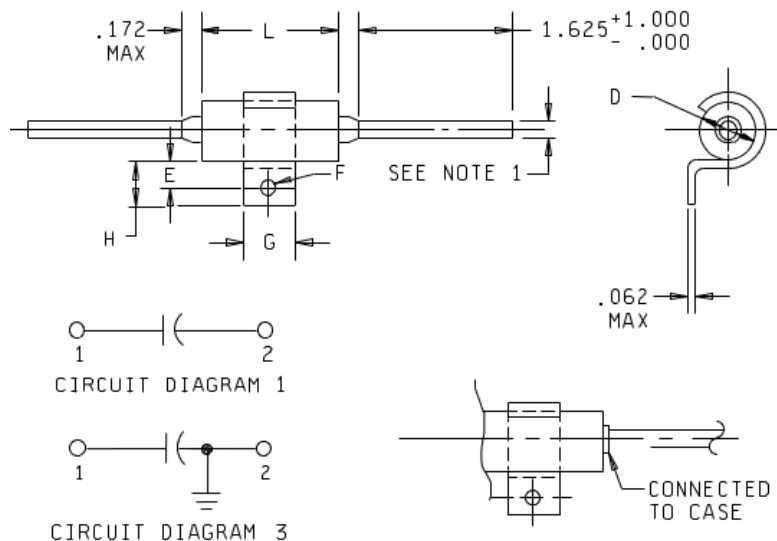


PERFORMANCE SPECIFICATION SHEET

CAPACITOR, FIXED, METALLIZED PAPER-PLASTIC FILM DIELECTRIC,
DIRECT CURRENT, (HERMETICALLY SEALED IN METAL CASES),
ESTABLISHED RELIABILITY, STYLE CHR12 (UNINSULATED)

This specification sheet 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-39022](#).



NOTES:

1. Number 22 AWG wire .025 inch $\pm$.002 inch (0.64 mm $\pm$ 0.05 mm) for case diameters of .235 inch (5.97 mm) and .312 inch (7.92 mm). Number 20 AWG wire .032 inch $\pm$.002 inch (0.81 mm $\pm$ 0.05 mm) for case diameters of .400 inch (10.16 mm) and over.
2. See table I for additional dimensions.
3. Dimensions are in inches.
4. Metric equivalents are in millimeters and are given for general information only.
5. The centerline of the mounting clamp shall be within .050 inch (1.27 mm) of the centerline of the length (L dimension) of the capacitor.

FIGURE 1. Dimensions and configuration.

AMSC N/A

DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited.

FSC 5910



REQUIREMENTS:

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

Case material: Nonmagnetic (end seal may be of magnetic material).

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

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

Rated voltage: See [table I](#).

Dielectric material:

Normally paper polycarbonate-terephthalate (on 200-, 400-, and 600-volt units).

Normally polyethylene-terephthalate (on 50-volt units).

Operating temperature range:

-55°C to +125°C (on 200-, 400-, and 600-volt units).

-55°C to +85°C (on 50-volt units).

Failure rate level (percent/1,000 hours): M, P, R, and S.

Thermal shock: [MIL-STD-202-107](#), condition A, except step 3 shall be +125°C +4°C, -0°C.

Radiographic inspection (X-ray): [MIL-STD-202-209](#).

Seal: [MIL-STD-202-112](#), condition A (200-, 400-, and 600-volt units) or condition B (50-volt units); or (for liquid-filled units only) 1 hour at applicable high-test temperature with no evidence of leakage.

Dielectric withstanding voltage (DWV): [MIL-STD-202-301](#).

Terminal to terminal: 200 percent of rated voltage.

Terminals to case (when case is not a terminal): 200 percent of rated voltage.

For 100 percent inspection:

250 percent for not less than 5 seconds, or

200 percent for not less than 15 seconds.

Insulation resistance (IR): [MIL-STD-202-302](#).

Terminal to terminal: See [table II](#).

Terminals to case (when case is not a terminal): 10,000 megohms, minimum.

Capacitance: [MIL-STD-202-305](#).

Dissipation factor (DF):

At +25°C: 1 percent.

At high test temperature: 2.0 percent.

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TABLE I. Electrical characteristics, dimensions, and dash numbers.

Capacitance value (μF)	Circuit diagram	Capacitance tolerance (Percent ±)	Dimensions, nominal (inches) <u>1/</u>							Dash number Failure rate level for (%/1,000 hr)			
			L ± .062	D ± .031	H ± .062	G ± .062	E ± .031	F ± .005	M (1.0)	P (0.1)	R (0.01)	S (0.001)	
50 V													
0.15	1	5	.875	.312	.312	.250	.188	.144	2101	2201	2301	2401	
0.15	1	10	.875	.312	.312	.250	.188	.144	2102	2202	2302	2402	
0.15	3	5	.812	.312	.312	.250	.188	.144	2103	2203	2303	2403	
0.15	3	10	.812	.312	.312	.250	.188	.144	2104	2204	2304	2404	
0.18	1	5	.875	.312	.312	.250	.188	.144	2105	2205	2305	2405	
0.18	1	10	.875	.312	.312	.250	.188	.144	2106	2206	2306	2406	
0.18	3	5	.812	.312	.312	.250	.188	.144	2107	2207	2307	2407	
0.18	3	10	.812	.312	.312	.250	.188	.144	2108	2208	2308	2408	
0.22	1	5	.875	.312	.312	.250	.188	.144	2109	2209	2309	2409	
0.22	1	10	.875	.312	.312	.250	.188	.144	2110	2210	2310	2410	
0.22	3	5	.812	.312	.312	.250	.188	.144	2111	2211	2311	2411	
0.22	3	10	.812	.312	.312	.250	.188	.144	2112	2212	2312	2412	
0.27	1	5	.875	.312	.312	.250	.188	.144	2113	2213	2313	2413	
0.27	1	10	.875	.312	.312	.250	.188	.144	2114	2214	2314	2414	
0.27	3	5	.812	.312	.312	.250	.188	.144	2115	2215	2315	2415	
0.27	3	10	.812	.312	.312	.250	.188	.144	2116	2216	2316	2416	
0.33	1	5	.875	.312	.312	.250	.188	.144	2117	2217	2317	2417	
0.33	1	10	.875	.312	.312	.250	.188	.144	2118	2218	2318	2418	
0.33	3	5	.812	.312	.312	.250	.188	.144	2119	2219	2319	2419	
0.33	3	10	.812	.312	.312	.250	.188	.144	2120	2220	2320	2420	
0.39	1	5	1.125	.312	.312	.250	.188	.144	2121	2221	2321	2421	
0.39	1	10	1.125	.312	.312	.250	.188	.144	2122	2222	2322	2422	
0.39	3	5	1.062	.312	.312	.250	.188	.144	2123	2223	2323	2423	
0.39	3	10	1.062	.312	.312	.250	.188	.144	2124	2224	2324	2424	
0.47	1	5	1.125	.312	.312	.250	.188	.144	2125	2225	2325	2425	
0.47	1	10	1.125	.312	.312	.250	.188	.144	2126	2226	2326	2426	
0.47	3	5	1.062	.312	.312	.250	.188	.144	2127	2227	2327	2427	
0.47	3	10	1.062	.312	.312	.250	.188	.144	2128	2228	2328	2428	
0.56	1	5	1.125	.400	.312	.250	.188	.144	2129	2229	2329	2429	
0.56	1	10	1.125	.400	.312	.250	.188	.144	2130	2230	2330	2430	
0.56	3	5	1.062	.400	.312	.250	.188	.144	2131	2231	2331	2431	
0.56	3	10	1.062	.400	.312	.250	.188	.144	2132	2232	2332	2432	
0.68	1	5	1.125	.400	.312	.250	.188	.144	2133	2233	2333	2433	
0.68	1	10	1.125	.400	.312	.250	.188	.144	2134	2234	2334	2434	
0.68	3	5	1.062	.400	.312	.250	.188	.144	2135	2235	2335	2435	
0.68	3	10	1.062	.400	.312	.250	.188	.144	2136	2236	2336	2436	
0.82	1	5	1.125	.400	.312	.250	.188	.144	2137	2237	2337	2437	
0.82	1	10	1.125	.400	.312	.250	.188	.144	2138	2238	2338	2438	
0.82	3	5	1.062	.400	.312	.250	.188	.144	2139	2239	2339	2439	
0.82	3	10	1.062	.400	.312	.250	.188	.144	2140	2240	2340	2440	
1.0	1	5	1.125	.400	.312	.250	.188	.144	2141	2241	2341	2441	
1.0	1	10	1.125	.400	.312	.250	.188	.144	2142	2242	2342	2442	
1.0	3	5	1.062	.400	.312	.250	.188	.144	2143	2243	2343	2443	
1.0	3	10	1.062	.400	.312	.250	.188	.144	2144	2244	2344	2444	
1.2	1	5	1.375	.400	.312	.250	.188	.144	2145	2245	2345	2445	
1.2	1	10	1.375	.400	.312	.250	.188	.144	2146	2246	2346	2446	
1.2	3	5	1.312	.400	.312	.250	.188	.144	2147	2247	2347	2447	
1.2	3	10	1.312	.400	.312	.250	.188	.144	2148	2248	2348	2448	
1.5	1	5	1.125	.500	.438	.500	.250	.156	2149	2249	2349	2449	
1.5	1	10	1.172	.500	.438	.500	.250	.156	2150	2250	2350	2450	

See footnotes at end of table.

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TABLE I. Electrical characteristics, dimensions, and dash numbers – continued.

Capacitance value (μ F)	Circuit diagram	Capacitance tolerance (Percent $\pm$)	Dimensions, nominal (inches) 1/						Dash number Failure rate level for (%/1,000 hr)			
			L $\pm$.062	D $\pm$.031	H $\pm$.062	G $\pm$.062	E $\pm$.031	F $\pm$.005	M (1.0)	P (0.1)	R (0.01)	S (0.001)
50 V – continued.												
1.5	3	5	1.062	.500	.438	.500	.250	.156	2151	2251	2351	2451
1.5	3	10	1.062	.500	.438	.500	.250	.156	2152	2252	2352	2452
1.8	1	5	1.375	.500	.438	.500	.250	.156	2153	2253	2353	2453
1.8	1	10	1.375	.500	.438	.500	.250	.156	2154	2254	2354	2454
1.8	3	5	1.312	.500	.438	.500	.250	.156	2155	2255	2355	2455
1.8	3	10	1.312	.500	.438	.500	.250	.156	2156	2256	2356	2456
2.2	1	5	1.125	.562	.438	.500	.250	.156	2157	2257	2357	2457
2.2	1	10	1.125	.562	.438	.500	.250	.156	2158	2258	2358	2458
2.2	3	5	1.062	.562	.438	.500	.250	.156	2159	2259	2359	2459
2.2	3	10	1.062	.562	.438	.500	.250	.156	2160	2260	2360	2460
2.7	1	5	1.375	.562	.438	.500	.250	.156	2161	2261	2361	2461
2.7	1	10	1.375	.562	.438	.500	.250	.156	2162	2262	2362	2462
2.7	3	5	1.312	.562	.438	.500	.250	.156	2163	2263	2363	2463
2.7	3	10	1.312	.562	.438	.500	.250	.156	2164	2264	2364	2464
3.3	1	5	1.375	.562	.438	.500	.250	.156	2165	2265	2365	2465
3.3	1	10	1.375	.562	.438	.500	.250	.156	2166	2266	2366	2466
3.3	3	5	1.312	.562	.438	.500	.250	.156	2167	2267	2367	2467
3.3	3	10	1.312	.562	.438	.500	.250	.156	2168	2268	2368	2468
3.9	1	5	1.625	.562	.438	.500	.250	.156	2169	2269	2369	2469
3.9	1	10	1.625	.562	.438	.500	.250	.156	2170	2270	2370	2470
3.9	3	5	1.562	.562	.438	.500	.250	.156	2171	2271	2371	2471
3.9	3	10	1.562	.562	.438	.500	.250	.156	2172	2272	2372	2472
4.7	1	5	1.750	.562	.438	.500	.250	.156	2173	2273	2373	2473
4.7	1	10	1.750	.562	.438	.500	.250	.156	2174	2274	2374	2474
4.7	3	5	1.688	.562	.438	.500	.250	.156	2175	2275	2375	2475
4.7	3	10	1.688	.562	.438	.500	.250	.156	2176	2276	2376	2476
5.6	1	5	1.875	.562	.438	.500	.250	.156	2177	2277	2377	2477
5.6	1	10	1.875	.562	.438	.500	.250	.156	2178	2278	2378	2478
5.6	3	5	1.812	.562	.438	.500	.250	.156	2179	2279	2379	2479
5.6	3	10	1.812	.562	.438	.500	.250	.156	2180	2280	2380	2480
6.8	1	5	1.625	.670	.438	.500	.250	.156	2181	2281	2381	2481
6.8	1	10	1.625	.670	.438	.500	.250	.156	2182	2282	2382	2482
6.8	3	5	1.562	.670	.438	.500	.250	.156	2183	2283	2383	2483
6.8	3	10	1.562	.670	.438	.500	.250	.156	2184	2284	2384	2484
8.2	1	5	1.875	.670	.438	.500	.250	.156	2185	2285	2385	2485
8.2	1	10	1.875	.670	.438	.500	.250	.156	2186	2286	2386	2486
8.2	3	5	1.812	.670	.438	.500	.250	.156	2187	2287	2387	2487
8.2	3	10	1.812	.670	.438	.500	.250	.156	2188	2288	2388	2488
10.0	1	5	1.875	.750	.438	.500	.250	.156	2189	2289	2389	2489
10.0	1	10	1.875	.750	.438	.500	.250	.156	2190	2290	2390	2490
10.0	3	5	1.812	.750	.438	.500	.250	.156	2191	2291	2391	2491
10.0	3	10	1.812	.750	.438	.500	.250	.156	2192	2292	2392	2492
12.0	1	5	2.375	.750	.438	.500	.250	.156	2193	2293	2393	2493
12.0	1	10	2.375	.750	.438	.500	.250	.156	2194	2294	2394	2494
12.0	3	5	2.312	.750	.438	.500	.250	.156	2195	2295	2395	2495
12.0	3	10	2.312	.750	.438	.500	.250	.156	2196	2296	2396	2496
200 V												
0.10	1	5	.844	.312	.312	.250	.188	.144	1121	1241	1361	1481
0.10	1	10	.844	.312	.312	.250	.188	.144	1122	1242	1362	1482
0.10	3	5	.781	.312	.312	.250	.188	.144	1123	1243	1363	1483

See footnotes at end of table.

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TABLE I. Electrical characteristics, dimensions, and dash numbers – continued.

Capacitance value (μ F)	Circuit diagram	Capacitance tolerance (Percent $\pm$)	Dimensions, nominal (inches) 1/							Dash number Failure rate level for (%/1,000 hr)			
			L $\pm$.062	D $\pm$.031	H $\pm$.062	G $\pm$.062	E $\pm$.031	F $\pm$.005	M (1.0)	P (0.1)	R (0.01)	S (0.001)	
200 V – continued.													
0.10	3	10	.781	.312	.312	.250	.188	.144	1124	1244	1364	1484	
0.22	1	10	1.125	.312	.312	.250	.188	.144	1125	1245	1365	1485	
0.22	1	20	1.125	.312	.312	.250	.188	.144	1126	1246	1366	1486	
0.22	3	10	1.062	.312	.312	.250	.188	.144	1127	1247	1367	1487	
0.22	3	20	1.062	.312	.312	.250	.188	.144	1128	1248	1368	1488	
0.47	1	10	1.125	.400	.312	.250	.188	.144	1129	1249	1369	1489	
0.47	1	20	1.125	.400	.312	.250	.188	.144	1130	1250	1370	1490	
0.47	3	10	1.062	.400	.312	.250	.188	.144	1131	1251	1371	1491	
0.47	3	20	1.062	.400	.312	.250	.188	.144	1132	1252	1372	1492	
1.0	1	10	1.125	.562	.438	.500	.250	.156	1133	1253	1373	1493	
1.0	1	20	1.125	.562	.438	.500	.250	.156	1134	1254	1374	1494	
1.0	3	10	1.062	.562	.438	.500	.250	.156	1135	1255	1375	1495	
1.0	3	20	1.062	.562	.438	.500	.250	.156	1136	1256	1376	1496	
1.5	1	10	1.844	.562	.438	.500	.250	.156	1137	1257	1377	1497	
1.5	1	20	1.844	.562	.438	.500	.250	.156	1138	1258	1378	1498	
1.5	3	10	1.781	.562	.438	.500	.250	.156	1139	1259	1379	1499	
1.5	3	20	1.781	.562	.438	.500	.250	.156	1140	1260	1380	1500	
2.2	1	10	1.844	.562	.438	.500	.250	.156	1141	1261	1381	1501	
2.2	1	20	1.844	.562	.438	.500	.250	.156	1142	1262	1382	1502	
2.2	3	10	1.781	.562	.438	.500	.250	.156	1143	1263	1383	1503	
2.2	3	20	1.781	.562	.438	.500	.250	.156	1144	1264	1384	1504	
3.3	1	10	1.875	.670	.438	.500	.250	.156	1145	1265	1385	1505	
3.3	1	20	1.875	.670	.438	.500	.250	.156	1146	1266	1386	1506	
3.3	3	10	1.812	.670	.438	.500	.250	.156	1147	1267	1387	1507	
3.3	3	20	1.812	.670	.438	.500	.250	.156	1148	1268	1388	1508	
4.7	1	10	1.875	1.000	.438	.500	.250	.156	1149	1269	1389	1509	
4.7	1	20	1.875	1.000	.438	.500	.250	.156	1150	1270	1390	1510	
4.7	3	10	1.812	1.000	.438	.500	.250	.156	1151	1271	1391	1511	
4.7	3	20	1.812	1.000	.438	.500	.250	.156	1152	1272	1392	1512	
6.8	1	10	1.875	1.000	.438	.500	.250	.156	1153	1273	1393	1513	
6.8	1	20	1.875	1.000	.438	.500	.250	.156	1154	1274	1394	1514	
6.8	3	10	1.812	1.000	.438	.500	.250	.156	1155	1275	1395	1515	
6.8	3	20	1.812	1.000	.438	.500	.250	.156	1156	1276	1396	1516	
10.0	1	10	2.375	1.000	.438	.500	.250	.156	1157	1277	1397	1517	
10.0	1	20	2.375	1.000	.438	.500	.250	.156	1158	1278	1398	1518	
10.0	3	10	2.312	1.000	.438	.500	.250	.156	1159	1279	1399	1519	
10.0	3	20	2.312	1.000	.438	.500	.250	.156	1160	1280	1400	1520	
12.0	1	10	2.625	1.000	.438	.500	.250	.156	1161	1281	1401	1521	
12.0	1	20	2.625	1.000	.438	.500	.250	.156	1162	1282	1402	1522	
12.0	3	10	2.562	1.000	.438	.500	.250	.156	1163	1283	1403	1523	
12.0	3	20	2.562	1.000	.438	.500	.250	.156	1164	1284	1404	1524	
400 V													
0.047	1	10	1.125	.312	.312	.250	.188	.144	1165	1285	1405	1525	
0.047	1	20	1.125	.312	.312	.250	.188	.144	1166	1286	1406	1526	
0.047	3	10	1.062	.312	.312	.250	.188	.144	1167	1287	1407	1527	
0.047	3	20	1.062	.312	.312	.250	.188	.144	1168	1288	1408	1528	
0.10	1	10	1.125	.562	.438	.500	.250	.156	1169	1289	1409	1529	
0.10	1	20	1.125	.562	.438	.500	.250	.156	1170	1290	1410	1530	
0.10	3	10	1.062	.562	.438	.500	.250	.156	1171	1291	1411	1531	
0.10	3	20	1.062	.562	.438	.500	.250	.156	1172	1292	1412	1532	

See footnotes at end of table.

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TABLE I. Electrical characteristics, dimensions, and dash numbers – continued.

Capacitance value (μ F)	Circuit diagram	Capacitance tolerance (Percent $\pm$)	Dimensions, nominal (inches) 1/						Dash number Failure rate level for (%/1,000 hr)			
			L $\pm$.062	D $\pm$.031	H $\pm$.062	G $\pm$.062	E $\pm$.031	F $\pm$.005	M (1.0)	P (0.1)	R (0.01)	S (0.001)
400 V – continued.												
0.22	1	10	1.125	.562	.438	.500	.250	.156	1173	1293	1413	1533
0.22	1	20	1.125	.562	.438	.500	.250	.156	1174	1294	1414	1534
0.22	3	10	1.062	.562	.438	.500	.250	.156	1175	1295	1415	1535
0.22	3	20	1.062	.562	.438	.500	.250	.156	1176	1296	1416	1536
0.47	1	10	1.625	.552	.438	.500	.250	.156	1177	1297	1417	1537
0.47	1	20	1.625	.562	.438	.500	.250	.156	1178	1298	1418	1538
0.47	3	10	1.562	.562	.438	.500	.250	.156	1179	1299	1419	1539
0.47	3	20	1.562	.562	.438	.500	.250	.156	1180	1300	1420	1540
1.0	1	10	1.875	.750	.438	.500	.250	.156	1181	1301	1421	1541
1.0	1	20	1.875	.750	.438	.500	.250	.156	1182	1302	1422	1542
1.0	3	10	1.812	.750	.438	.500	.250	.156	1183	1303	1423	1543
1.0	3	20	1.812	.750	.438	.500	.250	.156	1184	1304	1424	1544
2.2	1	10	1.875	1.000	.438	.500	.250	.156	1185	1305	1425	1545
2.2	1	20	1.875	1.000	.438	.500	.250	.156	1186	1306	1426	1546
2.2	3	10	1.812	1.000	.438	.500	.250	.156	1187	1307	1427	1547
2.2	3	20	1.812	1.000	.438	.500	.250	.156	1188	1308	1428	1548
3.3	1	10	2.625	1.000	.438	.500	.250	.156	1189	1309	1429	1549
3.3	1	20	2.625	1.000	.438	.500	.250	.156	1190	1310	1430	1550
3.3	3	10	2.562	1.000	.438	.500	.250	.156	1191	1311	1431	1551
3.3	3	20	2.562	1.000	.438	.500	.250	.156	1192	1312	1432	1552
600 V												
0.01	1	10	.812	.312	.312	.250	.188	.144	1193	1313	1433	1553
0.01	1	20	.812	.312	.312	.250	.188	.144	1194	1314	1434	1554
0.01	3	10	.750	.312	.312	.250	.188	.144	1195	1315	1435	1555
0.01	3	20	.750	.312	.312	.250	.188	.144	1196	1316	1436	1556
0.022	1	10	.812	.312	.312	.250	.188	.144	1197	1317	1437	1557
0.022	1	20	.812	.312	.312	.250	.188	.144	1198	1318	1438	1558
0.022	3	10	.750	.312	.312	.250	.188	.144	1199	1319	1439	1559
0.022	3	20	.750	.312	.312	.250	.188	.144	1200	1320	1440	1560
0.047	1	10	1.125	.400	.312	.250	.188	.144	1201	1321	1441	1561
0.047	1	20	1.125	.400	.312	.250	.188	.144	1202	1322	1442	1562
0.047	3	10	1.062	.400	.312	.250	.188	.144	1203	1323	1443	1563
0.047	3	20	1.062	.400	.312	.250	.188	.144	1204	1324	1444	1564
0.10	1	10	1.125	.500	.438	.500	.250	.156	1205	1325	1445	1565
0.10	1	20	1.125	.500	.438	.500	.250	.156	1206	1326	1446	1566
0.10	3	10	1.062	.500	.438	.500	.250	.156	1207	1327	1447	1567
0.10	3	20	1.062	.500	.438	.500	.250	.156	1208	1328	1448	1568
0.15	1	10	1.125	.562	.438	.500	.250	.156	1229	1349	1469	1589
0.15	1	20	1.125	.562	.438	.500	.250	.156	1230	1350	1470	1590
0.15	3	10	1.062	.562	.438	.500	.250	.156	1231	1351	1471	1591
0.15	3	20	1.062	.562	.438	.500	.250	.156	1232	1352	1472	1592
0.22	1	10	1.375	.562	.438	.500	.250	.156	1209	1329	1449	1569
0.22	1	20	1.375	.562	.438	.500	.250	.156	1210	1330	1450	1570
0.22	3	10	1.312	.562	.438	.500	.250	.156	1211	1331	1451	1571
0.22	3	20	1.312	.562	.438	.500	.250	.156	1212	1332	1452	1572
0.47	1	10	1.625	.670	.438	.500	.250	.156	1213	1333	1453	1573
0.47	1	20	1.625	.670	.438	.500	.250	.156	1214	1334	1454	1574
0.47	3	10	1.562	.670	.438	.500	.250	.156	1215	1335	1455	1575
0.47	3	20	1.562	.670	.438	.500	.250	.156	1216	1336	1456	1576
1.0	1	10	1.844	1.000	.438	.500	.250	.156	1217	1337	1457	1577

See footnotes at end of table.

MIL-PRF-39022/8G

TABLE I. Electrical characteristics, dimensions, and dash numbers – continued.

Capacitance value (μ F)	Circuit diagram	Capacitance tolerance (Percent $\pm$)	Dimensions, nominal (inches) <u>1/</u>						Dash number Failure rate level for (%/1,000 hr)			
			L $\pm$.062	D $\pm$.031	H $\pm$.062	G $\pm$.062	E $\pm$.031	F $\pm$.005	M (1.0)	P (0.1)	R (0.01)	S (0.001)
600 V – continued.												
1.0	1	20	1.844	1.000	.438	.500	.250	.156	1218	1338	1458	1578
1.0	3	10	1.781	1.000	.438	.500	.250	.156	1219	1339	1459	1579
1.0	3	20	1.781	1.000	.438	.500	.250	.156	1220	1340	1460	1580
1.5	1	10	1.875	1.000	.438	.500	.250	.156	1221	1341	1461	1581
1.5	1	20	1.875	1.000	.438	.500	.250	.156	1222	1342	1462	1582
1.5	3	10	1.812	1.000	.438	.500	.250	.156	1223	1343	1463	1583
1.5	3	20	1.812	1.000	.438	.500	.250	.156	1224	1344	1464	1584
2.2	1	10	2.625	1.000	.438	.500	.250	.156	1225	1345	1465	1585
2.2	1	20	2.625	1.000	.438	.500	.250	.156	1226	1346	1466	1586
2.2	3	10	2.562	1.000	.438	.500	.250	.156	1227	1347	1467	1587
2.2	3	20	2.562	1.000	.438	.500	.250	.156	1228	1348	1468	1588

^{1/} See table III for metric equivalents.

TABLE II. Insulation resistance.

	At dc voltage of			
	50 V	200 V	400 V	600 V
In megohms:				
At +25°C $\pm$ 3°C (need not exceed) - - - - -	30,000	12,000	12,000	12,000
At +125°C +4°C, -0°C (need not exceed) - -	150	150	600	600
In megohms x microfarads (minimum):				
At +25°C $\pm$ 3°C - - - - -	20,000	2,000	2,000	2,000
At +125°C +4°C, -0°C - - - - -	10	10	40	40

TABLE III. Metric equivalents of decimal inches. ^{1/}

Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
.005	0.13	.312	7.92	.812	20.62	1.562	39.67	2.312	58.72
.031	0.79	.400	10.16	.844	21.44	1.625	41.28	2.375	60.33
.062	1.57	.438	11.13	.875	22.23	1.688	42.88	2.562	65.07
.144	3.66	.500	12.70	1.000	25.40	1.750	44.45	2.625	66.68
.156	3.96	.562	14.27	1.062	26.97	1.781	45.24		
.172	4.37	.670	17.02	1.125	28.58	1.812	46.02		
.188	4.78	.750	19.05	1.312	33.32	1.844	46.84		
.250	6.35	.781	19.84	1.375	34.93	1.875	47.63		

^{1/} Metric equivalents are given for general information only.

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Barometric pressure (reduced): [MIL-STD-202-105](#), condition D (100,000 feet).

125 percent of rated voltage applied: See [MIL-PRF-39022](#) for voltage limitations.

Vibration, high frequency: [MIL-STD-202-204](#), condition D (20 g's peak).

50 percent of rated voltage applied.

Salt atmosphere (corrosion): [MIL-STD-202-101](#), condition B (48 hours).

Salt solution: 5 percent.

Immersion: [MIL-STD-202-104](#), condition C.

DWV:

Terminal to terminal: 200 percent of rated voltage.

Terminals to case (when case is not a terminal): 200 percent of rated voltage.

IR:

Terminal to terminal: Not less than 50 percent of value specified in [table II](#).

Terminals to case (when case is not a terminal): 5,000 megohms, minimum.

Capacitance: Within ± 10 percent of initial value.

DF: Not more than 1.1 percent of initial value.

Solderability: [MIL-STD-202-208](#).

Shock (specified pulse): [MIL-STD-202-213](#), condition I.

50 percent of rated voltage applied.

Resistance to soldering heat: [MIL-STD-202-210](#), condition C, except the time shall be 10 seconds $\pm$ 1 second.

IR: See [table II](#).

Capacitance: Within ± 5 percent of initial value.

DF: Not more than 1.0 percent.

Moisture resistance: [MIL-STD-202-106](#).

DWV, IR, Capacitance, and DF: Same as for immersion.

Terminal strength: [MIL-STD-202-211](#), conditions A and D.

Condition A: Applied force 5 pounds.

Condition D: 3 rotations of 360 degrees.

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Low temperature and capacitance change with temperature:

Low temperature: -55°C +0°C, -10°C for 48 hours ± 4 hours with rated voltage applied.

Capacitance change with temperature: At -55°C +0°C, -3°C: -10 percent, maximum. At +125°C +4°C, -0°C: +20 percent maximum.

Fungus: Method 508 of [MIL-STD-810](#).

Life: [MIL-STD-202-108](#).

Qualification:

Accelerated conditions: 140 percent of rated voltage for 2,000 +72, -0 hours.

Rated conditions: 100 percent of rated voltage for 10,000 +96, -0 hours.

DF (at +125°C +4°C, -0°C) between 24 and 48 hours of test: 2 percent maximum.

During last 48 hours of test: 2.5 percent maximum.

IR:

Insulating sleeves: 100 megohms, minimum.

Terminal to terminal: Not less than 33.3 percent of initial requirement.

Terminals to case (when case is not a terminal): 5,000 megohms, minimum.

Capacitance: Within ± 10 percent of initial value.

DF (at +25°C ± 3°C after life): 1.25 percent.

Quality conformance: 240 hours at accelerated conditions and meet the requirements for qualification test.

Extended life:

Accelerated conditions: 2,000 +72, -0 hours.

Rated conditions: 10,000 +96, -0 hours.

Substitutability: See [table IV](#).

Marking: In accordance with [MIL-PRF-39022](#).

Part or Identifying Number (PIN): M39022/08- (dash number from [table I](#)).

MIL-PRF-39022/8G

TABLE IV. Substitutability data.

Dash number in MIL-C-39022/8A thru MIL-PRF-39022/8G 1/					Type designation in MIL-C-39022/8 2/
L (5.0)	M (1.0)	P (0.1)	R (0.01)	S (0.001)	
2001	2101	2201	2301	2401	
2002	2102	2202	2302	2402	
2003	2103	2203	2303	2403	
2004	2104	2204	2304	2404	
2005	2105	2205	2305	2405	
2006	2106	2206	2306	2406	
2007	2107	2207	2307	2407	
2008	2108	2208	2308	2408	
2009	2109	2209	2309	2409	
2010	2110	2210	2310	2410	
2011	2111	2211	2311	2411	
2012	2112	2212	2312	2412	
2013	2113	2213	2313	2413	
2014	2114	2214	2314	2414	
2015	2115	2215	2315	2415	
2016	2116	2216	2316	2416	
2017	2117	2217	2317	2417	
2018	2118	2218	2318	2418	
2019	2119	2219	2319	2419	
2020	2120	2220	2320	2420	
2021	2121	2221	2321	2421	
2022	2122	2222	2322	2422	
2023	2123	2223	2323	2423	
2024	2124	2224	2324	2424	
2025	2125	2225	2325	2425	
2026	2126	2226	2326	2426	
2027	2127	2227	2327	2427	
2028	2128	2228	2328	2428	
2029	2129	2229	2329	2429	
2030	2130	2230	2330	2430	
2031	2131	2231	2331	2431	
2032	2132	2232	2332	2432	
2033	2133	2233	2333	2433	
2034	2134	2234	2334	2434	
2035	2135	2235	2335	2435	
2036	2136	2236	2336	2436	
2037	2137	2237	2337	2437	
2038	2138	2238	2338	2438	
2039	2139	2239	2339	2439	
2040	2140	2240	2340	2440	
2041	2141	2241	2341	2441	
2042	2142	2242	2342	2442	
2043	2143	2243	2343	2443	
2044	2144	2244	2344	2444	
2045	2145	2245	2345	2445	
2046	2146	2246	2346	2446	
2047	2147	2247	2347	2447	
2048	2148	2248	2348	2448	
2049	2149	2249	2349	2449	
2050	2150	2250	2350	2450	
2051	2151	2251	2351	2451	

See footnotes at end of table.

MIL-PRF-39022/8G

TABLE IV. Substitutability data - continued.

Dash number in MIL-C-39022/8A thru MIL-PRF-39022/8G 1/					Type designation in MIL-C-39022/8 2/
L (5.0)	M (1.0)	P (0.1)	R (0.01)	S (0.001)	
2052	2152	2252	2352	2452	
2053	2153	2253	2353	2453	
2054	2154	2254	2354	2454	
2055	2155	2255	2355	2455	
2056	2156	2256	2356	2456	
2057	2157	2257	2357	2457	
2058	2158	2258	2358	2458	
2059	2159	2259	2359	2459	
2060	2160	2260	2360	2460	
2062	2162	2262	2362	2462	
2063	2163	2263	2363	2463	
2064	2164	2264	2364	2464	
2065	2165	2265	2365	2465	
2066	2166	2266	2366	2466	
2067	2167	2267	2367	2467	
2068	2168	2268	2368	2468	
2069	2169	2269	2369	2469	
2070	2170	2270	2370	2470	
2071	2171	2271	2371	2471	
2072	2172	2272	2372	2472	
2073	2173	2273	2373	2473	
2074	2174	2274	2374	2474	
2075	2175	2275	2375	2475	
2076	2176	2276	2376	2476	
2077	2177	2277	2377	2477	
2078	2178	2278	2378	2478	
2079	2179	2279	2379	2479	
2080	2180	2280	2380	2480	
2081	2181	2281	2381	2481	
2082	2182	2282	2382	2482	
2083	2183	2283	2383	2483	
2084	2184	2284	2384	2484	
2085	2185	2285	2385	2485	
2086	2186	2286	2386	2486	
2087	2187	2287	2387	2487	
2088	2188	2288	2388	2488	
2089	2189	2289	2389	2489	
2090	2190	2290	2390	2490	
2091	2191	2291	2391	2491	
2092	2192	2292	2392	2492	
2093	2193	2293	2393	2493	
2094	2194	2294	2394	2494	
2095	2195	2295	2395	2495	
2096	2196	2296	2396	2496	
1001	1121	1241	1361	1481	CHR12A1NC104--
1002	1122	1242	1362	1482	CHR12A1NC104--
1003	1123	1243	1363	1483	CHR12A3NC104--
1004	1124	1244	1364	1484	CHR12A3NC104--
1005	1125	1245	1365	1485	CHR12A1NC224--
1006	1126	1246	1366	1486	CHR12A1NC224--
1007	1127	1247	1367	1487	CHR12A3NC224--

See footnotes at end of table.

MIL-PRF-39022/8G

TABLE IV. Substitutability data - continued.

Dash number in MIL-C-39022/8A thru MIL-PRF-39022/8G 1/					Type designation in MIL-C-39022/8 2/
L (5.0)	M (1.0)	P (0.1)	R (0.01)	S (0.001)	
1008	1128	1248	1368	1488	CHR12A3NC224--
1009	1129	1249	1369	1489	CHR12A1NC474--
1010	1130	1250	1370	1490	CHR12A1NC474--
1011	1131	1251	1371	1491	CHR12A3NC474--
1012	1132	1252	1372	1492	CHR12A3NC474--
1013	1133	1253	1373	1493	CHR12A1NC105--
1014	1134	1254	1374	1494	CHR12A1NC105--
1015	1135	1255	1375	1495	CHR12A3NC105--
1016	1136	1256	1376	1496	CHR12A3NC105--
1017	1137	1257	1377	1497	CHR12A1NC155--
1018	1138	1258	1378	1498	CHR12A1NC155--
1019	1139	1259	1379	1499	CHR12A3NC155--
1020	1140	1260	1380	1500	CHR12A3NC155--
1021	1141	1261	1381	1501	CHR12A1NC225--
1022	1142	1262	1382	1502	CHR12A1NC225--
1023	1143	1263	1383	1503	CHR12A3NC225--
1024	1144	1264	1384	1504	CHR12A3NC225--
1025	1145	1265	1385	1505	CHR12A1NC335--
1026	1146	1266	1386	1506	CHR12A1NC335--
1027	1147	1267	1387	1507	CHR12A3NC335--
1028	1148	1268	1388	1508	CHR12A3NC335--
1029	1149	1269	1389	1509	CHR12A1NC475--
1030	1150	1270	1390	1510	CHR12A1NC475--
1031	1151	1271	1391	1511	CHR12A3NC475--
1032	1152	1272	1392	1512	CHR12A3NC475--
1033	1153	1273	1393	1513	CHR12A1NC685--
1034	1154	1274	1394	1514	CHR12A1NC685--
1035	1155	1275	1395	1515	CHR12A3NC685--
1036	1156	1276	1396	1516	CHR12A3NC685--
1037	1157	1277	1397	1517	CHR12A1NC106--
1038	1158	1278	1398	1518	CHR12A1NC106--
1039	1159	1279	1399	1519	CHR12A3NC106--
1040	1160	1280	1400	1520	CHR12A3NC106--
1041	1161	1281	1401	1521	CHR12A1NC126--
1042	1162	1282	1402	1522	CHR12A1NC126--
1043	1163	1283	1403	1523	CHR12A3NC126--
1044	1164	1284	1404	1524	CHR12A3NC126--
1045	1165	1285	1405	1525	CHR12A1NE473--
1046	1166	1286	1406	1526	CHR12A1NE473--
1047	1167	1287	1407	1527	CHR12A3NE473--
1048	1168	1288	1408	1528	CHR12A3NE473--
1049	1169	1289	1409	1529	CHR12A1NE104--
1050	1170	1290	1410	1530	CHR12A1NE104--
1051	1171	1291	1411	1531	CHR12A3NE104--
1052	1172	1292	1412	1532	CHR12A3NE104--
1053	1173	1293	1413	1533	CHR12A1NE224--
1054	1174	1294	1414	1534	CHR12A1NE224--
1055	1175	1295	1415	1535	CHR12A3NE224--
1056	1176	1296	1416	1536	CHR12A3NE224--
1057	1177	1297	1417	1537	CHR12A1NE474--
1058	1178	1298	1418	1538	CHR12A1NE474--

See footnotes at end of table.

MIL-PRF-39022/8G

TABLE IV. Substitutability data - continued.

Dash number in MIL-C-39022/8A thru MIL-PRF-39022/8G <u>1/</u>					Type designation in MIL-C-39022/8 <u>2/</u>
L (5.0)	M (1.0)	P (0.1)	R (0.01)	S (0.001)	
1059	1179	1299	1419	1539	CHR12A3NE474--
1060	1180	1300	1420	1540	CHR12A3NE474--
1061	1181	1301	1421	1541	CHR12A1NE105--
1062	1182	1302	1422	1542	CHR12A1NE105--
1063	1183	1303	1423	1543	CHR12A3NE105--
1064	1184	1304	1424	1544	CHR12A3NE105--
1065	1185	1305	1425	1545	CHR12A1NE225--
1066	1186	1306	1426	1546	CHR12A1NE225--
1067	1187	1307	1427	1547	CHR12A3NE225--
1068	1188	1308	1428	1548	CHR12A3NE225--
1069	1189	1309	1429	1549	CHR12A1NE335--
1070	1190	1310	1430	1550	CHR12A1NE335--
1071	1191	1311	1431	1551	CHR12A3NE335--
1072	1192	1312	1432	1552	CHR12A3NE335--
1073	1193	1313	1433	1553	CHR12A1NF103--
1074	1194	1314	1434	1554	CHR12A1NF103--
1075	1195	1315	1435	1555	CHR12A3NF103--
1076	1196	1316	1436	1556	CHR12A3NF103--
1077	1197	1317	1437	1557	CHR12A1NF223--
1078	1198	1318	1438	1558	CHR12A1NF223--
1079	1199	1319	1439	1559	CHR12A3NF223--
1080	1200	1320	1440	1560	CHR12A3NF223--
1081	1201	1321	1441	1561	CHR12A1NF473--
1082	1202	1322	1442	1562	CHR12A1NF473--
1083	1203	1323	1443	1563	CHR12A3NF473--
1084	1204	1324	1444	1564	CHR12A3NF473--
1085	1205	1325	1445	1565	CHR12A1NF104--
1086	1206	1326	1446	1566	CHR12A1NF104--
1087	1207	1327	1447	1567	CHR12A3NF104--
1088	1208	1328	1448	1568	CHR12A3NF104--
1109	1229	1349	1469	1589	
1110	1230	1350	1470	1590	
1111	1231	1351	1471	1591	
1112	1232	1352	1472	1592	
1089	1209	1329	1449	1569	CHR12A1NF224--
1090	1210	1330	1450	1570	CHR12A1NF224--
1091	1211	1331	1451	1571	CHR12A3NF224--
1092	1212	1332	1452	1572	CHR12A3NF224--
1093	1213	1333	1453	1573	CHR12A1NF474--
1094	1214	1334	1454	1574	CHR12A1NF474--
1095	1215	1335	1455	1575	CHR12A3NF474--
1096	1216	1336	1456	1576	CHR12A3NF474--
1097	1217	1337	1457	1577	CHR12A1NF105--
1098	1218	1338	1458	1578	CHR12A1NF105--
1099	1219	1339	1459	1579	CHR12A3NF105--
1100	1220	1340	1460	1580	CHR12A3NF105--
1101	1221	1341	1461	1581	CHR12A1NF155--
1102	1222	1342	1462	1582	CHR12A1NF155--
1103	1223	1343	1463	1583	CHR12A3NF155--
1104	1224	1344	1464	1584	CHR12A3NF155--
1105	1225	1345	1465	1585	CHR12A1NF225--

See footnotes at end of table.

MIL-PRF-39022/8G

TABLE IV. Substitutability data - continued.

Dash number in MIL-C-39022/8A thru MIL-PRF-39022/8G <u>1/</u>					Type designation in MIL-C-39022/8 <u>2/</u>
L (5.0)	M (1.0)	P (0.1)	R (0.01)	S (0.001)	
1106	1226	1346	1466	1586	CHR12A1NF225--
1107	1227	1347	1467	1587	CHR12A3NF225--
1108	1228	1348	1468	1588	CHR12A3NF225--

1/ FRL L for revisions A and B only.

2/ Complete type designation includes additional symbols for capacitance tolerance and failure rate 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 previous issue.

Referenced documents: In addition to [MIL-PRF-39022](#), this document also references:

MIL-STD-202-101	MIL-STD-202-112	MIL-STD-202-213
MIL-STD-202-104	MIL-STD-202-204	MIL-STD-202-301
MIL-STD-202-105	MIL-STD-202-208	MIL-STD-202-302
MIL-STD-202-106	MIL-STD-202-209	MIL-STD-202-305
MIL-STD-202-107	MIL-STD-202-210	MIL-STD-810
MIL-STD-202-108	MIL-STD-202-211	

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

Preparing activity:
 DLA - CC

(Project 5910-2025-020)

Review activities:
 Army - AR
 Navy - AS, MC
 Air Force - 19

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 the ASSIST online database at <https://assist.dla.mil>.