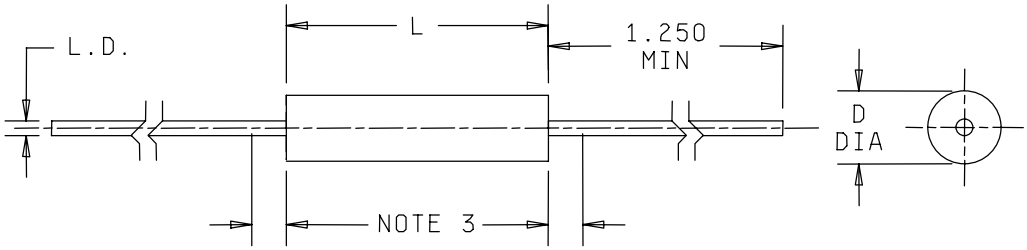
INCH-POUND
MIL-PRF-39014/21A
18 June 2001
SUPERSEDING
MIL-PRF-39014/21
16 August 1976

PERFORMANCE SPECIFICATION SHEET

CAPACITORS, FIXED, CERAMIC DIELECTRIC (GENERAL PURPOSE), ESTABLISHED RELIABILITY, STYLES CKR31 AND CKR32

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 sheet and MIL-PRF-39014.



STYLE	DIMENSIONS		
	L	D	Lead Diameter, L.D.
CKR31	.240 ± .010	.090 ± .010	.017 ± .002
CKR32	.240 ± .010	.130 ± .010	.017 ± .002

Inches	mm
.002	0.05
.010	0.25
.017	0.43
.090	2.29
.130	3.30
.240	6.10
1.250	31.75

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Non-conductive material shall not extend beyond .010 (.25 mm) from end of capacitor body.
4. Lead length may be a minimum of 1.00 inch (25.4 mm) long for use in tape and reel packaging, when specified in the ordering data.

FIGURE 1. Capacitor style CKR31 and CKR32.

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

REQUIREMENTS:

Dimensions and configuration: See figure.

Case type: tubular.

Capacitance value: See table I.

Capacitance tolerance: See table I.

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

Voltage rating: See table I.

Dissipation factor (DF): See table II.

Insulation resistance (IR):

At 25°C: Not less than 100,000 megohms or 1,000 megohm-microfarads, whichever is less.

At 125°C: Not less than 10,000 megohms or 100 megohm-microfarads, whichever is less.

Insertion loss: Not applicable.

Seal: Not applicable.

Voltage-temperature limits: In accordance with MIL-PRF-39014. See table II.

Immersion:

DWV: 250 percent of rated voltage.

IR: 10,000 megohms, min or 100 megohm-microfarads, whichever is less.

Capacitance change: See table II.

DF: See table II.

Salt spray (corrosion): Not applicable.

Resistance to soldering heat:

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

Capacitance change: See table II.

DF: See table II.

Life:

Rated conditions, 100 percent of dc rated voltage at 125°C.

0 through 3,000 hours:

IR: At 25°C, not less than 50 percent of initial 25°C requirement.

At 125°C, not less than 50 percent of initial 125°C requirement.

ΔC: See table II.

DF: See table II.

4,000 through 32,000 hours:

IR: At 25°C, not less than 15 percent of initial 25°C requirement.

At 125°C, not less than 15 percent of initial 125°C requirement.

ΔC: See table II.

DF: See table II.

Accelerated condition, 200 percent of dc rated voltage at 125°C.

0 and 250 hours:

IR: At 25°C, not less than 50 percent of initial 25°C requirement.

At 125°C, not less than 50 percent of initial 125°C requirement.

ΔC: See table II.

DF: See table II.

1,000, 2,000, and 4,000 hours:

IR: At 25°C, not less than 15 percent of initial 25°C requirement.

At 125°C, not less than 15 percent of initial 125°C requirement.

ΔC: See table II.

DF: See table II.

Part number: M39014/21-(dash number from table I).

Marking: In accordance with MIL-PRF-39014, except that minimum marking as shown in the following example will be permitted. Full marking shall be included on the package.

Example:	JCK31	-	J for JAN, CK31 for CKR31.
	103KP	-	Capacitance, tolerance, failure rate level.
	0120A	-	Date code and lot code.
	TM	-	Manufacturer’s two or three digit trademark or symbol.

TABLE I. Dash number and electrical characteristics.

Dash number		Capacitance, pF	Capacitance tolerance symbol	DC rated voltage, volts
Failure rate level (%/1,000 hours)				
M (1.0)	P (0.1)			
Style CKR31, voltage-temperature limits of +2, -10% and +2, -10%				
0001	0101	270	J	50
0002	0102	270	K	50
0003	0103	330	J	50
0004	0104	330	K	50
0005	0105	390	J	50
0006	0106	390	K	50
0007	0107	470	J	50
0008	0108	470	K	50
0009	0109	560	J	50
0010	0110	560	K	50
0011	0111	680	J	50
0012	0112	680	K	50
0013	0113	820	J	50
0014	0114	820	K	50
0015	0115	1,000	J	50
0016	0116	1,000	K	50
0017	0117	1,200	J	50
0018	0118	1,200	K	50
0019	0119	1,500	J	50
0020	0120	1,500	K	50
0021	0121	1,800	J	50
0022	0122	1,800	K	50
0023	0123	2,200	J	50
0024	0124	2,200	K	50
0025	0125	2,700	J	50
0026	0126	2,700	K	50
0027	0127	3,300	J	50
0028	0128	3,300	K	50
0029	0129	3,900	J	50
0030	0130	3,900	K	50
0031	0131	4,700	J	50
0032	0132	4,700	K	50
0033	0133	5,600	J	50
0034	0134	5,600	K	50
0035	0135	6,800	J	50
0036	0136	6,800	K	50
0037	0137	8,200	J	50
0038	0138	8,200	K	50
0039	0139	10,000	J	50
0040	0140	10,000	K	50
Style CKR31, voltage-temperature limits of +2, -15% and +2, -15%				
0041	0141	12,000	K	50
0042	0142	12,000	M	50
0043	0143	15,000	K	50
0044	0144	15,000	M	50
0045	0145	18,000	K	50
0046	0146	18,000	M	50
0047	0147	20,000	K	50
0048	0148	20,000	M	50

TABLE I. Dash number and electrical characteristics - Continued.

Dash number		Capacitance, pF	Capacitance tolerance symbol	DC rated voltage, volts
Failure rate level (%/1,000 hours)				
M (1.0)	P (0.1)			
Style CKR31, voltage-temperature limits of +20, -45% and +20, -50%				
0049	0149	22,000	K	50
0050	0150	22,000	M	50
0051	0151	27,000	K	50
0052	0152	27,000	M	50
0053	0153	33,000	K	50
0054	0154	33,000	M	50
0055	0155	39,000	K	50
0056	0156	39,000	M	50
0057	0157	47,000	K	50
0058	0158	47,000	M	50
0059	0159	51,000	K	50
0060	0160	51,000	M	50
Style CKR32, voltage-temperature limits of +2, -10% and +2, -10%				
0061	0161	12,000	J	50
0062	0162	12,000	K	50
0063	0163	15,000	J	50
0064	0164	15,000	K	50
0065	0165	18,000	J	50
0066	0166	18,000	K	50
0067	0167	20,000	J	50
0068	0168	20,000	K	50
Style CKR32, voltage-temperature limits of +2, -15% and +2, -15%				
0069	0169	22,000	K	50
0070	0170	22,000	M	50
0071	0171	27,000	K	50
0072	0172	27,000	M	50
0073	0173	33,000	K	50
0074	0174	33,000	M	50
0075	0175	39,000	K	50
0076	0176	39,000	M	50
Style CKR32, voltage-temperature limits of +20, -45% and +20, -50%				
0077	0177	56,000	K	50
0078	0178	56,000	M	50
0079	0179	62,000	K	50
0080	0180	62,000	M	50
0081	0181	68,000	K	50
0082	0182	68,000	M	50
0083	0183	75,000	K	50
0084	0184	75,000	M	50
0085	0185	82,000	K	50
0086	0186	82,000	M	50
0087	0187	91,000	K	50
0088	0188	91,000	M	50
0089	0189	100,000	K	50
0090	0190	100,000	M	50

TABLE II.

Capacitance change with reference to 25°C		Dissipation factor (max)	Capacitance change	
Steps A through D of table V Bias = 0 volts	Steps E through G of table V Bias = Rated voltage		After immersion, moisture resistance, and resistance to soldering heat	After life
+2, -10%	+2, -10%	1.0%	±2%	±5%
+2, -15%	+2, -15%	1.5%	±2%	±10%
+20, -45%	+20, -50%	3.0%	±5%	±20%

Custodians:
Air Force - 11
DLA - CC

Review activities:
Air Force - 99

Preparing activity:
DLA - CC

(Project 5910-2129)