

INCH-POUND

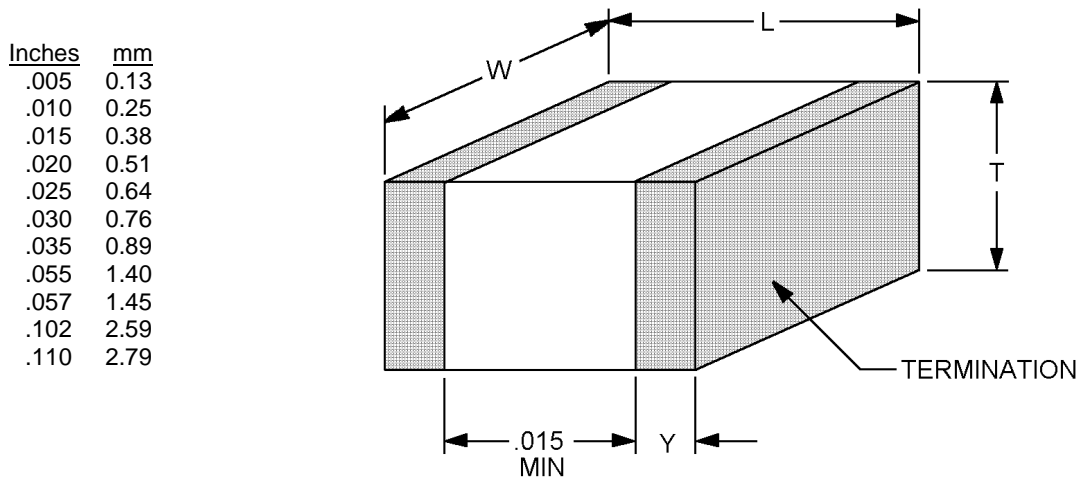
MIL-PRF-55681/4G
 10 September 2010
 SUPERSEDING
 MIL-PRF-55681/4F
 15 June 2005

PERFORMANCE SPECIFICATION SHEET

CAPACITORS, CHIP, MULTIPLE LAYER, FIXED, CERAMIC DIELECTRIC,
 ESTABLISHED RELIABILITY AND NON-ESTABLISHED RELIABILITY,
 STYLES CDR11, CDR12, CDR13, AND CDR14 (HIGH FREQUENCY)

This specification 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 and [MIL-PRF-55681](#).



Style	Dimensions				
	L	W	T		Y
			Min	Max	
CDR11	.055 ±.015	.055 ±.015	.020	.057	.010 -.005 +.010
CDR12	.055 ±.025	.055 ±.015	.020	.057	.010 -.005 +.010
CDR13	.110 ±.020	.110 ±.020	.030	.102	.015 ±.010
CDR14	.110 -.020, +.035	.110 ±.020	.030	.102	.015 ±.010

NOTES:

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

FIGURE 1. Dimensions and configuration.

REQUIREMENTS:

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

Terminations:

Styles CDR11 and CDR13: Termination finish M or N.

Styles CDR12 and CDR14: Termination finish S, U, W, Y, or Z. Solder, when applicable, shall have a maximum melting point of +200°C.

Inspection conditions: Solderability examination shall be in accordance with [method 208 of MIL-STD-202](#). All other visual examinations shall be performed using a stereo microscope having a minimum magnification of 20 power.

Capacitance: See tables [I](#) and [II](#).

Capacitance tolerance: See tables [I](#) and [II](#).

Rated voltage: See tables [I](#) and [II](#).

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

Operating temperature range: -55°C to +125°C.

Dissipation factor: In accordance with [MIL-PRF-55681](#).

Insulation resistance:

At +25°C ±5°C: 10⁶ megohms, minimum (for 0.1 pF through 470 pF); 10⁵ megohms, minimum (for 510 pF through 1,000 pF).

At +125°C ±5°C: 10⁵ megohms, minimum (for 0.1 pF through 470 pF); 10⁴ megohms, minimum (for 510 pF through 1,000 pF).

Equivalent series resistance: In accordance with [MIL-PRF-55681](#).

Series resonance: In accordance with [MIL-PRF-55681](#).

NOTE: These capacitors are intended for use in RF solid-state circuitry up to and including 25 gigahertz, and cannot be replaced in the field.

TABLE I. Styles CDR11 and CDR12 capacitor characteristics.

Part or Identifying (PIN) <u>1/</u> <u>2/</u>	Capacitance (pF)	Capacitance tolerance	Rated temperature and voltage-temperature limits	Rated voltage (V dc)
CDR1-B-0R1-B --	0.1	B	BG, BP	50, 150
CDR1-B-0R2-B --	0.2	B	BG, BP	50, 150
CDR1-B-0R3 ----	0.3	B, C	BG, BP	50, 150
CDR1-B-0R4 ----	0.4	B, C	BG, BP	50, 150
CDR1-B-0R5 ----	0.5	B, C, D	BG, BP	50, 150
CDR1-B-0R6 ----	0.6	B, C, D	BG, BP	50, 150
CDR1-B-0R7 ----	0.7	B, C, D	BG, BP	50, 150
CDR1-B-0R8 ----	0.8	B, C, D	BG, BP	50, 150
CDR1-B-0R9 ----	0.9	B, C, D	BG, BP	50, 150
CDR1-B-1R0 ----	1	B, C, D	BG, BP	50, 150
CDR1-B-1R1 ----	1.1	B, C, D	BG, BP	50, 150
CDR1-B-1R2 ----	1.2	B, C, D	BG, BP	50, 150
CDR1-B-1R3 ----	1.3	B, C, D	BG, BP	50, 150
CDR1-B-1R4 ----	1.4	B, C, D	BG, BP	50, 150
CDR1-B-1R5 ----	1.5	B, C, D	BG, BP	50, 150
CDR1-B-1R6 ----	1.6	B, C, D	BG, BP	50, 150
CDR1-B-1R7 ----	1.7	B, C, D	BG, BP	50, 150
CDR1-B-1R8 ----	1.8	B, C, D	BG, BP	50, 150
CDR1-B-1R9 ----	1.9	B, C, D	BG, BP	50, 150
CDR1-B-2R0 ----	2	B, C, D	BG, BP	50, 150
CDR1-B-2R1 ----	2.1	B, C, D	BG, BP	50, 150
CDR1-B-2R2 ----	2.2	B, C, D	BG, BP	50, 150
CDR1-B-2R4 ----	2.4	B, C, D	BG, BP	50, 150
CDR1-B-2R7 ----	2.7	B, C, D	BG, BP	50, 150
CDR1-B-3R0 ----	3	B, C, D	BG, BP	50, 150
CDR1-B-3R3 ----	3.3	B, C, D	BG, BP	50, 150
CDR1-B-3R6 ----	3.6	B, C, D	BG, BP	50, 150
CDR1-B-3R9 ----	3.9	B, C, D	BG, BP	50, 150
CDR1-B-4R3 ----	4.3	B, C, D	BG, BP	50, 150
CDR1-B-4R7 ----	4.7	B, C, D	BG, BP	50, 150
CDR1-B-5R1 ----	5.1	B, C, D	BG, BP	50, 150
CDR1-B-5R6 ----	5.6	B, C, D	BG, BP	50, 150
CDR1-B-6R2 ----	6.2	B, C, D	BG, BP	50, 150
CDR1-B-6R8 ----	6.8	B, C, J, K, M	BG, BP	50, 150
CDR1-B-7R5 ----	7.5	B, C, J, K, M	BG, BP	50, 150
CDR1-B-8R2 ----	8.2	B, C, J, K, M	BG, BP	50, 150
CDR1-B-9R1 ----	9.1	B, C, J, K, M	BG, BP	50, 150
CDR1-B-100 ----	10	F, G, J, K, M	BG, BP	50, 150
CDR1-B-110 ----	11	F, G, J, K, M	BG, BP	50, 150
CDR1-B-120 ----	12	F, G, J, K, M	BG, BP	50, 150
CDR1-B-130 ----	13	F, G, J, K, M	BG, BP	50, 150
CDR1-B-150 ----	15	F, G, J, K, M	BG, BP	50, 150
CDR1-B-160 ----	16	F, G, J, K, M	BG, BP	50, 150
CDR1-B-180 ----	18	F, G, J, K, M	BG, BP	50, 150
CDR1-B-200 ----	20	F, G, J, K, M	BG, BP	50, 150
CDR1-B-220 ----	22	F, G, J, K, M	BG, BP	50, 150
CDR1-B-240 ----	24	F, G, J, K, M	BG, BP	50, 150
CDR1-B-270 ----	27	F, G, J, K, M	BG, BP	50, 150

See footnotes at end of table.

TABLE I. Styles CDR11 and CDR12 capacitor characteristics - Continued.

PIN <u>1/</u> <u>2/</u>	Capacitance (pF)	Capacitance tolerance	Rated temperature and voltage-temperature limits	Rated voltage (V dc)
CDR1-B-300 ----	30	F, G, J, K, M	BG, BP	50, 150
CDR1-B-330 ----	33	F, G, J, K, M	BG, BP	50, 150
CDR1-B-360 ----	36	F, G, J, K, M	BG, BP	50, 150
CDR1-B-390 ----	39	F, G, J, K, M	BG, BP	50, 150
CDR1-B-430 ----	43	F, G, J, K, M	BG, BP	50, 150
CDR1-B-470 ----	47	F, G, J, K, M	BG, BP	50, 150
CDR1-B-510 ----	51	F, G, J, K, M	BG, BP	50, 150
CDR1-B-560 ----	56	F, G, J, K, M	BG, BP	50, 150
CDR1-B-620 ----	62	F, G, J, K, M	BG, BP	50, 150
CDR1-B-680 ----	68	F, G, J, K, M	BG, BP	50, 150
CDR1-B-750 ----	75	F, G, J, K, M	BG, BP	50, 150
CDR1-B-820 ----	82	F, G, J, K, M	BG, BP	50, 150
CDR1-B-910 ----	91	F, G, J, K, M	BG, BP	50, 150
CDR1-B-101 ----	100	F, G, J, K, M	BG, BP	50, 150
CDR1-BP111A ---	110	F, G, J, K, M	BP	50, 100
CDR1-BP121A ---	120	F, G, J, K, M	BP	50, 100
CDR1-BP131A ---	130	F, G, J, K, M	BP	50, 100
CDR1-BP151A ---	150	F, G, J, K, M	BP	50, 100
CDR1-BP161A ---	160	F, G, J, K, M	BP	50, 100
CDR1-BP181A ---	180	F, G, J, K, M	BP	50, 100
CDR1-BP201A ---	200	F, G, J, K, M	BP	50, 100
CDR1-BP221A ---	220	F, G, J, K, M	BP	50, 100
CDR1-BP241A ---	240	F, G, J, K, M	BP	50, 100
CDR1-BP271A ---	270	F, G, J, K, M	BP	50, 100
CDR1-BP301A ---	300	F, G, J, K, M	BP	50, 100
CDR1-BP331A ---	330	F, G, J, K, M	BP	50, 100
CDR1-BP361A ---	360	F, G, J, K, M	BP	50, 100
CDR1-BP391A ---	390	F, G, J, K, M	BP	50, 100
CDR1-BP431A ---	430	F, G, J, K, M	BP	50, 100
CDR1-BP471A ---	470	F, G, J, K, M	BP	50, 100
CDR1-BP511A ---	510	F, G, J, K, M	BP	50, 100
CDR1-BP561A ---	560	F, G, J, K, M	BP	50, 100
CDR1-BP621A ---	620	F, G, J, K, M	BP	50, 100
CDR1-BP681A ---	680	F, G, J, K, M	BP	50, 100
CDR1-BP751A ---	750	F, G, J, K, M	BP	50, 100
CDR1-BP821A ---	820	F, G, J, K, M	BP	50, 100
CDR1-BP911A ---	910	F, G, J, K, M	BP	50, 100
CDR1-BP102A ---	1,000	F, G, J, K, M	BP	50, 100

1/ Complete PIN shall include additional symbols to indicate style, voltage-temperature limits (where applicable), rated voltage, capacitance tolerance (where applicable), termination finish ("M" or "N" for style CDR11, and "S", "U", "W", "Y" or "Z" for style CDR12), and product level.

2/ All capacitors with the 150 volt rating (rated voltage code letter "K") are substitutable, with acquiring agency approval, for the same capacitors which had the 50 volt rating (rated voltage code letter "A") in previous revisions of this document.

TABLE II. Styles CDR13 and CDR14 capacitor characteristics.

PIN <u>1/</u>	Capacitance (pF)	Capacitance tolerance	Rated temperature and voltage- temperature limits	Rated voltage (V dc)
CDR1-B-0R1-B --	0.1	B	BG, BP	200, 500
CDR1-B-0R2-B --	0.2	B	BG, BP	200, 500
CDR1-B-0R3 ----	0.3	B, C	BG, BP	200, 500
CDR1-B-0R4 ----	0.4	B, C	BG, BP	200, 500
CDR1-B-0R5 ----	0.5	B, C, D	BG, BP	200, 500
CDR1-B-0R6 ----	0.6	B, C, D	BG, BP	200, 500
CDR1-B-0R7 ----	0.7	B, C, D	BG, BP	200, 500
CDR1-B-0R8 ----	0.8	B, C, D	BG, BP	200, 500
CDR1-B-0R9 ----	0.9	B, C, D	BG, BP	200, 500
CDR1-B-1R0 ----	1	B, C, D	BG, BP	200, 500
CDR1-B-1R1 ----	1.1	B, C, D	BG, BP	200, 500
CDR1-B-1R2 ----	1.2	B, C, D	BG, BP	200, 500
CDR1-B-1R3 ----	1.3	B, C, D	BG, BP	200, 500
CDR1-B-1R4 ----	1.4	B, C, D	BG, BP	200, 500
CDR1-B-1R5 ----	1.5	B, C, D	BG, BP	200, 500
CDR1-B-1R6 ----	1.6	B, C, D	BG, BP	200, 500
CDR1-B-1R7 ----	1.7	B, C, D	BG, BP	200, 500
CDR1-B-1R8 ----	1.8	B, C, D	BG, BP	200, 500
CDR1-B-1R9 ----	1.9	B, C, D	BG, BP	200, 500
CDR1-B-2R0 ----	2	B, C, D	BG, BP	200, 500
CDR1-B-2R1 ----	2.1	B, C, D	BG, BP	200, 500
CDR1-B-2R2 ----	2.2	B, C, D	BG, BP	200, 500
CDR1-B-2R4 ----	2.4	B, C, D	BG, BP	200, 500
CDR1-B-2R7 ----	2.7	B, C, D	BG, BP	200, 500
CDR1-B-3R0 ----	3	B, C, D	BG, BP	200, 500
CDR1-B-3R3 ----	3.3	B, C, D	BG, BP	200, 500
CDR1-B-3R6 ----	3.6	B, C, D	BG, BP	200, 500
CDR1-B-3R9 ----	3.9	B, C, D	BG, BP	200, 500
CDR1-B-4R3 ----	4.3	B, C, D	BG, BP	200, 500
CDR1-B-4R7 ----	4.7	B, C, D	BG, BP	200, 500
CDR1-B-5R1 ----	5.1	B, C, D	BG, BP	200, 500
CDR1-B-5R6 ----	5.6	B, C, D	BG, BP	200, 500
CDR1-B-6R2 ----	6.2	B, C, D	BG, BP	200, 500
CDR1-B-6R8 ----	6.8	B, C, J, K, M	BG, BP	200, 500
CDR1-B-7R5 ----	7.5	B, C, J, K, M	BG, BP	200, 500
CDR1-B-8R2 ----	8.2	B, C, J, K, M	BG, BP	200, 500
CDR1-B-9R1 ----	9.1	B, C, J, K, M	BG, BP	200, 500
CDR1-B-100 ----	10	F, G, J, K, M	BG, BP	200, 500
CDR1-B-110 ----	11	F, G, J, K, M	BG, BP	200, 500
CDR1-B-120 ----	12	F, G, J, K, M	BG, BP	200, 500
CDR1-B-130 ----	13	F, G, J, K, M	BG, BP	200, 500
CDR1-B-150 ----	15	F, G, J, K, M	BG, BP	200, 500
CDR1-B-160 ----	16	F, G, J, K, M	BG, BP	200, 500
CDR1-B-180 ----	18	F, G, J, K, M	BG, BP	200, 500
CDR1-B-200 ----	20	F, G, J, K, M	BG, BP	200, 500
CDR1-B-220 ----	22	F, G, J, K, M	BG, BP	200, 500
CDR1-B-240 ----	24	F, G, J, K, M	BG, BP	200, 500
CDR1-B-270 ----	27	F, G, J, K, M	BG, BP	200, 500
CDR1-B-300 ----	30	F, G, J, K, M	BG, BP	200, 500

See footnote at end of table.

TABLE II. Styles CDR13 and CDR14 capacitor characteristics - Continued.

PIN <u>1/</u>	Capacitance (pF)	Capacitance tolerance	Rated temperature and voltage- temperature limits	Rated voltage (V dc)
CDR1-B-330 ----	33	F, G, J, K, M	BG, BP	200, 500
CDR1-B-360 ----	36	F, G, J, K, M	BG, BP	200, 500
CDR1-B-390 ----	39	F, G, J, K, M	BG, BP	200, 500
CDR1-B-430 ----	43	F, G, J, K, M	BG, BP	200, 500
CDR1-B-470 ----	47	F, G, J, K, M	BG, BP	200, 500
CDR1-B-510 ----	51	F, G, J, K, M	BG, BP	200, 500
CDR1-B-560 ----	56	F, G, J, K, M	BG, BP	200, 500
CDR1-B-620 ----	62	F, G, J, K, M	BG, BP	200, 500
CDR1-B-680 ----	68	F, G, J, K, M	BG, BP	200, 500
CDR1-B-750 ----	75	F, G, J, K, M	BG, BP	200, 500
CDR1-B-820 ----	82	F, G, J, K, M	BG, BP	200, 500
CDR1-B-910 ----	91	F, G, J, K, M	BG, BP	200, 500
CDR1-B-101 ----	100	F, G, J, K, M	BG, BP	200, 500
CDR1-B-111 ----	110	F, G, J, K, M	BG, BP	200, 300
CDR1-B-121 ----	120	F, G, J, K, M	BG, BP	200, 300
CDR1-B-131 ----	130	F, G, J, K, M	BG, BP	200, 300
CDR1-B-151 ----	150	F, G, J, K, M	BG, BP	200, 300
CDR1-B-161 ----	160	F, G, J, K, M	BG, BP	200, 300
CDR1-B-181 ----	180	F, G, J, K, M	BG, BP	200, 300
CDR1-B-201 ----	200	F, G, J, K, M	BG, BP	200, 300
CDR1-B-221C ---	220	F, G, J, K, M	BG, BP	200
CDR1-B-241C ---	240	F, G, J, K, M	BG, BP	200
CDR1-B-271C ---	270	F, G, J, K, M	BG, BP	200
CDR1-B-301C ---	300	F, G, J, K, M	BG, BP	200
CDR1-B-331C ---	330	F, G, J, K, M	BG, BP	200
CDR1-B-361C ---	360	F, G, J, K, M	BG, BP	200
CDR1-B-391C ---	390	F, G, J, K, M	BG, BP	200
CDR1-B-431C ---	430	F, G, J, K, M	BG, BP	200
CDR1-B-471C ---	470	F, G, J, K, M	BG, BP	200
CDR1-B-511B ---	510	F, G, J, K, M	BG, BP	100
CDR1-B-561B ---	560	F, G, J, K, M	BG, BP	100
CDR1-B-621B ---	620	F, G, J, K, M	BG, BP	100
CDR1-B-681A ---	680	F, G, J, K, M	BG, BP	50
CDR1-B-751A ---	750	F, G, J, K, M	BG, BP	50
CDR1-B-821A ---	820	F, G, J, K, M	BG, BP	50
CDR1-B-911A ---	910	F, G, J, K, M	BG, BP	50
CDR1-B-102A ---	1,000	F, G, J, K, M	BG, BP	50
CDR1-BP112A ---	1,100	F, G, J, K, M	BP	50
CDR1-BP122A ---	1,200	F, G, J, K, M	BP	50
CDR1-BP132A ---	1,300	F, G, J, K, M	BP	50
CDR1-BP152A ---	1,500	F, G, J, K, M	BP	50
CDR1-BP162A ---	1,600	F, G, J, K, M	BP	50
CDR1-BP182A ---	1,800	F, G, J, K, M	BP	50
CDR1-BP202A ---	2,000	F, G, J, K, M	BP	50
CDR1-BP222A ---	2,200	F, G, J, K, M	BP	50
CDR1-BP242A ---	2,400	F, G, J, K, M	BP	50
CDR1-BP272A ---	2,700	F, G, J, K, M	BP	50
CDR1-BP302A ---	3,000	F, G, J, K, M	BP	50
CDR1-BP332A ---	3,300	F, G, J, K, M	BP	50

See footnote at end of table.

TABLE II. Styles CDR13 and CDR14 capacitor characteristics - Continued.

PIN 1/	Capacitance (pF)	Capacitance tolerance	Rated temperature and voltage-temperature limits	Rated voltage (V dc)
CDR1-BP362A - - -	3,600	F, G, J, K, M	BP	50
CDR1-BP392A - - -	3,900	F, G, J, K, M	BP	50
CDR1-BP432A - - -	4,300	F, G, J, K, M	BP	50
CDR1-BP472A - - -	4,700	F, G, J, K, M	BP	50
CDR1-BP502A - - -	5,000	F, G, J, K, M	BP	50
CDR1-BP512A - - -	5,100	F, G, J, K, M	BP	50

1/ Complete PIN shall include additional symbols to indicate style, voltage-temperature limits (where applicable), rated voltage (where applicable), capacitance tolerance (where applicable), termination finish ("M" or "N" for style CDR13, and "S", "U", "W", "Y" or "Z" for style CDR14), and product level.

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-55681](#), this document also references [MIL-STD-202](#).

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

Preparing activity:
 Army - CR
 Agent:
 DLA - CC

Review activities:
 Navy - AS, MC, OS, SH
 Air Force - 19, 99

(Project 5910-2010-030)

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.daps.dla.mil>.