GENERAL PURPOSE), STYLE CK05

INACTIVE FOR NEW DESIGN
after 28 September 1970. For new design use MIL-PRF-39014/1.

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](#).



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are in millimeters and are given for general information only.
3. For flush mounting, a .078 inch (1.98 mm) printed-circuit hole is required to clear shoulder.
4. Unless otherwise specified, tolerance is $\pm .010$ inch (0.25 mm).
5. Lead length may be a minimum of .625 inch (15.88 mm) for use in tape and reel automatic insertion equipment, when specified.

Inches	mm
.001	0.03
.004	0.10
.015	0.38
.025	0.64
.045	1.14
.090	2.29
.190	4.83
.200	5.08
1.250	31.75

FIGURE 1. Style CK05 capacitors.



REQUIREMENTS:

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

Case type: Flat plate, molded or pre-formed.

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

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

Rated temperature: -55°C to $+125^{\circ}\text{C}$. (Note: Although 10 pF through 1,000 pF capacitors are identified as B units, they shall have the capability of -55°C to $+150^{\circ}\text{C}$ operation, see [figure 2](#).)

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

Dielectric:

Test voltage: 250 percent of rated voltage.

Body insulation:

Test potential: 1,300 volts dc.

| 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](#).

IR: Not less than 50 percent of initial $+25^{\circ}\text{C}$ requirement.

| Salt atmosphere (corrosion): Not applicable.

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.

MIL-C-11015/18F

TABLE I. Style CK05 characteristics.

Part or identifying number (PIN) ^{1/}	Rated voltage (V _{dc})	Rated temperature and voltage-temperature limits	Capacitance (pF)	Capacitance tolerance
CK05BX100-	200	BX	10	K, M
CK05BX120K	200	BX	12	K
CK05BX150-	200	BX	15	K, M
CK05BX180K	200	BX	18	K
CK05BX220-	200	BX	22	K, M
CK05BX270K	200	BX	27	K
CK05BX330-	200	BX	33	K, M
CK05BX390K	200	BX	39	K
CK05BX470-	200	BX	47	K, M
CK05BX560K	200	BX	56	K
CK05BX680-	200	BX	68	K, M
CK05BX820K	200	BX	82	K
CK05BX101-	200	BX	100	K, M
CK05BX121K	200	BX	120	K
CK05BX151-	200	BX	150	K, M
CK05BX181K	200	BX	180	K
CK05BX221-	200	BX	220	K, M
CK05BX271K	200	BX	270	K
CK05BX331-	200	BX	330	K, M
CK05BX391K	200	BX	390	K
CK05BX471-	200	BX	470	K, M
CK05BX561K	200	BX	560	K
CK05BX681-	200	BX	680	K, M
CK05BX821K	200	BX	820	K
CK05BX102-	200	BX	1,000	K, M
CK05BX122K	100	BX	1,200	K
CK05BX152-	100	BX	1,500	K, M
CK05BX182K	100	BX	1,800	K
CK05BX222-	100	BX	2,200	K, M
CK05BX272K	100	BX	2,700	K
CK05BX332-	100	BX	3,300	K, M
CK05BX392K	100	BX	3,900	K
CK05BX472-	100	BX	4,700	K, M
CK05BX562K	100	BX	5,600	K
CK05BX682-	100	BX	6,800	K, M
CK05BX822K	100	BX	8,200	K
CK05BX103-	100	BX	10,000	K, M
CK05BX123K	50	BX	12,000	K
CK05BX153-	50	BX	15,000	K, M
CK05BX183K	50	BX	18,000	K
CK05BX223-	50	BX	22,000	K, M
CK05BX273K	50	BX	27,000	K
CK05BX333-	50	BX	33,000	K, M
CK05BX393K	50	BX	39,000	K
CK05BX473-	50	BX	47,000	K, M
CK05BX563K	50	BX	56,000	K
CK05BX683-	50	BX	68,000	K, M
CK05BX823K	50	BX	82,000	K
CK05BX104-	50	BX	100,000	K, M

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

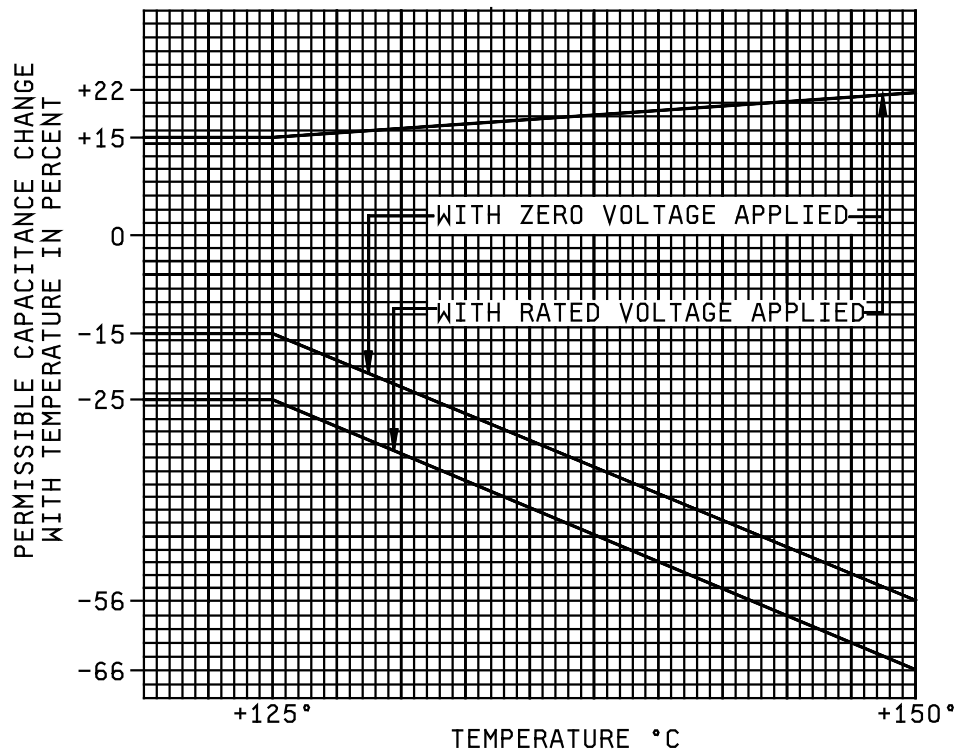


FIGURE 2. Extended voltage-temperature limits 10 pF through 1,000 pF capacitors).

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](#) and [figure 2](#) (for 10 pF through 1,000 pF capacitors).

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

Test potential: 200 percent of rated voltage.

IR: 1,000 megohms, min or 10 megohm-microfarads, min, whichever is less (at +125°C), and not less than 10 percent of initial requirement (at +25°C).

Δ C: Shall not exceed ± 20 percent from initial measured value.

DF: 2.5 percent, max (at +25°C).

Marking: In accordance with [MIL-C-11015](#), and as shown in [figure 1](#).

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Supersession data: Items having a "CW" voltage-temperature limit formerly covered by Rev. A, and earlier issues, of this specification sheet are superseded as indicated in [table II](#).

TABLE II. Cross-reference of substitute items.

Superseded item <u>1/</u>	Recommended substitute item <u>1/</u>	Superseded item <u>1/</u>	Recommended substitute item <u>1/</u>
CK05CW100-	CK05BX100-	CK05CW121K	CK05BX121K
CK05CW120K	CK05BX120K	CK05CW151-	CK05BX151-
CK05CW150-	CK05BX150-	CK05CW181K	CK05BX181K
CK05CW180K	CK05BX180K	CK05CW221-	CK05BX221-
CK05CW220-	CK05BX220-	CK05CW271K	CK05BX271K
CK05CW270K	CK05BX270K	CK05CW331-	CK05BX331-
CK05CW330-	CK05BX330-	CK05CW391K	CK05BX391K
CK05CW390K	CK05BX390K	CK05CW471-	CK05BX471-
CK05CW470-	CK05BX470-	CK05CW561K	CK05BX561K
CK05CW560K	CK05BX560K	CK05CW681-	CK05BX681-
CK05CW680-	CK05BX680-	CK05CW821K	CK05BX821K
CK05CW820K	CK05BX820K	CK05AW102-	CK05BX102-
CK05CW101-	CK05BX101-		

1/ Where required, the PIN will include comparable capacitance tolerance symbol.

Inactive styles: For new design, units of [MIL-PRF-39014/1](#) should be used as listed in [table III](#). Although [table III](#) 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-39014/1 of the same capacitance value, tolerance, rated voltage and temperature coefficient can be used regardless of the failure rate designation.

TABLE III. Cross reference of inactivated styles.

From Inactivated MIL-C-11015/18	To MIL-PRF-39014/1 M(1.0) M39014/01-	From inactivated MIL-C-11015/18	To MIL-PRF-39014/1 M(1.0) M39014/01-
CK05BX100K	1201	CK05BX102M	1238
CK05BX100M	1202	CK05BX122K	1239
CK05BX120K	1203	CK05BX152K	1240
CK05BX150K	1204	CK05BX152M	1441
CK05BX150M	1205	CK05BX182K	1442
CK05BX180K	1206	CK05BX222K	1443
CK05BX220K	1207	CK05BX222M	1444
CK05BX220M	1208	CK05BX272K	1445
CK05BX270K	1209	CK05BX332K	1446
CK05BX330K	1210	CK05BX332M	1447
CK05BX330M	1211	CK05BX392K	1448
CK05BX390K	1212	CK05BX472K	1449
CK05BX470K	1213	CK05BX472M	1450
CK05BX470M	1214	CK05BX562K	1451
CK05BX560K	1215	CK05BX682K	1452
CK05BX680K	1216	CK05BX682M	1453
CK05BX680M	1217	CK05BX822K	1454
CK05BX820K	1218	CK05BX103K	1455
CK05BX101K	1219	CK05BX103M	1456
CK05BX101M	1220	CK05BX123K	1457
CK05BX121K	1221	CK05BX153K	1458

TABLE III. Cross reference of inactivated styles - Continued.

From Inactivated MIL-C-11015/18	To MIL-PRF-39014/1 M(1.0) M39014/01-	From inactivated MIL-C-11015/18	To MIL-PRF-39014/1 M(1.0) M39014/01-
CK05BX151K	1222	CK05BX153M	1459
CK05BX151M	1223	CK05BX183K	1460
CK05BX181K	1224	CK05BX223K	1461
CK05BX221K	1225	CK05BX223M	1462
CK05BX221M	1226	CK05BX273K	1463
CK05BX271K	1227	CK05BX333K	1464
CK05BX331K	1228	CK05BX333M	1465
CK05BX331M	1229	CK05BX393K	1466
CK05BX391K	1230	CK05BX473K	1467
CK05BX471K	1231	CK05BX473M	1468
CK05BX471M	1232	CK05BX563K	1469
CK05BX561K	1233	CK05BX683K	1470
CK05BX681K	1234	CK05BX683M	1471
CK05BX681M	1235	CK05BX823K	1472
CK05BX821K	1236	CK05BX104K	1473
CK05BX102K	1237	CK05BX104M	1474

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

[MIL-PRF-39014/1](#)
[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.

Custodians:
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(Project 5910-2021-031)

Review activities:
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