

INCH-POUND

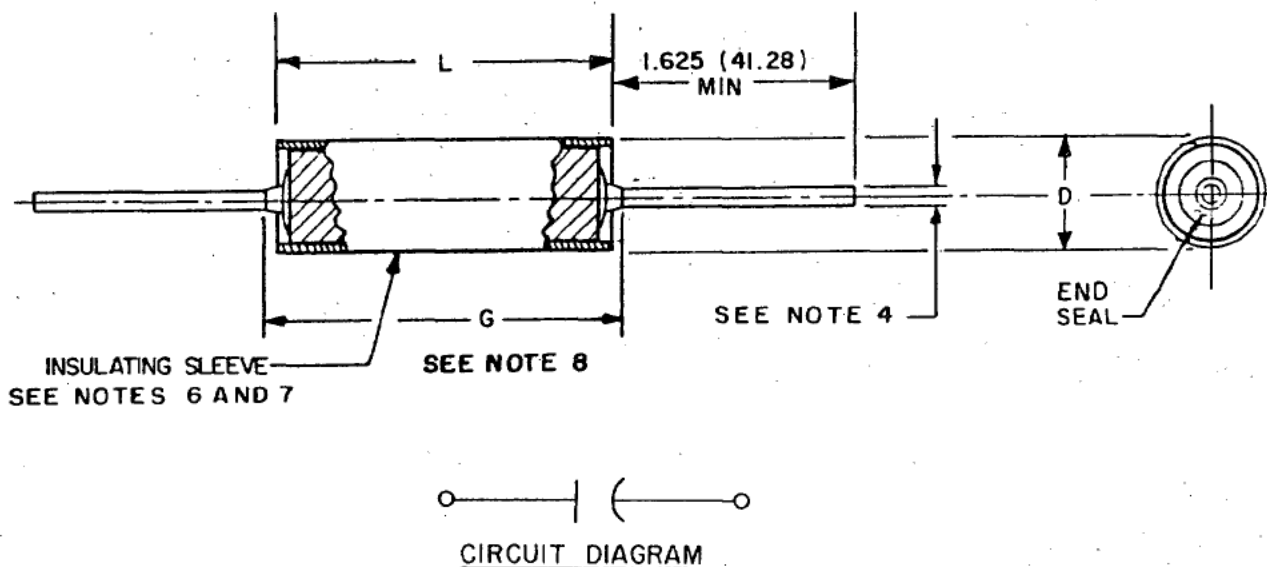
MIL-C-83421/3
25 July 1989

MILITARY SPECIFICATION SHEET

CAPACITORS, FIXED, SUPERMETALLIZED PLASTIC FILM DIELECTRIC, DC AND AC,
HERMETICALLY SEALED IN METAL CASES,
HIGH RELIABILITY (INSULATED),
STYLES CRS01, CRS02, CRS03, CRS04 AND CRS05

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 the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-C-83421.



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Metric equivalents are in parentheses.
4. Number 22 AWG wire for case diameters of .312 (7.92 mm) and less.
Number 20 AWG wire for case diameters of .400 (10.16 mm) and .500 (12.70 mm)
Number 18 AWG wire for case diameters of .562 (14.27 mm) and over.
5. See table I for additional dimensions.
6. Insulating sleeve shall extend beyond the capacitor body. Insulating sleeve thickness shall not exceed .005 (0.13 mm) inch.
7. Plastic insulating sleeve shall be transparent; marking shall be applied to the capacitor case.
8. Lead length may be a minimum of one inch long for use in tape and reel packaging, when specified in the ordering data.

FIGURE 1. Capacitor configuration.

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

CRS01 - 30 volts (dc rating)																	
Capacitance value (in μ F)	Dimensions $\frac{L}{D}$ (in inches with mm in parentheses)		Dash number								AC ratings (for sinusoidal operation $\frac{2}{}$ from -65° C to $+100^{\circ}$ C)						
	L +0.030(0.76) -0.000	D +0.020(0.51) -0.000	G (max)	Capacitance tolerance value (in %)								0 to .4 KHz		At 4 KHz		At 40 KHz	
				± 0.25	± 0.5	± 1.0	± 2.0	± 5.0	± 10.0	Volts	Current (in A)	Volts	Current (in A)	Volts	Current (in A)		
0.001	0.500(12.70)	0.170(4.32)	0.700(17.78)	1001	1002	1003	1004	1005	1006	22.0	.001	22.0	.001	22.0	.006		
0.0012	"	"	"	1007	1008	1009	1010	1011	1012	"	"	"	"	"	.007		
0.0015	"	"	"	1013	1014	1015	1016	1017	1018	"	"	"	"	"	.008		
0.0018	"	"	"	1019	1020	1021	1022	1023	1024	"	"	"	"	"	.010		
0.002	"	"	"	1025	1026	1027	1028	1029	1030	"	"	"	"	"	.011		
0.0022	"	"	"	1031	1032	1033	1034	1035	1036	"	"	"	"	"	.012		
0.0027	"	"	"	1037	1038	1039	1040	1041	1042	"	"	"	"	.002	.015		
0.0033	"	"	"	1043	1044	1045	1046	1047	1048	"	"	"	"	"	.018		
0.0039	"	"	"	1049	1050	1051	1052	1053	1054	"	"	"	"	"	.021		
0.0047	"	"	"	1055	1056	1057	1058	1059	1060	"	"	"	"	.003	.026		
0.005	"	"	"	1061	1062	1063	1064	1065	1066	"	"	"	"	"	.028		
0.0056	"	"	"	1067	1068	1069	1070	1071	1072	"	"	"	"	"	.031		
0.0068	"	"	"	1073	1074	1075	1076	1077	1078	"	"	"	"	.004	.037		
0.0082	"	"	"	1079	1080	1081	1082	1083	1084	"	"	"	"	.005	.045		
0.01	"	"	"	1085	1086	1087	1088	1089	1090	"	"	"	"	.006	.055		
0.012	"	"	"	1091	1092	1093	1094	1095	1096	"	"	"	"	.007	.066		
0.015	"	"	"	1097	1098	1099	1100	1101	1102	"	"	"	"	.008	.082		
0.018	"	"	"	1103	1104	1105	1106	1107	1108	"	"	"	"	.010	.10		
0.02	"	"	"	1109	1110	1111	1112	1113	1114	"	"	"	"	.011	.11		
0.022	"	"	"	1115	1116	1117	1118	1119	1120	"	"	"	"	.012	.12		
0.027	0.562(14.27)	"	0.762(19.35)	1121	1122	1123	1124	1125	1126	"	"	"	"	.015	.15		
0.033	"	"	"	1127	1128	1129	1130	1131	1132	"	.002	"	"	.018	.18		
0.039	"	"	"	1133	1134	1135	1136	1137	1138	"	.002	"	"	.021	.21		
0.047	"	"	"	1139	1140	1141	1142	1143	1144	"	.003	"	"	.026	.26		

See footnotes at end of table.

MIL-C-83421/3

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

CRS01 - 30 volts (dc rating)																
Capacitance value (in μF)	Dimensions $\frac{1}{D}$ (in inches with mm in parentheses)		G (max)	Dash number					AC ratings (for sinusoidal operation $\frac{2}{}$ from -65°C to $+100^\circ\text{C}$)							
	L +0.030(0.76)	D +0.020(0.51)		Capacitance tolerance value (in %)					0 to .4 KHz		At 4 KHz		At 40 KHz			
				+0.25	+0.5	+1.0	+2.0	+5.0	±10.0	Volts	Current (in A)	Volts	Current (in A)	Volts	Current (in A)	
0.05	0.562(14.27)	0.170(4.32)	0.762(19.35)	1145	1146	1147	1148	1149	1150	22.0	.003	.028	22.0	.028	22.0	.28
0.056	0.562(14.27)	"	"	1151	1152	1153	1154	1155	1156	"	.003	.031	"	.031	"	.31
0.068	0.687(17.45)	"	0.887(22.53)	1157	1158	1159	1160	1161	1162	"	.004	.037	"	.037	"	.37
0.082	"	"	"	1163	1164	1165	1166	1167	1168	"	.005	.045	"	.045	"	.45
0.1	"	0.193(4.90)	"	1169	1170	1171	1172	1173	1174	"	.006	.055	"	.055	"	.55
0.12	"	0.193(4.90)	"	1175	1176	1177	1178	1179	1180	"	.007	.066	"	.066	"	.66
0.15	0.562(14.27)	0.235(5.97)	0.762(19.35)	1181	1182	1183	1184	1185	1186	"	.008	.082	"	.082	"	.83
0.18	0.687(17.45)	"	0.887(22.53)	1373	1374	1375	1376	1377	1378	"	.010	.100	"	.100	"	1.00
0.20	"	"	"	1187	1188	1189	1190	1191	1192	"	.011	.110	"	.110	20.0	1.00
0.22	"	"	"	1193	1194	1195	1196	1197	1198	"	.012	.12	"	.12	18.5	1.02
0.27	"	"	"	1199	1200	1201	1202	1203	1204	"	.015	.15	"	.15	17.0	1.15
0.33	"	"	"	1205	1206	1207	1208	1209	1210	"	.018	.18	"	.18	16.0	1.32
0.39	"	"	"	1211	1212	1213	1214	1215	1216	"	.021	.21	"	.21	15.0	1.46
0.47	"	0.312(7.92)	"	1217	1218	1219	1220	1221	1222	"	.026	.26	"	.26	14.0	1.65
0.50	"	"	"	1223	1224	1225	1226	1227	1228	"	.028	.28	"	.28	13.5	1.69
0.56	"	"	"	1229	1230	1231	1232	1233	1234	"	.031	.31	"	.31	12.9	1.81
0.68	"	"	"	1235	1236	1237	1238	1239	1240	"	.037	.37	"	.37	12.0	2.04
0.82	0.813(20.65)	"	1.013(25.73)	1241	1242	1243	1244	1245	1246	"	.045	.45	"	.45	10.0	2.05
1.0	"	"	"	1247	1248	1249	1250	1251	1252	"	.055	.55	"	.55	8.4	2.10
1.2	"	"	"	1253	1254	1255	1256	1257	1258	"	.066	.66	"	.66	7.2	2.15
1.5	"	0.400(10.16)	"	1259	1260	1261	1262	1263	1264	"	.082	.83	"	.83	5.8	2.17
1.8	"	"	"	1265	1266	1267	1268	1269	1270	"	.099	.99	"	.99	4.8	2.20
2.0	"	"	"	1271	1272	1273	1274	1275	1276	"	.110	1.10	"	1.10	4.4	"
2.2	"	"	"	1277	1278	1279	1280	1281	1282	"	.12	1.21	"	1.21	4.0	"
2.7	1.063(27.00)	"	1.263(32.08)	1385	1386	1387	1388	1389	1390	"	.15	1.49	"	1.49	3.3	"

See footnotes at end of table.

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

CRS01 - 30 volts (dc rating)																		
Capacitance value (in μ F)	Dimensions $\frac{1}{0}$ (in inches with mm in parentheses)		Dash number										AC ratings (for sinusoidal operation $\frac{2}{-65^\circ\text{C to }+100^\circ\text{C}}$)					
	L	D	Capacitance tolerance value (in %)										0 to .4 KHz		At 4 KHz		At 40 KHz	
	+ .030 (0.76)	+ .020 (0.51)	±0.25 ±0.5 ±1.0 ±2.0 ±5.0 ±10.0										Volts	Current (in A)	Volts	Current (in A)	Volts	Current (in A)
3.0	1.063 (27.00)	0.400 (10.16)	1.263 (32.08)	1289	1290	1291	1292	1293	1294	22.0	.17	22.0	1.65	2.9	2.20			
3.3	1.063 (27.00)	"	1.263 (32.08)	1295	1296	1297	1298	1299	1300	"	.18	"	1.82	2.7	"			
3.9	1.375 (34.93)	"	1.575 (40.01)	1301	1302	1303	1304	1305	1306	"	.21	"	2.14	2.3	"			
4.7	"	0.500 (12.70)	"	1313	1314	1315	1316	1317	1318	"	.26	18.7	2.20	1.9	"			
5.0	"	"	"	1319	1320	1321	1322	1323	1324	"	.28	17.6	"	1.8	"			
5.6	"	"	"	1325	1326	1327	1328	1329	1330	"	.31	15.7	"	1.6	"			
6.8	"	0.562 (14.27)	"	1331	1332	1333	1334	1335	1336	"	.37	13.0	"	1.3	"			
8.0	"	"	"	1337	1338	1339	1340	1341	1342	"	.44	11.0	"	1.1	"			
8.2	"	"	"	1343	1344	1345	1346	1347	1348	"	.45	10.7	"	1.1	"			
10.0	"	"	"	1349	1350	1351	1352	1353	1354	"	.55	8.8	"	.88	"			
12.0	1.875 (47.63)	"	2.075 (52.71)	1379	1380	1381	1382	1383	1384	"	.66	7.3	"	.73	"			
15.0	"	"	"	1355	1356	1357	1358	1359	1360	"	.83	5.9	"	.59	"			
20.0	"	0.670 (17.02)	"	1361	1362	1363	1364	1365	1366	"	1.10	4.4	"	.44	"			
22.0	"	0.670 (17.02)	"	1367	1368	1369	1370	1371	1372	"	1.21	4.0	"	.40	"			

See footnotes at end of table.

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

CRS02 - 50 volts (dc rating)															
Capacitance value (in μF)	Dimensions $\frac{1}{2}$ (in inches with mm in parentheses)		Dash number				AC ratings (for sinusoidal operation $\frac{2}{2}$ from -65°C to +100°C)								
	L +.030(0.76) -.000	D +.020(0.51) -.000	G (max)	Capacitance tolerance value (in %)		0 to .4 KHz		At 4 KHz		At 40 KHz					
				+0.25	+0.5	+1.0	+2.0	+5.0	+10.0	Volts	Current (in A)	Volts	Current (in A)		
0.05	0.687(17.45)	0.170(4.32)	0.887(22.53)	2145	2146	2147	2148	2149	2150	36.0	.005	36.0	.045	36.0	.45
0.056	"	0.193(4.90)	"	2151	2152	2153	2154	2155	2156	"	.005	"	.050	36.0	.50
0.068	"	"	"	2157	2158	2159	2160	2161	2162	"	.006	"	.061	34.0	.58
0.082	0.813(20.65)	"	1.013(25.73)	2163	2164	2165	2166	2167	2168	"	.007	"	.074	32.0	.66
0.1	0.813(20.65)	"	1.013(25.73)	2169	2170	2171	2172	2173	2174	"	.009	"	.090	30.0	.75
0.12	0.687(17.45)	0.235(5.97)	0.887(22.53)	2175	2176	2177	2178	2179	2180	"	.011	"	.11	30.0	.90
0.15	0.687(17.45)	"	0.887(22.53)	2181	2182	2183	2184	2185	2186	"	.013	"	.14	26.0	.98
0.18	0.813(20.65)	"	1.013(25.73)	2187	2188	2189	2190	2191	2192	"	.016	"	.16	25.0	1.13
0.20	"	"	"	2193	2194	2195	2196	2197	2198	"	.018	"	.18	24.0	1.20
0.22	"	"	"	2199	2200	2201	2202	2203	2204	"	.020	"	.20	23.0	1.27
0.27	0.687(17.45)	0.312(7.92)	0.887(22.53)	2205	2206	2207	2208	2209	2210	"	.024	"	.24	19.0	1.28
0.33	0.687(17.45)	"	0.887(22.53)	2211	2212	2213	2214	2215	2216	"	.030	"	.30	18.0	1.48
0.39	0.813(20.65)	"	1.013(25.73)	2217	2218	2219	2220	2221	2222	"	.035	"	.35	17.0	1.66
0.47	"	"	"	2223	2224	2225	2226	2227	2228	"	.042	"	.42	15.7	1.85
0.50	"	"	"	2229	2230	2231	2232	2233	2234	"	.045	"	.45	15.2	1.90
0.56	"	0.400(10.16)	"	2235	2236	2237	2238	2239	2240	"	.050	"	.50	14.4	2.01
0.68	"	"	"	2241	2242	2243	2244	2245	2246	"	.061	"	.61	14.0	2.38
0.82	1.063(27.00)	"	1.263(32.08)	2247	2248	2249	2250	2251	2252	"	.074	"	.74	12.0	2.46
1.0	"	"	"	2253	2254	2255	2256	2257	2258	"	.090	"	.90	10.0	2.50
1.2	"	"	"	2259	2260	2261	2262	2263	2264	"	.11	"	1.08	9.1	2.73
1.5	"	"	"	2265	2266	2267	2268	2269	2270	"	.14	"	1.35	7.7	2.90
1.8	"	"	"	2271	2272	2273	2274	2275	2276	"	.16	"	1.62	6.6	3.00
2.0	1.125(28.58)	0.500(12.70)	1.325(33.66)	2277	2278	2279	2280	2281	2282	"	.18	"	1.80	6.2	3.10
2.2	1.125(28.58)	0.500(12.70)	1.325(33.66)	2383	2384	2385	2386	2387	2388	"	.20	"	1.98	5.8	3.20

See footnotes at end of table.

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

CRS02 - 50 volts (dc rating)																	
Capacitance value (nom) (in μF)	Dimensions $\frac{L}{D}$ (in inches with mm in parentheses)		G (max)	Dash number								AC ratings (for sinusoidal operation $\frac{2}{}$ from -65 C to +100 C)					
	+0.030(0.76)	+0.020(0.51)		Capacitance tolerance value (in %) $\pm 5.0 \pm 10.0$								0 to .4 KHz		At 4 KHz		At 40 KHz	
				± 0.25	± 0.5	± 1.0	± 2.0	± 5.0	± 10.0	Volts	Current (in A)	Volts	Current (in A)	Volts	Current (in A)		
2.7	1.375(34.93)	0.500(12.70)	1.575(40.01)	2289	2290	2291	2292	2293	2294	2294	36.0	.24	36.0	2.43	5.0	3.34	
3.0	"	"	"	2295	2296	2297	2298	2299	2300	2300	"	.27	"	2.70	4.5	3.40	
3.3	"	"	"	2301	2302	2303	2304	2305	2306	2306	"	.30	"	2.97	4.2	3.50	
3.9	"	0.562(14.27)	"	2307	2308	2309	2310	2311	2312	2312	"	.35	"	3.51	3.7	3.60	
4.7	"	0.670(17.02)	"	2319	2320	2321	2322	2323	2324	2324	"	.42	31.0	3.60	3.1	"	
5.0	"	"	"	2325	2326	2327	2328	2329	2330	2330	"	.45	29.0	"	2.9	"	
5.6	"	"	"	2331	2332	2333	2334	2335	2336	2336	"	.50	26.0	"	2.6	"	
6.8	1.875(47.63)	"	2.075(52.71)	2337	2338	2339	2340	2341	2342	2342	"	.61	21.2	"	2.1	"	
8.0	"	"	"	2343	2344	2345	2346	2347	2348	2348	"	.72	18.0	"	1.8	"	
8.2	"	"	"	2349	2350	2351	2352	2353	2354	2354	"	.74	17.6	"	1.8	"	
10.0	"	"	"	2355	2356	2357	2358	2359	2360	2360	"	.90	14.4	"	1.4	"	

See footnotes at end of table.

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

CRS03 - 100 volts (dc rating)																					
Capacitance value (nom) (in μF)	Dimensions ^{1/} (in inches with mm in parentheses)		G (max)	Dash number								AC ratings (for sinusoidal operation ^{2/} from -65°C to +100°C)									
	L	D		Capacitance tolerance value (in %) ± 10.0								0 to .4 KHz		At 4 KHz		At 40 KHz					
	+0.030(0.76)	+0.020(0.51)										Volts	Current (in A)	Volts	Current (in A)	Volts	Current (in A)				
0.001	0.500(12.70)	0.170(4.32)	0.700(17.78)	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012	60.0	.001	60.0	.002	60.0	.015
0.0012	"	"	"	3013	3014	3015	3016	3017	3018	3019	3020	3021	3022	3023	3024	"	"	"	"	"	.018
0.0015	"	"	"	3025	3026	3027	3028	3029	3030	3031	3032	3033	3034	3035	3036	"	"	"	"	"	.022
0.0018	"	"	"	3037	3038	3039	3040	3041	3042	3043	3044	3045	3046	3047	3048	"	"	"	"	"	.027
0.002	"	"	"	3049	3050	3051	3052	3053	3054	3055	3056	3057	3058	3059	3060	"	"	"	"	"	.030
0.0022	"	"	"	3061	3062	3063	3064	3065	3066	3067	3068	3069	3070	3071	3072	"	"	"	"	"	.033
0.0027	"	"	"	3073	3074	3075	3076	3077	3078	3079	3080	3081	3082	3083	3084	"	"	"	"	"	.041
0.0033	"	"	"	3085	3086	3087	3088	3089	3090	3091	3092	3093	3094	3095	3096	"	"	"	"	"	.050
0.0039	"	"	"	3097	3098	3099	3100	3101	3102	3103	3104	3105	3106	3107	3108	"	"	"	"	"	.058
0.0047	"	"	"	3109	3110	3111	3112	3113	3114	3115	3116	3117	3118	3119	3120	"	"	"	"	"	.071
0.005	"	"	"	3121	3122	3123	3124	3125	3126	3127	3128	3129	3130	3131	3132	"	"	"	"	"	.075
0.0056	"	"	"	3133	3134	3135	3136	3137	3138	3139	3140	3141	3142	3143	3144	"	"	"	"	"	.084
0.0068	0.562(14.27)	"	0.762(19.35)	3073	3074	3075	3076	3077	3078	3079	3080	3081	3082	3083	3084	"	"	"	"	"	.10
0.0082	0.562(14.27)	"	0.762(19.35)	3079	3080	3081	3082	3083	3084	3085	3086	3087	3088	3089	3090	"	"	"	"	"	.12
0.01	0.687(17.45)	"	0.887(22.53)	3085	3086	3087	3088	3089	3090	3091	3092	3093	3094	3095	3096	"	"	"	"	"	.15
0.012	"	"	"	3091	3092	3093	3094	3095	3096	3097	3098	3099	3100	3101	3102	"	"	"	"	"	.18
0.015	"	"	"	3097	3098	3099	3100	3101	3102	3103	3104	3105	3106	3107	3108	"	"	"	"	"	.10
0.018	"	0.193(4.90)	"	3103	3104	3105	3106	3107	3108	3109	3110	3111	3112	3113	3114	"	"	"	"	"	.22
0.02	"	"	"	3109	3110	3111	3112	3113	3114	3115	3116	3117	3118	3119	3120	"	"	"	"	"	.26
0.022	"	"	"	3115	3116	3117	3118	3119	3120	3121	3122	3123	3124	3125	3126	"	"	"	"	"	.28
0.027	"	"	"	3121	3122	3123	3124	3125	3126	3127	3128	3129	3130	3131	3132	"	"	"	"	"	.29
0.033	"	"	"	3127	3128	3129	3130	3131	3132	3133	3134	3135	3136	3137	3138	"	"	"	"	"	.34
0.039	"	0.235(5.97)	"	3133	3134	3135	3136	3137	3138	3139	3140	3141	3142	3143	3144	"	"	"	"	"	.41
0.047	"	0.235(5.97)	"	3139	3140	3141	3142	3143	3144	3145	3146	3147	3148	3149	3150	"	"	"	"	"	.47

See footnotes at end of table.

MIL-C-83421/3

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

CRS03 - 100 volts (dc rating)															
Capacitance value (in μ F)	Dimensions $\frac{1}{D}$ (in inches with mm in parentheses)		Dash number				AC ratings (for sinusoidal operation $\frac{2}{C}$ from -65 C to +100 C)								
	+0.030(0.76)	+0.020(0.51) -0.000	G (max)	Capacitance tolerance value (in %)		At 4 KHz		At 40 KHz		Volts	Current (in A)	Volts	Current (in A)		
				± 0.25	± 1.0	± 2.0	± 5.0	0 to .4 KHz	At 4 KHz						
0.050	0.687(17.45)	0.235(5.97)	0.887(22.53)	3145	3146	3147	3148	3149	3150	60.0	.008	60.0	.075	46.0	.58
0.056	0.687(17.45)	"	0.887(22.53)	3151	3152	3153	3154	3155	3156	"	.008	"	.084	46.0	.64
0.068	0.813(20.65)	"	1.013(25.73)	3157	3158	3159	3160	3161	3162	"	.010	"	.10	42.0	.71
0.082	0.687(17.45)	0.312(7.92)	0.887(22.53)	3163	3164	3165	3166	3167	3168	"	.012	"	.12	38.0	.78
0.10	"	"	"	3169	3170	3171	3172	3173	3174	"	.015	"	.15	36.0	.90
0.12	"	"	"	3175	3176	3177	3178	3179	3180	"	.018	"	.18	35.0	1.05
0.15	0.813(20.65)	"	1.013(25.73)	3181	3182	3183	3184	3185	3186	"	.022	"	.23	33.0	1.24
0.18	"	"	"	3187	3188	3189	3190	3191	3192	"	.027	"	.27	31.0	1.40
0.20	"	"	"	3193	3194	3195	3196	3197	3198	"	.030	"	.30	30.0	1.50
0.22	"	"	"	3199	3200	3201	3202	3203	3204	"	.033	"	.33	27.0	1.50
0.27	1.063(27.00)	"	1.263(32.08)	3205	3206	3207	3208	3209	3210	"	.041	"	.41	24.0	1.62
0.33	"	"	"	3211	3212	3213	3214	3215	3216	"	.050	"	.50	23.0	1.90
0.39	"	0.400(10.16)	"	3217	3218	3219	3220	3221	3222	"	.058	"	.59	22.0	2.15
0.47	"	"	"	3223	3224	3225	3226	3227	3228	"	.071	"	.71	21.0	2.47
0.5	"	"	"	3229	3230	3231	3232	3233	3234	"	.075	"	.75	20.0	2.50
0.56	"	"	"	3235	3236	3237	3238	3239	3240	"	.084	"	.84	19.0	2.64
0.68	1.125(28.58)	0.500(12.70)	1.325(33.66)	3241	3242	3243	3244	3245	3246	"	.10	"	1.02	16.0	2.72
0.82	"	0.500(12.70)	"	3247	3248	3249	3250	3251	3252	"	.12	"	1.23	15.0	2.87
1.00	"	0.562(14.27)	"	3253	3254	3255	3256	3257	3258	"	.15	"	1.50	12.0	3.00
1.20	"	"	"	3259	3260	3261	3262	3263	3264	"	.18	"	1.80	11.0	3.25
1.5	1.375(34.93)	"	1.575(40.01)	3265	3266	3267	3268	3269	3270	"	.23	"	2.26	10.0	3.75
2.0	"	0.670(17.02)	"	3271	3272	3273	3274	3275	3276	"	.30	"	3.00	8.1	4.10
2.2	"	"	"	3277	3278	3279	3280	3281	3282	"	.33	"	3.31	7.5	4.12
2.7	1.875(47.63)	"	2.075(52.71)	3283	3284	3285	3286	3287	3288	"	.41	"	4.05	6.5	4.40

See footnotes at end of table.

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

CRS03 - 100 volts (dc rating)															
Capacitance value (nom) (in μ F)	Dimensions 1/ (in inches with mm in parentheses)		G (max)	Dash number				AC ratings (for sinusoidal operation 2/ from -65 C to +100 C)							
	L	D		Capacitance tolerance value (in %)				0 to .4 KHZ		At 4 KHZ		At 40 KHZ			
	+ .030(0.76) - .020(0.51)			± 0.25 ± 0.5 ± 1.0 ± 2.0 ± 5.0 ± 10.0				Volts	Current (in A)	Volts	Current (in A)	Volts	Current (in A)		
3.0	1.875(47.63)	0.670(17.02)	2.075(52.71)	3289	3290	3291	3292	3293	3294	60.0	.45	60.0	4.51	6.0	4.51
3.3	"	0.670(17.02)	"	3295	3296	3297	3298	3299	3300	"	.50	55.0	4.73	5.5	4.55
3.9	"	0.750(19.05)	"	3301	3302	3303	3304	3305	3306	"	.59	49.0	4.90	5.0	4.90
4.7	"	"	"	3313	3314	3315	3316	3317	3318	"	.71	43.0	5.00	4.3	5.00
5.0	"	"	"	3319	3320	3321	3322	3323	3324	"	.75	40.0	"	4.0	"
5.6	"	"	"	3325	3326	3327	3328	3329	3330	"	.84	36.0	"	3.6	"
6.8	2.375(60.33)	1.000(25.40)	2.575(65.41)	3331	3332	3333	3334	3335	3336	"	1.02	29.0	"	3.0	"
8.0	"	"	"	3337	3338	3339	3340	3341	3342	"	1.20	25.0	"	2.5	"
8.2	"	"	"	3343	3344	3345	3346	3347	3348	"	1.23	24.4	"	2.4	"
10.0	"	"	"	3349	3350	3351	3352	3353	3354	"	1.50	20.0	"	2.0	"

See footnotes at end of table.

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

CRS04 - 200 volts (dc rating)																	
Capacitance value (nom) (in μF)	Dimensions $\frac{1}{D}$ (in inches with mm in parentheses)		Dash number								AC ratings (for sinusoidal operation $\frac{2}{}$ from -65 C to +100 C)						
	L + .030(0.76) - .000	D + .020(0.51) - .000	G (max)	Capacitance tolerance value (in %)								0 to .4 KHz		At 4 KHz		At 40 KHz	
				± 0.25	± 0.5	± 1.0	± 2.0	± 5.0	± 10.0	Volts	Current (in A)	Volts	Current (in A)	Volts	Current (in A)		
0.001	0.562(14.27)	0.170(4.32)	0.762(19.35)	4001	4002	4003	4004	4005	4006	120.0	.001	120.0	.003	80.0	.020		
0.0012	"	"	"	4007	4008	4009	4010	4011	4012	"	"	"	.004	"	.024		
0.0015	"	"	"	4013	4014	4015	4016	4017	4018	"	"	"	.004	"	.030		
0.0018	"	"	"	4019	4020	4021	4022	4023	4024	"	"	"	.005	"	.036		
0.002	"	"	"	4025	4026	4027	4028	4029	4030	"	"	"	.006	"	.040		
0.0022	"	"	"	4031	4032	4033	4034	4035	4036	"	"	"	.007	"	.044		
0.0027	"	"	"	4037	4038	4039	4040	4041	4042	"	"	"	.008	"	.054		
0.0033	"	"	"	4043	4044	4045	4046	4047	4048	"	"	"	.010	"	.066		
0.0039	"	"	"	4049	4050	4051	4052	4053	4054	"	"	"	.012	"	.078		
0.0047	"	"	"	4055	4056	4057	4058	4059	4060	"	"	"	.014	"	.094		
0.005	"	"	"	4061	4062	4063	4064	4065	4066	"	.002	"	.015	"	.10		
0.0056	"	"	"	4067	4068	4069	4070	4071	4072	"	"	"	.017	"	.11		
0.0068	"	"	"	4073	4074	4075	4076	4077	4078	"	"	"	.020	"	.14		
0.0082	"	0.193(4.90)	"	4079	4080	4081	4082	4083	4084	"	"	"	.025	"	.16		
0.01	"	"	"	4085	4086	4087	4088	4089	4090	"	.003	"	.030	"	.20		
0.012	"	"	"	4091	4092	4093	4094	4095	4096	"	.004	"	.036	78.0	.23		
0.015	"	0.235(5.97)	"	4097	4098	4099	4100	4101	4102	"	"	"	.045	76.0	.29		
0.018	0.687(17.45)	"	0.887(22.53)	4103	4104	4105	4106	4107	4108	"	.005	"	.054	74.0	.33		
0.02	"	"	"	4109	4110	4111	4112	4113	4114	"	.006	"	.060	71.0	.36		
0.022	"	"	"	4115	4116	4117	4118	4119	4120	"	.007	"	.066	68.0	.37		
0.027	"	0.312(7.92)	"	4121	4122	4123	4124	4125	4126	"	.008	"	.081	65.0	.44		
0.033	"	"	"	4127	4128	4129	4130	4131	4132	"	.010	"	.099	62.0	.51		
0.039	"	"	"	4133	4134	4135	4136	4137	4138	"	.012	"	.12	60.0	.59		
0.047	"	"	"	4139	4140	4141	4142	4143	4144	"	.014	"	.14	57.0	.67		

See footnotes at end of table.

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

CRS04 - 200 volts (dc rating)																	
Capacitance value (in μ F)	Dimensions L/ (in inches with mm in parentheses)		G (max)	Dash number								AC ratings (for sinusoidal operation 2/ from -65 C to +100 C)					
	L	D		Capacitance tolerance value (in %)								0 to .4 KHz		At 4 KHz		At 40 KHz	
	+ .030(0.76)	+ .020(0.51)		± 0.25 ± 0.5 ± 1.0 ± 2.0 ± 5.0 ± 10.0								Volts	Current (in A)	Volts	Current (in A)	Volts	Current (in A)
0.05	0.687(17.45)	0.312(7.92)	0.887(22.53)	4145	4146	4147	4148	4149	4150	4150	120.0	.015	120.0	.15	56.0	.70	
0.056	0.813(20.65)	"	1.013(25.73)	4151	4152	4153	4154	4155	4156	"	"	.017	"	.17	56.0	.78	
0.068	"	"	"	4157	4158	4159	4160	4161	4162	"	"	.020	"	.20	50.0	.85	
0.082	"	"	"	4163	4164	4165	4166	4167	4168	"	"	.025	"	.25	44.0	.90	
0.10	"	"	"	4169	4170	4171	4172	4173	4174	"	"	.030	"	.30	42.0	1.10	
0.12	"	"	"	4175	4176	4177	4178	4179	4180	"	"	.036	"	.36	40.0	1.20	
0.15	1.063(27.00)	0.400(10.16)	1.253(32.08)	4181	4182	4183	4184	4185	4186	"	"	.045	"	.45	36.0	1.34	
0.18	1.375(34.93)	"	1.575(40.01)	4187	4188	4189	4190	4191	4192	"	"	.054	"	.54	34.0	1.54	
0.20	"	"	"	4193	4194	4195	4196	4197	4198	"	"	.060	"	.60	33.0	1.65	
0.22	"	"	"	4199	4200	4201	4202	4203	4204	"	"	.066	"	.66	32.0	1.76	
0.27	"	0.500(12.70)	"	4205	4206	4207	4208	4209	4210	"	"	.081	"	.81	29.0	1.96	
0.33	"	"	"	4211	4212	4213	4214	4215	4216	"	"	.099	"	.99	28.0	2.31	
0.39	"	"	"	4217	4218	4219	4220	4221	4222	"	"	.12	"	1.17	27.0	2.63	
0.47	"	"	"	4223	4224	4225	4226	4227	4228	"	"	.14	"	1.41	26.0	3.06	
0.5	"	"	"	4229	4230	4231	4232	4233	4234	"	"	.15	"	1.50	25.0	3.13	
0.56	"	"	"	4235	4236	4237	4238	4239	4240	"	"	.17	"	1.61	23.0	3.17	
0.68	1.875(47.63)	0.562(14.27)	2.075(52.71)	4241	4242	4243	4244	4245	4246	"	"	.20	"	1.87	20.0	3.40	
0.82	"	"	"	4247	4248	4249	4250	4251	4252	"	"	.25	"	2.05	18.0	3.70	
1.0	"	"	"	4253	4254	4255	4256	4257	4258	"	"	.30	"	2.25	15.0	3.75	
1.2	"	"	"	4259	4260	4261	4262	4263	4264	"	"	.36	"	2.61	13.5	4.05	
1.5	"	0.670(17.02)	"	4265	4266	4267	4268	4269	4270	"	"	.45	"	3.20	12.0	4.50	
1.8	"	0.750(19.05)	"	4271	4272	4273	4274	4275	4276	"	"	.54	110.0	3.74	11.0	5.00	
2.0	"	0.750(19.05)	"	4277	4278	4279	4280	4281	4283	"	"	.60	100.0	4.05	10.0	5.00	

See footnotes at end of table.

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

CRS04 - 200 volts (dc rating)															
Capacitance value (in μF)	Dimensions $\frac{1}{2}$ (in inches with mm in parentheses)		Dash number				AC ratings (for sinusoidal operation $\frac{2}{2}$ from -65°C to +100°C)								
	L	D	Capacitance tolerance value (in %)		Dash number		0 to 4 KHz		At 4 KHz		At 40 KHz				
	+0.030(0.76)	+0.020(0.51)	G (max)	± 0.25	± 0.5	± 1.0	± 2.0	± 5.0	± 10.0	Volts	Current (in A)	Volts	Current (in A)		
2.2	1.875(47.63)	0.750(19.05)	2.075(52.71)	4283	4284	4285	4286	4287	4288	120.0	.66	90.5	4.20	9.1	5.00
2.5	"	"	"	4289	4290	4291	4292	4293	4294	"	.75	80.0	4.31	8.0	5.00
2.7	"	"	"	4295	4296	4297	4298	4299	4300	"	.81	77.0	4.60	7.7	5.20
3.0	"	1.000(25.40)	"	4301	4302	4303	4304	4305	4306	"	.90	70.0	5.04	7.0	5.27
3.3	"	"	"	4307	4308	4309	4310	4311	4312	"	.99	65.0	5.21	6.5	5.36
3.9	2.375(60.33)	"	2.575(65.41)	4313	4314	4315	4316	4317	4318	"	1.20	55.0	5.39	5.5	5.40

See footnotes at end of table.

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

CR505 - 400 volts (dc rating)																	
Capacitance value (in μF)	Dimensions 1/ (in inches with mm in parentheses)		Dash number								AC ratings (for sinusoidal operation 2/ from -65 C to +100 C)						
	L +0.30(0.76)	D +0.20(0.51) -0.000	G (max)	Capacitance tolerance value (in %)								0 to .4 KHz		At 4 KHz		At 40 KHz	
				± 0.25	± 0.5	± 1.0	± 2.0	± 5.0	± 10.0	Volts	Current (in A)	Volts	Current (in A)	Volts	Current (in A)		
0.001	0.562(14.27)	"	0.193(4.90)	0.762(19.35)	5001	5002	5003	5004	5005	5006	240.0	0.001	240.0	0.006	100.0	.025	
0.0012	"	"	"	"	5007	5008	5009	5010	5011	5012	"	"	"	0.007	"	.030	
0.0015	"	"	"	"	5013	5014	5015	5016	5017	5018	"	"	"	0.009	"	.037	
0.0018	"	"	"	"	5019	5020	5021	5022	5023	5024	"	"	"	0.011	"	.045	
0.002	"	"	"	"	5025	5026	5027	5028	5029	5030	"	"	"	0.012	"	.050	
0.0022	"	"	"	"	5031	5032	5033	5034	5035	5036	"	"	"	0.013	"	.055	
0.0027	"	"	0.235(5.97)	"	5037	5038	5039	5040	5041	5042	"	0.002	"	0.016	"	.068	
0.0033	"	"	"	"	5043	5044	5045	5046	5047	5048	"	"	"	0.020	"	.083	
0.0039	"	"	"	"	5049	5050	5051	5052	5053	5054	"	"	"	0.023	"	.097	
0.0047	"	"	"	"	5055	5056	5057	5058	5059	5060	"	"	"	0.028	"	.12	
0.005	"	"	"	"	5061	5062	5063	5064	5065	5066	"	"	"	0.030	"	.13	
0.0056	"	"	"	"	5067	5068	5069	5070	5071	5072	"	"	"	0.034	"	.14	
0.0068	0.687(17.45)	"	"	0.887(22.53)	5073	5074	5075	5076	5077	5078	"	0.004	"	0.041	"	.17	
0.0082	"	"	"	"	5079	5080	5081	5082	5083	5084	"	0.005	"	0.049	"	.21	
0.01	"	"	"	"	5085	5086	5087	5088	5089	5090	"	0.006	"	0.060	"	.25	
0.012	"	"	"	"	5091	5092	5093	5094	5095	5096	"	0.007	"	0.072	"	.30	
0.015	0.813(20.65)	"	"	1.013(25.73)	5097	5098	5099	5100	5101	5102	"	0.009	"	0.090	94.0	.35	
0.018	"	"	0.312(7.92)	"	5103	5104	5105	5106	5107	5108	"	0.011	"	0.11	90.0	.52	
0.02	"	"	"	"	5271	5272	5273	5274	5275	5276	"	0.012	"	0.12	88.0	.44	
0.022	"	"	"	"	5109	5110	5111	5112	5113	5114	"	0.013	"	0.13	85.0	.47	
0.027	"	"	"	"	5115	5116	5117	5118	5119	5120	"	0.016	"	0.16	81.0	.55	
0.033	"	"	"	"	5121	5122	5123	5124	5125	5126	"	0.020	"	0.20	78.0	.65	
0.039	"	"	"	"	5127	5128	5129	5130	5131	5132	"	0.023	"	0.23	75.0	.73	
0.047	"	"	0.400(10.16)	"	5133	5134	5135	5136	5137	5138	"	0.028	"	0.28	71.0	.83	

See footnotes at end of table.

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

CRS05 - 400 volts (dc rating)																			
Capacitance value (nom) (in μF)	Dimensions 1/ (in inches with mm in parentheses)		G (max)	Dash number										AC ratings (for sinusoidal operation 2/ from -65°C to $+100^\circ\text{C}$)					
	L	D		Capacitance tolerance value (in %)										0 to .4 KHz		At 4 KHz		At 40 KHz	
	+0.030(0.76)	+0.020(0.51)		-0.000	+0.25	+0.5	+1.0	+2.0	+5.0	+10.0	Volts	Current	Volts	Current	Volts	Current			
0.050	0.813(20.65)	0.400(10.16)	1.013(25.73)	5139	5140	5141	5142	5143	5144	240.0	0.30	240.0	0.30	70.0	0.88				
0.056	"	"	"	5145	5146	5147	5148	5149	5150	"	0.34	"	0.34	67.5	0.95				
0.068	"	"	"	5151	5152	5153	5154	5155	5156	"	0.41	"	0.41	60.0	1.02				
0.082	1.063(27.00)	"	1.263(32.08)	5157	5158	5159	5160	5161	5162	"	0.49	"	0.49	50.0	1.03				
0.10	"	"	"	5163	5164	5165	5166	5167	5168	"	0.60	"	0.60	46.0	1.20				
0.12	"	"	"	5169	5170	5171	5172	5173	5174	"	0.72	"	0.72	44.5	1.34				
0.15	1.375(34.93)	"	1.575(40.01)	5175	5176	5177	5178	5179	5180	"	0.90	"	0.90	40.0	1.50				
0.18	"	0.500(12.70)	"	5277	5278	5279	5280	5281	5282	"	1.1	"	1.1	38.0	1.70				
0.20	"	"	"	5181	5182	5183	5184	5185	5186	"	1.12	"	1.12	37.0	1.85				
0.22	"	"	"	5187	5188	5189	5190	5191	5192	"	1.13	"	1.13	35.0	1.93				
0.27	"	0.562(14.27)	"	5193	5194	5195	5196	5197	5198	"	1.16	"	1.16	33.0	2.24				
0.33	"	"	"	5199	5200	5201	5202	5203	5204	"	1.20	"	1.20	32.0	2.65				
0.39	1.875(47.63)	"	2.075(52.71)	5205	5206	5207	5208	5209	5210	"	1.23	"	1.23	32.0	3.14				
0.47	"	"	"	5211	5212	5213	5214	5215	5216	"	1.28	"	1.28	31.0	3.64				
0.50	"	"	"	5217	5218	5219	5220	5221	5222	"	1.30	"	1.30	30.0	3.75				
0.56	"	"	"	5223	5224	5225	5226	5227	5228	"	1.34	"	1.34	29.0	4.05				
0.68	"	0.750(19.05)	"	5229	5230	5231	5232	5233	5234	"	1.41	"	1.41	26.0	4.50				
0.82	"	"	"	5235	5236	5237	5238	5239	5240	"	1.49	"	1.49	23.4	4.80				
1.0	"	"	"	5241	5242	5243	5244	5245	5246	"	1.60	"	1.60	20.8	5.20				
1.2	"	1.000(25.40)	"	5247	5248	5249	5250	5251	5252	"	1.72	"	1.72	18.3	5.50				
1.5	2.375(60.33)	"	2.575(65.41)	5253	5254	5255	5256	5257	5258	"	1.90	"	1.90	16.0	6.00				
1.8	"	"	"	5259	5260	5261	5262	5263	5264	"	1.08	"	1.08	15.0	6.80				
2.0	"	"	"	5265	5266	5267	5268	5269	5270	"	1.20	"	1.20	14.0	7.00				

1/ L and D are bare case dimensions (see figure 1).

2/ For $+125^\circ\text{C}$ operation, linearly derate $+100^\circ\text{C}$ rating by 50 percent.

MIL-C-83421/3

REQUIREMENTS:

Parts supplied to this specification shall be qualified to "S" failure rate level of MIL-C-83421/1 and shall have passed subgroups 1 and 2 of group A inspection in MIL-C-83421. All parts shall be permanently serialized on the case prior to group A inspection of MIL-C-83421/3.

Reliability assurance program:

- a. Prior to granting of qualification approval, a baseline document in accordance with appendix A of MIL-C-87217 shall be prepared by the manufacturer and approved by the qualifying activity.
- b. Traceability of materials in accordance with MIL-STD-790 is required.
- c. An inspection lot shall consist of capacitors of the same style, voltage rating, design and nominal capacitance rating produced in the same case size. Manufacture of all parts in the lot shall have been started, processed, assembled, and tested as a group. Lot identity shall be maintained throughout the manufacturing cycle.

Design and construction: In accordance with MIL-C-83421/1.

Leads: In accordance with MIL-C-83421/1.

Terminal capacitance value: See table I.

Capacitance tolerance: See table I.

DC rated voltage: See tables I and II.

TABLE II. DC ratings.

Styles	Volts, DC
CRS01	30
CRS02	50
CRS03	100
CRS04	200
CRS05	400

Operating temperature: -65° to $+125^{\circ}\text{C}$ with derating in accordance with table I.

AC current ratings: See table I.

DC burn-in: 140 percent of dc rated voltage shall be applied for 48 hours minimum at $+100^{\circ}\text{C}$, $+4^{\circ}\text{C}$, -0°C .

AC burn-in: Rated ac current for 48 hours minimum at $+100^{\circ}$, $+4^{\circ}$, -0°C .

Thermal aging: In accordance with MIL-C-83421, 10 cycles with the following exception: -65°C to $+125^{\circ}\text{C}$.

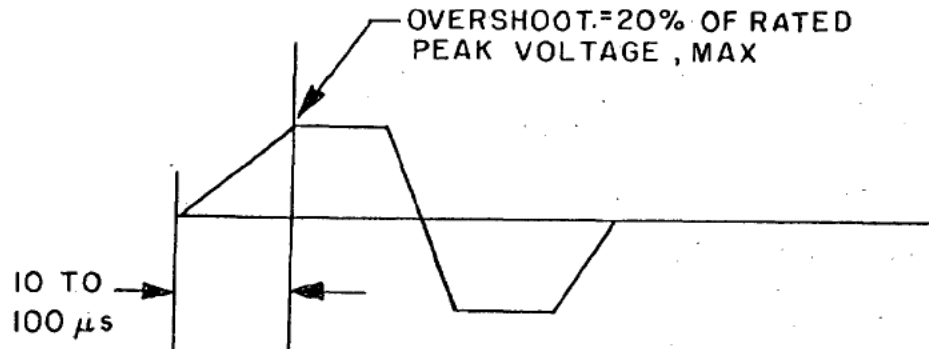
Thermal shock: Method 107 of MIL-STD-202, test condition B, 10 cycles with the following exception: -65°C to $+125^{\circ}\text{C}$.

Seal: Method 112 of MIL-STD-202, test condition C, procedure IIIa, followed by test condition D at $+125^{\circ}\text{C}$ leakage rate sensitivity to 10^{-6} atm cm^3/s .

MIL-C-83421/3

Dielectric withstanding voltage: Method 301 of MIL-STD-202, terminal to terminal.

AC: 100 Hz \pm 10 Hz square wave, peak-to-peak voltage, three times dc rated voltage for 60 to 90 seconds, not to exceed 800 Vp/p.



DC: 200 percent of dc rated voltage for 60 seconds minimum.

Insulation resistance: Method 302 of MIL-STD-202. Charge to rated voltage, for 5 minutes maximum; however for capacitance values greater than 1.0 μ F, an additional one minute per μ F is permitted.

Capacitance: Method 305 of MIL-STD-202. The following details shall apply:

- a. Test frequency: 1,000 Hz \pm 100 Hz.
- b. Limit of accuracy: \pm .05 percent.

Dissipation factor: The dissipation factor shall be measured at 1,000 Hz \pm 100 Hz for capacitors having a nominal capacitance of 1 μ F or less and 100 Hz \pm 10 Hz for capacitors having a nominal capacitance greater than 1 μ F. The limit shall be .15 percent maximum.

Test limits: For test limits of insulation resistance, dissipation factor, temperature coefficient, and dielectric absorption, the limits specified in MIL-C-83421/1 shall apply.

Radiographic inspection: In accordance with appendix B of MIL-C-87217.

Random vibration: MIL-STD-202, method 214. The following details shall apply:

- a. Mounting: Rigidly mounted by the body to the vibration-test apparatus; terminals shall be secured 0.500 \pm .125 inch from the case.
- b. Electrical load conditions: During the test, a dc potential equal to 50 percent of rated dc voltage shall be applied between the terminals of the capacitor.
- c. Test condition: II, letter K.
- d. Duration: Fifteen minutes in each of two mutually perpendicular directions, one parallel and the other perpendicular to the cylindrical axis.
- e. Measurements: In accordance with MIL-C-83421.

Quality conformance inspection: Group A inspection table shown herein replaces the one in the general specification.

MIL-C-83421/3

TABLE III. Group A inspection.

Inspection	Requirement paragraph	Test method paragraph	Number of sample units to be inspected	Number of defectives permitted
<u>Subgroup 1</u> <u>1/</u>				
DC burn-in	3.6	4.7.2	} (100% inspection)	
AC burn-in	3.6	4.7.2		
Thermal aging	3.7	4.7.3		
Seal	3.9	4.7.5		
Dielectric withstanding voltage	3.10	4.7.6		
Insulation resistance	3.11	4.7.7		
Capacitance	3.12	4.7.8		
Dissipation factor	3.13	4.7.9		
Radiographic inspection	<u>3/</u>	<u>3/</u>		
<u>2/</u>				
<u>Subgroup 2</u> <u>4/</u>				
Solderability	3.19	4.7.15	} 6	0
Random vibration	<u>5/</u>	<u>5/</u>		
<u>Subgroup 3</u>				
Visual and mechanical inspection:				
Physical dimensions	3.1	4.7.1	} 5	0
External	3.4, 3.5	4.7.1		
Marking	3.31	4.7.1		
Workmanship	3.32	4.7.1	13	0

1/ Percent defective allowable five percent, except ten percent for radiographic inspection and ten percent for seal test.

2/ This test can be done in any sequence within subgroup 1.

3/ Requirement and test method paragraphs in accordance with MIL-C-87217.

4/ Parts may not be shipped.

5/ Requirement and test method in accordance with MIL-C-83421/3.

Marking: In accordance with MIL-C-83421.

Part or Identifying Number (PIN): Consists of the basic number of this specification sheet with a dash number coded as shown in the following:

	M83421/03-	1	001
Specification sheet number _____			
Single digit designating style (i.e., 1 = CRS01; 2 = CRS02; 3 = CRS03); 4 = CRS04; and 5 = CRS05 _____			
Nonsignificant dash number from table I _____			

Packaging: Capacitors will be furnished in tape and reel packaging when so specified in the ordering data.

MIL-C-83421/3

CONCLUDING MATERIAL

Custodians:

Navy - EC
Air Force - 19
NASA - NA

Review activities:

Air Force - 17, 85
DLA - ES

User activities:

Navy - AS, CG, MC, OS, SH
Air Force - 11

Preparing activity:

NASA - NA

Agent:

DLA - ES

(Project 5910-1654-1)