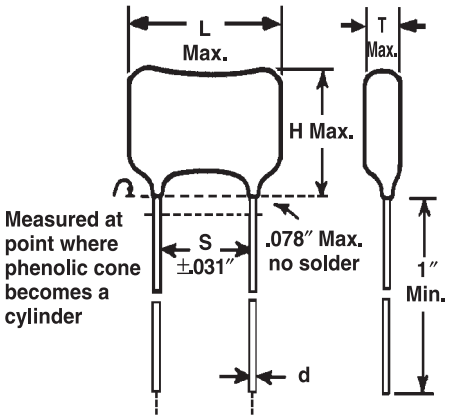
High-Reliability Dipped Capacitors/MIL-PRF-39001

Type CMR meets requirements of MIL-PRF-39001, Type CMR high-reliability dipped silvered mica capacitors are ideal for high-grade ground, airborne, and spaceborne devices, such as computers, jetcraft, and missiles.

Performance Highlights

- Voltage Range: 50 Vdc to 500 Vdc
- Capacitance Range: 1 pF to 91,000 pF
- Capacitance Tolerance: ±½ pF (D), ±1% (F), ±2% (G), ±5% (J)
- Temperature Range: –55°C to +125°C (O) –55°C to +150°C (P)*
- Meets Requirements of MIL-PRF-39001
- Established reliability to .01%/1,000 hours failure rate

*"P" temperature range available for CMR04, CMR05, CMR06, CMR07



Ratings and Dimensions

Cap pF	Catalog Number	L Inches (mm)	H Inches (mm)	T Inches (mm)	S Inches (mm)	d Inches (mm)
			50 Vdc			
22	CMR03E220DOYR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
24	CMR03E240DOYR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
27	CMR03E270JOYR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
30	CMR03E300JOYR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
33	CMR03E330JOYR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
36	CMR03E360JOYR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
39	CMR03E390JOYR	.270 (6.9)	.190 (4.8)	.120 (3.0)	.120 (3.0)	.016 (.4)
43	CMR03E430JOYR	.270 (6.9)	.190 (4.8)	.120 (3.0)	.120 (3.0)	.016 (.4)
47	CMR03E470JOYR	.270 (6.9)	.190 (4.8)	.120 (3.0)	.120 (3.0)	.016 (.4)
51	CMR03E510JOYR	.270 (6.9)	.190 (4.8)	.120 (3.0)	.120 (3.0)	.016 (.4)
56	CMR03E560JOYR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
62	CMR03E620JOYR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
68	CMR03E680JOYR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
75	CMR03E750JOYR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
82	CMR03E820JOYR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
91	CMR03F910JOYR	.270 (6.9)	.200 (5.1)	.130 (3.3)	.120 (3.0)	.016 (.4)
100	CMR03F101JOYR	.270 (6.9)	.200 (5.1)	.130 (3.3)	.120 (3.0)	.016 (.4)
110	CMR03F111JOYR	.270 (6.9)	.200 (5.1)	.130 (3.3)	.120 (3.0)	.016 (.4)
120	CMR03F121JOYR	.270 (6.9)	.200 (5.1)	.130 (3.3)	.120 (3.0)	.016 (.4)
130	CMR03F131JOYR	.270 (6.9)	.210 (5.3)	.130 (3.3)	.120 (3.0)	.016 (.4)
150	CMR03F151JOYR	.270 (6.9)	.210 (5.3)	.140 (3.6)	.120 (3.0)	.016 (.4)
160	CMR03F161JOYR	.270 (6.9)	.210 (5.3)	.140 (3.6)	.120 (3.0)	.016 (.4)
180	CMR03F181JOYR	.270 (6.9)	.210 (5.3)	.140 (3.6)	.120 (3.0)	.016 (.4)
200	CMR03F201JOYR	.270 (6.9)	.220 (5.6)	.150 (3.8)	.120 (3.0)	.016 (.4)
220	CMR03F221JOYR	.270 (6.9)	.220 (5.6)	.150 (3.8)	.120 (3.0)	.016 (.4)
240	CMR03F241JOYR	.270 (6.9)	.220 (5.6)	.160 (4.1)	.120 (3.0)	.016 (.4)
270	CMR03F271JOYR	.270 (6.9)	.230 (5.8)	.160 (4.1)	.120 (3.0)	.016 (.4)
300	CMR03F301JOYR	.270 (6.9)	.230 (5.8)	.170 (4.3)	.120 (3.0)	.016 (.4)
330	CMR03F331JOYR	.270 (6.9)	.240 (6.1)	.180 (4.6)	.120 (3.0)	.016 (.4)
360	CMR03F361JOYR	.270 (6.9)	.240 (6.1)	.180 (4.6)	.120 (3.0)	.016 (.4)
390	CMR03F391JOYR	.270 (6.9)	.250 (6.4)	.190 (4.8)	.120 (3.0)	.016 (.4)
400	CMR03F401JOYR	.270 (6.9)	.250 (6.4)	.190 (4.8)	.120 (3.0)	.016 (.4)
			100 Vdc			
15	CMR03C150DOAR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
18	CMR03C180DOAR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
20	CMR03E200DOAR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
22	CMR03E220DOAR	.270 (6.9)	.190 (4.8)	.120 (3.0)	.120 (3.0)	.016 (.4)
24	CMR03E240DOAR	.270 (6.9)	.190 (4.8)	.120 (3.0)	.120 (3.0)	.016 (.4)
27	CMR03E270JOAR	.270 (6.9)	.190 (4.8)	.120 (3.0)	.120 (3.0)	.016 (.4)

Cap pF	Catalog Number	L Inches (mm)	H Inches (mm)	T Inches (mm)	S Inches (mm)	d Inches (mm)
			100 Vdc (cont'd)			
30	CMR03E300JOAR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
33	CMR03E330JOAR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
36	CMR03E360JOAR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
39	CMR03E390JOAR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
43	CMR03E430JOAR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
47	CMR03E470JOAR	.270 (6.9)	.200 (5.1)	.130 (3.3)	.120 (3.0)	.016 (.4)
51	CMR03E510JOAR	.270 (6.9)	.200 (5.1)	.130 (3.3)	.120 (3.0)	.016 (.4)
56	CMR03E560JOAR	.270 (6.9)	.200 (5.1)	.130 (3.3)	.120 (3.0)	.016 (.4)
62	CMR03E620JOAR	.270 (6.9)	.210 (5.3)	.130 (3.3)	.120 (3.0)	.016 (.4)
68	CMR03E680JOAR	.270 (6.9)	.210 (5.3)	.140 (3.6)	.120 (3.0)	.016 (.4)
75	CMR03E750JOAR	.270 (6.9)	.210 (5.3)	.140 (3.6)	.120 (3.0)	.016 (.4)
82	CMR03E820JOAR	.270 (6.9)	.210 (5.3)	.140 (3.6)	.120 (3.0)	.016 (.4)
91	CMR03F910JOAR	.270 (6.9)	.210 (5.3)	.140 (3.6)	.120 (3.0)	.016 (.4)
100	CMR03F101JOAR	.270 (6.9)	.220 (5.6)	.150 (3.8)	.120 (3.0)	.016 (.4)
110	CMR03F111JOAR	.270 (6.9)	.220 (5.6)	.150 (3.8)	.120 (3.0)	.016 (.4)
120	CMR03F121JOAR	.270 (6.9)	.220 (5.6)	.160 (4.1)	.120 (3.0)	.016 (.4)
130	CMR03F131JOAR	.270 (6.9)	.230 (5.8)	.160 (4.1)	.120 (3.0)	.016 (.4)
150	CMR03F151JOAR	.270 (6.9)	.230 (5.8)	.170 (4.3)	.120 (3.0)	.016 (.4)
160	CMR03F161JOAR	.270 (6.9)	.240 (6.1)	.170 (4.3)	.120 (3.0)	.016 (.4)
170	CMR03F171JOAR	.270 (6.9)	.240 (6.1)	.180 (4.6)	.120 (3.0)	.016 (.4)
180	CMR03F181JOAR	.270 (6.9)	.240 (6.1)	.180 (4.6)	.120 (3.0)	.016 (.4)
200	CMR03F201JOAR	.270 (6.9)	.250 (6.4)	.190 (4.8)	.120 (3.0)	.016 (.4)
330	CMR04F331JOAR	.390 (9.9)	.380 (9.7)	.220 (5.6)	.150 (3.8)	.016 (.4)
360	CMR04F361JOAR	.390 (9.9)	.380 (9.7)	.220 (5.6)	.150 (3.8)	.016 (.4)
390	CMR04F391JOAR	.390 (9.9)	.380 (9.7)	.220 (5.6)	.150 (3.8)	.016 (.4)
			300 Vdc			
1	CMR03C1R0DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
1.5	CMR03C1R5DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
2	CMR03C2R0DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
2.5	CMR03C2R5DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
3	CMR03C3R0DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
3.5	CMR03C3R5DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
4	CMR03C4R0DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
4.5	CMR03C4R5DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
5	CMR03C5R0DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
6	CMR03C6R0DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)

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CDE CORNELL DUBILIER
Your Source For Capacitor Solutions

Ratings and Dimensions

Cap pF	Catalog Number	L Inches (mm)	H Inches (mm)	T Inches (mm)	S Inches (mm)	d Inches (mm)
			300 Vdc (cont'd)			
7	CMR03C7R0DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
8	CMR03C8R0DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
9	CMR03C9R0DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
10	CMR03C100DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
11	CMR03C110DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
12	CMR03C120DOCR	.270 (6.9)	.190 (4.8)	.110 (2.8)	.120 (3.0)	.016 (.4)
15	CMR03C150DOCR	.270 (6.9)	.190 (4.8)	.120 (3.0)	.120 (3.0)	.016 (.4)
18	CMR03C180DOCR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
20	CMR03E200DOCR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
22	CMR03E220DOCR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
24	CMR03E240DOCR	.270 (6.9)	.200 (5.1)	.120 (3.0)	.120 (3.0)	.016 (.4)
27	CMR03E270JOCR	.270 (6.9)	.200 (5.1)	.130 (3.3)	.120 (3.0)	.016 (.4)
30	CMR03E300JOCR	.270 (6.9)	.200 (5.1)	.130 (3.3)	.120 (3.0)	.016 (.4)
33	CMR03E330JOCR	.270 (6.9)	.200 (5.1)	.130 (3.3)	.120 (3.0)	.016 (.4)
36	CMR03E360JOCR	.270 (6.9)	.210 (5.3)	.130 (3.3)	.120 (3.0)	.016 (.4)
39	CMR03E390JOCR	.270 (6.9)	.210 (5.3)	.130 (3.3)	.120 (3.0)	.016 (.4)
43	CMR03E430JOCR	.270 (6.9)	.210 (5.3)	.140 (3.6)	.120 (3.0)	.016 (.4)
47	CMR03E470JOCR	.270 (6.9)	.210 (5.3)	.140 (3.6)	.120 (3.0)	.016 (.4)
51	CMR03E510JOCR	.270 (6.9)	.210 (5.3)	.140 (3.6)	.120 (3.0)	.016 (.4)
56	CMR03E560JOCR	.270 (6.9)	.220 (5.6)	.150 (3.8)	.120 (3.0)	.016 (.4)
62	CMR03E620JOCR	.270 (6.9)	.220 (5.6)	.150 (3.8)	.120 (3.0)	.016 (.4)
68	CMR03E680JOCR	.270 (6.9)	.220 (5.6)	.150 (3.8)	.120 (3.0)	.016 (.4)
75	CMR03E750JOCR	.270 (6.9)	.230 (5.8)	.160 (4.1)	.120 (3.0)	.016 (.4)
82	CMR03E820JOCR	.270 (6.9)	.230 (5.8)	.160 (4.1)	.120 (3.0)	.016 (.4)
91	CMR03F910JOCR	.270 (6.9)	.230 (5.8)	.170 (4.3)	.120 (3.0)	.016 (.4)
100	CMR03F101JOCR	.270 (6.9)	.240 (6.1)	.180 (4.6)	.120 (3.0)	.016 (.4)
110	CMR03F111JOCR	.270 (6.9)	.240 (6.1)	.180 (4.6)	.120 (3.0)	.016 (.4)
120	CMR03F121JOCR	.270 (6.9)	.250 (6.4)	.190 (4.8)	.120 (3.0)	.016 (.4)
270	CMR04F271JOCR	.390 (9.9)	.380 (9.7)	.220 (5.6)	.150 (3.8)	.016 (.4)
300	CMR04F301JOCR	.390 (9.9)	.380 (9.7)	.220 (5.6)	.150 (3.8)	.016 (.4)
			500 Vdc			
1	CMR04C1R0DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
1	CMR05C1R0DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
1.5	CMR04C1R5DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
1.5	CMR05C1R5DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
2	CMR04C2R0DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
2	CMR05C2R0DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
2.5	CMR04C2R5DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
2.5	CMR05C2R5DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
3	CMR04C3R0DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
3	CMR05C3R0DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
3.5	CMR04C3R5DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
3.5	CMR05C3R5DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
4	CMR04C4R0DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
4	CMR05C4R0DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
4.5	CMR04C4R5DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
4.5	CMR05C4R5DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
5	CMR04C5R0DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
5	CMR05C5R0DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
6	CMR04C6R0DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
6	CMR05C6R0DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
7	CMR04C7R0DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
7	CMR05C7R0DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
8	CMR04C8R0DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
8	CMR05C8R0DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
9	CMR04C9R0DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
9	CMR05C9R0DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
10	CMR04C100DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
10	CMR05C100DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
11	CMR04C110DODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
11	CMR05C110DODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
12	CMR04C120JODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
12	CMR05C120JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
15	CMR04C150JODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
15	CMR05C150JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
18	CMR04C180JODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
18	CMR05C180JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
20	CMR04E200JODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
20	CMR05E200JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
22	CMR04E220JODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)

Cap pF	Catalog Number	L Inches (mm)	H Inches (mm)	T Inches (mm)	S Inches (mm)	d Inches (mm)
			500 Vdc (con'd)			
22	CMR05E220JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
24	CMR04E240JODR	.360 (9.1)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
24	CMR05E240JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
27	CMR04E270JODR	.370 (9.4)	.330 (8.4)	.190 (4.8)	.150 (3.8)	.016 (.4)
27	CMR05E270JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
30	CMR04E300JODR	.370 (9.4)	.340 (8.6)	.190 (4.8)	.150 (3.8)	.016 (.4)
30	CMR05E300JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
33	CMR04E330JODR	.370 (9.4)	.340 (8.6)	.190 (4.8)	.150 (3.8)	.016 (.4)
33	CMR05E330JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
36	CMR04E360JODR	.370 (9.4)	.340 (8.6)	.190 (4.8)	.150 (3.8)	.016 (.4)
36	CMR05E360JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
39	CMR04E390JODR	.370 (9.4)	.340 (8.6)	.190 (4.8)	.150 (3.8)	.016 (.4)
39	CMR05E390JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
43	CMR04E430JODR	.370 (9.4)	.340 (8.6)	.190 (4.8)	.150 (3.8)	.016 (.4)
43	CMR05E430JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
47	CMR04E470JODR	.370 (9.4)	.340 (8.6)	.190 (4.8)	.150 (3.8)	.016 (.4)
47	CMR05E470JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
51	CMR04E510JODR	.370 (9.4)	.340 (8.6)	.190 (4.8)	.150 (3.8)	.016 (.4)
51	CMR05E510JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
56	CMR04E560JODR	.370 (9.4)	.340 (8.6)	.190 (4.8)	.150 (3.8)	.016 (.4)
56	CMR05E560JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
62	CMR04E620JODR	.370 (9.4)	.340 (8.6)	.190 (4.8)	.150 (3.8)	.016 (.4)
62	CMR05E620JODR	.450 (11.4)	.360 (9.1)	.170 (4.3)	.225 (5.7)	.025 (.6)
68	CMR04E680JODR	.370 (9.4)	.340 (8.6)	.190 (4.8)	.150 (3.8)	.016 (.4)
68	CMR05E680JODR	.450 (11.4)	.360 (9.1)	.180 (4.6)	.225 (5.7)	.025 (.6)
75	CMR04E750JODR	.370 (9.4)	.340 (8.6)	.200 (5.1)	.150 (3.8)	.016 (.4)
75	CMR05E750JODR	.450 (11.4)	.360 (9.1)	.180 (4.6)	.225 (5.7)	.025 (.6)
82	CMR04E820JODR	.370 (9.4)	.350 (8.9)	.200 (5.1)	.150 (3.8)	.016 (.4)
82	CMR05E820JODR	.450 (11.4)	.360 (9.1)	.180 (4.6)	.225 (5.7)	.025 (.6)
91	CMR04F910JODR	.370 (9.4)	.350 (8.9)	.200 (5.1)	.150 (3.8)	.016 (.4)
91	CMR05F910JODR	.460 (11.7)	.360 (9.1)	.180 (4.6)	.225 (5.7)	.025 (.6)
100	CMR04F101JODR	.370 (9.4)	.350 (8.9)	.200 (5.1)	.150 (3.8)	.016 (.4)
100	CMR05F101JODR	.460 (11.7)	.360 (9.1)	.180 (4.6)	.225 (5.7)	.025 (.6)
110	CMR04F111JODR	.380 (9.7)	.350 (8.9)	.200 (5.1)	.150 (3.8)	.016 (.4)
110	CMR05F111JODR	.460 (11.7)	.370 (9.4)	.180 (4.6)	.225 (5.7)	.025 (.6)
120	CMR04F121JODR	.380 (9.7)	.350 (8.9)	.200 (5.1)	.150 (3.8)	.016 (.4)
120	CMR05F121JODR	.460 (11.7)	.370 (9.4)	.180 (4.6)	.225 (5.7)	.025 (.6)
130	CMR04F131JODR	.380 (9.7)	.360 (9.1)	.200 (5.1)	.150 (3.8)	.016 (.4)
130	CMR05F131JODR	.460 (11.7)	.370 (9.4)	.180 (4.6)	.225 (5.7)	.025 (.6)
150	CMR04F151JODR	.380 (9.7)	.360 (9.1)	.210 (5.3)	.150 (3.8)	.016 (.4)
150	CMR05F151JODR	.460 (11.7)	.370 (9.4)	.190 (4.8)	.225 (5.7)	.025 (.6)
160	CMR04F161JODR	.380 (9.7)	.360 (9.1)	.210 (5.3)	.150 (3.8)	.016 (.4)
160	CMR05F161JODR	.460 (11.7)	.370 (9.4)	.190 (4.8)	.225 (5.7)	.025 (.6)
180	CMR04F181JODR	.380 (9.7)	.370 (9.4)	.210 (5.3)	.150 (3.8)	.016 (.4)
180	CMR05F181JODR	.460 (11.7)	.370 (9.4)	.190 (4.8)	.225 (5.7)	.025 (.6)
200	CMR04F201JODR	.390 (9.9)	.380 (9.7)	.220 (5.6)	.150 (3.8)	.016 (.4)
200	CMR05F201JODR	.460 (11.7)	.380 (9.7)	.190 (4.8)	.225 (5.7)	.025 (.6)
220	CMR04F221JODR	.390 (9.9)	.380 (9.7)	.220 (5.6)	.150 (3.8)	.016 (.4)
220	CMR05F221JODR	.460 (11.7)	.380 (9.7)	.200 (5.1)	.225 (5.7)	.025 (.6)
240	CMR04F241JODR	.390 (9.9)	.380 (9.7)	.220 (5.6)	.150 (3.8)	.016 (.4)
240	CMR05F241JODR	.460 (11.7)	.380 (9.7)	.200 (5.1)	.225 (5.7)	.025 (.6)
270	CMR05F271JODR	.470 (11.9)	.390 (9.9)	.210 (5.3)	.225 (5.7)	.025 (.6)
300	CMR05F301JODR	.470 (11.9)	.390 (9.9)	.210 (5.3)	.225 (5.7)	.025 (.6)
330	CMR05F331JODR	.470 (11.9)	.390 (9.9)	.210 (5.3)	.225 (5.7)	.025 (.6)
360	CMR05F361JODR	.470 (11.9)	.400 (10.2)	.220 (5.6)	.225 (5.7)	.025 (.6)
390	CMR05F391JODR	.470 (11.9)	.400 (10.2)	.220 (5.6)	.225 (5.7)	.025 (.6)
430	CMR06F431JODR	.640 (16.3)	.510 (13.0)	.200 (5.1)	.350 (8.9)	.032 (.8)
470	CMR06F471JODR	.640 (16.3)	.510 (13.0)	.200 (5.1)	.350 (8.9)	.032 (.8)
510	CMR06F511JODR	.650 (16.5)	.510 (13.0)	.200 (5.1)	.350 (8.9)	.032 (.8)
560	CMR06F561JODR	.650 (16.5)	.510 (13.0)	.200 (5.1)	.350 (8.9)	.032 (.8)
620	CMR06F621JODR	.650 (16.5)	.510 (13.0)	.200 (5.1)	.350 (8.9)	.032 (.8)
680	CMR06F681JODR	.650 (16.5)	.510 (13.0)	.210 (5.3)	.350 (8.9)	.032 (.8)
750	CMR06F751JODR	.650 (16.5)	.510 (13.0)	.210 (5.3)	.350 (8.9)	.032 (.8)
820	CMR06F821JODR	.650 (16.5)	.510 (13.0)	.210 (5.3)	.350 (8.9)	.032 (.8)
910	CMR06F911JODR	.650 (16.5)	.510 (13.0)	.210 (5.3)	.350 (8.9)	.032 (.8)
1000	CMR06F102JODR	.650 (16.5)	.520 (13.2)	.220 (5.6)	.350 (8.9)	.032 (.8)
1100	CMR06F112JODR	.650 (16.5)	.520 (13.2)	.220 (5.6)	.350 (8.9)	.032 (.8)
1200	CMR06F122JODR	.660 (16.8)	.520 (13.2)	.220 (5.6)	.350 (8.9)	.032 (.8)
1300	CMR06F132JODR	.660 (16.8)	.520 (13.2)	.220 (5.6)	.350 (8.9)	.032 (.8)
1500	CMR06F152JODR	.660 (16.8)	.520 (13.2)	.230 (5.8)	.350 (8.9)	.032 (.8)
1600	CMR06F162JODR	.660 (16.8)	.530 (13.5)	.230 (5.8)	.350 (8.9)	.032 (.8)
1800	CMR06F182JODR	.670 (17.0)	.530 (13.5)	.240 (6.1)	.350 (8.9)	.032 (.8)
2000	CMR06F202JODR	.670 (17.0)	.530 (13.5)	.240 (6.1)	.350 (8.9)	.032 (.8)

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E-mail: cdenb@cornell-dubilier.com

Ratings and Dimensions

Cap pF	Catalog Number	L Inches (mm)	H Inches (mm)	T Inches (mm)	S Inches (mm)	d Inches (mm)
			500 Vdc (cont'd)			
2200	CMR06F222JODR	.670 (17.0)	.530 (13.5)	.250 (6.4)	.350 (8.9)	.032 (.8)
2400	CMR06F242JODR	.670 (17.0)	.540 (13.7)	.260 (6.6)	.350 (8.9)	.032 (.8)
2700	CMR06F272JODR	.680 (17.3)	.540 (13.7)	.270 (6.9)	.350 (8.9)	.032 (.8)
3000	CMR06F302JODR	.680 (17.3)	.550 (14.0)	.280 (7.1)	.350 (8.9)	.032 (.8)
3300	CMR06F332JODR	.680 (17.3)	.550 (14.0)	.290 (7.4)	.350 (8.9)	.032 (.8)
3600	CMR06F362JODR	.680 (17.3)	.560 (14.2)	.300 (7.6)	.350 (8.9)	.032 (.8)
3900	CMR06F392JODR	.690 (17.5)	.560 (14.2)	.310 (7.9)	.350 (8.9)	.032 (.8)
4300	CMR06F432JODR	.690 (17.5)	.570 (14.5)	.330 (8.4)	.350 (8.9)	.032 (.8)
4700	CMR06F472JODR	.700 (17.8)	.580 (14.7)	.350 (8.9)	.350 (8.9)	.032 (.8)
5100	CMR07F512JODR	.780 (19.8)	.860 (21.8)	.280 (7.1)	.425 (10.8)	.040 (1.0)
5600	CMR07F562JODR	.780 (19.8)	.870 (22.1)	.290 (7.4)	.425 (10.8)	.040 (1.0)
6200	CMR07F622JODR	.780 (19.8)	.870 (22.1)	.290 (7.4)	.425 (10.8)	.040 (1.0)
6800	CMR07F682JODR	.780 (19.8)	.870 (22.1)	.300 (7.6)	.425 (10.8)	.040 (1.0)
7500	CMR07F752JODR	.790 (20.1)	.880 (22.4)	.310 (7.9)	.425 (10.8)	.040 (1.0)
8200	CMR07F822JODR	.790 (20.1)	.880 (22.4)	.320 (8.1)	.425 (10.8)	.040 (1.0)
9100	CMR07F912JODR	.790 (20.1)	.880 (22.4)	.330 (8.4)	.425 (10.8)	.040 (1.0)
10000	CMR07F103JODR	.800 (20.3)	.890 (22.6)	.340 (8.6)	.425 (10.8)	.040 (1.0)
11000	CMR07F113JODR	.800 (20.3)	.890 (22.6)	.350 (8.9)	.425 (10.8)	.040 (1.0)
12000	CMR07F123JODR	.800 (20.3)	.890 (22.6)	.360 (9.1)	.425 (10.8)	.040 (1.0)
13000	CMR07F133JODR	.810 (20.6)	.890 (22.6)	.370 (9.4)	.425 (10.8)	.040 (1.0)
15000	CMR07F153JODR	.810 (20.6)	.900 (22.9)	.390 (9.9)	.425 (10.8)	.040 (1.0)
16000	CMR07F163JODR	.820 (20.8)	.900 (22.9)	.410 (10.4)	.425 (10.8)	.040 (1.0)
18000	CMR07F183JODR	.820 (20.8)	.910 (23.1)	.430 (10.9)	.425 (10.8)	.040 (1.0)

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Specifications

Capacitance is within tolerance when measured at these frequencies:

1–1000 pF @ 1 MHz
> 1000 pF @ 1 kHz

Dissipation Factor limits are below. Measure dissipation factor at 1 MHz when the capacitance is 1 pF to 1,000 pF, and at 1 kHz when the capacitance is greater than 1,000 pF. Dissipation factor is equal to DF=2πfRC, where f is the test frequency, R is the equivalent series resistance, and C is the capacitance. For other capacitance values, see Figure 1.

Capacitance	Dissipation Factor
100–1000 pF	0.00075 max at 1 MHz
1100–3300 pF	0.0014 max at 1 kHz
3600–9100 pF	0.0013 max at 1 kHz
10,000 pF	0.0012 max at 1 kHz

Quality Factor (Q) is the reciprocal of dissipation factor.

Insulation Resistance for capacitances up to 10,000 pF is greater than 100 GΩ at 25°C, greater than 10 GΩ at 125°C, and greater than 5 GΩ at 150°C. For other capacitance values and temperatures, see Figure 2.

Withstanding Voltage is two times the rated voltage, and can be applied up to 5 seconds without damage.

Temperature Coefficient and Capacitance Drift: Measure the capacitors' capacitance at 25°C, –55°C, 25°C, 125°C (or 150°C) and at 25°C after stabilizing at each temperature. The capacitance will meet the limits of the Characteristic table shown in Ordering Information.

Failure Rate: Type CMR capacitors have specified failure rate levels ranging from 0.01% to 2.0% per 1,000 hours. The failure rate level is established at a 90% confidence level and is referred to operational life at full-rated voltage at maximum-rated temperature.

High-Voltage Stabilization: We subject capacitors with Failure Levels M, P, and R to a burn-in at twice-rated voltage, at rated temperature, for a minimum of 48 hours. Capacitors that show damage, arcing, breakdown, or low IR are removed. We reject the lot if more than 8% of the capacitors fail.

Solderability: After an 8-hour steam aging, coat leads with a rosin flux (R) and immerse in molten 245°C±5°C 60/40 tin/lead solder. Solder coverage will be no less than 95% when examined at 10X magnification.

Life Test: Subject the capacitors to maximum operating temperature (+125°C or +150°C) with 1.5 times rated voltage applied for 10,000 hours. Take readings and make visual observations every 2,000 hours. There will be no visual damage and the capacitors will meet the after-test limits on page 3.25.

Resistance to Solvents: Subject the capacitors to three cycles of 3-minute immersion in solvent, 10 strokes with bristle brush and, where applicable, ½ minute in vapor, per MIL-STD-202, Method 215. Repeat the three cycles for three solvent mixtures: Isopropyl alcohol mixture (Solvent 1), azeotrope mixture (Solvent 3), and water/propylene-glycol mixture (Solvent 4). The marking will not rub off or smear and there will be no visible damage to the capacitor body. Refer to MIL-STD-202 for details.

Resistance to Soldering Heat: Capacitors will meet the requirements of MIL-STD-202, Method 210 Test Condition G. Immerse capacitor leads to within .250 inches (6.4 mm) of the body in molten tin/lead solder (260°C±5°C) for 10±2 seconds. Allow to cool. Capacitors will meet the after-test limits on page 3.25.

Marking of capacitors conforms to method I of MIL-STD-1285, and includes the type designation, "JAN," brand, trademark, source code, date code, rated voltage, capacitance, capacitance tolerance, and highest rated temperature. Small capacitors are marked with the letter "J."

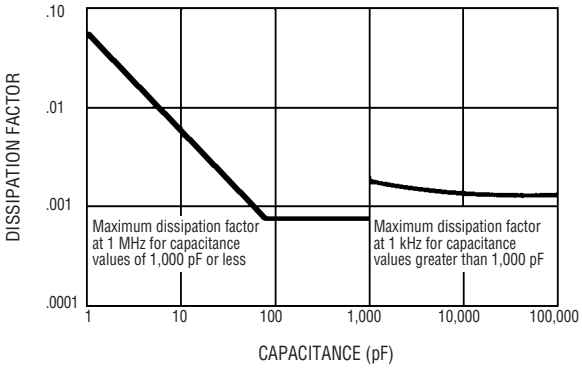

Figure 1. DF vs. Capacitance

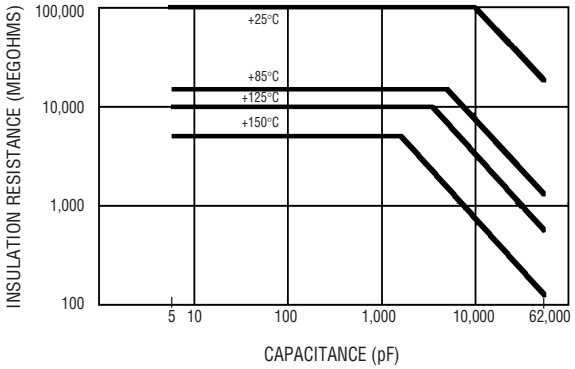

Figure 2. IR vs. Capacitance

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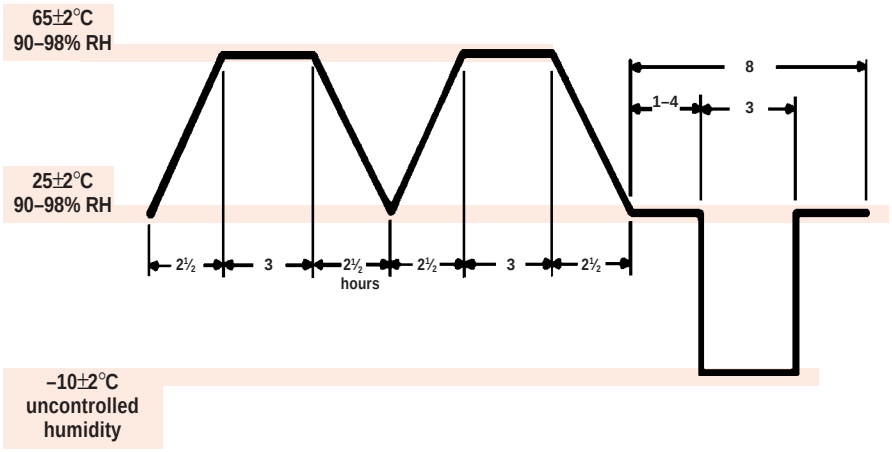
Specifications

Moisture Resistance: Capacitors will meet the requirements of MIL-STD-202, Method 106F as outlined here and diagrammed on the right. Apply 100 V or the rated voltage (whichever is less) to half of the capacitors. Don't apply voltage to the other half. Refer to MIL-STD-202 for details.

1. Dry capacitors for 24 hours in a 50±2°C oven and then allow to stabilize at room temperature.
2. Subject the capacitors to 20 24-hour continuous cycles with relative humidity and temperature as shown.
3. 4 to 24 hours after completion of the last cycle the capacitors will show no visual damage and will meet the after-test limits below.

24-Hour Moisture Resistance Cycle



After-Test Limits

Test	Withstand Voltage	Insulation Resistance	Capacitance Change (whichever is greater)	DF	Q
Moisture Resistance	IL	30 GΩ	NV±1% or ±1 pF	150% IL	2/3xIL
Life Test	IL	IL	NV±1% or ±1 pF	150% IL	2/3xIL
Solder Heat	IL	IL	IV±5% or ±5pF	IL	IL

IL=Initial Limit NV=Nominal Value IV=Initial Value

Ordering Information

Order by complete part number, as below. For other options, write your requirements on your quote request.

High-Reliability Mica Capacitors

CMR05 — CDE Type

C — Characteristic

	Temp. Coeff. ppm/°C	Capacitance Drift	Standard Cap. Range
C	–200 to +200	±(0.5% +0.1pF)	1 – 18 pF
E	–20 to +100	±(0.1% +0.1pF)	20 – 82 pF
F	0 to + 70	±(0.05% +0.1pF)	91 pF and up

100 — Capacitance
1R0 = 1.0pF
361 = 360pF
122 =1200pF

J — Capacitance Tolerance
D=±.5 pf
F=±1%
G=±2%
J=±5%

P — Temperature Range
O=–55°C to +125°C
P=–55°C to +150°C*

D — Voltage
Y = 50 Vdc
A = 100 Vdc
C = 300 Vdc
D = 500 Vdc

R — Failure Rate
L = 2.0%/1000 hrs.
M = 1.0%/1000 hrs.
P = .1%/1000 hrs.
R = .01%/1000 hrs.

* "P" temperature range is available for CMR04, CMR05, CMR06, CMR07

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