



SPECIFICATION FOR APPROVAL

File No.: Q/FRK 0.GS. E.C3B.1-C02

Product Name	DC-Link-Capacitor (Dry-Type, Aluminum case)
Product Type:	C3B
Product Code	
Customer	
Customer Code	
Issue Date	2016-7



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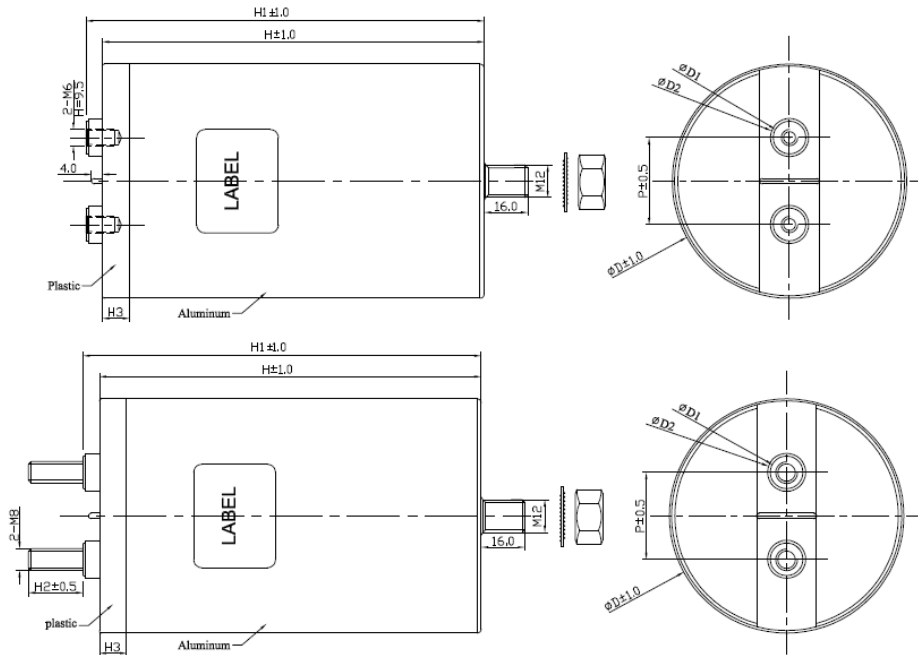


Revision record

No.	Revision description	Recorder	Updated date	Version

DC-Link Capacitor (Dry-Type, Aluminum case)

■ Outline Drawing



Additional remark of dimensions

D=76mm	P=32mm; D1=12mm; D2=14mm; H3=10mm	
D=86mm	P=32mm; D1=12mm; D2=14mm; H3=10mm or 45mm	
	P=45mm;	Female terminals: D1=14mm; D2=16mm; H3=10mm or 45mm Male terminals: D1=16mm; D2=20mm; H3=10mm or 45mm

Notes:

1. I_{max} 70A of terminals
2. H3 can be changed in pursuance of customer's request.



■ Features

- Used in DC-Link circuits, Can replace electrolytic capacitor
- Low ESR, high ripple current handling capabilities
- Low L_s
- Self-healing property
- Long lifetime
- Aluminum case, Filled with resin

■ Applications

- Used in inverters of solar power
- Welders, Elevators, Motor Driver systems

■ Safty approvals

	TUV Rheinland	EN 61071: 2007, EN 61881-1: 2011, 600Vdc ~ 4000Vdc, 5 μ F~5600 μ F, -40/85°C Certificate No.: R 50266039
	UL	UL 810 (construction only), Max.5000Vdc, 90°C File No.: E256238 CCN: CZDS2



■ Specifications

Reference Standard	GB/T 17702, IEC 61071	
Climatic Category	40/85/56	
Operating Temperature Range	-40°C~85°C ($\Theta_{hs} \leq 85^\circ\text{C}$)	
Storage temperature range	-40°C~85°C	
Voltage Range	600Vdc~1 500Vdc	
Capacitance Range	110 μF ~2 300 μF	
Capacitance Tolerance	$\pm 5\%$ (J); $\pm 10\%$ (K)	
Test Voltage Between Terminals	1.5U _N (10s, 20°C $\pm 5^\circ\text{C}$)	
Test Voltage Between Terminals And Case	U _N <1500Vdc, 3000Vac(10s,50Hz, 20°C $\pm 5^\circ\text{C}$) U _N \geq 1500Vdc, ($\sqrt{2}$ U _N +1000)Vac(10s,50Hz, 20°C $\pm 5^\circ\text{C}$)	
tg δ_d	0.0002	
IR \times C _N	$\geq 5000\text{s}$ (20°C, 500Vdc, 1min)	
Over Voltage	1.1 U _N (30% of on-load-dur.)	
	1.15 U _N (30min/day)	
	1.2 U _N (5min/day)	
	1.3 U _N (1min/day)	
	1.5 U _N (30ms every time, 1000times during the life of the capacitor)	
Max. Altitude	2000m	
Max. Torque of terminals	M6: 5Nm	M8: 6 Nm
Max. Torque of Installation	10 Nm	
Installation	Any Position	
Expected lifetime	100 000hrs @ U _N , $\Theta_{hs}=70^\circ\text{C}$	
Failure rate	50 FIT	

Note: The effect of altitude on convection cooling and external insulation should be taken into consideration, if the altitude exceeds 2000m.

■ Part number system

The 18 digits part number is formed as follow:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

C	3	B															
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Digit 1 to 3 Series code of film capacitor

Digit 4 to 5 DC rated voltage

1U=600V 3V=750V 2K=800V 1X=900V 3A=1000V

1M=1100V 3L=1200V 4M=1500V

Digit 6 to 8 Rated capacitance value

For example: 127=12 $\times 10^7$ pF=120 μF

Digit 9 Capacitance tolerance

J= $\pm 5\%$ K= $\pm 10\%$

Digit 10 to 11 Dimension code

ϕ D	H	Code	ϕ D	H	Code	ϕ D	H	Code
86	140	10	76	95	60	86	136	G0
86	120	20	86	155	70	86	252	Q0
76	140	30	76	155	80			
76	120	40	86	174	90			
86	95	50	76	174	A0			

Digit 11 Internal use

Digit 12 to 15 Terminals code(refer to table 1)

Table 1 Terminals code

Male terminals code

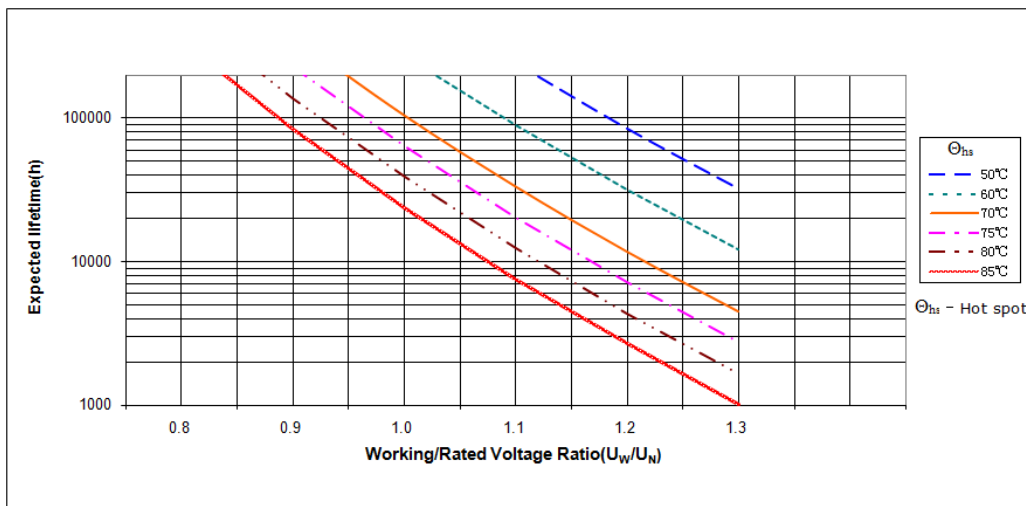
Digit 12		Digit 13		Digit 14		Digit 15	
code	Terminal form	code	Fix style	code	Length of terminals	code	Specificaions of terminal
2	Male Terminals	7	Bottom-bolt M12	0	20mm	0	M8(P=32)
		8	Ring-clip in the middle of case	2	16mm	2	M8(P=45)
				4	15mm		
				5	13mm		
				6	25mm		

Female terminals code

Digit 12		Digit 13		Digit 14		Digit 15	
code	Terminal form	code	Fix style	code	Depth of terminals	code	Specificaions of terminal
H	Thread hole type	7	Bottom-bolt M12	3	9.5mm	1	M6(P=32)
		8	Ring-clip in the middle of case			3	M6(P=45)

Digit 16 to 18 Internal use

Expected lifetime curve





■ Technical data (mm)

U _N (Vdc)	C _N (μF)	ESR @1KHz (mΩ)	L _S (nH)	R _{th} (K/W)	Ī (A)	I _{max} (A)			Dimension			Weight (kg)	Part number
						40°C	50°C	60°C	ΦD	H	H1		
600	580	1.5	45	5.6	1 650	70	59	48	76	95	101	0.60	C3B1U587-60*****++
	800	1.8	50	4.7	1 670	70	59	48	76	120	126	0.70	C3B1U807-40*****++
	960	2.1	55	4.6	1 660	64	56	46	76	140	146	0.75	C3B1U967-30*****++
	1000	1.1	40	4.3	3 260	70	70	70	76	155	161	0.90	C3B1U108-80*****++
	1200	1.1	45	4.2	3 410	70	70	70	76	174	180	1.00	C3B1U128-A0*****++
	720	1.4	45	5.1	2 190	70	70	53	86	95	101	0.72	C3B1U727-50*****++
	1100	1.5	50	4.7	2 300	70	65	53	86	120	126	1.00	C3B1U118-20*****++
	1200	1.7	55	4.6	2 170	70	62	50	86	136	142	1.10	C3B1U128-G0*****++
	1300	1.7	55	4.6	2 250	70	61	50	86	140	146	1.15	C3B1U138-10*****++
	1400	1.0	40	4.4	4 560	70	70	70	86	155	161	1.25	C3B1U148-70*****++
	1600	1.0	45	4.3	4 540	70	70	70	86	174	180	1.30	C3B1U168-90*****++
2300	0.9	55	3.0	6 530	70	70	70	86	252	258	1.80	C3B1U238-Q0*****++	
750	520	1.6	45	5.6	1 690	70	57	47	76	95	101	0.60	C3B3V527-60*****++
	700	2.0	50	4.7	1 680	66	57	46	76	120	126	0.70	C3B3V707-40*****++
	850	2.3	55	4.6	1 680	62	54	44	76	140	146	0.75	C3B3V857-30*****++
	900	1.1	40	4.3	3 360	70	70	70	76	155	161	0.90	C3B3V907-80*****++
	1000	1.2	45	4.2	3 250	70	70	70	76	174	180	1.00	C3B3V108-A0*****++
	680	1.4	45	5.1	2 210	70	65	53	86	95	101	0.72	C3B3V687-50*****++
	900	1.7	50	4.7	2 160	70	61	50	86	120	126	1.00	C3B3V907-20*****++
	1100	1.8	55	4.6	2 270	70	60	49	86	136	142	1.10	C3B3V118-G0*****++
	1200	1.8	55	4.6	2 370	70	60	49	86	140	146	1.15	C3B3V128-10*****++
	1200	1.0	40	4.4	4 480	70	70	70	86	155	161	1.25	C3B3V128-70*****++
	1400	1.0	45	4.3	4 550	70	70	70	86	174	180	1.30	C3B3V148-90*****++
2000	0.9	55	3.0	6 500	70	70	70	86	252	258	1.80	C3B3V208-Q0*****++	
800	370	1.7	45	5.6	1 600	64	56	45	76	95	101	0.60	C3B2K377-60*****++
	500	2.1	50	4.7	1 610	64	55	45	76	120	126	0.70	C3B2K507-40*****++
	600	2.4	55	4.6	1 590	60	52	42	76	140	146	0.75	C3B2K607-30*****++
	660	1.1	40	4.3	3 280	70	70	70	76	155	161	0.90	C3B2K667-80*****++
	730	1.2	45	4.2	3 200	70	70	70	76	174	180	1.00	C3B2K737-A0*****++
	490	1.5	45	5.1	2 100	70	63	51	86	95	101	0.72	C3B2K497-50*****++
	670	1.8	50	4.7	2 110	70	60	49	86	120	126	1.00	C3B2K677-20*****++
	770	1.9	55	4.6	2 140	70	58	48	86	136	142	1.10	C3B2K777-G0*****++
	780	2.0	55	4.6	2 100	66	57	47	86	140	146	1.15	C3B2K787-10*****++
	850	1.0	40	4.4	4 150	70	70	70	86	155	161	1.25	C3B2K857-70*****++
	970	1.1	45	4.3	4 120	70	70	70	86	174	180	1.30	C3B2K977-90*****++
1400	1.0	55	3.0	6 310	70	70	70	86	252	258	1.80	C3B2K148-Q0*****++	
900	370	1.7	45	5.6	1 600	64	56	45	76	95	101	0.60	C3B1X377-60*****++
	500	2.1	50	4.7	1 610	64	55	45	76	120	126	0.70	C3B1X507-40*****++
	600	2.4	55	4.6	1 590	60	52	42	76	140	146	0.75	C3B1X607-30*****++
	660	1.1	40	4.3	3 280	70	70	70	76	155	161	0.90	C3B1X667-80*****++
	730	1.2	45	4.2	3 200	70	70	70	76	174	180	1.00	C3B1X737-A0*****++
	490	1.5	45	5.1	2 100	70	63	51	86	95	101	0.72	C3B1X497-50*****++
	670	1.8	50	4.7	2 110	70	60	49	86	120	126	1.00	C3B1X677-20*****++
	770	1.9	55	4.6	2 140	70	58	48	86	136	142	1.10	C3B1X777-G0*****++
	780	2.0	55	4.6	2 100	66	57	47	86	140	146	1.15	C3B1X787-10*****++
	850	1.0	40	4.4	4 150	70	70	70	86	155	161	1.25	C3B1X857-70*****++
	970	1.1	45	4.3	4 120	70	70	70	86	174	180	1.30	C3B1X977-90*****++
1400	1.0	55	3.0	6 310	70	70	70	86	252	258	1.80	C3B1X148-Q0*****++	



■ Technical data (mm)

U _N (Vdc)	C _N (μF)	ESR @1KHz (mΩ)	L _S (nH)	R _{th} (K/W)	Ī (A)	I _{max} (A)			Dimension			Weight (kg)	Part number
						40°C	50°C	60°C	ΦD	H	H1		
1000	300	1.9	45	5.6	1 540	62	54	44	76	95	101	0.60	C3B3A307-60*****++
	400	2.2	50	4.7	1 590	62	53	44	76	120	126	0.70	C3B3A407-40*****++
	490	2.6	55	4.6	1 560	58	50	41	76	140	146	0.75	C3B3A497-30*****++
	530	1.2	40	4.3	3 190	70	70	63	76	155	161	0.90	C3B3A537-80*****++
	590	1.3	45	4.2	3 090	70	70	61	76	174	180	1.00	C3B3A597-A0*****++
	400	1.6	45	5.1	2 060	70	61	50	86	95	101	0.72	C3B3A407-50*****++
	540	1.9	50	4.7	2 080	70	58	48	86	120	126	1.00	C3B3A547-20*****++
	620	2.0	55	4.6	2 130	65	57	46	86	136	142	1.10	C3B3A627-G0*****++
	640	2.1	55	4.6	2 130	64	56	45	86	140	146	1.15	C3B3A647-10*****++
	680	1.1	40	4.4	4 130	70	70	70	86	155	161	1.25	C3B3A687-70*****++
	780	1.1	45	4.3	4 110	70	70	70	86	174	180	1.30	C3B3A787-90*****++
1100	1.0	55	3.0	6 170	70	70	70	86	252	258	1.80	C3B3A118-Q0*****++	
1100	220	2.0	45	5.6	1 580	60	52	42	76	95	101	0.60	C3B1M227-60*****++
	300	2.5	50	4.7	1 570	58	50	41	76	120	126	0.70	C3B1M307-40*****++
	360	3.0	55	4.6	1 500	54	47	38	76	140	146	0.75	C3B1M367-30*****++
	400	1.3	40	4.3	3 150	70	70	60	76	155	161	0.90	C3B1M407-80*****++
	440	1.4	45	4.2	3 020	70	70	59	76	174	180	1.00	C3B1M447-A0*****++
	300	1.7	45	5.1	2 060	70	59	48	86	95	101	0.72	C3B1M307-50*****++
	400	2.1	50	4.7	2 020	64	55	45	86	120	126	1.00	C3B1M407-20*****++
	450	2.4	55	4.6	1 960	61	52	43	86	136	142	1.10	C3B1M457-G0*****++
	500	1.2	40	4.4	3 940	70	70	70	86	155	161	1.25	C3B1M507-70*****++
	580	1.2	45	4.3	3 980	70	70	62	86	174	180	1.30	C3B1M587-90*****++
	840	1.0	55	3.0	5 970	70	70	70	86	252	258	1.80	C3B1M847-Q0*****++
1200	180	2.1	45	5.6	1 540	59	51	41	76	95	101	0.60	C3B3L187-60*****++
	250	2.8	50	4.7	1 420	56	48	39	76	120	126	0.70	C3B3L257-40*****++
	310	3.1	55	4.6	1 450	53	46	37	76	140	146	0.75	C3B3L317-30*****++
	330	1.3	40	4.3	2 930	70	70	59	76	155	161	0.90	C3B3L337-80*****++
	370	1.4	45	4.2	2 860	70	70	57	76	174	180	1.00	C3B3L377-A0*****++
	250	1.8	45	5.1	1 930	66	57	47	86	95	101	0.72	C3B3L257-50*****++
	340	2.2	50	4.7	1 930	62	54	44	86	120	126	1.00	C3B3L347-20*****++
	380	2.5	55	4.6	1 860	59	51	42	86	136	142	1.10	C3B3L387-G0*****++
	400	2.6	55	4.6	1 870	58	50	41	86	140	146	1.15	C3B3L407-10*****++
	420	1.2	40	4.4	3 730	70	70	62	86	155	161	1.25	C3B3L427-70*****++
	480	1.3	45	4.3	3 710	70	70	60	86	174	180	1.30	C3B3L487-90*****++
700	1.1	55	3.0	5 560	70	70	70	86	252	258	1.80	C3B3L707-Q0*****++	
1500	110	2.6	45	5.6	1 350	53	46	37	76	95	101	0.60	C3B4M117-60*****++
	150	3.3	50	4.7	1 350	51	44	36	76	120	126	0.70	C3B4M157-40*****++
	170	4.0	55	4.6	1 260	46	40	33	76	140	146	0.75	C3B4M177-30*****++
	180	1.6	40	4.3	2 530	70	70	54	76	155	161	0.90	C3B4M187-80*****++
	200	1.7	45	4.2	2 450	70	64	52	76	174	180	1.00	C3B4M207-A0*****++
	140	2.2	45	5.1	1 710	60	52	42	86	95	101	0.72	C3B4M147-50*****++
	190	2.7	50	4.7	1 700	56	48	39	86	120	126	1.00	C3B4M197-20*****++
	220	3.1	55	4.6	1 700	53	46	38	86	136	142	1.10	C3B4M227-G0*****++
	240	1.4	40	4.4	3 380	70	70	58	86	155	161	1.25	C3B4M247-70*****++
	270	1.5	45	4.3	3 300	70	70	56	86	174	180	1.30	C3B4M277-90*****++
	410	1.2	55	3.0	5 010	70	70	70	86	252	258	1.80	C3B4M417-Q0*****++

Note: 1. “-”=capacitance tolerance code, J=±5.0%,K=±10%

2. “*****”=terminals code(refer to table1),terminals can be male or female.

3. “+++”=Internal use

4. “I_{max}”=Maxium allowable r.m.s current at Θ_{amb}(40°C,50°C,60°C). Θ_{hs} will reach the maximum value on this condition.

5. “R_{th}” = R_{th} between hotspot and ambient on natural cooling condition.

6. Sizes above are normally used dimension,other dimension can be produced in pursuance of customer’s request.
Sizes of terminals please refer to corresponding national standard.

7. Customers also can choose the capacitor with or without the bottom bolt M12.

8. *Θ_{hs}=Θ_{amb}+ I_{rms}²×ESR×R_{th}.