

INCH-POUND

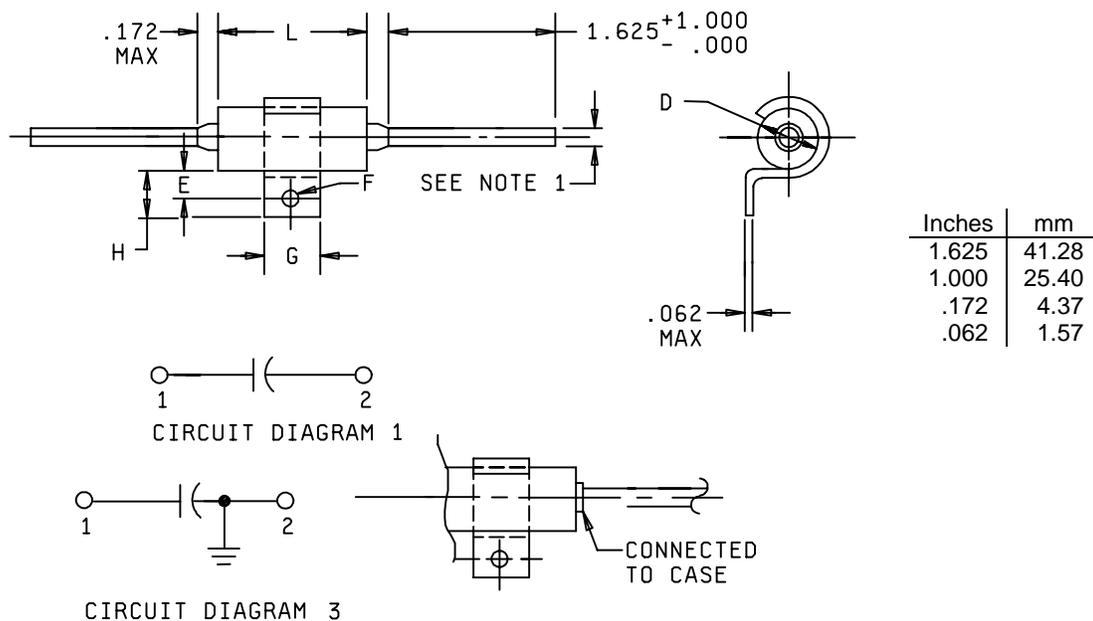
MIL-PRF-39022/8D
25 May 2001
SUPERSEDING
MIL-PRF-39022/8C
28 July 1993

PERFORMANCE SPECIFICATION SHEET

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

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-39022.



NOTES:

1. Number 22 AWG wire $.025 \pm .002$ inch (0.64 ± 0.05 mm) for case diameters of $.235$ inch (5.97 mm) and $.312$ inch (7.92 mm).
Number 20 AWG wire $.032 \pm .002$ inch (0.81 ± 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 given for general information only.
5. Metric equivalents are in parentheses.
6. 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.

REQUIREMENTS:

Dimensions and configuration: See figure 1 and table I.

Case material: Nonmagnetic.

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: M (1.0 percent), P (0.1 percent), R (0.01 percent), and S (0.001 percent).

Radiographic inspection (X-ray): Method 209 of MIL-STD-202.

Thermal shock: Method 107 of MIL-STD-202, condition A, except step 3 shall be +125°C +4°C, -0°C.

Seal: Method 112 of MIL-STD-202, 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): Method 301 of MIL-STD-202.

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): Method 302 of MIL-STD-202.

Terminal to terminal: See table II.

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

Capacitance: Method 305 of MIL-STD-202.

Dissipation factor (DF):

At 25°C: 1 percent.

At high test temperature: 2.0 percent.

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

DC rated voltage (volts)	Capacitance value (μF)	Circuit diagram	Capacitance tolerance (Percent ±)	Dimensions, nominal (inches) 1/						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	0.15	1	5	0.875	0.312	0.312	0.250	0.188	0.144	2101	2201	2301	2401
50	0.15	1	10	0.875	0.312	0.312	0.250	0.188	0.144	2102	2202	2302	2402
50	0.15	3	5	0.812	0.312	0.312	0.250	0.188	0.144	2103	2203	2303	2403
50	0.15	3	10	0.812	0.312	0.312	0.250	0.188	0.144	2104	2204	2304	2404
50	0.18	1	5	0.875	0.312	0.312	0.250	0.188	0.144	2105	2205	2305	2405
50	0.18	1	10	0.875	0.312	0.312	0.250	0.188	0.144	2106	2206	2306	2406
50	0.18	3	5	0.812	0.312	0.312	0.250	0.188	0.144	2107	2207	2307	2407
50	0.18	3	10	0.812	0.312	0.312	0.250	0.188	0.144	2108	2208	2308	2408
50	0.22	1	5	0.875	0.312	0.312	0.250	0.188	0.144	2109	2209	2309	2409
50	0.22	1	10	0.875	0.312	0.312	0.250	0.188	0.144	2110	2210	2310	2410
50	0.22	3	5	0.812	0.312	0.312	0.250	0.188	0.144	2111	2211	2311	2411
50	0.22	3	10	0.812	0.312	0.312	0.250	0.188	0.144	2112	2212	2312	2412
50	0.27	1	5	0.875	0.312	0.312	0.250	0.188	0.144	2113	2213	2313	2413
50	0.27	1	10	0.875	0.312	0.312	0.250	0.188	0.144	2114	2214	2314	2414
50	0.27	3	5	0.812	0.312	0.312	0.250	0.188	0.144	2115	2215	2315	2415
50	0.27	3	10	0.812	0.312	0.312	0.250	0.188	0.144	2116	2216	2316	2416
50	0.33	1	5	0.875	0.312	0.312	0.250	0.188	0.144	2117	2217	2317	2417
50	0.33	1	10	0.875	0.312	0.312	0.250	0.188	0.144	2118	2218	2318	2418
50	0.33	3	5	0.812	0.312	0.312	0.250	0.188	0.144	2119	2219	2319	2419
50	0.33	3	10	0.812	0.312	0.312	0.250	0.188	0.144	2120	2220	2320	2420
50	0.39	1	5	1.125	0.312	0.312	0.250	0.188	0.144	2121	2221	2321	2421
50	0.39	1	10	1.125	0.312	0.312	0.250	0.188	0.144	2122	2222	2322	2422
50	0.39	3	5	1.062	0.312	0.312	0.250	0.188	0.144	2123	2223	2323	2423
50	0.39	3	10	1.062	0.312	0.312	0.250	0.188	0.144	2124	2224	2324	2424
50	0.47	1	5	1.125	0.312	0.312	0.250	0.188	0.144	2125	2225	2325	2425
50	0.47	1	10	1.125	0.312	0.312	0.250	0.188	0.144	2126	2226	2326	2426
50	0.47	3	5	1.062	0.312	0.312	0.250	0.188	0.144	2127	2227	2327	2427
50	0.47	3	10	1.062	0.312	0.312	0.250	0.188	0.144	2128	2228	2328	2428
50	0.56	1	5	1.125	0.400	0.312	0.250	0.188	0.144	2129	2229	2329	2429
50	0.56	1	10	1.125	0.400	0.312	0.250	0.188	0.144	2130	2230	2330	2430
50	0.56	3	5	1.062	0.400	0.312	0.250	0.188	0.144	2131	2231	2331	2431
50	0.56	3	10	1.062	0.400	0.312	0.250	0.188	0.144	2132	2232	2332	2432
50	0.68	1	5	1.125	0.400	0.312	0.250	0.188	0.144	2133	2233	2333	2433
50	0.68	1	10	1.125	0.400	0.312	0.250	0.188	0.144	2134	2234	2334	2434
50	0.68	3	5	1.062	0.400	0.312	0.250	0.188	0.144	2135	2235	2335	2435
50	0.68	3	10	1.062	0.400	0.312	0.250	0.188	0.144	2136	2236	2336	2436

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See footnote at end of table.

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

DC rated voltage (volts)	Capacitance value (μF)	Circuit diagram	Capacitance tolerance (Percent ±)	Dimensions, nominal (inches) 1/						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	0.82	1	5	1.125	0.400	0.312	0.250	0.188	0.144	2137	2237	2337	2437
50	0.82	1	10	1.125	0.400	0.312	0.250	0.188	0.144	2138	2238	2338	2438
50	0.82	3	5	1.062	0.400	0.312	0.250	0.188	0.144	2139	2239	2339	2439
50	0.82	3	10	1.062	0.400	0.312	0.250	0.188	0.144	2140	2240	2340	2440
50	1.0	1	5	1.125	0.400	0.312	0.250	0.188	0.144	2141	2241	2341	2441
50	1.0	1	10	1.125	0.400	0.312	0.250	0.188	0.144	2142	2242	2342	2442
50	1.0	3	5	1.062	0.400	0.312	0.250	0.188	0.144	2143	2243	2343	2443
50	1.0	3	10	1.062	0.400	0.312	0.250	0.188	0.144	2144	2244	2344	2444
50	1.2	1	5	1.375	0.400	0.312	0.250	0.188	0.144	2145	2245	2345	2445
50	1.2	1	10	1.375	0.400	0.312	0.250	0.188	0.144	2146	2246	2346	2446
50	1.2	3	5	1.312	0.400	0.312	0.250	0.188	0.144	2147	2247	2347	2447
50	1.2	3	10	1.312	0.400	0.312	0.250	0.188	0.144	2148	2248	2348	2448
50	1.5	1	5	1.125	0.500	0.438	0.500	0.250	0.156	2149	2249	2349	2449
50	1.5	1	10	1.172	0.500	0.438	0.500	0.250	0.156	2150	2250	2350	2450
50	1.5	3	5	1.062	0.500	0.438	0.500	0.250	0.156	2151	2251	2351	2451
50	1.5	3	10	1.062	0.500	0.438	0.500	0.250	0.156	2152	2252	2352	2452
50	1.8	1	5	1.375	0.500	0.438	0.500	0.250	0.156	2153	2253	2353	2453
50	1.8	1	10	1.375	0.500	0.438	0.500	0.250	0.156	2154	2254	2354	2454
50	1.8	3	5	1.312	0.500	0.438	0.500	0.250	0.156	2155	2255	2355	2455
50	1.8	3	10	1.312	0.500	0.438	0.500	0.250	0.156	2156	2256	2356	2456
50	2.2	1	5	1.125	0.562	0.438	0.500	0.250	0.156	2157	2257	2357	2457
50	2.2	1	10	1.125	0.562	0.438	0.500	0.250	0.156	2158	2258	2358	2458
50	2.2	3	5	1.062	0.562	0.438	0.500	0.250	0.156	2159	2259	2359	2459
50	2.2	3	10	1.062	0.562	0.438	0.500	0.250	0.156	2160	2260	2360	2460
50	2.7	1	5	1.375	0.562	0.438	0.500	0.250	0.156	2161	2261	2361	2461
50	2.7	1	10	1.375	0.562	0.438	0.500	0.250	0.156	2162	2262	2362	2462
50	2.7	3	5	1.312	0.562	0.438	0.500	0.250	0.156	2163	2263	2363	2463
50	2.7	3	10	1.312	0.562	0.438	0.500	0.250	0.156	2164	2264	2364	2464
50	3.3	1	5	1.375	0.562	0.438	0.500	0.250	0.156	2165	2265	2365	2465
50	3.3	1	10	1.375	0.562	0.438	0.500	0.250	0.156	2166	2266	2366	2466
50	3.3	3	5	1.312	0.562	0.438	0.500	0.250	0.156	2167	2267	2367	2467
50	3.3	3	10	1.312	0.562	0.438	0.500	0.250	0.156	2168	2268	2368	2468
50	3.9	1	5	1.625	0.562	0.438	0.500	0.250	0.156	2169	2269	2369	2469
50	3.9	1	10	1.625	0.562	0.438	0.500	0.250	0.156	2170	2270	2370	2470
50	3.9	3	5	1.562	0.562	0.438	0.500	0.250	0.156	2171	2271	2371	2471
50	3.9	3	10	1.562	0.562	0.438	0.500	0.250	0.156	2172	2272	2372	2472

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See footnotes at end of table.

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

DC rated voltage (volts)	Capacitance value (μF)	Circuit diagram	Capacitance tolerance (Percent ±)	Dimensions, nominal (inches) 1/						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	4.7	1	5	1.750	0.562	0.438	0.500	0.250	0.156	2173	2273	2373	2473
50	4.7	1	10	1.750	0.562	0.438	0.500	0.250	0.156	2174	2274	2374	2474
50	4.7	3	5	1.688	0.562	0.438	0.500	0.250	0.156	2175	2275	2375	2475
50	4.7	3	10	1.688	0.562	0.438	0.500	0.250	0.156	2176	2276	2376	2476
50	5.6	1	5	1.875	0.562	0.438	0.500	0.250	0.156	2177	2277	2377	2477
50	5.6	1	10	1.875	0.562	0.438	0.500	0.250	0.156	2178	2278	2378	2478
50	5.6	3	5	1.812	0.562	0.438	0.500	0.250	0.156	2179	2279	2379	2479
50	5.6	3	10	1.812	0.562	0.438	0.500	0.250	0.156	2180	2280	2380	2480
50	6.8	1	5	1.625	0.670	0.438	0.500	0.250	0.156	2181	2281	2381	2481
50	6.8	1	10	1.625	0.670	0.438	0.500	0.250	0.156	2182	2282	2382	2482
50	6.8	3	5	1.562	0.670	0.438	0.500	0.250	0.156	2183	2283	2383	2483
50	6.8	3	10	1.562	0.670	0.438	0.500	0.250	0.156	2184	2284	2384	2484
50	8.2	1	5	1.875	0.670	0.438	0.500	0.250	0.156	2185	2285	2385	2485
50	8.2	1	10	1.875	0.670	0.438	0.500	0.250	0.156	2186	2286	2386	2486
50	8.2	3	5	1.812	0.670	0.438	0.500	0.250	0.156	2187	2287	2387	2487
50	8.2	3	10	1.812	0.670	0.438	0.500	0.250	0.156	2188	2288	2388	2488
50	10.0	1	5	1.875	0.750	0.438	0.500	0.250	0.156	2189	2289	2389	2489
50	10.0	1	10	1.875	0.750	0.438	0.500	0.250	0.156	2190	2290	2390	2490
50	10.0	3	5	1.812	0.750	0.438	0.500	0.250	0.156	2191	2291	2391	2491
50	10.0	3	10	1.812	0.750	0.438	0.500	0.250	0.156	2192	2292	2392	2492
50	12.0	1	5	2.375	0.750	0.438	0.500	0.250	0.156	2193	2293	2393	2493
50	12.0	1	10	2.375	0.750	0.438	0.500	0.250	0.156	2194	2294	2394	2494
50	12.0	3	5	2.312	0.750	0.438	0.500	0.250	0.156	2195	2295	2395	2495
50	12.0	3	10	2.312	0.750	0.438	0.500	0.250	0.156	2196	2296	2396	2496
200	0.10	1	5	0.844	0.312	0.312	0.250	0.188	0.144	1121	1241	1361	1481
200	0.10	1	10	0.844	0.312	0.312	0.250	0.188	0.144	1122	1242	1362	1482
200	0.10	3	5	0.781	0.312	0.312	0.250	0.188	0.144	1123	1243	1363	1483
200	0.10	3	10	0.781	0.312	0.312	0.250	0.188	0.144	1124	1244	1364	1484
200	0.22	1	10	1.125	0.312	0.312	0.250	0.188	0.144	1125	1245	1365	1485
200	0.22	1	20	1.125	0.312	0.312	0.250	0.188	0.144	1126	1246	1366	1486
200	0.22	3	10	1.062	0.312	0.312	0.250	0.188	0.144	1127	1247	1367	1487
200	0.22	3	20	1.062	0.312	0.312	0.250	0.188	0.144	1128	1248	1368	1488
200	0.47	1	10	1.125	0.400	0.312	0.250	0.188	0.144	1129	1249	1369	1489
200	0.47	1	20	1.125	0.400	0.312	0.250	0.188	0.144	1130	1250	1370	1490
200	0.47	3	10	1.062	0.400	0.312	0.250	0.188	0.144	1131	1251	1371	1491
200	0.47	3	20	1.062	0.400	0.312	0.250	0.188	0.144	1132	1252	1372	1492

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See footnotes at end of table.

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

DC rated voltage (volts)	Capacitance value (μF)	Circuit diagram	Capacitance tolerance (Percent ±)	Dimensions, nominal (inches) 1/						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)
200	1.0	1	10	1.125	0.562	0.438	0.500	0.250	0.156	1133	1253	1373	1493
200	1.0	1	20	1.125	0.562	0.438	0.500	0.250	0.156	1134	1254	1374	1494
200	1.0	3	10	1.062	0.562	0.438	0.500	0.250	0.156	1135	1255	1375	1495
200	1.0	3	20	1.062	0.562	0.438	0.500	0.250	0.156	1136	1256	1376	1496
200	1.5	1	10	1.844	0.562	0.438	0.500	0.250	0.156	1137	1257	1377	1497
200	1.5	1	20	1.844	0.562	0.438	0.500	0.250	0.156	1138	1258	1378	1498
200	1.5	3	10	1.781	0.562	0.438	0.500	0.250	0.156	1139	1259	1379	1499
200	1.5	3	20	1.781	0.562	0.438	0.500	0.250	0.156	1140	1260	1380	1500
200	6.2	1	10	1.844	0.562	0.438	0.500	0.250	0.156	1141	1261	1381	1501
200	6.2	1	20	1.844	0.562	0.438	0.500	0.250	0.156	1142	1262	1382	1502
200	6.2	3	10	1.781	0.562	0.438	0.500	0.250	0.156	1143	1263	1383	1503
200	6.2	3	20	1.781	0.562	0.438	0.500	0.250	0.156	1144	1264	1384	1504
200	3.3	1	10	1.875	0.670	0.438	0.500	0.250	0.156	1145	1265	1385	1505
200	3.3	1	20	1.875	0.670	0.438	0.500	0.250	0.156	1146	1266	1386	1506
200	3.3	3	10	1.812	0.670	0.438	0.500	0.250	0.156	1147	1267	1387	1507
200	3.3	3	20	1.812	0.670	0.438	0.500	0.250	0.156	1148	1268	1388	1508
200	4.7	1	10	1.875	1.000	0.438	0.500	0.250	0.156	1149	1269	1389	1509
200	4.7	1	20	1.875	1.000	0.438	0.500	0.250	0.156	1150	1270	1390	1510
200	4.7	3	10	1.812	1.000	0.438	0.500	0.250	0.156	1151	1271	1391	1511
200	4.7	3	20	1.812	1.000	0.438	0.500	0.250	0.156	1152	1272	1392	1512
200	6.8	1	10	1.875	1.000	0.438	0.500	0.250	0.156	1153	1273	1393	1513
200	6.8	1	20	1.875	1.000	0.438	0.500	0.250	0.156	1154	1274	1394	1514
200	6.8	3	10	1.812	1.000	0.438	0.500	0.250	0.156	1155	1275	1395	1515
200	6.8	3	20	1.812	1.000	0.438	0.500	0.250	0.156	1156	1276	1396	1516
200	10.0	1	10	2.375	1.000	0.438	0.500	0.250	0.156	1157	1277	1397	1517
200	10.0	1	20	2.375	1.000	0.438	0.500	0.250	0.156	1158	1278	1398	1518
200	10.0	3	10	2.312	1.000	0.438	0.500	0.250	0.156	1159	1279	1399	1519
200	10.0	3	20	2.312	1.000	0.438	0.500	0.250	0.156	1160	1280	1400	1520
200	12.0	1	10	2.625	1.000	0.438	0.500	0.250	0.156	1161	1281	1401	1521
200	12.0	1	20	2.625	1.000	0.438	0.500	0.250	0.156	1162	1282	1402	1522
200	12.0	3	10	2.562	1.000	0.438	0.500	0.250	0.156	1163	1283	1403	1523
200	12.0	3	20	2.562	1.000	0.438	0.500	0.250	0.156	1164	1284	1404	1524
400	0.047	1	10	1.125	0.312	0.312	0.250	0.188	0.144	1165	1285	1405	1525
400	0.047	1	20	1.125	0.312	0.312	0.250	0.188	0.144	1166	1286	1406	1526

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See footnotes at end of table.

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

DC rated voltage (volts)	Capacitance value (μF)	Circuit diagram	Capacitance tolerance (Percent ±)	Dimensions, nominal (inches) 1/						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)
400	0.047	3	10	1.062	0.312	0.312	0.250	0.188	0.144	1167	1287	1407	1527
400	0.047	3	20	1.062	0.312	0.312	0.250	0.188	0.144	1168	1288	1408	1528
400	0.10	1	10	1.125	0.562	0.438	0.500	0.250	0.156	1169	1289	1409	1529
400	0.10	1	20	1.125	0.562	0.438	0.500	0.250	0.156	1170	1290	1410	1530
400	0.10	3	10	1.062	0.562	0.438	0.500	0.250	0.156	1171	1291	1411	1531
400	0.10	3	20	1.062	0.562	0.438	0.500	0.250	0.156	1172	1292	1412	1532
400	0.22	1	10	1.125	0.562	0.438	0.500	0.250	0.156	1173	1293	1413	1533
400	0.22	1	20	1.125	0.562	0.438	0.500	0.250	0.156	1174	1294	1414	1534
400	0.22	3	10	1.062	0.562	0.438	0.500	0.250	0.156	1175	1295	1415	1535
400	0.22	3	20	1.062	0.562	0.438	0.500	0.250	0.156	1176	1296	1416	1536
400	0.47	1	10	1.625	0.552	0.438	0.500	0.250	0.156	1177	1297	1417	1537
400	0.47	1	20	1.625	0.562	0.438	0.500	0.250	0.156	1178	1298	1418	1538
400	0.47	3	10	1.562	0.562	0.438	0.500	0.250	0.156	1179	1299	1419	1539
400	0.47	3	20	1.562	0.562	0.438	0.500	0.250	0.156	1180	1300	1420	1540
400	1.0	1	10	1.875	0.750	0.438	0.500	0.250	0.156	1181	1301	1421	1541
400	1.0	1	20	1.875	0.750	0.438	0.500	0.250	0.156	1182	1302	1422	1542
400	1.0	3	10	1.812	0.750	0.438	0.500	0.250	0.156	1183	1303	1423	1543
400	1.0	3	20	1.812	0.750	0.438	0.500	0.250	0.156	1184	1304	1424	1544
400	2.2	1	10	1.875	1.000	0.438	0.500	0.250	0.156	1185	1305	1425	1545
400	2.2	1	20	1.875	1.000	0.438	0.500	0.250	0.156	1186	1306	1426	1546
400	2.2	3	10	1.812	1.000	0.438	0.500	0.250	0.156	1187	1307	1427	1547
400	2.2	3	20	1.812	1.000	0.438	0.500	0.250	0.156	1188	1308	1428	1548
400	3.3	1	10	2.625	1.000	0.438	0.500	0.250	0.156	1189	1309	1429	1549
400	3.3	1	20	2.625	1.000	0.438	0.500	0.250	0.156	1190	1310	1430	1550
400	3.3	3	10	2.562	1.000	0.438	0.500	0.250	0.156	1191	1311	1431	1551
400	3.3	3	20	2.562	1.000	0.438	0.500	0.250	0.156	1192	1312	1432	1552
600	0.01	1	10	0.812	0.312	0.312	0.250	0.188	0.144	1193	1313	1433	1553
600	0.01	1	20	0.812	0.312	0.312	0.250	0.188	0.144	1194	1314	1434	1554
600	0.01	3	10	0.750	0.312	0.312	0.250	0.188	0.144	1195	1315	1435	1555
600	0.01	3	20	0.750	0.312	0.312	0.250	0.188	0.144	1196	1316	1436	1556
600	0.022	1	10	0.812	0.312	0.312	0.250	0.188	0.144	1197	1317	1437	1557
600	0.022	1	20	0.812	0.312	0.312	0.250	0.188	0.144	1198	1318	1438	1558
600	0.022	3	10	0.750	0.312	0.312	0.250	0.188	0.144	1199	1319	1439	1559
600	0.022	3	20	0.750	0.312	0.312	0.250	0.188	0.144	1200	1320	1440	1560
600	0.047	1	10	1.125	0.400	0.312	0.250	0.188	0.144	1201	1321	1441	1561
600	0.047	1	20	1.125	0.400	0.312	0.250	0.188	0.144	1202	1322	1442	1562

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See footnotes at end of table.

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

DC rated voltage (volts)	Capacitance value (μF)	Circuit diagram	Capacitance tolerance (Percent ±)	Dimensions, nominal (inches) ^{1/}						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)
600	0.047	3	10	1.062	0.400	0.312	0.250	0.188	0.144	1203	1323	1443	1563
600	0.047	3	20	1.062	0.400	0.312	0.250	0.188	0.144	1204	1324	1444	1564
600	0.10	1	10	1.125	0.500	0.438	0.500	0.250	0.156	1205	1325	1445	1565
600	0.10	1	20	1.125	0.500	0.438	0.500	0.250	0.156	1206	1326	1446	1566
600	0.10	3	10	1.062	0.500	0.438	0.500	0.250	0.156	1207	1327	1447	1567
600	0.10	3	20	1.062	0.500	0.438	0.500	0.250	0.156	1208	1328	1448	1568
600	0.15	1	10	1.125	0.562	0.438	0.500	0.250	0.156	1229	1349	1469	1589
600	0.15	1	20	1.125	0.562	0.438	0.500	0.250	0.156	1230	1350	1470	1590
600	0.15	3	10	1.062	0.562	0.438	0.500	0.250	0.156	1231	1351	1471	1591
600	0.15	3	20	1.062	0.562	0.438	0.500	0.250	0.156	1232	1352	1472	1592
600	0.22	1	10	1.375	0.562	0.438	0.500	0.250	0.156	1209	1329	1449	1569
600	0.22	1	20	1.375	0.562	0.438	0.500	0.250	0.156	1210	1330	1450	1570
600	0.22	3	10	1.312	0.562	0.438	0.500	0.250	0.156	1211	1331	1451	1571
600	0.22	3	20	1.312	0.562	0.438	0.500	0.250	0.156	1212	1332	1452	1572
600	0.47	1	10	1.625	0.670	0.438	0.500	0.250	0.156	1213	1333	1453	1573
600	0.47	1	20	1.625	0.670	0.438	0.500	0.250	0.156	1214	1334	1454	1574
600	0.47	3	10	1.562	0.670	0.438	0.500	0.250	0.156	1215	1335	1455	1575
600	0.47	3	20	1.562	0.670	0.438	0.500	0.250	0.156	1216	1336	1456	1576
600	1.0	1	10	1.844	1.000	0.438	0.500	0.250	0.156	1217	1337	1457	1577
600	1.0	1	20	1.844	1.000	0.438	0.500	0.250	0.156	1218	1338	1458	1578
600	1.0	3	10	1.781	1.000	0.438	0.500	0.250	0.156	1219	1339	1459	1579
600	1.0	3	20	1.781	1.000	0.438	0.500	0.250	0.156	1220	1340	1460	1580
600	1.5	1	10	1.875	1.000	0.438	0.500	0.250	0.156	1221	1341	1461	1581
600	1.5	1	20	1.875	1.000	0.438	0.500	0.250	0.156	1222	1342	1462	1582
600	1.5	3	10	1.812	1.000	0.438	0.500	0.250	0.156	1223	1343	1463	1583
600	1.5	3	20	1.812	1.000	0.438	0.500	0.250	0.156	1224	1344	1464	1584
600	2.2	1	10	2.625	1.000	0.438	0.500	0.250	0.156	1225	1345	1465	1585
600	2.2	1	20	2.625	1.000	0.438	0.500	0.250	0.156	1226	1346	1466	1586
600	2.2	3	10	2.562	1.000	0.438	0.500	0.250	0.156	1227	1347	1467	1587
600	2.2	3	20	2.562	1.000	0.438	0.500	0.250	0.156	1228	1348	1468	1588

^{1/} Metric equivalents are given in table III.

TABLE II. Insulation resistance.

	At dc voltage of			
	50 V	200 V	400 V	600 V
In megohms:				
At +25°C ± 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 ± 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.

Barometric pressure (reduced): Method 105 of MIL-STD-202, condition D (100,000 feet).

125 percent of rated voltage applied: See MIL-PRF-39022 for voltage limitations.

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

50 percent of rated voltage applied.

Salt spray (corrosion): Method 101 of MIL-STD-202, condition B (48 hours).

Salt solution: 5 percent.

Immersion: Method 104 of MIL-STD-202, 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.

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Solderability: Method 208 of MIL-STD-202.

Shock (specified pulse): Method 213 of MIL-STD-202, condition I.

50 percent of rated voltage applied.

Moisture resistance: Method 106 of MIL-STD-202.

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

Terminal strength: Method 211 of MIL-STD-202, conditions A and D.

Condition A: Applied force 5 pounds.

Condition D: 3 rotations of 360 degrees.

Low temperature and capacitance change with temperature:

Low temperature: -55°C $+0^{\circ}\text{C}$, -10°C for 48 hours \pm 4 hours with rated voltage applied.

Capacitance change with temperature: At -55°C $+0^{\circ}\text{C}$, -3°C : -3 percent, maximum. At $+125^{\circ}\text{C}$ $+4^{\circ}\text{C}$, -0°C : +20 percent maximum.

Fungus: Method 508 of MIL-STD-810.

Resistance to soldering heat: Method 210 of MIL-STD-202, condition C, except the time shall be 10 seconds \pm 1 second.

IR: See table II.

Capacitance: Within \pm 5 percent of initial value.

DF: Not more than 1.0 percent.

Life: Method 108 of MIL-STD-202.

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 $+125^{\circ}\text{C}$ $+4^{\circ}\text{C}$, -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 \pm 10 percent of initial value.

DF (at $+25^{\circ}\text{C}$ \pm 3°C after life): 1.25 percent.

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

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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).

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

TABLE IV. Substitutability data.

Dash number in MIL-C-39022/8A thru MIL-PRF-39022/8D <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)	
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	

See footnote at end of table.

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TABLE IV. Substitutability data - Continued.

Dash number in MIL-C-39022/8A thru MIL-PRF-39022/8D <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)	
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	
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	

See footnote at end of table.

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TABLE IV. Substitutability data - Continued.

Dash number in MIL-C-39022/8A thru MIL-PRF-39022/8D <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)	
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--
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--

See footnote at end of table.

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TABLE IV. Substitutability data - Continued.

Dash number in MIL-C-39022/8A thru MIL-PRF-39022/8D <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)	
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--
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--

See footnote at end of table.

MIL-PRF-39022/8D

TABLE IV. Substitutability data - Continued.

Dash number in MIL-C-39022/8A thru MIL-PRF-39022/8D <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)	
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--
1106	1226	1346	1466	1586	CHR12A1NF225--
1107	1227	1347	1467	1587	CHR12A3NF225--
1108	1228	1348	1468	1588	CHR12A3NF225--

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

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

Preparing activity:
 DLA - CC
 (Project 5910-2066)

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