DC-Link Capacitor

C51

Characteristics

- Aluminum metal shell, flame retardant epoxy resin encapsulation
- Tin plated copper nut or copper screw out
- High voltage resistance, low temperature rise
- Low ESL, low ESR, small dissipation factor (tgδ)
- Excellent stability and self healing

Application

- Widely used in DC support of DC-link and Filtering for SVG, UPS, High Frequency Inverter, Photovoltaic, Wind Power Converter, Laser Energy Storage, Welding Power Supply and other equipments .

Tecahnical Data

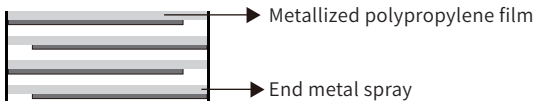
Reference Standards	GB/T 17702 IEC 61071
Operating Temperature Range	-40°C～+70°C TMax +85°C
Capacitance Range	33μF～3000μF
Rated Voltage	700VDC～4000VDC
Capacity Tolerance	±5%(J); ±10%(K)
Test voltage between electrodes	1.5UN (DC) 60S 20°C
Test voltage between electrode and case	1000+2×UN/√2(VAC) 50Hz 60S (min 3000VAC)
Dissipation Factor	tgδ≤3×10-3 at 20°C, 100Hz
Insulation Resistance	C•R≥10000S, at 100VDC, 20°C, 60S
Life Expectancy	100000hrs (Un hotspot ≤ 70°C)

Overvoltage Operation

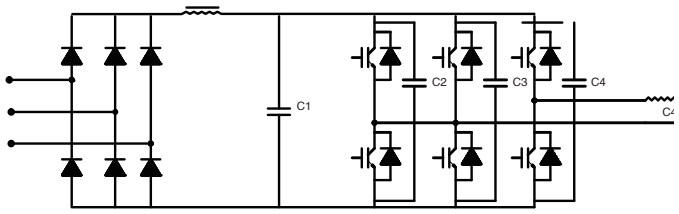
1.1×U_N	30% of on-load-dur.
1.15×U_N	30 min/day
1.2×U_N	5 min/day
1.3×U_N	1min/day
1.5×U_N	100ms every time, no more than 1000 times during the lifetime

C51 DC-Link Capacitor

Construction Diagram

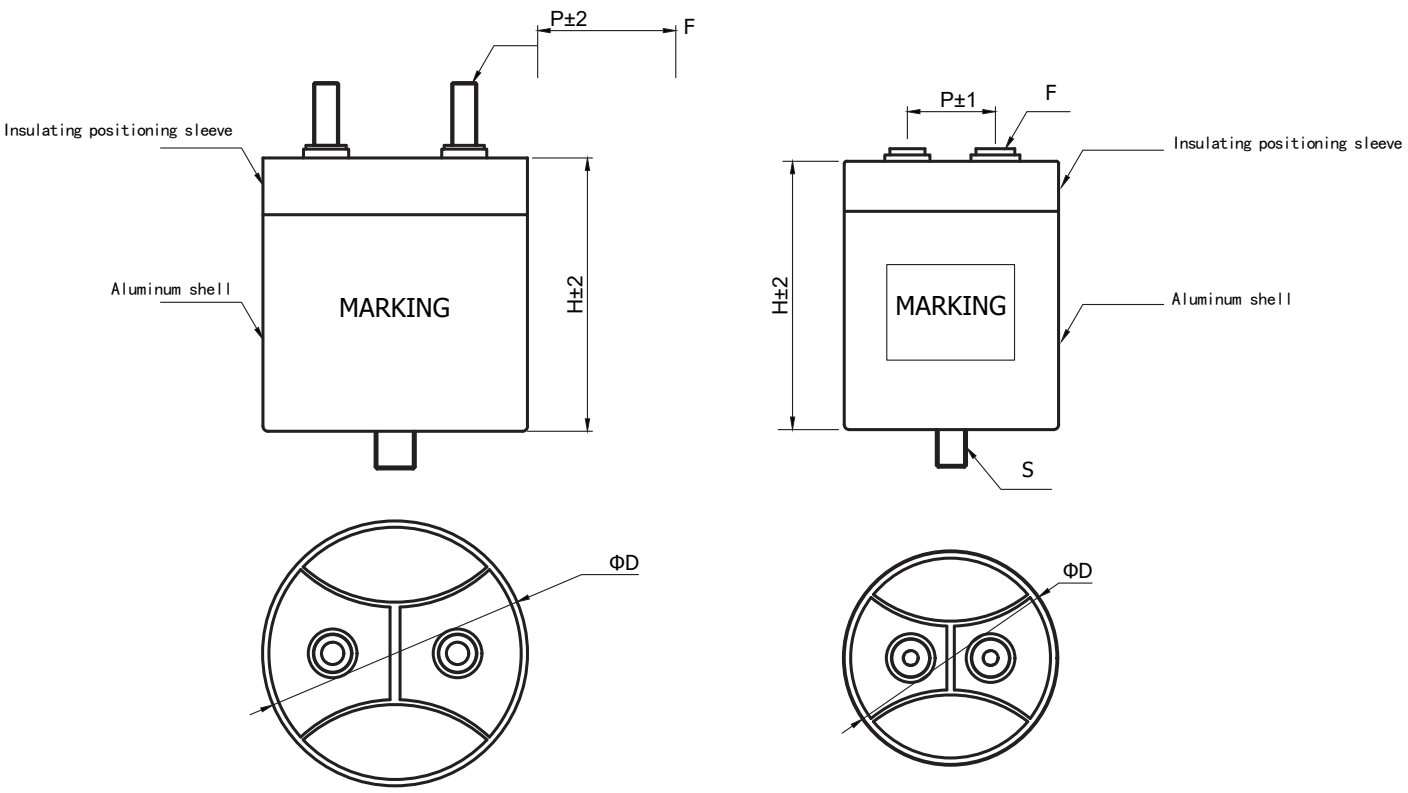


Typical Circuit



C1 is C51 DC-Link Capacitor in the main circuit diagram of three-phase inverter

Product Shape



Product Dimension				
D(mm)	P(mm)	S(mm)	F(mm)	M(mm)
76	32	M12×16	M6×10	M8×20
86	32	M12×16	M6×10	M8×20
96	45	M12×16	M6×10	M8×20
106	50	M12×16	M6×10	M8×20
116	50	M12×16	M6×10	M8×20
136	50	M16×25	M6×10	M8×20

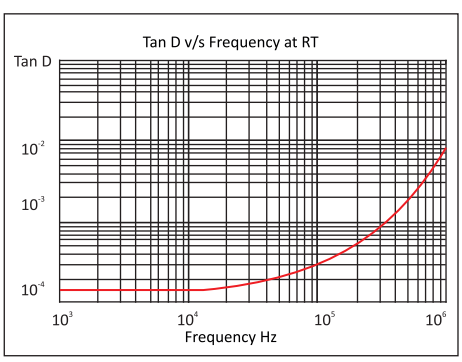
C51 DC-Link Capacitor

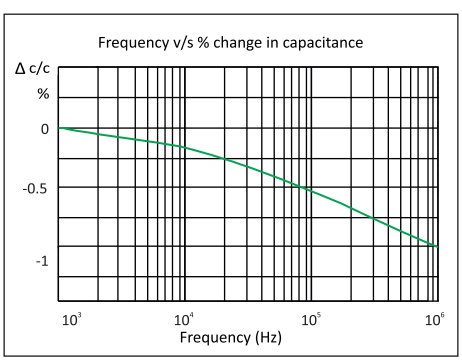
Product Coding

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
C	5	1	X	X	N	X	X	N	□	□	□	□	–	□	□

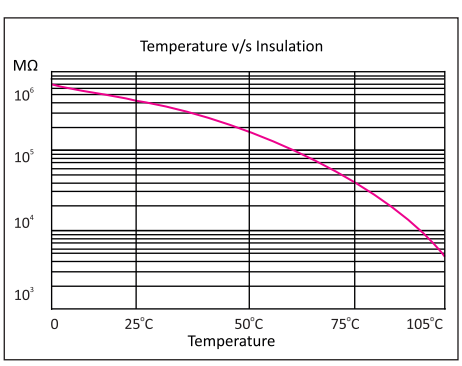
- 01 02 03: Product model
- 04 05 06: Rated voltage — XX*10^n (V)
- 07 08 09: Nominal capacity — XX*10^n (pF)
- 10: Capacity deviation
  - J ±5%
  - K ±10%
- 11: Extraction electrode
  - F -Nut
  - M -Bolt
- 12 13: Nut or Bolt Specification
- 14 15 16: Serial number — 01、02…

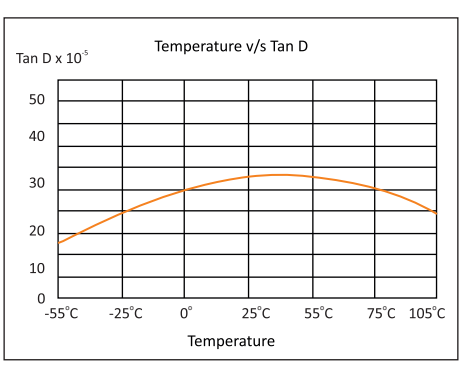
Temperature Characteristics

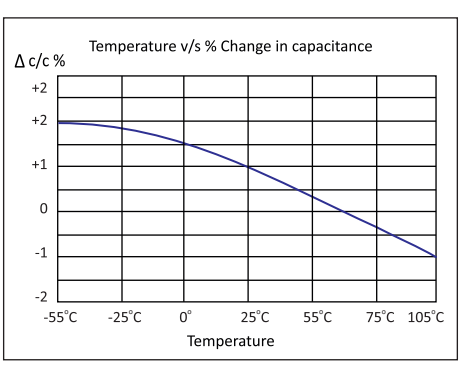




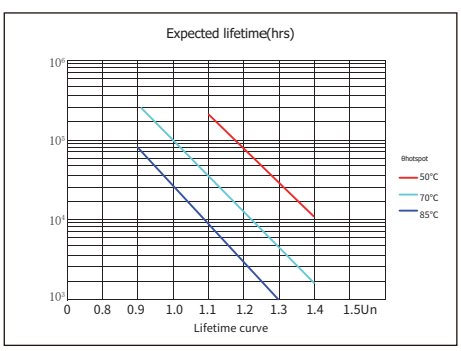
Frequency Characteristics







Life Expectancy



C51 DC-Link Capacitor

Article Table

Part Number	CAP μF	Dimension（mm） D	H	P	dV/dt (V/μS)	Ip (KA)	Is (KA)	Irms @ 50℃ (A)	Rth (K/W)	ESL (nH)	ESR @1KHz (mΩ)
U_N 800VDC											
C51801437JFM····	430	76	120	32	12	5.1	15.3	40	1.5	45	2.5
C51801557JFM····	550	86	120	32	12	6.6	19.8	46	1.6	55	2.8
C51801807JFM····	800	76	225	32	11	8.8	26.4	67	2.0	60	3
C51801108JFM····	1000	86	225	32	10	10.0	30.0	76	1.3	62	3.5
U_N 900VDC											
C51901377JFM····	370	76	125	32	15	5.5	16.5	60	4.5	50	3.0
C51901397JFM····	390	76	130	32	13	5.0	15.0	33	5.0	45	3.5
C51901457JFM····	450	76	145	32	12	5.4	16.2	61	3.0	45	3.0
C51901497JFM····	490	86	125	32	10	4.9	14.7	71	2.3	45	2.0
C51901527JFM····	520	86	120	32	10	5.2	15.6	40	2.3	45	2.0
C51901577JFM····	570	76	175	32	8	4.5	13.5	61	2.0	50	3.5
C51901607JFM····	600	86	145	32	8	4.8	14.4	72	3.0	55	2.3
C51901757JFM····	750	86	175	32	8	6.0	18.0	73	2.3	55	2.3
C51901787JFM····	780	76	225	32	7	5.4	16.2	63	2.5	60	2.5
C51901108JFM····	1000	116	125	50	7	7.0	21.0	53	2.7	60	1.6
C51901108JFM····	1050	86	225	32	7	7.3	21.9	76	2.68	65	1.5
C51901118JFM····	1100	116	150	50	6	6.6	19.2	88	2.8	65	1.3
C51901148JFM····	1450	116	180	50	6	8.7	26.1	90	2.7	65	1.3
C51901208JFM····	2000	116	230	50	6	12.0	36.0	92	2.2	70	1.0
C51901278JFM····	2750	136	230	50	5	13.7	41.1	99	2.1	70	1.0
U_N 1000VDC											
C51102277JFM····	270	76	120	32	14	3.7	11.1	37	2.0	55	3.5
C51102357JFM····	350	86	120	32	12	4.2	12.6	43	6.5	55	3.5
C51102507JFM····	500	76	225	32	9	4.5	13.5	63	2.8	60	2.5
C51102687JFM····	680	86	225	32	9	6.1	18.3	73	2.6	70	2.5
U_N 1100VDC											
C51112257JFM····	250	76	120	32	15	3.7	11.1	30	2.0	50	4.5
C51112337JFM····	330	86	120	32	15	4.9	14.7	36	1.7	45	3.0
C51112377JFM····	370	86	130	32	12	4.4	13.2	36	6.5	45	2.8
C51112407JFM····	400	86	145	32	12	4.8	14.4	67	3.0	45	2.5
C51112427JFM····	420	86	155	32	12	5.0	15.0	69	3.2	45	1.8
C51112507JFM····	500	86	175	32	10	5.0	15.0	67	2.3	60	1.8

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C51 DC-Link Capacitor

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Part Number	CAP μF	Dimension（mm） D	H	P	dV/dt (V/μS)	Ip (KA)	Is (KA)	Irms @ 50℃ (A)	Rth (K/W)	ESL (nH)	ESR @1KHz (mΩ)
U_N 1100VDC											
C51112657JFM····	650	116	125	50	10	6.5	19.5	49	2.9	65	2.5
C51112687JFM····	680	86	225	32	9	6.1	18.3	69	1.9	70	2.5
C51112737JFM····	730	116	150	50	9	6.5	19.5	82	2.7	70	2.5
C51112907JFM····	900	136	125	50	8	7.2	21.6	54	2.1	75	2.0
C51112927JFM····	920	116	180	50	9	8.2	24.6	82	2.2	75	2.0
C51112128JFM····	1250	116	230	50	12	15	45	84	2.1	75	1.5
C51112178JFM····	1700	136	230	50	5	8.5	26.5	90	1.4	70	1.4
C51112198JFM····	1900	136	260	50	5	9.5	28.5	120	1.7	70	1.2
C51112258JFM····	2550	136	335	50	5	12.7	38.1	120	5.7	80	1.0
U_N 1200VDC											
C51122207JFM····	200	76	120	32	15	3.0	9.0	35	2.4	55	5.5
C51122227JFM····	220	76	120	32	15	3.3	9.9	29.2	2.6	55	5.0
C51122257JFM····	250	86	120	32	13	3.2	9.6	33	2.2	50	4.5
C51122257JFM····	250	86	125	32	13	3.2	9.6	63	1.4	50	4.5
C51122277JFM····	270	86	120	32	13	3.5	10.5	34	2.6	50	4.5
C51122337JFM····	330	86	125	50	13	4.3	12.9	41	1.7	45	3.0
C51122337JFM····	330	86	140	32	15	4.9	14.7	34	1.8	45	3.0
C51122377JFM····	370	76	225	32	13	4.8	14.4	61	2.0	55	3.0
C51122427JFM····	420	86	175	32	12	5.0	15.0	64.5	2.8	45	1.6
C51122477JFM····	470	86	225	32	12	5.6	16.8	60.7	3.0	60	3.0
C51122507JFM····	500	116	130	50	10	5.0	15.0	88	1.9	65	3.0
C51122557JFM····	550	116	150	50	10	5.5	16.5	98.1	2.1	65	2.5
C51122567JFM····	560	86	225	32	10	5.6	16.8	65.5	2.5	60	2.1
C51122687JFM····	680	116	180	50	10	6.8	17.4	83.1	2.1	65	2.8
C51122108JFM····	1000	136	180	50	8	8.0	24.0	99.8	2.1	70	1.5
C51122108JFM····	1000	116	230	50	7	7.0	21.0	85.4	2.3	70	1.3
C51122128JFM····	1200	136	230	50	7	8.4	25.2	97.4	1.2	70	1.3
C51122188JFM····	1800	136	335	50	5	9.0	27.0	120	1.3	80	0.9
U_N 1400VDC											
C51142147JFM····	140	76	120	32	15	2.1	6.3	33	3.0	50	5.5
C51142147JFM····	180	86	120	32	15	2.7	8.1	38	3.3	50	5.5
C51142147JFM····	270	76	225	32	13	3.5	10.5	58	1.9	60	5.0
C51142147JFM····	350	86	225	32	13	4.5	13.5	66	1.7	60	3.5

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U_N 1600VDC											
C51162107JFM····	100	76	120	32	15	1.5	4.5	30	2.8	55	6.0
C51162147JFM····	140	86	120	32	15	2.1	6.3	36	3.3	55	5.5
C51162207JFM····	200	76	225	32	15	3.0	6.0	54	1.0	55	4.5
C51162207JFM····	200	106	140	50	13	2.6	7.8	55	2.0	60	4.0
C51162277JFM····	270	86	225	32	12	3.2	9.6	64	1.2	60	3.5
U_N 1800VDC											
C51182806JFM····	80	76	120	32	15	1.2	3.6	29	2.7	50	5.5
C51182117JFM····	110	86	120	32	15	1.6	4.8	35	3.2	55	5.0
C51182167JFM····	160	76	225	32	15	2.4	7.2	52	1.5	60	4.0
C51182207JFM····	200	86	225	32	13	2.6	7.8	60	1.9	60	3.5
U_N 2000VDC											
C51202756JFM····	75	76	120	32	15	1.1	3.3	22	3.3	55	4.0
C51202107JFM····	100	86	120	32	15	1.5	4.5	27	3.8	55	4.0
C51202137JFM····	130	76	225	32	15	1.9	5.7	36	3.5	60	4.0
C51202157JFM····	150	86	175	32	15	2.2	6.6	51	3.5	60	3.5
C51202177JFM····	170	86	225	32	12	2.0	6.0	42	2.4	65	3.5
C51202197JFM····	190	116	125	50	10	1.9	5.7	36	2.5	65	3.0
C51202207JFM····	200	86	225	32	12	2.4	7.2	52	2.4	65	2.5
C51202227JFM····	220	116	150	50	10	2.2	6.6	65	2.0	65	2.5
C51202277JFM····	275	136	125	50	10	2.7	8.1	41	2.1	70	2.0
C51202287JFM····	280	116	180	50	10	2.8	8.4	64	2.0	75	1.8
C51202387JFM····	380	116	230	50	10	3.8	11.4	65	1.6	80	2.0
C51202407JFM····	400	136	180	50	7	2.8	8.4	71	1.3	65	1.8
C51202547JFM····	540	136	230	50	7	3.8	11.4	72	1.3	70	1.5
C51202607JFM····	600	136	260	50	6	3.6	10.8	99	1.2	70	1.3
C51202807JFM····	800	136	335	50	5	4.0	12.0	102	1.3	80	1.3
U_N 2500VDC											
C512521956JFM····	95	116	130	50	25	2.4	7.2	43	1.9	60	2.5
C51252137JFM····	130	136	130	50	25	3.2	9.6	47	2.0	60	2.5
C51252207JFM····	200	116	230	50	25	5.0	15.0	42	1.5	75	2.0
C51252287JFM····	280	136	230	50	20	5.6	16.8	46	1.3	75	2.5

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U_N 3000VDC											
C51302396JFM····	39	76	175	32	35	1.3	3.9	21	2.0	65	4.0
C51302476JFM····	47	86	145	32	35	1.6	4.8	28	3.2	60	4.0
C51302566JFM····	56	76	225	32	35	1.9	5.7	22	2.3	70	4.0
C51302686JFM····	68	116	130	50	35	2.4	7.2	40	1.6	75	3.6
C51302826JFM····	82	86	225	32	30	2.4	7.2	27	2.4	85	3.5
C51302107JFM····	100	116	180	50	30	3.0	9.0	37	1.2	80	3.5
C51302127JFM····	120	136	180	50	30	3.6	10.8	43	1.5	80	3.0
C51302157JFM····	150	116	230	50	30	4.5	13.5	38	1.5	85	3.0
C51302187JFM····	180	136	230	50	25	4.5	13.5	54	1.3	85	2.5
U_N 3600VDC											
C51182806JFM····	42	116	180	50	45	1.9	5.7	35	1.2	80	3.5
C51182117JFM····	60	136	180	50	40	2.4	7.2	40	1.5	80	3.0
C51182167JFM····	88	116	230	50	40	3.5	10.5	34	1.5	85	3.0
C51182207JFM····	125	136	230	50	35	4.3	12.9	38	1.3	85	3.0
U_N 4000VDC											
C51402336JFM····	33	116	180	50	50	1.6	4.8	33	1.2	80	3.5
C51402476JFM····	47	136	180	50	40	1.8	5.4	37	1.5	80	3.0
C51402706JFM····	70	116	230	50	35	2.4	7.2	32	1.5	85	3.0
C51402107JFM····	100	136	230	50	35	3.5	10.8	36	1.3	85	3.0

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Note：1. “Irms @ 50°C”=Maxium allowable r.m,s Current at θambient 50°C. θhotspot will reach the maximum value on this condition.
2. “Rth”= Rth between hotspot and ambient on natural cooling condition.
3. These are standard shell sizes in the above chart, other specification with different size can be made. Pls refer national standards for the size of leading out terminal.
4. Choose the capacitor which bottom with or without screw bolts according to your needs.