

# +105°C Tubular Axial Lead Aluminum Capacitors

## M39018/03

- Styles CU16, CU17, CUR17

### **General Specifications-**

**Operating Temperature:**  
-55 to +105°C

**Voltage Range:**  
7 – 350 VDC

**Capacitance Range:**  
5.8μF to 12,000μF

**Capacitance Tolerance:**  
-10%/+30%  
-10%/+50%  
-10%/+75%

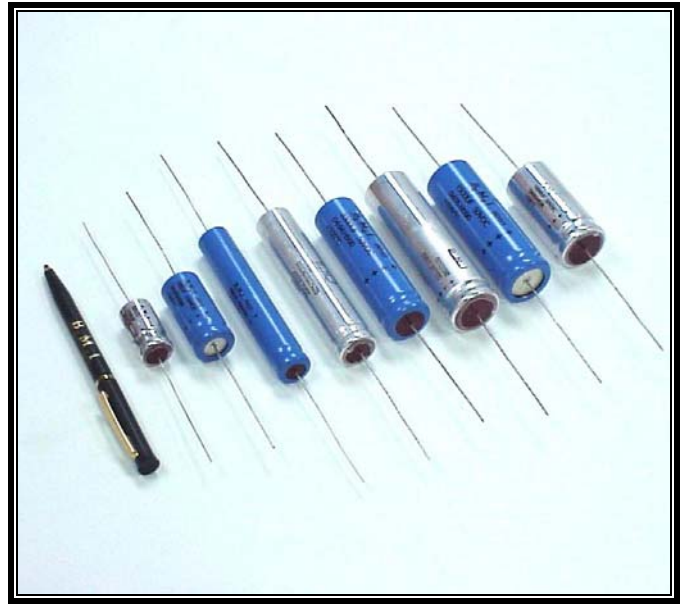
**Case Size Range:**  
0.625" X 1.125" – 1.000" X 3.625"

**Termination:**  
Axial Leads.

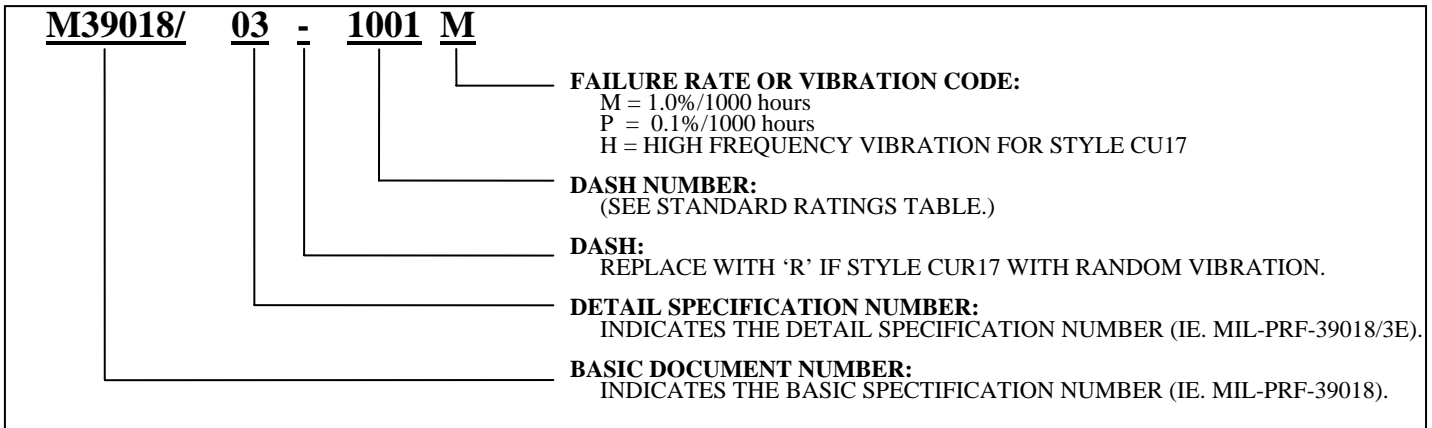
**Life Validation Test:**  
See MIL-PRF-39018/3E for test requirements.

**Shelf Test:**  
See MIL-PRF-39018/3E for test requirements.

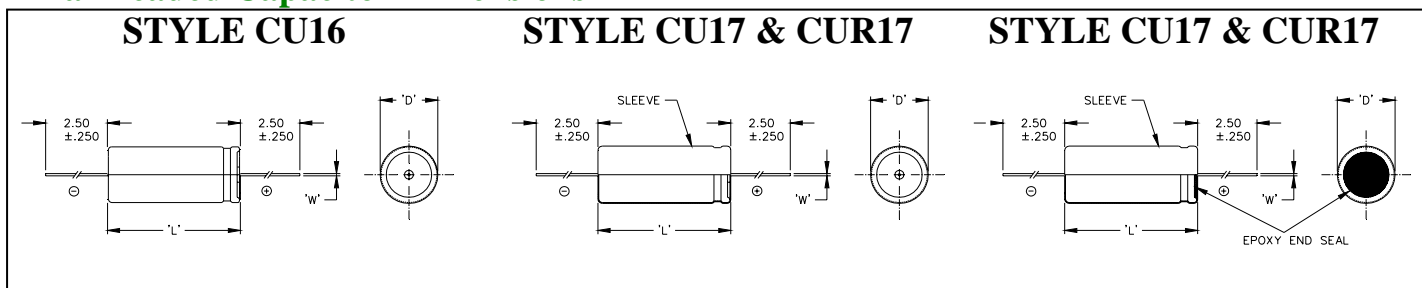
**Other Test Parameters:**  
See MIL-PRF-39018/3E for test requirements.



## PART NUMBER BREAK-DOWN:



## Axial-Leaded Capacitor Dimensions



**Table 1. Case Dimensions mm(in.)**

CASE CODE	CU16		CU17 & CUR17 (Sleeve Only)		CU17 & CUR17 (Epoxy & Sleeve)		WIRE GAUGE 'W'
	'D' ±0.4 (±0.015)	'L' NOMINAL	'D' MAX.	'L' ± 1.58 (±0.062)	'D' MAX.	'L' MAX.	
D1	15.88 (0.625)	28.58 (1.125)	16.46 (0.648)	30.20 (1.189)	16.46 (0.648)	33.73 (1.328)	No. 20 AWG (0.032")
D2	19.05 (0.750)	28.58 (1.125)	19.63 (0.773)	30.20 (1.189)	19.63 (0.773)	33.73 (1.328)	No. 18 AWG (0.040")
D3	22.23 (0.875)	28.58 (1.125)	22.81 (0.898)	30.20 (1.189)	22.81 (0.898)	33.73 (1.328)	No. 18 AWG (0.040")
D4	15.88 (0.625)	41.28 (1.625)	16.46 (0.648)	42.90 (1.689)	16.46 (0.648)	46.43 (1.828)	No. 20 AWG (0.032")
D5	19.05 (0.750)	41.28 (1.625)	19.63 (0.773)	42.90 (1.689)	19.63 (0.773)	46.43 (1.828)	No. 18 AWG (0.040")
D6	22.23 (0.875)	41.28 (1.625)	22.81 (0.898)	42.90 (1.689)	22.81 (0.898)	46.43 (1.828)	No. 18 AWG (0.040")
D7	25.40 (1.000)	41.28 (1.625)	25.98 (1.023)	42.90 (1.689)	25.98 (1.023)	46.43 (1.828)	No. 18 AWG (0.040")
E1	15.88 (0.625)	53.98 (2.125)	16.46 (0.648)	55.60 (2.189)	16.46 (0.648)	59.13 (2.328)	No. 20 AWG (0.032")
E2	19.05 (0.750)	53.98 (2.125)	19.63 (0.773)	55.60 (2.189)	19.63 (0.773)	59.13 (2.328)	No. 18 AWG (0.040")
E3	22.23 (0.875)	53.98 (2.125)	22.81 (0.898)	55.60 (2.189)	22.81 (0.898)	59.13 (2.328)	No. 18 AWG (0.040")
E4	25.40 (1.000)	53.98 (2.125)	25.98 (1.023)	55.60 (2.189)	25.98 (1.023)	59.13 (2.328)	No. 18 AWG (0.040")
E5	15.88 (0.625)	66.68 (2.625)	16.46 (0.648)	68.30 (2.689)	16.46 (0.648)	71.83 (2.828)	No. 20 AWG (0.032")
E6	19.05 (0.750)	66.68 (2.625)	19.63 (0.773)	68.30 (2.689)	19.63 (0.773)	71.83 (2.828)	No. 18 AWG (0.040")
E7	22.23 (0.875)	66.68 (2.625)	22.81 (0.898)	68.30 (2.689)	22.81 (0.898)	71.83 (2.828)	No. 18 AWG (0.040")
F1	25.40 (1.000)	66.68 (2.625)	25.98 (1.023)	68.30 (2.689)	25.98 (1.023)	71.83 (2.828)	No. 18 AWG (0.040")
F2	15.88 (0.625)	79.38 (3.125)	16.46 (0.648)	81.00 (3.189)	16.46 (0.648)	84.53 (3.328)	No. 20 AWG (0.032")
F3	22.23 (0.875)	79.38 (3.125)	22.81 (0.898)	81.00 (3.189)	22.81 (0.898)	84.53 (3.328)	No. 18 AWG (0.040")
F4	25.40 (1.000)	79.38 (3.125)	25.98 (1.023)	81.00 (3.189)	25.98 (1.023)	84.53 (3.328)	No. 18 AWG (0.040")
F5	19.05 (0.750)	92.08 (3.625)	19.63 (0.773)	93.70 (3.689)	19.63 (0.773)	97.23 (3.828)	No. 18 AWG (0.040")
F6	22.23 (0.875)	92.08 (3.625)	22.81 (0.898)	93.70 (3.689)	22.81 (0.898)	97.23 (3.828)	No. 18 AWG (0.040")
F7	25.40 (1.000)	92.08 (3.625)	25.98 (1.023)	93.70 (3.689)	25.98 (1.023)	97.23 (3.828)	No. 18 AWG (0.040")

## STANDARD RATINGS FOR TYPE M39018/03

Rated Cap. ( $\mu$ F)	Case Size	Max. ESR +25°C 120Hz ( $\Omega$ )	Max. Ripple Current +85°C 120Hz (Arms)	Dash Number											
				Capacitance Tolerance (%)											
				CU16			CU17			CUR17 (low freq. vibration)			CUR17 (high freq. vibration)		
				-10 +30	-10 +50	-10 +75	-10 +30	-10 +50	-10 +75	-10 +30	-10 +50	-10 +75	-10 +30	-10 +50	-10 +75
<b>7 VOLTS DC WORKING; 10 VOLTS DC SURGE</b>															
680	D1	0.78	0.489	0401	---	0501	0601	---	0701	1001-	---	1101-	1201-	---	1301-
1,000	D2	0.53	0.644	0402	---	0502	0602	---	0702	1002-	---	1102-	1202-	---	1302-
1,500	D4	0.35	0.885	0403	---	0503	0603	---	0703	1003-	---	1103-	1203-	---	1303-
2,200	E1	0.24	1.220	0404	---	0504	0604	---	0704	1004-	---	1104-	1204-	---	1304-
3,300	D6	0.16	1.520	0405	---	0505	0605	---	0705	1005-	---	1105-	1205-	---	1305-
4,700	D7	0.11	1.930	0406	---	0506	0606	---	0706	1006-	---	1106-	1206-	---	1306-
6,800	F5	0.08	2.930	0407	---	0507	0607	---	0707	1007-	---	1107-	1207-	---	1307-
10,000	F4	0.05	3.850	0408	---	0508	0608	---	0708	1008-	---	1108-	1208-	---	1308-
12,000	F7	0.04	4.510	0409	---	0509	0609	---	0709	1009-	---	1109-	1209-	---	1309-
<b>10 VOLTS DC WORKING; 15 VOLTS DC SURGE</b>															
470	D1	0.99	0.454	0410	---	0510	0610	---	0710	1010-	---	1110-	1210-	---	1310-
1,000	D4	0.46	0.807	0411	---	0511	0611	---	0711	1011-	---	1111-	1211-	---	1311-
1,500	E1	0.31	1.130	0412	---	0512	0612	---	0712	1012-	---	1112-	1212-	---	1312-
2,200	D6	0.21	1.390	0413	---	0513	0613	---	0713	1013-	---	1113-	1213-	---	1313-
3,300	E3	0.14	1.950	0414	---	0514	0614	---	0714	1014-	---	1114-	1214-	---	1314-
4,700	F5	0.10	2.750	0415	---	0515	0615	---	0715	1015-	---	1115-	1215-	---	1315-
6,800	F6	0.07	3.570	0416	---	0516	0616	---	0716	1016-	---	1116-	1216-	---	1316-
8,200	F7	0.06	4.180	0417	---	0517	0617	---	0717	1017-	---	1117-	1217-	---	1317-
<b>15 VOLTS DC WORKING; 20 VOLTS DC SURGE</b>															
390	D1	0.85	0.478	0418	---	0518	0618	---	0718	1018-	---	1118-	1218-	---	1318-
680	D2	0.49	0.689	0419	---	0519	0619	---	0719	1019-	---	1119-	1219-	---	1319-
1,000	E1	0.33	1.060	0420	---	0520	0620	---	0720	1020-	---	1120-	1220-	---	1320-
1,500	E2	0.22	1.42	0421	---	0521	0621	---	0721	1021-	---	1121-	1221-	---	1321-
2,200	E6	0.15	1.89	0422	---	0522	0622	---	0722	1022-	---	1122-	1222-	---	1322-
3,300	E4	0.10	2.380	0423	---	0523	0623	---	0723	1023-	---	1123-	1223-	---	1323-
4,700	F6	0.07	3.420	0424	---	0524	0624	---	0724	1024-	---	1124-	1224-	---	1324-
6,800	F7	0.05	4.360	0425	---	0525	0625	---	0725	1025-	---	1125-	1225-	---	1325-
<b>30 VOLTS DC WORKING; 40 VOLTS DC SURGE</b>															
150	D1	2.21	0.296	0426	---	0526	0626	---	0726	1026-	---	1126-	1226-	---	1326-
220	D2	1.51	0.390	0427	---	0527	0627	---	0727	1027-	---	1127-	1227-	---	1327-
330	D4	1.00	0.536	0428	---	0528	0628	---	0728	1028-	---	1128-	1228-	---	1328-
470	D3	0.71	0.609	0429	---	0529	0629	---	0729	1029-	---	1129-	1229-	---	1329-
680	E5	0.44	0.957	0430	---	0530	0630	---	0730	1030-	---	1130-	1230-	---	1330-
1,000	E3	0.33	1.230	0431	---	0531	0631	---	0731	1031-	---	1131-	1231-	---	1331-
1,500	E7	0.22	1.680	0432	---	0532	0632	---	0732	1032-	---	1132-	1232-	---	1332-
2,200	F6	0.15	2.350	0433	---	0533	0633	---	0733	1033-	---	1133-	1233-	---	1333-
2,700	F4	0.12	2.560	0434	---	0534	0634	---	0734	1034-	---	1134-	1234-	---	1334-

## STANDARD RATINGS FOR TYPE M39018/03

Rated Cap. ( $\mu$ F)	Case Size	Max. ESR +25°C 120Hz ( $\Omega$ )	Max. Ripple Current +85°C 120Hz (Arms)	Dash Number											
				Capacitance Tolerance (%)											
				CU16			CU17			CUR17 (low freq. vibration)			CUR17 (high freq. vibration)		
			-10 +30	-10 +50	-10 +75	-10 +30	-10 +50	-10 +75	-10 +30	-10 +50	-10 +75	-10 +30	-10 +50	-10 +75	
<b>50 VOLTS DC WORKING; 60 VOLTS DC SURGE</b>															
100	D1	1.33	0.241	0435	---	0535	0635	---	0735	1035-	---	1135-	1235-	---	1335-
150	D2	0.88	0.322	0436	---	0536	0636	---	0736	1036-	---	1136-	1236-	---	1336-
220	D3	0.60	0.417	0437	---	0537	0637	---	0737	1037-	---	1137-	1237-	---	1337-
330	D5	0.40	0.58	0438	---	0538	0638	---	0738	1038-	---	1138-	1238-	---	1338-
470	E2	0.28	0.619	0439	---	0539	0639	---	0739	1039-	---	1139-	1239-	---	1339-
680	D7	0.20	0.946	0440	---	0540	0640	---	0740	1040-	---	1140-	1240-	---	1340-
1,000	E4	0.13	1.300	0441	---	0541	0641	---	0741	1041-	---	1141-	1241-	---	1341-
1,500	F4	0.09	1.920	0442	---	0542	0642	---	0742	1042-	---	1142-	1242-	---	1342-
1,800	F7	0.07	2.260	---	---	---	0699	---	0799	1099	---	1199	1299	---	1399
<b>75 VOLTS DC WORKING; 90 VOLTS DC SURGE</b>															
47	D1	2.82	0.166	0443	---	0543	0643	---	0743	1043-	---	1143-	1243-	---	1343-
68	D2	1.95	0.217	0444	---	0544	0644	---	0744	1044-	---	1144-	1244-	---	1344-
100	D3	1.33	0.281	0445	---	0545	0645	---	0745	1045-	---	1145-	1245-	---	1345-
150	D5	0.88	0.391	0446	---	0546	0646	---	0746	1046-	---	1146-	1246-	---	1346-
220	E2	0.60	0.540	0447	---	0547	0647	---	0747	1047-	---	1147-	1247-	---	1347-
330	E7	0.40	0.781	0448	---	0548	0648	---	0748	1048-	---	1148-	1248-	---	1348-
470	F3	0.28	1.010	0449	---	0549	0649	---	0749	1049-	---	1149-	1249-	---	1349-
680	F4	0.20	1.290	0450	---	0550	0650	---	0750	1050-	---	1150-	1250-	---	1350-
820	F7	0.16	1.520	0451	---	0551	0651	---	0751	1051-	---	1151-	1251-	---	1351-
<b>100 VOLTS DC WORKING; 125 VOLTS DC SURGE</b>															
22	D1	6.03	0.113	0452	0552	---	0652	0752	---	1052-	1152-	---	1252-	1352-	---
47	D2	2.82	0.180	0453	0553	---	0653	0753	---	1053-	1153-	---	1253-	1353-	---
68	D3	1.95	0.232	0454	0554	---	0654	0754	---	1054-	1154-	---	1254-	1354-	---
100	F2	1.33	0.389	0455	0555	---	0655	0755	---	1055-	1155-	---	1255-	1355-	---
160	D7	0.88	0.444	0456	0556	---	0656	0756	---	1056-	1156-	---	1256-	1356-	---
220	E4	0.60	0.613	0457	0557	---	0657	0757	---	1057-	1157-	---	1257-	1357-	---
330	F6	0.40	0.906	0458	0558	---	0658	0758	---	1058-	1158-	---	1258-	1358-	---
470	F7	0.28	1.150	0459	0559	---	0659	0759	---	1059-	1159-	---	1259-	1359-	---
<b>150 VOLTS DC WORKING; 175 VOLTS DC SURGE</b>															
18	D1	7.37	0.103	0460	0560	---	0660	0760	---	1060-	1160-	---	1260-	1360-	---
33	D4	4.02	0.170	0461	0561	---	0661	0761	---	1061-	1161-	---	1261-	1361-	---
47	D3	2.82	0.192	0462	0562	---	0662	0762	---	1062-	1162-	---	1262-	1362-	---
68	E5	1.95	0.304	0463	0563	---	0663	0763	---	1063-	1163-	---	1263-	1363-	---
100	D7	1.35	0.362	0464	0564	---	0664	0764	---	1064-	1164-	---	1264-	1364-	---
150	E7	0.88	0.528	0465	0565	---	0665	0765	---	1065-	1165-	---	1265-	1365-	---
220	F1	0.60	0.627	0466	0566	---	0666	0766	---	1066-	1166-	---	1266-	1366-	---
330	F7	0.40	0.966	0467	0567	---	0667	0767	---	1067-	1167-	---	1267-	1367-	---

## STANDARD RATINGS FOR TYPE M39018/03

Rated Cap. ( $\mu$ F)	Case Size	Max. ESR +25°C 120Hz ( $\Omega$ )	Max. Ripple Current +85°C 120Hz (Arms)	Dash Number											
				Capacitance Tolerance (%)											
				CU16			CU17			CUR17 (low freq. vibration)			CUR17 (high freq. vibration)		
				-10 +30	-10 +50	-10 +75	-10 +30	-10 +50	-10 +75	-10 +30	-10 +50	-10 +75	-10 +30	-10 +50	-10 +75
<b>200 VOLTS DC WORKING; 225 VOLTS DC SURGE</b>															
15	D1	8.84	0.094	0468	0568	---	0668	0768	---	1068-	1168-	---	1268-	1368-	---
33	D3	4.02	0.162	0469	0569	---	0669	0769	---	1069-	1169-	---	1269-	1369-	---
47	E1	2.82	0.230	0470	0570	---	0670	0770	---	1070-	1170-	---	1270-	1370-	---
68	E5	1.95	0.304	0471	0571	---	0671	0771	---	1071-	1171-	---	1271-	1371-	---
100	D7	1.33	0.362	0472	0572	---	0672	0772	---	1072-	1172-	---	1272-	1372-	---
150	E4	0.88	0.506	0473	0573	---	0673	0773	---	1073-	1173-	---	1273-	1373-	---
22	F4	0.60	0.736	0474	0574	---	0674	0774	---	1074-	1174-	---	1274-	1374-	---
270	F7	0.49	0.873	0475	0575	---	0675	0775	---	1075-	1175-	---	1275-	1375-	---
<b>250 VOLTS DC WORKING; 275 VOLTS DC SURGE</b>															
10	D1	13.26	0.096	0476	0576	---	0676	0776	---	1076-	1176-	---	1276-	1376-	---
20	D4	6.63	0.131	0477	0577	---	0677	0777	---	1077-	1177-	---	1277-	1377-	---
33	E5	4.02	0.212	0478	0578	---	0678	0778	---	1078-	1178-	---	1278-	1378-	---
39	F2	3.40	0.240	0479	0579	---	0679	0779	---	1079-	1179-	---	1279-	1379-	---
68	D7	1.95	0.299	0480	0580	---	0680	0780	---	1080-	1180-	---	1280-	1380-	---
82	E4	1.62	0.374	0481	0581	---	0681	0781	---	1081-	1181-	---	1281-	1381-	---
120	F6	1.11	0.548	0482	0582	---	0682	0782	---	1082-	1182-	---	1282-	1382-	---
180	F7	0.74	0.712	0483	0583	---	0683	0783	---	1083-	1183-	---	1283-	1383-	---
<b>300 VOLTS DC WORKING; 325 VOLTS DC SURGE</b>															
8.2	D1	24.26	0.069	0484	0584	---	0684	0784	---	1084-	1184-	---	1284-	1384-	---
15	D4	13.26	0.114	0485	0585	---	0685	0785	---	1085-	1185-	---	1285-	1385-	---
27	D5	7.37	0.166	0486	0586	---	0686	0786	---	1086-	1186-	---	1286-	1386-	---
47	E6	4.23	0.275	0487	0587	---	0687	0787	---	1087-	1187-	---	1287-	1387-	---
68	E7	2.93	0.355	0488	0588	---	0688	0788	---	1088-	1188-	---	1288-	1388-	---
82	F3	2.43	0.423	0489	0589	---	0689	0789	---	1089-	1189-	---	1289-	1389-	---
120	F6	1.66	0.547	0490	0590	---	0690	0790	---	1090-	1190-	---	1290-	1390-	---
150	F7	1.33	0.650	0491	0591	---	0691	0791	---	1091-	1191-	---	1291-	1391-	---
<b>350 VOLTS DC WORKING; 375 VOLTS DC SURGE</b>															
5.8	D1	35.53	0.057	0492	0592	---	0692	0792	---	---	---	---	---	---	---
20	E1	9.95	0.150	0493	0593	---	0693	0793	---	---	---	---	---	---	---
27	F2	7.37	0.208	0494	0594	---	0694	0794	---	---	---	---	---	---	---
47	D7	4.23	0.248	0495	0595	---	0695	0795	---	---	---	---	---	---	---
56	E7	3.55	0.332	0496	0596	---	0696	0796	---	---	---	---	---	---	---
82	F3	2.43	0.422	0497	0597	---	0697	0797	---	---	---	---	---	---	---
120	F7	1.66	0.581	0498	0598	---	0698	0798	---	---	---	---	---	---	---

**NOTE:** Additional Electrical Parameters can be found in MIL-PRF-39018/3E.