

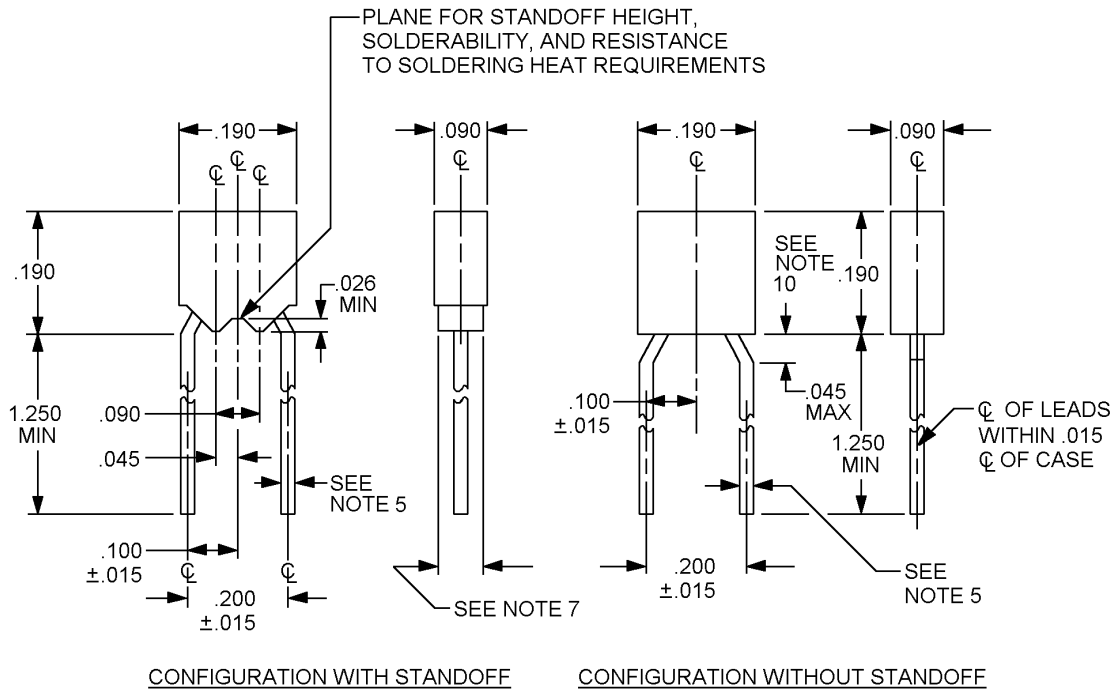
INCH-POUND
 MIL-PRF-39014/1H
 27 April 2004
 SUPERSEDING
 MIL-PRF-39014/1G
 16 September 1997

PERFORMANCE SPECIFICATION SHEET

CAPACITORS, FIXED, CERAMIC DIELECTRIC
 (GENERAL PURPOSE),
 ESTABLISHED RELIABILITY AND NONESTABLISHED RELIABILITY,
 STYLE CKR05, NATO TYPE DESIGNATION NCC61

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.



Inches	mm
.015	0.38
.026	0.66
.045	1.14
.090	2.29
.100	2.54
.190	4.83
.200	5.08
1.250	31.75

FIGURE 1. Dimensions and configurations.

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NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is $\pm .010$ inch (0.25 mm).
4. Lead length may be a minimum of .625 inch (15.88 mm) for use in tape and reel automatic insertion equipment, when specified.
5. Lead diameter shall be .023 inch (0.58 mm) to .029 inch (0.74 mm).
6. Optional standoffs shall be of triangular shape so that the standoff will provide line contact with the surface upon which the capacitor is mounted.
- * 7. Thickness of standoffs shall be a minimum of .075 inch (1.90 mm) to a maximum of the actual thickness of the capacitor body.
8. Insulation coating shall not extend more than .018 inch (0.46 mm) along lead wires. For capacitors with standoffs, insulation coating shall be measured from the plane from which the standoff height is measured.
9. At the option of the user, the standoff configuration may be substituted as a replacement for the nonstandoff configuration of the same style.
10. For flush mounting .078 inch (1.98 mm), printed circuit hole diameter is required to clear shoulder.

FIGURE 1. Dimensions and configurations - Continued.

REQUIREMENTS:

Dimensions and configuration: See figure 1.

- * Case type: Molded or preformed.

Capacitance value: See table I.

Capacitance tolerance: See table I.

Operating temperature range: -55°C to $+125^{\circ}\text{C}$.

Voltage rating: See table I.

Radiographic inspection (failure rate level 'S'): In accordance with MIL-PRF-39014.

Dissipation factor: Not more than 2.5 percent.

Dielectric withstanding voltage:

Body insulation: Shall be able to withstand 1,300 volts between leads and case.

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.

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

Capacitance change with reference to 25°C	
Step A through step D of MIL-PRF-39014, voltage-temperature limit cycle table Bias = 0 volt	Step E through step G of MIL-PRF-39014, voltage-temperature limit cycle table Bias = rated voltage
± 15 percent	+15 percent, -25 percent

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Immersion:

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

* Salt atmosphere (corrosion) (salt spray): Not applicable.

Life:

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

0 hour 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: ±20 percent from initial measured value.

Dissipation factor: Not greater than 2.5 percent.

4,000 hours 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: ±20 percent from initial measured value.

Dissipation factor: Not greater than 2.5 percent.

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

0 hour 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: ±20 percent from initial measured value.

Dissipation factor: Not greater than 2.5 percent.

1,000 hours, 2,000 hours, 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: ±20 percent from initial measured value.

Dissipation factor: Not greater than 2.5 percent.

* Resistance to soldering heat: Resistance to soldering heat shall be in accordance with method 210 of MIL-STD-202, test condition C.

ΔC: +15 percent, -5 percent of the initial 25°C measurement.

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Solderability: The leads shall be solderable up to .020 inch (0.51 mm) from the body egress. For styles with standoffs, solderability shall be measured from the plane shown on figure 1.

Workmanship: Exposed copper or bare leads will be permitted to a maximum of .020 inch (0.51 mm) from the body egress. For parts without standoffs, workmanship shall be in accordance with MIL-PRF-39014.

Part or Identifying Number (PIN): Established reliability - M39014/01-(dash number from table I). Nonestablished reliability - M39014/01C (failure rate level M dash number from table I).

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

<u>FRONT</u>		<u>BACK</u>	
M390 14/01 1201	Abbreviated PIN	J - - 0417 A	“J” brand and two digit manufacturer's code or symbol <u>1/</u> Date code Lot code

Established reliability without optional standoff

<u>FRONT</u>		<u>BACK</u>	
C390 14/01 1201	Abbreviated PIN	J - - 0417 A	“J” brand and two digit manufacturer's code or symbol <u>1/</u> Date code Lot code

Nonestablished reliability without optional standoff 2/

<u>FRONT</u>	<u>FRONT</u>
M390 14/01 1201V	C390 14/01 1201V

Established reliability with optional standoffNonestablished reliability with optional standoff 2/

Supersession data: See table II.

1/ Location of manufacturer's code or symbol is optional.

2/ NOTE: The reduced marking requirement for nonestablished reliability (product level C) differs from the actual PIN of the nonestablished reliability part in the placement of the character “C”.

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TABLE I. Dash number and electrical characteristics.

Dash number <u>1/ 2/</u>				Capacitance (pF)	Capacitance tolerance (± percent)	DC rated voltage (volts)
Failure rate level (%/1,000 hours)						
1.0 (M)	0.1 (P)	0.01 (R)	0.001 (S)			
1201-	1241-	1281-	1321-	10	10	200
1202-	1242-	1282-	1322-	10	20	200
1203-	1243-	1283-	1323-	12	10	200
1204-	1244-	1284-	1324-	15	10	200
1205-	1245-	1285-	1325-	15	20	200
1206-	1246-	1286-	1326-	18	10	200
1207-	1247-	1287-	1327-	22	10	200
1208-	1248-	1288-	1328-	22	20	200
1209-	1249-	1289-	1329-	27	10	200
1210-	1250-	1290-	1330-	33	10	200
1211-	1251-	1291-	1331-	33	20	200
1212-	1252-	1292-	1332-	39	10	200
1213-	1253-	1293-	1333-	47	10	200
1214-	1254-	1294-	1334-	47	20	200
1215-	1255-	1295-	1335-	56	10	200
1216-	1256-	1296-	1336-	68	10	200
1217-	1257-	1297-	1337-	68	20	200
1218-	1258-	1298-	1338-	82	10	200
1219-	1259-	1299-	1339-	100	10	200
1220-	1260-	1300-	1340-	100	20	200
1221-	1261-	1301-	1341-	120	10	200
1222-	1262-	1302-	1342-	150	10	200
1223-	1263-	1303-	1343-	150	20	200
1224-	1264-	1304-	1344-	180	10	200
1225-	1265-	1305-	1345-	220	10	200
1226-	1266-	1306-	1346-	220	20	200
1227-	1267-	1307-	1347-	270	10	200
1228-	1268-	1308-	1348-	330	10	200
1229-	1269-	1309-	1349-	330	20	200
1230-	1270-	1310-	1350-	390	10	200
1231-	1271-	1311-	1351-	470	10	200
1232-	1272-	1312-	1352-	470	20	200
1233-	1273-	1313-	1353-	560	10	200
1234-	1274-	1314-	1354-	680	10	200
1235-	1275-	1315-	1355-	680	20	200
1236-	1276-	1316-	1356-	820	10	200
1237-	1277-	1317-	1357-	1,000	10	200
1238-	1278-	1318-	1358-	1,000	20	200
1239-	1279-	1319-	1359-	1,200	10	100
1240-	1280-	1320-	1360-	1,500	10	100
1441-	1481-	1521-	1561-	1,500	20	100
1442-	1482-	1522-	1562-	1,800	10	100
1443-	1483-	1523-	1563-	2,200	10	100

See footnotes at end of table.

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TABLE I. Dash number and electrical characteristics - Continued.

Dash number <u>1/</u> <u>2/</u>				Capacitance (pF)	Capacitance tolerance (± percent)	DC rated voltage (volts)
Failure rate level (%/1,000 hours)						
1.0 (M)	0.1 (P)	0.01 (R)	0.001 (S)			
1444-	1484-	1524-	1564-	2,200	20	100
1445-	1485-	1525-	1565-	2,700	10	100
1446-	1486-	1526-	1566-	3,300	10	100
1447-	1487-	1527-	1567-	3,300	20	100
1448-	1488-	1528-	1568-	3,900	10	100
1449-	1489-	1529-	1569-	4,700	10	100
1450-	1490-	1530-	1570-	4,700	20	100
1451-	1491-	1531-	1571-	5,600	10	100
1452-	1492-	1532-	1572-	6,800	10	100
1453-	1493-	1533-	1573-	6,800	20	100
1454-	1494-	1534-	1574-	8,200	10	100
1455-	1495-	1535-	1575-	10,000	10	100
1456-	1496-	1536-	1576-	10,000	20	100
1457-	1497-	1537-	1577-	12,000	10	50
1458-	1498-	1538-	1578-	15,000	10	50
1459-	1499-	1539-	1579-	15,000	20	50
1460-	1500-	1540-	1580-	18,000	10	50
1461-	1501-	1541-	1581-	22,000	10	50
1462-	1502-	1542-	1582-	22,000	20	50
1463-	1503-	1543-	1583-	27,000	10	50
1464-	1504-	1544-	1584-	33,000	10	50
1465-	1505-	1545-	1585-	33,000	20	50
1466-	1506-	1546-	1586-	39,000	10	50
1467-	1507-	1547-	1587-	47,000	10	50
1468-	1508-	1548-	1588-	47,000	20	50
1469-	1509-	1549-	1589-	56,000	10	50
1470-	1510-	1550-	1590-	68,000	10	50
1471-	1511-	1551-	1591-	68,000	20	50
1472-	1512-	1552-	1592-	82,000	10	50
1473-	1513-	1553-	1593-	100,000	10	50
1474-	1514-	1554-	1594-	100,000	20	50

- 1/ Dash number shall include the letter "V" to indicate the optional standoff configuration (when applicable) or "-" shall be deleted for the configuration without the standoff.
- 2/ For nonestablished reliability (product level C) parts, the complete PIN shall include the letter "C" in place of "-" at the beginning of the dash number and the failure rate level "M" dash number (e.g. M39014/01C1201 or M39014/01C1201V).

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TABLE II. Substitutability data.

Dash number in MIL-C-39014/1C, /1D, /1E, /1F, MIL-PRF-39014/1G and /1H 1/					Substitutable for dash number in									
					MIL-C-39014/1A and /1B					MIL-C-39014/1				
L 2/	M	P	R	S	L 3/	M	P	R	S	L	M	P	R	S
1361	1201	1241	1281	1321	0361	0201	0241	0281	0321	-	0001	0002	0003	0004
1362	1202	1242	1282	1322	0362	0202	0242	0282	0322	-	0005	0006	0007	0008
1363	1203	1243	1283	1323	0363	0203	0243	0283	0323	-	0009	0010	0011	0012
1364	1204	1244	1284	1324	0364	0204	0244	0284	0324	-	0013	0014	0015	0016
1365	1205	1245	1285	1325	0365	0205	0245	0285	0325	-	0017	0018	0019	0020
1366	1206	1246	1286	1326	0366	0206	0246	0286	0326	-	0021	0022	0023	0024
1367	1207	1247	1287	1327	0367	0207	0247	0287	0327	-	0025	0026	0027	0028
1368	1208	1248	1288	1328	0368	0208	0248	0288	0328	-	0029	0030	0031	0032
1369	1209	1249	1289	1329	0369	0209	0249	0289	0329	-	0033	0034	0035	0036
1370	1210	1250	1290	1330	0370	0210	0250	0290	0330	-	0037	0038	0039	0040
1371	1211	1251	1291	1331	0371	0211	0251	0291	0331	-	0041	0042	0043	0044
1372	1212	1252	1292	1332	0372	0212	0252	0292	0332	-	0045	0046	0047	0048
1373	1213	1253	1293	1333	0373	0213	0253	0293	0333	-	0049	0050	0051	0052
1374	1214	1254	1294	1334	0374	0214	0254	0294	0334	-	0053	0054	0055	0056
1375	1215	1255	1295	1335	0375	0215	0255	0295	0335	-	0057	0058	0059	0060
1376	1216	1256	1296	1336	0376	0216	0256	0296	0336	-	0061	0062	0063	0064
1377	1217	1257	1297	1337	0377	0217	0257	0297	0337	-	0065	0066	0067	0068
1378	1218	1258	1298	1338	0378	0218	0258	0298	0338	-	0069	0070	0071	0072
1379	1219	1259	1299	1339	0379	0219	0259	0299	0339	-	0073	0074	0075	0076
1380	1220	1260	1300	1340	0380	0220	0260	0300	0340	-	0077	0078	0079	0080
1381	1221	1261	1301	1341	0381	0221	0261	0301	0341	-	0081	0082	0083	0084
1382	1222	1262	1302	1342	0382	0222	0262	0302	0342	-	0085	0086	0087	0088
1383	1223	1263	1303	1343	0383	0223	0263	0303	0343	-	0089	0090	0091	0092
1384	1224	1264	1304	1344	0384	0224	0264	0304	0344	-	0093	0094	0095	0096
1385	1225	1265	1305	1345	0385	0225	0265	0305	0345	-	0097	0098	0099	0100
1386	1226	1266	1306	1346	0386	0226	0266	0306	0346	-	0101	0102	0103	0104
1387	1227	1267	1307	1347	0387	0227	0267	0307	0347	-	0105	0106	0107	0108
1388	1228	1268	1308	1348	0388	0228	0268	0308	0348	-	0109	0110	0111	0112
1389	1229	1269	1309	1349	0389	0229	0269	0309	0349	-	0113	0114	0115	0116
1390	1230	1270	1310	1350	0390	0230	0270	0310	0350	-	0117	0118	0119	0120
1391	1231	1271	1311	1351	0391	0231	0271	0311	0351	-	0121	0122	0123	0124
1392	1232	1272	1312	1352	0392	0232	0272	0312	0352	-	0125	0126	0127	0128
1393	1233	1273	1313	1353	0393	0233	0273	0313	0353	-	0129	0130	0131	0132
1394	1234	1274	1314	1354	0394	0234	0274	0314	0354	-	0133	0134	0135	0136
1395	1235	1275	1315	1355	0395	0235	0275	0315	0355	-	0137	0138	0139	0140
1396	1236	1276	1316	1356	0396	0236	0276	0316	0356	-	0141	0142	0143	0144
1397	1237	1277	1317	1357	0397	0237	0277	0317	0357	-	0145	0146	0147	0148
1398	1238	1278	1318	1358	0398	0238	0278	0318	0358	-	0149	0150	0151	0152

See footnotes at end of table.

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TABLE II. Substitutability data. - Continued.

Dash number in MIL-C-39014/1C, /1D, /1E, /1F, and MIL-PRF-39014/1G ^{1/}					Substitutable for dash number in									
					MIL-C-39014/1A and /1B					MIL-C-39014/1				
L ^{2/}	M	P	R	S	L ^{3/}	M	P	R	S	L	M	P	R	S
MIL-C-39014/1B only														
1399	1239	1279	1319	1359	0399	0239	0279	0319	0359	-	-	-	-	-
1400	1240	1280	1320	1360	0400	0240	0280	0320	0360	-	-	-	-	-
1401	1441	1481	1521	1561	0401	0441	0481	0521	0561	-	-	-	-	-
1402	1442	1482	1522	1562	0402	0442	0482	0522	0562	-	-	-	-	-
1403	1443	1483	1523	1563	0403	0443	0483	0523	0563	-	-	-	-	-
1404	1444	1484	1524	1564	0404	0444	0484	0524	0564	-	-	-	-	-
1405	1445	1485	1525	1565	0405	0445	0485	0525	0565	-	-	-	-	-
1406	1446	1486	1526	1566	0406	0446	0486	0526	0566	-	-	-	-	-
1407	1447	1487	1527	1567	0407	0447	0487	0527	0567	-	-	-	-	-
1408	1448	1488	1528	1568	0408	0448	0488	0528	0568	-	-	-	-	-
1409	1449	1489	1529	1569	0409	0449	0489	0529	0569	-	-	-	-	-
1410	1450	1490	1530	1570	0410	0450	0490	0530	0570	-	-	-	-	-
1411	1451	1491	1531	1571	0411	0451	0491	0531	0571	-	-	-	-	-
1412	1452	1492	1532	1572	0412	0452	0492	0532	0572	-	-	-	-	-
1413	1453	1493	1533	1573	0413	0453	0493	0533	0573	-	-	-	-	-
1414	1454	1494	1534	1574	0414	0454	0494	0534	0574	-	-	-	-	-
1415	1455	1495	1535	1575	0415	0455	0495	0535	0575	-	-	-	-	-
1416	1456	1496	1536	1576	0416	0456	0496	0536	0576	-	-	-	-	-
1417	1457	1497	1537	1577	0417	0457	0497	0537	0577	-	-	-	-	-
1418	1458	1498	1538	1578	0418	0458	0498	0538	0578	-	-	-	-	-
1419	1459	1499	1539	1579	0419	0459	0499	0539	0579	-	-	-	-	-
1420	1460	1500	1540	1580	0420	0460	0500	0540	0580	-	-	-	-	-
1421	1461	1501	1541	1581	0421	0461	0501	0541	0581	-	-	-	-	-
1422	1462	1502	1542	1582	0422	0462	0502	0542	0582	-	-	-	-	-
1423	1463	1503	1543	1583	0423	0463	0503	0543	0583	-	-	-	-	-
1424	1464	1504	1544	1584	0424	0464	0504	0544	0584	-	-	-	-	-
1425	1465	1505	1545	1585	0425	0465	0505	0545	0585	-	-	-	-	-
1426	1466	1506	1546	1586	0426	0466	0506	0546	0586	-	-	-	-	-
1427	1467	1507	1547	1587	0427	0467	0507	0547	0587	-	-	-	-	-
1428	1468	1508	1548	1588	0428	0468	0508	0548	0588	-	-	-	-	-
1429	1469	1509	1549	1589	0429	0469	0509	0549	0589	-	-	-	-	-
1430	1470	1510	1550	1590	0430	0470	0510	0550	0590	-	-	-	-	-
1431	1471	1511	1551	1591	0431	0471	0511	0551	0591	-	-	-	-	-
1432	1472	1512	1552	1592	0432	0472	0512	0552	0592	-	-	-	-	-
1433	1473	1513	1553	1593	0433	0473	0513	0553	0593	-	-	-	-	-
1434	1474	1514	1554	1594	0434	0474	0514	0554	0594	-	-	-	-	-

^{1/} Dash numbers in lower failure rate level columns are substitutable for dash numbers in all higher failure rate level columns.

^{2/} Revision C only.

^{3/} Revision B only.

Referenced documents. In addition to MIL-PRF-39014, this document references MIL-STD-202.

Amendment notations: The margins of this specification are marked with asterisks to indicate modifications generated by this amendment. 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.

MIL-PRF-39014/1H

Custodians:

Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:

Army - CR
(Project 5910-2254)

Review activities:

- * Army - AR, AT, AV, MI
- Navy - MC, TD
- Air Force - 19, 99

- * 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 www.dodssp.daps.mil.