

CHR09

MIL-PRF-39022/1

Type
118P / 218P



Capacitors,
Fixed,
Metallized,
Nonmagnetic (end seals may be of magnetic material),
Paper-plastic film, or plastic film dielectric,
Direct current,
Hermetically sealed in metal cases,
Established reliability.

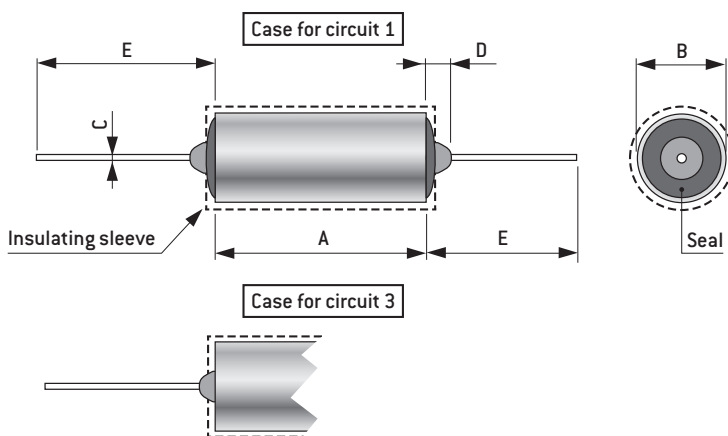
GENERAL CHARACTERISTICS

Dielectric material	50 V = normally polyethylene-terephthalate 200 to 600 V = normally paper polyethylene-terephthalate
Rated temperature	50 V = -55°C to +85°C 200 to 600 V = -55°C to +125°C.
Capacitance range	47 nF to 12 µF
Voltage range	50 V to 600 V
Capacitance tolerance	± 5%, ± 10%, ± 20%
Failure rate level	L (5% / 1,000 hours), M (1% / 1,000 hours), P (0.1% / 1,000 hours), R (0.01% / 1,000 hours).
Dielectric withstanding voltage (DWV)	Method 301 of MIL-STD-202 Terminal to terminal: 200 % of rated voltage. Terminals to case (when case is not a terminal): 200 % of rated voltage. For 100 % inspection: 250 % of rated voltage for not less than 5 seconds, or 200 % of rated voltage for not less than 15 seconds
Insulation resistance (IR)	Method 302 of MIL-STD-202 Terminal to terminal: See table INSULATION RESISTANCE Terminal to case: Greater than 10,000 MΩ

Full details and most up to date information found at government website.

DIMENSIONS

A		B	
See tables on the next pages			
C	D	E	
Inches	Inches	Inches	(mm)
See note 1	0.172 max	{4.37 max}	{41.28 ^{+25.4} ₋₀ }



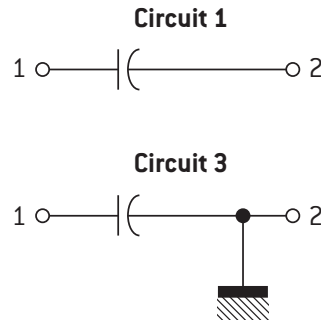
HOW TO ORDER

M39022	/01-	1025						
Performance Specification number	Specification sheet number	Nonsignificant dash number						
CHR09	A	1	M	C	152	K	1	M
HR Style	Terminal	Circuit	Characteristic	Voltage in code	Capacitance in code	Capacitance tolerance in code	Vibration grade	Failure rate level
CHR = HR style	A, R, L (see page 6)	1 = Circuit 1 3 = Circuit 3	R, N (see page 6)	A = 50V C = 200V E = 400V F = 600V	Examples: 101 = 100pF 472 = 4.7nF 473 = 47nF	J = ± 5% K = ± 10% M = ± 20%	1 = 10 to 55 Hz inclusive 3 = 10 to 2,000 Hz inclusive (acceleration 15 G)	M = 1% / 1,000 hours P = 0.1% / 1,000 hours R = 0.01% / 1,000 hours

NOTES

- Number 24 AWG wire 0.020"±0.002 (0.51±0.05 mm) for case diameters of 0.175" (4.45 mm) and 0.195" (4.95 mm). Number 22 AWG wire 0.025"±0.002 (0.64±0.05 mm) for case diameters of 0.235" (5.97 mm) and 0.312" (7.92 mm). Number 20 AWG wire 0.032"±0.002 (0.81±0.05 mm) for case diameters of 0.400" (10.16 mm) and over.
- See table below for additional dimensions.
- Dimensions are in inches.
- Metric equivalents are given for general information only
- Insulating sleeve shall extend beyond the capacitor body but shall not exceed 0.031" (0.79 mm) on either end. Insulating sleeve thickness shall not exceed 0.016" (0.41 mm).
- Plastic insulating sleeve shall be transparent; marking shall be applied to the capacitor case.
- Metric equivalents are in parentheses.
- Lead length may be a minimum of 1inch (25.4 mm) long for use in tape and reel packaging when specified in the ordering data.

CIRCUIT DIAGRAM



CHARACTERISTICS

Dielectric material	Paper-polyethylene-terephthalate	Polyethylene-terephthalate
Operating temperature range	-55°C to +125°C	-55°C to +85°C
DC voltage rating (volts)	200 V	400 V, 600 V
High ambient test temperature	+125°C +4°C, -0°C	-55°C +0°C, -3°C
Low ambient test temperature	-55°C +0°C, -3°C	+85°C +4°C, -0°C
Megohms x microfarads (minimum)		
At +25°C	2,000	2,000
At high ambient test temperature	10	40
Insulation resistance (megohms) (need not exceed)		
At +25°C	12,000	12,000
At high ambient test temperature	150	600
Capacitance change with temperature (maximum)		
At -55°C	-10	-10
At high ambient test temperature	+20	+20
		-8 %
		+8 %

ELECTRICAL CHARACTERISTICS, DIMENSIONS, AND DASH NUMBERS

Type designation in MIL-C-39022/1B *	Nominal capacitance (µF)	Capacitance Tolerance (%)	Circuit diagram	Dimensions**				Dash number in			MIL-C-39022/1A and /1
				A ±0.031 (±0.79mm)		B +0.015/-0.005 (+0.38/-0.13)		MIL-C-39022/1C thru MIL-PRF-39022/1G **			
				Inches	(mm)	Inches	(mm)	Failure rate level (%/1,000 hr)			
				M(1.0)	P(0.1)	R(0.01)					
Rated voltage 50 V _{DC}											
CHR09A1RA183--	0.018	5	1	0.750	(19.05)	0.175	(4.45)	1261	1521	1781	0001
CHR09A1RA183--	0.018	10	1	0.750	(19.05)	0.175	(4.45)	1262	1522	1782	0002
CHR09A3RA183--	0.018	5	3	0.688	(17.48)	0.175	(4.45)	1263	1523	1783	0003
CHR09A3RA183--	0.018	10	3	0.688	(17.48)	0.175	(4.45)	1264	1524	1784	0004
CHR09A1RA223--	0.022	5	1	0.750	(19.05)	0.175	(4.45)	1265	1525	1785	0005
CHR09A1RA223--	0.022	10	1	0.750	(19.05)	0.175	(4.45)	1266	1526	1786	0006
CHR09A3RA223--	0.022	5	3	0.688	(17.48)	0.175	(4.45)	1267	1527	1787	0007
CHR09A3RA223--	0.022	10	3	0.688	(17.48)	0.175	(4.45)	1268	1528	1788	0008
CHR09A1RA273--	0.027	5	1	0.750	(19.05)	0.175	(4.45)	1269	1529	1789	0009
CHR09A1RA273--	0.027	10	1	0.750	(19.05)	0.175	(4.45)	1270	1530	1790	0010
CHR09A3RA273--	0.027	5	3	0.688	(17.48)	0.175	(4.45)	1271	1531	1791	0011
CHR09A3RA273--	0.027	10	3	0.688	(17.48)	0.175	(4.45)	1272	1532	1792	0012
CHR09A1RA333--	0.033	5	1	0.750	(19.05)	0.175	(4.45)	1273	1533	1793	0013
CHR09A1RA333--	0.033	10	1	0.750	(19.05)	0.175	(4.45)	1274	1534	1794	0014
CHR09A3RA333--	0.033	5	3	0.688	(17.48)	0.175	(4.45)	1275	1535	1795	0015
CHR09A3RA333--	0.033	10	3	0.688	(17.48)	0.175	(4.45)	1276	1536	1796	0016
CHR09A1RA393--	0.039	5	1	0.750	(19.05)	0.195	(4.95)	1277	1537	1797	0017
CHR09A1RA393--	0.039	10	1	0.750	(19.05)	0.195	(4.95)	1278	1538	1798	0018
CHR09A3RA393--	0.039	5	3	0.688	(17.48)	0.195	(4.95)	1279	1539	1799	0019
CHR09A3RA393--	0.039	10	3	0.688	(17.48)	0.195	(4.95)	1280	1540	1800	0020
CHR09A1RA473--	0.047	5	1	0.750	(19.05)	0.195	(4.95)	1281	1541	1801	0021
CHR09A1RA473--	0.047	10	1	0.750	(19.05)	0.195	(4.95)	1282	1542	1802	0022
CHR09A3RA473--	0.047	5	3	0.688	(17.48)	0.195	(4.95)	1283	1543	1803	0023
CHR09A3RA473--	0.047	10	3	0.688	(17.48)	0.195	(4.95)	1284	1544	1804	0024

* Complete type designation will include additional symbols for capacitance tolerance and failure rate level.

** FRL L for revision C only.

ELECTRICAL CHARACTERISTICS, DIMENSIONS, AND DASH NUMBERS

Type designation in MIL-C-39022/1B*	Nominal capacitance (µF)	Capacitance Tolerance (%)	Circuit diagram	Dimensions**				Dash number in MIL-C-39022/1C thru MIL-PRF-39022/1G**			MIL-C-39022/1A and /1
				A ±0.031 (±0.79mm)		B 0.015/-0.005 (+0.38/-0.13)		Failure rate level (%/1,000 hr)			
				Inches	(mm)	Inches	(mm)	M(1.0)	P(0.1)	R(0.01)	
Rated voltage 50 V _{DC}											
CHR09A1RA563--	0.056	5	1	0.750	[19.05]	0.235	[5.97]	1285	1545	1805	0025
CHR09A1RA563--	0.056	10	1	0.750	[19.05]	0.235	[5.97]	1286	1546	1806	0026
CHR09A3RA563--	0.056	5	3	0.688	[17.48]	0.235	[5.97]	1287	1547	1807	0027
CHR09A3RA563--	0.056	10	3	0.688	[17.48]	0.235	[5.97]	1288	1548	1808	0028
CHR09A1RA683--	0.068	5	1	0.750	[19.05]	0.235	[5.97]	1289	1549	1809	0029
CHR09A1RA683--	0.068	10	1	0.750	[19.05]	0.235	[5.97]	1290	1550	1810	0030
CHR09A3RA683--	0.068	5	3	0.688	[17.48]	0.235	[5.97]	1291	1551	1811	0031
CHR09A3RA683--	0.068	10	3	0.688	[17.48]	0.235	[5.97]	1292	1552	1812	0032
CHR09A1RA823--	0.082	5	1	0.750	[19.05]	0.235	[5.97]	1293	1553	1813	0033
CHR09A1RA823--	0.082	10	1	0.750	[19.05]	0.235	[5.97]	1294	1554	1814	0034
CHR09A3RA823--	0.082	5	3	0.688	[17.48]	0.235	[5.97]	1295	1555	1815	0035
CHR09A3RA823--	0.082	10	3	0.688	[17.48]	0.235	[5.97]	1296	1556	1816	0036
CHR09A1RA104--	0.10	5	1	0.750	[19.05]	0.235	[5.97]	1297	1557	1817	0037
CHR09A1RA104--	0.10	10	1	0.750	[19.05]	0.235	[5.97]	1298	1558	1818	0038
CHR09A3RA104--	0.10	5	3	0.688	[17.48]	0.235	[5.97]	1299	1559	1819	0039
CHR09A3RA104--	0.10	10	3	0.688	[17.48]	0.235	[5.97]	1300	1560	1820	0040
CHR09A1RA124--	0.12	5	1	0.750	[19.05]	0.235	[5.97]	1301	1561	1821	
CHR09A1RA124--	0.12	10	1	0.750	[19.05]	0.235	[5.97]	1302	1562	1822	
CHR09A3RA124--	0.12	5	3	0.688	[17.48]	0.235	[5.97]	1303	1563	1823	
CHR09A3RA124--	0.12	10	3	0.688	[17.48]	0.235	[5.97]	1304	1564	1824	
CHR09A1RA154--	0.15	5	1	0.875	[22.23]	0.312	[7.92]	1305	1565	1825	
CHR09A1RA154--	0.15	10	1	0.875	[22.23]	0.312	[7.92]	1306	1566	1826	
CHR09A3RA154--	0.15	5	3	0.812	[20.62]	0.312	[7.92]	1307	1567	1827	
CHR09A3RA154--	0.15	10	3	0.812	[20.62]	0.312	[7.92]	1308	1568	1828	
CHR09A1RA184--	0.18	5	1	0.875	[22.23]	0.312	[7.92]	1309	1569	1829	0041
CHR09A1RA184--	0.18	10	1	0.875	[22.23]	0.312	[7.92]	1310	1570	1830	0042
CHR09A3RA184--	0.18	5	3	0.812	[20.62]	0.312	[7.92]	1311	1571	1831	0043
CHR09A3RA184--	0.18	10	3	0.812	[20.62]	0.312	[7.92]	1312	1572	1832	0044
CHR09A1RA224--	0.22	5	1	0.875	[22.23]	0.312	[7.92]	1313	1573	1833	0045
CHR09A1RA224--	0.22	10	1	0.875	[22.23]	0.312	[7.92]	1314	1574	1834	0046
CHR09A3RA224--	0.22	5	3	0.812	[20.62]	0.312	[7.92]	1315	1575	1835	0047
CHR09A3RA224--	0.22	10	3	0.812	[20.62]	0.312	[7.92]	1316	1576	1836	0048
CHR09A1RA274--	0.27	5	1	0.875	[22.23]	0.312	[7.92]	1317	1577	1837	0049
CHR09A1RA274--	0.27	10	1	0.875	[22.23]	0.312	[7.92]	1318	1578	1838	0050
CHR09A3RA274--	0.27	5	3	0.812	[20.62]	0.312	[7.92]	1319	1579	1839	0051
CHR09A3RA274--	0.27	10	3	0.812	[20.62]	0.312	[7.92]	1320	1580	1840	0052
CHR09A1RA334--	0.33	5	1	0.875	[22.23]	0.312	[7.92]	1321	1581	1841	0053
CHR09A1RA334--	0.33	10	1	0.875	[22.23]	0.312	[7.92]	1322	1582	1842	0054
CHR09A3RA334--	0.33	5	3	0.812	[20.62]	0.312	[7.92]	1323	1583	1843	0055
CHR09A3RA334--	0.33	10	3	0.812	[20.62]	0.312	[7.92]	1324	1584	1844	0056
CHR09A1RA394--	0.39	5	1	1.125	[28.58]	0.312	[7.92]	1325	1585	1845	0057
CHR09A1RA394--	0.39	10	1	1.125	[28.58]	0.312	[7.92]	1326	1586	1846	0058
CHR09A3RA394--	0.39	5	3	1.062	[26.97]	0.312	[7.92]	1327	1587	1847	0059
CHR09A3RA394--	0.39	10	3	1.062	[26.97]	0.312	[7.92]	1328	1588	1848	0060
CHR09A1RA474--	0.47	5	1	1.125	[28.58]	0.312	[7.92]	1329	1589	1849	0061
CHR09A1RA474--	0.47	10	1	1.125	[28.58]	0.312	[7.92]	1330	1590	1850	0062
CHR09A3RA474--	0.47	5	3	1.062	[26.97]	0.312	[7.92]	1331	1591	1851	0063
CHR09A3RA474--	0.47	10	3	1.062	[26.97]	0.312	[7.92]	1332	1592	1852	0064
CHR09A1RA564--	0.56	5	1	1.125	[28.58]	0.400	[10.16]	1333	1593	1853	0065
CHR09A1RA564--	0.56	10	1	1.125	[28.58]	0.400	[10.16]	1334	1594	1854	0066
CHR09A3RA564--	0.56	5	3	1.062	[26.97]	0.400	[10.16]	1335	1595	1855	0067
CHR09A3RA564--	0.56	10	3	1.062	[26.97]	0.400	[10.16]	1336	1596	1856	0068
CHR09A1RA684--	0.68	5	1	1.125	[28.58]	0.400	[10.16]	1337	1597	1857	0069
CHR09A1RA684--	0.68	10	1	1.125	[28.58]	0.400	[10.16]	1338	1598	1858	0070
CHR09A3RA684--	0.68	5	3	1.062	[26.97]	0.400	[10.16]	1339	1599	1859	0071
CHR09A3RA684--	0.68	10	3	1.062	[26.97]	0.400	[10.16]	1340	1600	1860	0072
CHR09A1RA824--	0.82	5	1	1.125	[28.58]	0.400	[10.16]	1341	1601	1861	0073
CHR09A1RA824--	0.82	10	1	1.125	[28.58]	0.400	[10.16]	1342	1602	1862	0074
CHR09A3RA824--	0.82	5	3	1.062	[26.97]	0.400	[10.16]	1343	1603	1863	0075
CHR09A3RA824--	0.82	10	3	1.062	[26.97]	0.400	[10.16]	1344	1604	1864	0076
CHR09A1RA105--	1.0	5	1	1.125	[28.58]	0.400	[10.16]	1345	1605	1865	0077
CHR09A1RA105--	1.0	10	1	1.125	[28.58]	0.400	[10.16]	1346	1606	1866	0078

* Complete type designation will include additional symbols for capacitance tolerance and failure rate level.

** FRL L for revision C only.

ELECTRICAL CHARACTERISTICS, DIMENSIONS, AND DASH NUMBERS

Type designation in MIL-C-39022/1B *	Nominal capacitance (µF)	Capacitance Tolerance (%)	Circuit diagram	Dimensions**				Dash number in MIL-C-39022/1C thru MIL-PRF-39022/1G **			MIL-C-39022/1A and /1
				A ±0.031 (±0.79mm)		B +0.015/-0.005 (+0.38/-0.13)		Failure rate level (%/1,000 hr)			
				Inches	(mm)	Inches	(mm)	M(1.0)	P(0.1)	R(0.01)	
Rated voltage 50 V _{DC}											
CHR09A3RA105--	1.0	5	3	1.062	[26.97]	0.400	[10.16]	1347	1607	1867	0079
CHR09A3RA105--	1.0	10	3	1.062	[26.97]	0.400	[10.16]	1348	1608	1868	0080
CHR09A1RA125--	1.2	5	1	1.375	[34.93]	0.400	[10.16]	1349	1609	1869	-
CHR09A1RA125--	1.2	10	1	1.375	[34.93]	0.400	[10.16]	1350	1610	1870	-
CHR09A3RA125--	1.2	5	3	1.312	[33.32]	0.400	[10.16]	1351	1611	1871	-
CHR09A3RA125--	1.2	10	3	1.312	[33.32]	0.400	[10.16]	1352	1612	1872	-
CHR09A1RA155--	1.5	5	1	1.125	[28.58]	0.500	[12.70]	1353	1613	1873	0081
CHR09A1RA155--	1.5	10	1	1.125	[28.58]	0.500	[12.70]	1354	1614	1874	0082
CHR09A3RA155--	1.5	5	3	1.062	[26.97]	0.500	[12.70]	1355	1615	1875	0083
CHR09A3RA155--	1.5	10	3	1.062	[26.97]	0.500	[12.70]	1356	1616	1876	0084
CHR09A1RA185--	1.8	5	1	1.375	[34.93]	0.500	[12.70]	1357	1617	1877	-
CHR09A1RA185--	1.8	10	1	1.375	[34.93]	0.500	[12.70]	1358	1618	1878	-
CHR09A3RA185--	1.8	5	3	1.312	[33.32]	0.500	[12.70]	1359	1619	1879	-
CHR09A3RA185--	1.8	10	3	1.312	[33.32]	0.500	[12.70]	1360	1620	1880	-
CHR09A1RA225--	2.2	5	1	1.125	[28.58]	0.562	[14.27]	1361	1621	1881	-
CHR09A1RA225--	2.2	10	1	1.125	[28.58]	0.562	[14.27]	1362	1622	1882	-
CHR09A3RA225--	2.2	5	3	1.062	[26.97]	0.562	[14.27]	1363	1623	1883	-
CHR09A3RA225--	2.2	10	3	1.062	[26.97]	0.562	[14.27]	1364	1624	1884	-
CHR09A1RA275--	2.7	5	1	1.375	[34.93]	0.562	[14.27]	1365	1625	1885	-
CHR09A1RA275--	2.7	10	1	1.375	[34.93]	0.562	[14.27]	1366	1626	1886	-
CHR09A3RA275--	2.7	5	3	1.312	[33.32]	0.562	[14.27]	1367	1627	1887	-
CHR09A3RA275--	2.7	10	3	1.312	[33.32]	0.562	[14.27]	1368	1628	1888	-
CHR09A1RA335--	3.3	5	1	1.375	[34.93]	0.562	[14.27]	1369	1629	1889	-
CHR09A1RA335--	3.3	10	1	1.375	[34.93]	0.562	[14.27]	1370	1630	1890	-
CHR09A3RA335--	3.3	5	3	1.312	[33.32]	0.562	[14.27]	1371	1631	1891	-
CHR09A3RA335--	3.9	10	3	1.312	[33.32]	0.562	[14.27]	1372	1632	1892	-
CHR09A1RA395--	3.9	5	1	1.625	[41.28]	0.562	[14.27]	1373	1633	1893	-
CHR09A1RA395--	3.9	10	1	1.625	[41.28]	0.562	[14.27]	1374	1634	1894	-
CHR09A3RA395--	3.9	5	3	1.562	[39.67]	0.562	[14.27]	1375	1635	1895	-
CHR09A3RA395--	3.9	10	3	1.562	[39.67]	0.562	[14.27]	1376	1636	1896	-
CHR09A1RA475--	4.7	5	1	1.750	[44.45]	0.562	[14.27]	1377	1637	1897	-
CHR09A1RA475--	4.7	10	1	1.750	[44.45]	0.562	[14.27]	1378	1638	1898	-
CHR09A3RA475--	4.7	5	3	1.688	[42.88]	0.562	[14.27]	1379	1639	1899	-
CHR09A3RA475--	4.7	10	3	1.688	[42.88]	0.562	[14.27]	1380	1640	1900	-
CHR09A1RA565--	5.6	5	1	1.875	[47.63]	0.562	[14.27]	1381	1641	1901	-
CHR09A1RA565--	5.6	10	1	1.875	[47.63]	0.562	[14.27]	1382	1642	1902	-
CHR09A3RA565--	5.6	5	3	1.812	[46.02]	0.562	[14.27]	1383	1643	1903	-
CHR09A3RA565--	5.6	10	3	1.812	[46.02]	0.562	[14.27]	1384	1644	1904	-
CHR09A1RA685--	6.8	5	1	1.625	[41.28]	0.672	[17.07]	1385	1645	1905	-
CHR09A1RA685--	6.8	10	1	1.625	[41.28]	0.672	[17.07]	1386	1646	1906	-
CHR09A3RA685--	6.8	5	3	1.562	[39.67]	0.672	[17.07]	1387	1647	1907	-
CHR09A3RA685--	6.8	10	3	1.562	[39.67]	0.672	[17.07]	1388	1648	1908	-
CHR09A1RA825--	8.2	5	1	1.875	[47.63]	0.672	[17.07]	1389	1649	1909	-
CHR09A1RA825--	8.2	10	1	1.875	[47.63]	0.672	[17.07]	1390	1650	1910	-
CHR09A3RA825--	8.2	5	3	1.812	[46.02]	0.672	[17.07]	1391	1651	1911	-
CHR09A3RA825--	8.2	10	3	1.812	[46.02]	0.672	[17.07]	1392	1652	1912	-
CHR09A1RA106--	10.0	5	1	1.875	[47.63]	0.750	[19.05]	1393	1653	1913	0113
CHR09A1RA106--	10.0	10	1	1.875	[47.63]	0.750	[19.05]	1394	1654	1914	0114
CHR09A3RA106--	10.0	5	3	1.812	[46.02]	0.750	[19.05]	1395	1655	1915	0115
CHR09A3RA106--	10.0	10	3	1.812	[46.02]	0.750	[19.05]	1396	1656	1916	0116
CHR09A1RA126--	12.0	5	1	2.375	[60.33]	0.750	[19.05]	1397	1657	1917	0117
CHR09A1RA126--	12.0	10	1	2.375	[60.33]	0.750	[19.05]	1398	1658	1918	0118
CHR09A3RA825--	8.2	5	3	1.812	[46.02]	0.672	[17.07]	1391	1651	1911	-
CHR09A3RA825--	8.2	10	3	1.812	[46.02]	0.672	[17.07]	1392	1652	1912	-
CHR09A1RA106--	10.0	5	1	1.875	[47.63]	0.750	[19.05]	1393	1653	1913	0113
CHR09A1RA106--	10.0	10	1	1.875	[47.63]	0.750	[19.05]	1394	1654	1914	0114
CHR09A3RA106--	10.0	5	3	1.812	[46.02]	0.750	[19.05]	1395	1655	1915	0115
CHR09A3RA106--	10.0	10	3	1.812	[46.02]	0.750	[19.05]	1396	1656	1916	0116
CHR09A1RA126--	12.0	5	1	2.375	[60.33]	0.750	[19.05]	1397	1657	1917	0117
CHR09A1RA126--	12.0	10	1	2.375	[60.33]	0.750	[19.05]	1398	1658	1918	0118
CHR09A3RA126--	12.0	5	3	2.312	[58.72]	0.750	[19.05]	1399	1659	1919	0119
CHR09A3RA126--	12.0	10	3	2.312	[58.72]	0.750	[19.05]	1400	1660	1920	0120

* Complete type designation will include additional symbols for capacitance tolerance and failure rate level.

** FRL L for revision C only.

ELECTRICAL CHARACTERISTICS, DIMENSIONS, AND DASH NUMBERS

Type designation in MIL-C-39022/1B *	Nominal capacitance (µF)	Capacitance Tolerance (%)	Circuit diagram	Dimensions**				Dash number in MIL-C-39022/1C thru MIL-PRF-39022/1G **			MIL-C-39022/1A and /1
				A ±0.031 (±0.79mm)		B +0.015/-0.005 (+0.38/-0.13)		Failure rate level (%/1,000 hr)			
				Inches	(mm)	Inches	(mm)	M(1.0)	P(0.1)	R(0.01)	
Rated voltage 200 V_{DC}											
CHR09A1NC104--	0.10	10	1	0.844	[21.44]	0.312	[7.92]	1401	1661	1921	-
CHR09A1NC104--	0.10	20	1	0.844	[21.44]	0.312	[7.92]	1402	1662	1922	-
CHR09A3NC104--	0.10	10	3	0.781	[19.84]	0.312	[7.92]	1403	1663	1923	-
CHR09A3NC104--	0.10	20	3	0.781	[19.84]	0.312	[7.92]	1404	1664	1924	-
CHR09A1NC224--	0.22	10	1	1.125	[28.58]	0.312	[7.92]	1405	1665	1925	-
CHR09A1NC224--	0.22	20	1	1.125	[28.58]	0.312	[7.92]	1406	1666	1926	-
CHR09A3NC224--	0.22	10	3	1.062	[26.97]	0.312	[7.92]	1407	1667	1927	-
CHR09A3NC224--	0.22	20	3	1.062	[26.97]	0.312	[7.92]	1408	1668	1928	-
CHR09A1NC474--	0.47	10	1	1.125	[28.58]	0.400	[10.16]	1409	1669	1929	-
CHR09A1NC474--	0.47	20	1	1.125	[28.58]	0.400	[10.16]	1410	1670	1930	-
CHR09A1NC474--	0.47	10	3	1.062	[26.97]	0.400	[10.16]	1411	1671	1931	-
CHR09A1NC474--	0.47	20	3	1.062	[26.97]	0.400	[10.16]	1412	1672	1932	-
CHR09A1NC155--	1.0	10	1	1.125	[28.58]	0.562	[14.27]	1413	1673	1933	-
CHR09A1NC155--	1.0	20	1	1.125	[28.58]	0.562	[14.27]	1414	1674	1934	-
CHR09A3NC155--	1.0	10	3	1.062	[26.97]	0.562	[14.27]	1415	1675	1935	-
CHR09A3NC155--	1.0	20	3	1.062	[26.97]	0.562	[14.27]	1416	1676	1936	-
CHR09A1NC155--	1.5	10	1	1.844	[46.84]	0.562	[14.27]	1417	1677	1937	-
CHR09A1NC155--	1.5	20	1	1.844	[46.84]	0.562	[14.27]	1418	1678	1938	-
CHR09A3NC155--	1.5	10	3	1.781	[45.24]	0.562	[14.27]	1419	1679	1939	-
CHR09A3NC155--	1.5	20	3	1.781	[45.24]	0.562	[14.27]	1420	1680	1940	-
CHR09A1NC225--	2.2	10	1	1.844	[46.84]	0.562	[14.27]	1421	1681	1941	-
CHR09A1NC225--	2.2	20	1	1.844	[46.84]	0.562	[14.27]	1422	1682	1942	-
CHR09A3NC225--	2.2	10	3	1.781	[45.24]	0.562	[14.27]	1423	1683	1943	-
CHR09A3NC225--	2.2	20	3	1.781	[45.24]	0.562	[14.27]	1424	1684	1944	-
CHR09A1NC335--	3.3	10	1	1.875	[47.63]	0.670	[17.02]	1425	1685	1945	-
CHR09A1NC335--	3.3	20	1	1.875	[47.63]	0.670	[17.02]	1426	1686	1946	-
CHR09A3NC335--	3.3	10	3	1.812	[46.02]	0.670	[17.02]	1427	1687	1947	-
CHR09A3NC335--	3.3	20	3	1.812	[46.02]	0.670	[17.02]	1428	1688	1948	-
CHR09A1NC475--	4.7	10	1	1.875	[47.63]	1.000	[25.40]	1429	1689	1949	-
CHR09A1NC475--	4.7	20	1	1.875	[47.63]	1.000	[25.40]	1430	1690	1950	-
CHR09A3NC475--	4.7	10	3	1.812	[46.02]	1.000	[25.40]	1431	1691	1951	-
CHR09A3NC475--	4.7	20	3	1.812	[46.02]	1.000	[25.40]	1432	1692	1952	-
CHR09A1NC685--	6.8	10	1	1.875	[47.63]	1.000	[25.40]	1433	1693	1953	-
CHR09A1NC685--	6.8	20	1	1.875	[47.63]	1.000	[25.40]	1434	1694	1954	-
Rated voltage 400 V_{DC}											
CHR09A3NC685--	6.8	10	3	1.812	[46.02]	1.000	[25.40]	1435	1695	1955	-
CHR09A3NC685--	6.8	20	3	1.812	[46.02]	1.000	[25.40]	1436	1696	1956	-
CHR09A1NC106--	10.0	10	1	2.375	[60.16]	1.000	[25.40]	1437	1697	1957	-
CHR09A1NC106--	10.0	20	1	2.375	[60.16]	1.000	[25.40]	1438	1698	1958	-
CHR09A3NC106--	10.0	10	3	2.312	[58.84]	1.000	[25.40]	1439	1699	1959	-
CHR09A3NC106--	10.0	20	3	2.312	[58.84]	1.000	[25.40]	1440	1700	1960	-
CHR09A1NC126--	12.0	10	1	2.625	[66.67]	1.000	[25.40]	1441	1701	1961	-
CHR09A1NC126--	12.0	20	1	2.625	[66.67]	1.000	[25.40]	1442	1702	1962	-
CHR09A3NC126--	12.0	10	3	2.562	[65.24]	1.000	[25.40]	1443	1703	1963	-
CHR09A3NC126--	12.0	20	3	2.562	[65.24]	1.000	[25.40]	1444	1704	1964	-
CHR09A1NE104--	0.10	20	1	1.125	[28.58]	0.400	[10.16]	1450	1710	1970	-
CHR09A3NE104--	0.10	10	3	1.062	[26.97]	0.400	[10.16]	1451	1711	1971	-
CHR09A3NE104--	0.10	20	3	1.062	[26.97]	0.400	[10.16]	1452	1712	1972	-
CHR09A1NE224--	0.22	10	1	1.125	[28.58]	0.562	[14.27]	1453	1713	1973	-
CHR09A1NE224--	0.22	20	1	1.125	[28.58]	0.562	[14.27]	1454	1714	1974	-
CHR09A3NE224--	0.22	10	3	1.062	[26.97]	0.562	[14.27]	1455	1715	1975	-
CHR09A3NE224--	0.22	20	3	1.062	[26.97]	0.562	[14.27]	1456	1716	1976	-
CHR09A1NE474--	0.47	10	1	1.625	[41.28]	0.562	[14.27]	1457	1717	1977	-
CHR09A1NE474--	0.47	20	1	1.625	[41.28]	0.562	[14.27]	1458	1718	1978	-
CHR09A3NE474--	0.47	10	3	1.562	[39.67]	0.562	[14.27]	1459	1719	1979	-
CHR09A3NE474--	0.47	20	3	1.562	[39.67]	0.562	[14.27]	1460	1720	1980	-
CHR09A1NE105--	1.0	10	1	1.875	[47.63]	0.750	[19.05]	1461	1721	1981	-
CHR09A1NE105--	1.0	20	1	1.875	[47.63]	0.750	[19.05]	1462	1722	1982	-
CHR09A3NE105--	1.0	10	3	1.812	[46.02]	0.750	[19.05]	1463	1723	1983	-
CHR09A3NE105--	1.0	20	3	1.812	[46.02]	0.750	[19.05]	1464	1724	1984	-
CHR09A1NE125--	2.2	10	1	1.875	[47.63]	1.000	[25.40]	1465	1725	1985	-

* Complete type designation will include additional symbols for capacitance tolerance and failure rate level.

** FRL L for revision C only.

ELECTRICAL CHARACTERISTICS, DIMENSIONS, AND DASH NUMBERS

Type designation in MIL-C-39022/1B *	Nominal capacitance (µF)	Capacitance Tolerance (%)	Circuit diagram	Dimensions**				Dash number in MIL-C-39022/1C thru MIL-PRF-39022/1G **			MIL-C-39022/1A and /1
				A ±0.031 (±0.79mm)		B +0.015/-0.005 (+0.38/-0.13)		Failure rate level (%/1,000 hr)			
				Inches	(mm)	Inches	(mm)	M(1.0)	P(0.1)	R(0.01)	
Rated voltage 400 V_{DC}											
CHR09A1NE125--	2.2	20	1	1,875	[47,63]	1,000	[25,40]	1466	1726	1986	-
CHR09A3NE125--	2.2	10	3	1,812	[46,02]	1,000	[25,40]	1467	1727	1987	-
CHR09A3NE125--	2.2	20	3	1,812	[46,02]	1,000	[25,40]	1468	1728	1988	-
CHR09A1NE335--	3.3	10	1	2,625	[66,68]	1,000	[25,40]	1469	1729	1989	-
CHR09A1NE335--	3.3	20	1	2,625	[66,68]	1,000	[25,40]	1470	1730	1990	-
CHR09A3NE335--	3.3	10	3	2,625	[66,68]	1,000	[25,40]	1471	1731	1991	-
CHR09A3NE335--	3.3	20	3	2,625	[66,68]	1,000	[25,40]	1472	1732	1992	-
Rated voltage 600 V_{DC}											
CHR09A1NF103--	0.01	10	1	0,812	[20,62]	0,312	[7,92]	1473	1733	1993	-
CHR09A1NF103--	0.01	20	1	0,812	[20,62]	0,312	[7,92]	1474	1734	1994	-
CHR09A3NF103--	0.01	10	3	0,750	[19,05]	0,312	[7,92]	1475	1735	1995	-
CHR09A3NF103--	0.01	20	3	0,750	[19,05]	0,312	[7,92]	1476	1736	1996	-
CHR09A1NF223--	0.022	10	1	0,812	[20,62]	0,312	[7,92]	1477	1737	1997	-
CHR09A1NF223--	0.022	20	1	0,812	[20,62]	0,312	[7,92]	1478	1738	1998	-
CHR09A3NF223--	0.022	10	3	0,750	[19,05]	0,312	[7,92]	1479	1739	1999	-
CHR09A3NF223--	0.022	20	3	0,750	[19,05]	0,312	[7,92]	1480	1740	2000	-
CHR09A1NF473--	0.047	10	1	1,125	[28,58]	0,400	[10,16]	1481	1741	2001	-
CHR09A1NF473--	0.047	20	1	1,125	[28,58]	0,400	[10,16]	1482	1742	2002	-
CHR09A3NF473--	0.047	10	3	1,062	[26,97]	0,400	[10,16]	1483	1743	2003	-
CHR09A3NF473--	0.047	20	3	1,062	[26,97]	0,400	[10,16]	1484	1744	2004	-
CHR09A1NF104--	0.10	10	1	1,125	[28,58]	0,500	[12,70]	1485	1745	2005	-
CHR09A1NF104--	0.10	20	1	1,125	[28,58]	0,500	[12,70]	1486	1746	2006	-
CHR09A3NF104--	0.10	10	3	1,062	[26,97]	0,500	[12,70]	1487	1747	2007	-
CHR09A3NF104--	0.10	20	3	1,062	[26,97]	0,500	[12,70]	1488	1748	2008	-
-	0.15	10	1	1,125	[28,58]	0,562	[14,27]	1509	1769	2029	-
-	0.15	20	1	1,125	[28,58]	0,562	[14,27]	1510	1770	2030	-
-	0.15	10	3	1,062	[26,97]	0,562	[14,27]	1511	1771	2031	-
-	0.15	20	3	1,062	[26,97]	0,562	[14,27]	1512	1772	2032	-
CHR09A1NF224--	0.22	10	1	1,375	[34,93]	0,562	[14,27]	1489	1749	2009	-
CHR09A1NF224--	0.22	20	1	1,375	[34,93]	0,562	[14,27]	1490	1750	2010	-
CHR09A3NF224--	0.22	10	3	1,312	[33,32]	0,562	[14,27]	1491	1751	2011	-
CHR09A3NF224--	0.22	20	3	1,312	[33,32]	0,562	[14,27]	1492	1752	2012	-
CHR09A1NF474--	0.47	10	1	1,625	[41,28]	0,670	[17,02]	1493	1753	2013	-
CHR09A1NF474--	0.47	20	1	1,625	[41,28]	0,670	[17,02]	1494	1754	2014	-
CHR09A3NF474--	0.47	10	3	1,562	[39,67]	0,670	[17,02]	1495	1755	2015	-
CHR09A3NF474--	0.47	20	3	1,562	[39,67]	0,670	[17,02]	1496	1756	2016	-
CHR09A1NF105--	1.0	10	1	1,844	[46,84]	1,000	[25,40]	1497	1757	2017	-
CHR09A1NF105--	1.0	20	1	1,844	[46,84]	1,000	[25,40]	1498	1758	2018	-
CHR09A3NF105--	1.0	10	3	1,781	[45,24]	1,000	[25,40]	1499	1759	2019	-
CHR09A3NF105--	1.0	20	3	1,781	[45,24]	1,000	[25,40]	1500	1760	2020	-
CHR09A1NF155--	1.5	10	1	1,875	[47,63]	1,000	[25,40]	1501	1761	2021	-
CHR09A1NF155--	1.5	20	1	1,875	[47,63]	1,000	[25,40]	1502	1762	2022	-
CHR09A3NF155--	1.5	10	3	1,812	[46,02]	1,000	[25,40]	1503	1763	2023	-
CHR09A3NF155--	1.5	20	3	1,812	[46,02]	1,000	[25,40]	1504	1764	2024	-
CHR09A1NF225--	2.2	10	1	2,625	[66,68]	1,000	[25,40]	1505	1765	2025	-
CHR09A1NF225--	2.2	20	1	2,625	[66,68]	1,000	[25,40]	1506	1766	2026	-
CHR09A3NF225--	2.2	10	3	2,562	[65,07]	1,000	[25,40]	1507	1767	2027	-
CHR09A3NF225--	2.2	20	3	2,562	[65,07]	1,000	[25,40]	1508	1768	2028	-

* Complete type designation will include additional symbols for capacitance tolerance and failure rate level.

** FRL L for revision C only.

Technical Informations

TERMINAL

The terminal is identified by a single letter in accordance with table below.

Symbol	Type of terminal
A	Axial wire lead
B	Solder lug (nonremovable)
C	Threaded stud and nuts
D and H	Pillar insulator for use at altitudes up to 7,500 feet (22.8 inches of mercury)
E	Pillar insulator for use at altitudes up to 50,000 feet (3.4 inches of mercury)
R	Radial wire-lead
L	Lugs

CHARACTERISTIC

The characteristic is identified by a single letter in accordance with table below.

Characteristic	Values of characteristics								
	E	F	G	K (2)	M	P	Q (4)	T	V
High ambient test temperature $\pm 3^{\circ}\text{C}$ (1)	+85°C	+85°C	+85°C	+125°C	+85°C	+65°C	+125°C	+170°C	+125°C
Low ambient test temperature +0°C, -5°C	-65°C	-55°C	-55°C	-65°C	-65°C	-65°C	-55°C	-65°C	-55°C

Life-test dc voltage, percent of the dc voltage rating: Watt-second group:									
I (0.5 watt-second and less)	140	140	140	140	140	140	150	140	150
II (0.5+ to 5 watt-seconds)	140	130	130	140 (3)	-	-	-	-	-
III (5+ to 50 watt-seconds)	140	110	110	140	-	-	-	-	-
IV (greater than 50 watt-seconds)	140	90	90	140	-	-	-	-	-
Flashpoint of impregnant of filling compound (°C)	+142°C	+135°C	+135°C	+142°C	+142°C	+142°C	+142°C	+217°C	+142°C

- (1) For characteristic K, voltage derating may be necessary at the high ambient test temperature.
 (2) For tubular units of characteristic K rated at 1,000 volts dc, life test voltage is 1,200 volts.
 (3) For tubular units of characteristic K in watt-seconds group II, use 130 percent of the dc voltage at +40°C for the life-test dc voltage.
 (4) Characteristic Q capacitors are no longer available

Characteristic	Construction		Operating temperature range
	Dielectric material	Electrode	
K	Polypropylene	Foil	-55°C to +105°C
L	Polypropylene	Metallized polypropylene	-55°C to +105°C
M	Polyethylene terephthalate	Foil	-55°C to +85°C
N	Polyethylene terephthalate	Metallized polyethylene terephthalate	-55°C to +85°C
Q	Polycarbonate	Foil	-55°C to +125°C (1)
R	Polycarbonate	Metallized polycarbonate	-55°C to +125°C (1)
U	Polyphenylene sulfide	Metallized polyphenylene sulfide	-55°C to +125°C (1)
V	Polyphenylene sulfide	Foil	-55°C to +125°C (1)

- (1) For operation at +125°C, characteristics Q, R, U and V capacitors are voltage derated (see table below)

Symbol	DC voltage rating at +85°C (1)	Characteristics Q and V DC voltage rating at +125°C	Characteristics R and U DC voltage rating at +125°C
A	50 V	33.3 V	25 V
B	100 V	66.7 V	50 V
C	200 V	133.3 V	100 V
D	300 V	200.0 V	150 V
E	400 V	266.7 V	200 V
F	600 V	400.0 V	300 V
G	75 V	50.0 V	37.5 V
H	150 V	100.0 V	75 V
J	25 V	16.7 V	12.5 V
K	250 V	166.7 V	125 V
L	800 V	533.3 V	400 V

- (1) DC voltage rating for characteristics K and L at +105°C are the same as those at +85°C.

VOLTAGE

The dc voltage rating for continuous operation at the high ambient test temperature specified in table III (except for characteristic K which is for +85°C operation), is identified by a single letter in accordance with table below.

Symbol	DC voltage rating (Volts)	Symbol	DC voltage rating (Volts)
Z	30 V	K	2,500 V
A	50 V	L	3,000 V
B	100 V	M	4,000 V
C	200 V	N	5,000 V
D	300 V	P	6,000 V
E	400 V	R	7,500 V
F	600 V	S	10,000 V
G	1,000 V	T	12,500 V
H	1,500 V	U	15,000 V
J	2,000 V		

CAPACITANCE TOLERANCE

The capacitance tolerance in percent is identified by a single letter in accordance with table below.

Symbol	Capacitance tolerance
C	$\pm 0.25\%$
D	$\pm 0.5\%$
F	$\pm 1\%$
G	$\pm 2\%$
J	$\pm 5\%$
K	$\pm 10\%$
M	$\pm 20\%$

CIRCUIT AND VOLTAGE CODES

Code	Circuit	Voltage (V)
A	1	50
B	3	50
C	1	100
D	3	100
E	1	200
F	3	200
G	1	400
H	3	400
J	1	600
K	3	600
L	1	300
M	3	300

Specifications, standards, and handbooks.

The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract (see 6.2).

FEDERAL STANDARDS

FED-STD-H28 - Screw-Thread Standards for Federal Services

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-C-18312 - Capacitors, Fixed, Metallized (Paper, Paper-Plastic, or Plastic Film) Dielectric, Direct Current (Hermetically Sealed in Metal Cases), General Specification for

MIL-PRF-83421/1 - Capacitors, Fixed, Metallized, Plastic Film Dielectric, DC and AC, Hermetically Sealed In Metal Cases, Established Reliability,

MIL-PRF-83421/2 - Capacitor, Fixed, Metallized Plastic Film, Dielectric, (DC, AC, or DC and AC), Hermetically Sealed in Metal Cases, Established Reliability,

MIL-PRF-83421/6 - Capacitor, Fixed, Metallized Plastic Film Dielectric, DC and AC, Hermetically Sealed in Metal Cases, Established Reliability,

MIL-PRF-11693/7 - Capacitors, Feed Through, Radio-Interference Reduction, DC (Hermetically Sealed in Metal Cases), Established and Non-Established Reliability,

MIL-PRF-83421/6 - Capacitors, Fixed, Metallized Plastic Film Dielectric, DC and AC, Hermetically Sealed In Metal Cases, Established Reliability.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-202 - Test Methods Standard Electronic and Electrical Component Parts

MIL-STD-202-101 - Method 101, Salt Atmosphere (Corrosion)

MIL-STD-202-104 - Method 104, Immersion

MIL-STD-202-105 - Method 105, Barometric Pressure (Reduced)

MIL-STD-202-106 - Method 106, Moisture Resistance

MIL-STD-202-107 - Method 107, Thermal Shock

MIL-STD-202-108 - Method 108, Life (at Elevated Ambient Temperature)

MIL-STD-202-112 - Method 112, Seal

MIL-STD-202-201 - Method 201, Vibration

MIL-STD-202-204 - Method 204, Vibration, High Frequency

MIL-STD-202-208 - Method 208, Solderability

MIL-STD-202-209 - Method 209, Radiographic Inspection

MIL-STD-202-210 - Method 210, Resistance to Soldering Heat

MIL-STD-202-211 - Method 211, Terminal Strength

MIL-STD-202-213 - Method 213, Shock (Specified Pulse)

MIL-STD-202-214 - Method 214, Random Vibration

MIL-STD-202-215 - Method 215, Resistance to Solvents

MIL-STD-202-301 - Method 301, Dielectric Withstanding Voltage

MIL-STD-202-302 - Method 302, Insulation Resistance

MIL-STD-202-305 - Method 305, Capacitance

MIL-STD-220 - Method of Insertion Loss Measurement

MIL-STD-690 - Failure Rate Sampling Plans and Procedures

MIL-STD-790 - Standard Practice for Established Reliability and High Reliability Qualified Products List (QPL) Systems for Electrical, Electronic, and Fiber Optic Parts Specifications

MIL-STD-810 - Environmental Engineering Considerations and Laboratory Tests

MIL-STD-1276 - Leads for Electronic Component Parts

MIL-STD-1285 - Marking of Electrical and Electronic Parts



Government Documents



Non-Government publications.

The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents are those listed in the solicitation or contract.

ASTM INTERNATIONAL (ASTM)

ASTM D92 - Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester

SAE INTERNATIONAL (SAE)

SAE EIA-554-1 - Assessment of Average Outgoing Quality Levels in Parts Per Million (PPM)

ASSOCIATION CONNECTING ELECTRONICS INDUSTRIES (IPC)

IPC/JEDEC J-STD-002 - Solderability Tests for Component Leads, Terminations, Lugs, Terminals and Wires

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO/IEC 17025 - General Requirements for the Competence of Testing and Calibration laboratories

ISO 10012 - Measurement Management Systems - Requirements for Measurement Processes and Measuring Equipment

NATIONAL CONFERENCE OF STANDARDS LABORATORIES (NCSL)

NCSL Z540.3 - Requirements for the Calibration of Measuring and Test Equipment

SAE INTERNATIONAL (SAE)

SAE EIA-554-1 - Assessment of Average Outgoing Quality Levels in Parts per Million (PPM)

SOLID STATE TECHNOLOGY ASSOCIATION (JEDEC)

JEDEC JESD557 - Statistical Process Control Systems

Order of precedence.

Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein (except for related specification sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.