

**High Security Capacitors with controllable frame layers**

**Type CKS 501-4 BDF**

**Applications**

- Railway Signal Systems
- High Reliability Circuits

**Main Characteristics**

- High Reliability
- Controllable Metallized frame layers
- Compliant to standards NF F 62 - 102
- Nominal Voltage  $U_N$ : 40 VDC to 630 VDC
- Dry film technology
- Climatic category 40/125/56
- Tolerances  $\pm 20\%$ ,  $\pm 10\%$ ,  $\pm 5\%$ ,  $\pm 2\%$ ,  $\pm 1\%$



**CKS 501-4BDF**

**Design Data**

- Metallized Polycarbonate
- Self-extinguishing plastic housing
- Tinned copper radial leads
- Epoxy resin end-seal (UL-V0)
- Marking to indicate outer foil on request

**Mounting**

- Indifferent positioning

**1.0 Rated Values and Operational Data**

DC	Nominal Voltage $U_R$ [VDC]	$\leq 85^\circ\text{C}$	B	40	63	160	250	400	630
	Category Voltage $U_C$ [VDC] = $0.5x_r$	$\leq 125^\circ\text{C}$	B	20	31.5	80	125	200	315
	Test Voltage $U_T$ [VDC] = $1.6xU_r$	1 min / $23^\circ\text{C}$	B	64	100	160	400	640	1000
AC	Nominal Voltage $U_{N-50/60}$ Hz [VAC]	$\leq 85^\circ\text{C}$	B	25	40	100	160	200	220

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**2.0 Capacitance Range**

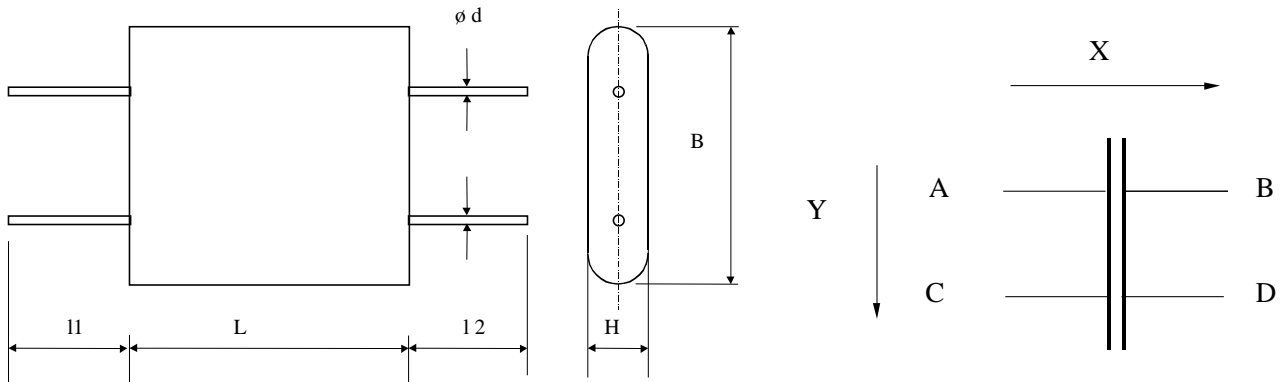
Cn =>	1.0 nF	22 nF	33 nF	68 nF	0.22µF	0.47µF	2.2µF	4.7µF	10µF	33µF
40 VDC										
63 VDC										
160 VDC										
250 VDC										
400 VDC										
630 VDC										

**3.0 Characteristics**

			Min	Typ	Max
Dissipation Factor	tg δ	≤ 1 µF			x 10 <sup>-4</sup>
		> 1 µF			x 10 <sup>-4</sup>
Insulation Resistance 1min à 23°C	R <sub>i</sub> [MΩ]	≤ 0.22 µF	50000		
Time Constant 1min à 23°C	R <sub>i</sub> C [s]	> 0.22 µF	10000		
Temperature Coefficient	α <sub>c</sub> [ppm]				
Long term stability	ΔC / C [%]				

## 4.0 Dimensions, Shape

The capacitors are delivered in bulk.



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**CKM501-4 BDF 40 VDC**

B4F6	Type	Cn	Dimensions					
			Pos.	Dim.	B [mm]	H [mm]	L [mm]	X [mm]
		[μF]						
2	CKM501-4 BDF 4-047	0.47	6	12.0	9.0	14.0	5.08	0.60
4	CKM501-4 BDF 4-068	0.68	9	13.5	10.5	14.0	5.08	0.60
6	CKM501-4 BDF 4-1.0	1.0	15	12.0	9.0	16.0	5.08	0.60
8	CKM501-4 BDF 4-1.5	1.5	20	13.5	10.5	16.0	5.08	0.60
10	CKM501-4 BDF 4-2.2	2.2	26	12.5	9.5	21.0	5.08	0.80
12	CKM501-4 BDF 4-3.3	3.3	30	15.0	11.0	21.0	7.62	0.80
14	CKM501-4 BDF 4-4.7	4.7	34	12.5	9.0	34.0	5.08	0.80
16	CKM501-4 BDF 4-6.8	6.8	37	14.0	11.0	34.0	5.08	0.80
18	CKM501-4 BDF 4-10.0	10	46	16.5	13.5	34.0	7.62	0.80
20	CKM501-4 BDF 4-15.0	15	45	22.0	13.0	34.0	10.16	0.80
22	CKM501-4 BDF 4-22.0	22	52	24.0	15.0	34.0	10.16	0.80
23	CKM501-4 BDF 4-33.0	33	55	27.0	18.0	34.0	12.70	0.80

**CKM501-4 BDF 63 VDC**

B4F6	Type	Cn	Dimensions					
			Pos.	Dim.	B [mm]	H [mm]	L [mm]	X [mm]
		[μF]						
1	CKM501-4 BDF 6-022	0.22	6	12.0	9.0	14.0	5.08	0.6
3	CKM501-4 BDF 6-033	0.33	9	13.5	10.5	14.0	5.08	0.6
5	CKM501-4 BDF 6-047	0.47	15	12.0	9.0	16.0	5.08	0.6
7	CKM501-4 BDF 6-068	0.68	20	13.5	10.5	16.0	5.08	0.6
9	CKM501-4 BDF 6-1.0	1.0	26	12.5	9.5	21.0	5.08	0.8
11	CKM501-4 BDF 6-1.5	1.5	30	15.0	11.0	21.0	7.62	0.8
13	CKM501-4 BDF 6-2.2	2.2	34	12.5	9.0	34.0	5.08	0.8
15	CKM501-4 BDF 6-3.3	3.3	37	14.0	11.0	34.0	5.08	0.8
17	CKM501-4 BDF 6-4.7	4.7	46	16.5	13.5	34.0	7.62	0.8
19	CKM501-4 BDF 6-6.8	6.8	45	22.0	13.0	34.0	10.16	0.8
21	CKM501-4 BDF 6-10.0	10	52	24.0	15.0	34.0	10.16	0.8
22	CKM501-4 BDF 6-15.0	15	58	26.0	17.0	45.0	12.70	1.0
23	CKM501-4 BDF 6-22.0	22	58	26.0	17.0	45.0	12.70	1.0
24	CKM501-4 BDF 6-33.0	33	59	32.0	21.0	45.0	12.70	1.0

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**Type CKS 501-4 BDF**

**CKM501-4 BDF 160 VDC**

B4F6	Type	Cn	Dimensions					
			Pos.	Dim.	B [mm]	H [mm]	L [mm]	X [mm]
	CKM501-4 BDF 16-168	0.068	6	12.0	9.0	14.0	5.08	0.6
	CKM501-4 BDF 16-010	0.100	8	13.0	10.0	14.0	5.08	0.6
	CKM501-4 BDF 16-015	0.150	15	12.0	9.0	16.0	5.08	0.6
	CKM501-4 BDF 16-022	0.22	18	12.5	9.5	16.0	5.08	0.6
	CKM501-4 BDF 16-033	0.33	25	13.0	9.0	21.0	5.08	0.8
	CKM501-4 BDF 16-047	0.47	27	13.0	10.0	21.0	5.08	0.8
	CKM501-4 BDF 16-068	0.68	34	12.5	9.0	34.0	5.08	0.8
	CKM501-4 BDF 16-1.0	1.0	35	13.0	10.0	34.0	5.08	0.8
	CKM501-4 BDF 16-1.5	1.5	41	16.0	12.5	34.0	7.62	0.8
	CKM501-4 BDF 16-2.2	2.2	47	17.0	14.0	34.0	7.62	0.8
	CKM501-4 BDF 16-3.3	3.3	52	24.0	15.0	34.0	10.16	0.8
	CKM501-4 BDF 16-4.7	4.7	53	25.5	16.5	34.0	12.70	0.8
	CKM501-4 BDF 16-6.8	6.8	58	26.0	17.0	45.0	12.70	1.0
	CKM501-4 BDF 16-10.0	10	59	32.0	21.0	45.0	12.70	1.0

**CKM501-4 BDF 250 VDC**

B4F6	Type	Cn	Dimensions					
			Pos.	Dim.	B [mm]	H [mm]	L [mm]	X [mm]
	CKM501-4 BDF 25-133	0.033	7	12.5	9.5	14.0	5.08	0.6
	CKM501-4 BDF 25-147	0.047	9	13.5	10.5	14.0	5.08	0.6
	CKM501-4 BDF 25-168	0.068	15	12.0	9.0	16.0	5.08	0.6
	CKM501-4 BDF 25-010	0.10	20	13.5	10.5	16.0	5.08	0.6
	CKM501-4 BDF 25-015	0.15	26	12.5	9.5	21.0	5.08	0.8
	CKM501-4 BDF 25-022	0.22	29	14.0	10.0	21.0	5.08	0.8
	CKM501-4 BDF 25-033	0.33	34	12.5	9.0	34.0	5.08	0.8
	CKM501-4 BDF 25-047	0.47	37	14.0	11.0	34.0	5.08	0.8
	CKM501-4 BDF 25-068	0.68	41	16.0	12.5	34.0	7.62	0.8
	CKM501-4 BDF 25-1.0	1.0	47	17.0	14.0	34.0	7.62	0.8
	CKM501-4 BDF 25-1.5	1.5	52	24.0	15.0	34.0	10.16	0.8
	CKM501-4 BDF 25-2.2	2.2	55	27.0	18.0	34.0	12.70	0.8
	CKM501-4 BDF 25-3.3	3.3	58	26.0	17.0	45.0	12.70	1.0
	CKM501-4 BDF 25-4.7	4.7	59	32.0	21.0	45.0	12.70	1.0

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**CKM501-4 BDF 400 VDC**

B4F6	Type	Cn	Dimensions						
			Pos.	Dim.	B [mm]	H [mm]	L [mm]	X [mm]	∅ lead [mm]
	3	CKM501-4 BDF 40-122	0.022	7	12.5	9.5	14.0	5.08	0.6
	5	CKM501-4 BDF 40-133	0.033	11	14.0	11.0	14.0	5.08	0.6
	7	CKM501-4 BDF 40-147	0.047	18	12.5	9.5	16.0	5.08	0.6
	9	CKM501-4 BDF 40-168	0.068	26	12.5	9.5	21.0	5.08	0.8
	11	CKM501-4 BDF 40-010	0.10	27	13.0	10.0	21.0	5.08	0.8
	13	CKM501-4 BDF 40-015	0.15	31	14.5	11.5	21.0	5.08	0.8
	15	CKM501-4 BDF 40-022	0.22	34	12.5	9.0	34.0	5.08	0.8
	17	CKM501-4 BDF 40-033	0.33	37	14.0	11.0	34.0	5.08	0.8
	19	CKM501-4 BDF 40-047	0.47	41	16.0	12.5	34.0	7.62	0.8
	21	CKM501-4 BDF 40-068	0.68	42	21.0	12.5	34.0	10.16	0.8
	23	CKM501-4 BDF 40-1.0	1.00	52	24.0	15.0	34.0	10.16	0.8
	24	CKM501-4 BDF 40-1.5	1.50	58	26.0	17.0	45.0	12.70	1.0
	25	CKM501-4 BDF 40-2.2	2.20	58	26.0	17.0	45.0	12.70	1.0
	26	CKM501-4 BDF 40-3.3	3.30	59	32.0	21.0	45.0	12.70	1.0
	27	CKM501-4 BDF 40-4.7	4.70	60	37.0	26.0	45.0	12.70	1.0

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**CKM501-4 BDF 630 VDC**

B4F6	Type	Cn [μF]	Dimensions					
			Case	B [mm]	H [mm]	L [mm]	X [mm]	∅ lead [mm]
1	CKM501-4 BDF 63-210	0.0010	5	11.0	8.0	14.0	5.08	0.6
3	CKM501-4 BDF 63-215	0.0015	5	11.0	8.0	14.0	5.08	0.6
5	CKM501-4 BDF 63-222	0.0022	6	12.0	9.0	14.0	5.08	0.6
7	CKM501-4 BDF 63-233	0.0033	6	12.0	9.0	14.0	5.08	0.6
9	CKM501-4 BDF 63-247	0.0047	6	12.0	9.0	14.0	5.08	0.6
11	CKM501-4 BDF 63-268	0.0068	6	12.0	9.0	14.0	5.08	0.6
13	CKM501-4 BDF 63-110	0.010	7	12.5	9.5	14.0	5.08	0.6
15	CKM501-4 BDF 63-115	0.015	11	14.0	11.0	14.0	5.08	0.6
17	CKM501-4 BDF 63-122	0.022	18	12.5	9.5	16.0	5.08	0.6
19	CKM501-4 BDF 63-133	0.033	26	12.5	9.5	21.0	5.08	0.8
21	CKM501-4 BDF 63-147	0.047	27	13.0	10.0	21.0	5.08	0.8
23	CKM501-4 BDF 63-168	0.068	30	15.0	11.0	21.0	7.62	0.8
25	CKM501-4 BDF 63-010	0.10	32	17.0	13.0	21.0	7.62	0.8
27	CKM501-4 BDF 63-015	0.15	37	14.0	11.0	34.0	5.08	0.8
29	CKM501-4 BDF 63-022	0.22	46	16.5	13.5	34.0	7.62	0.8
31	CKM501-4 BDF 63-033	0.33	51	19.0	15.0	34.0	7.62	0.8
23	CKM501-4 BDF 63-047	0.47	54	21.0	18.0	34.0	10.16	0.8
24	CKM501-4 BDF 63-068	0.68	56	28.0	19.0	34.0	12.70	0.8
25	CKM501-4 BDF 63-1.0	1.0	57	32.0	23.0	34.0	12.70	0.8
26	CKM501-4 BDF 63-1.5	1.5	59	32.0	21.0	45.0	12.70	1.0
27	CKM501-4 BDF 63-2.2	2.2	60	37.0	26.0	45.0	12.70	1.0