

**DCB - (Expanded range; new 450Vdc rating - In Progress)**  
**Metallized polypropylene film capacitor**  
**MKP - DC Link Capacitor - small size**  
**2/4 x terminals execution**



**Main applications**

DC capacitor for medium-low power DC-Link applications in inverters, AC/ DC motor controls and welding equipments. **Not suitable for AC applications: refer to MHBA / MHBS series**

**Dielectric**

Polypropylene

**Electrodes**

Vacuum deposited metal layers

**Coating**

Solvent resistant plastic case with resin sealing (UL 94 V-0). Flame retardant execution

**Construction**

Extended metallized film (refer to general technical information)

**Terminals**

Tinned copper wire (lead free). 2 and 4 terminals execution.

**Degree of protection**

IP00

**Installation**

Whatever position assuring correct heat dissipation. Arrangement of many components with box walls in contact not admitted; suggested minimum distance between side by side elements  $\geq 1/8$  of the box thickness (B size)

**Reference standard**

IEC 61071, IEC 60068, RoHS compliant

**Climatic category**

40/85/56 (IEC 60068/1), GPE (DIN40040)

**Operating temperature range (case)**

-40°...+85°C (at +85°C without power applied)

**Max. permissible ambient temperature**

+70°C (operation at rated power, current, voltage and natural cooling)

**Rated capacitance (Cr)**

7,5µF to 125µF. Refer to article table

**Capacitance tolerance (at 1kHz)**

$\pm 10\%$  (code=K),  $\pm 5\%$  (code=J). Other tolerances upon request

**Capacitance temperature coefficient**

Refer to graphs in general technical information

**Long term stability (at 1 kHz)**

Capacitance variation  $\leq \pm 1\%$  after a period of 2 years at standard environmental conditions

**Rated voltage (Ur)**

450, 700, 900, 1100 Vdc

**Non recurrent surge voltage (Upk)**

560, 875, 1125, 1375 Vdc

**Max. applicable peak to peak ripple voltage (Upp)**

0,2 x Urdc (respecting current ratings)

**Max. repetitive peak voltage (Upkr)**

1,15 x Ur (30 minutes max./ day)

**Self inductance**

$\leq 1\text{nH/mm}$  of capacitor pitch

**Maximum pulse rise time**

Refer to article table

**Maximum peak current (Ipeak)**

Refer to article table

**Dissipation factor (DF), max.**

$Tg\delta \times 10^{-4}$ , measured at 25 $\pm 5^\circ\text{C}$ , 1kHz

Cr $\leq 20\mu\text{F}$	$20\mu\text{F} < \text{Cr} \leq 50\mu\text{F}$	$50\mu\text{F} < \text{Cr} \leq 75\mu\text{F}$	Cr $> 75\mu\text{F}$
20	30	37	45

**Insulation resistance (IR)**

$\geq 3000\text{s}$  when measured between terminals, at 25 $\pm 5^\circ\text{C}$ , after 1 minute of electrification at 100Vdc

**Test voltage between terminals (Ut)**

1,5xUr (DC) applied for 10s at 25 $\pm 5^\circ\text{C}$

**Test voltage between terminals and case (Utc)**

3kV 50 $\pm 60\text{Hz}$  applied for 60s at 25 $\pm 5^\circ\text{C}$

**Damp heat test (steady state)**

Test conditions:

Temperature= +40 $\pm 2^\circ\text{C}$

Relative humidity=93 $\pm 2\%$

Test duration= 56 days

Performance:

Capacitance change  $\leq \pm 3\%$

DF change  $\leq 0.0010$  at 1kHz for Cr $\leq 60\mu\text{F}$

DF change  $\leq 0.0015$  at 1kHz for Cr $> 60\mu\text{F}$

IR $\geq 50\%$  of initial limit value

**Typical capacitance change versus operating time**

-5% after 100'000 hours at Ur

**Life expectancy**

$\geq 100'000$  hours (Ur)

**Failure quota**

300/10<sup>9</sup> component hours

**Resistance to soldering heat test**

Test conditions:

Solder bath temperature= +260 $\pm 5^\circ\text{C}$

Dipping time (with heat screen)= 10 $\pm 1\text{s}$

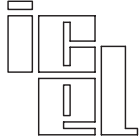
Performance:

Capacitance change  $\leq \pm 1\%$

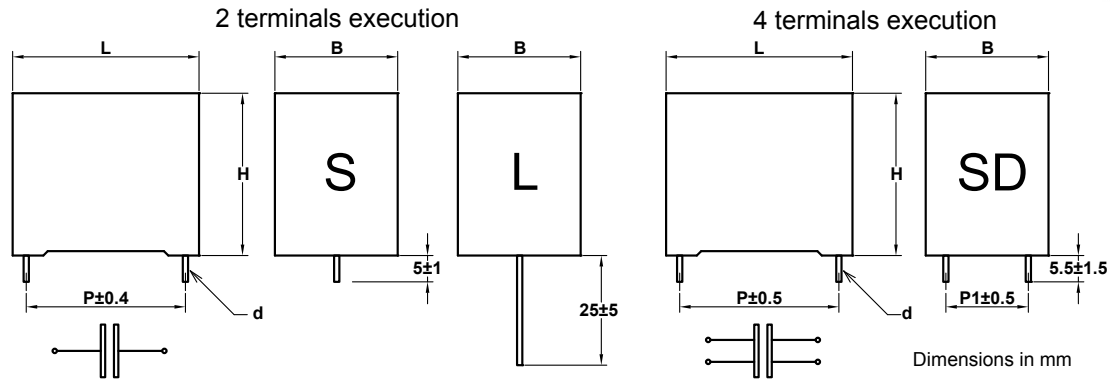
DF change  $\leq 0.0010$  at 1kHz

IR $\geq 50\%$  of initial limit value

**Warning: this specification must be completed with the data given in the "General technical information" chapter**



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DCB article table (different values available upon request)

Ur Vdc	Upk Vdc	Upkr Vdc	Cap. µF	Dimension in mm							du/dt V/µs	Ipeak A	Irms <sup>(2)</sup> A	ESR <sup>(3)</sup> mΩ	ICEL Code <sup>(1)</sup>
				B	H	L	d	P	P1						
450	560	515	25	22	33,5	42,5	1,2	37,5	-	10	250	8	9,3	DCB1455250*J#	
450	560	515	30	20	40	41,5	1,2	37,5	-	10	300	10	8,3	DCB1455300*J#	
450	560	515	40	28	37	42,5	1,2	37,5	-	10	400	11	7,1	DCB1455400*J#	
450	560	515	40	28	37	42,5	1,2	37,5	10,2	10	400	12,5	6,4	DCB1455400*JSD	
450	560	515	50	30	45	42,5	1,2	37,5	-	10	500	13	6,3	DCB1455500*J#	
450	560	515	50	30	45	42,5	1,2	37,5	20,3	10	500	15	5,5	DCB1455500*JSD	
450	560	515	70	30	45	57,5	1,2	52,5	-	7	490	14	6,0	DCB1455700*R#	
450	560	515	70	30	45	57,5	1,2	52,5	20,3	7	490	15,5	5,3	DCB1455700*RSD	
450	560	515	100	35	50	57,5	1,2	52,5	20,3	7	700	19,5	4,2	DCB1456100*RSD	
450	560	515	125	38	57,5	57,5	1,2	52,5	20,3	7	875	21,5	3,7	DCB1456125*RSD	
700	875	805	12,5	22	30	42,5	1,2	37,5	-	13	162,5	7,5	11	DCB1705125*J#	
700	875	805	15	22	33,5	42,5	1,2	37,5	-	13	195	8	9,5	DCB1705150*J#	
700	875	805	15	22	33,5	42,5	1,2	37,5	10,2	13	195	9,5	8,7	DCB1705150*JSD	
700	875	805	20	28	37	42,5	1,2	37,5	-	13	260	10	7,9	DCB1705200*J#	
700	875	805	20	28	37	42,5	1,2	37,5	10,2	13	260	12	7,1	DCB1705200*JSD	
700	875	805	22	28	37	42,5	1,2	37,5	-	13	286	10,5	7,5	DCB1705220*J#	
700	875	805	22	28	37	42,5	1,2	37,5	10,2	13	286	12,5	6,7	DCB1705220*JSD	
700	875	805	30	30	45	42,5	1,2	37,5	-	13	390	13	6,3	DCB1705300*J#	
700	875	805	30	30	45	42,5	1,2	37,5	20,3	13	390	15	5,5	DCB1705300*JSD	
700	875	805	45	30	45	57,5	1,2	52,5	-	10	450	14	6,5	DCB1705450*R#	
700	875	805	45	30	45	57,5	1,2	52,5	20,3	10	450	16	5,7	DCB1705450*RSD	
700	875	805	55	35	50	57,5	1,2	52,5	-	10	550	14	5,7	DCB1705550*R#	
700	875	805	55	35	50	57,5	1,2	52,5	20,3	10	550	19	4,9	DCB1705550*RSD	
700	875	805	60	35	50	57,5	1,2	52,5	-	10	600	14	5,5	DCB1705600*RSD	
700	875	805	60	35	50	57,5	1,2	52,5	20,3	10	600	19,5	4,7	DCB1705600*RSD	
700	875	805	75	38	57,5	57,5	1,2	52,5	20,3	10	750	20,5	4,3	DCB1705750*RSD	
900	1125	1035	10	22	33,5	42,5	1,2	37,5	-	16	160	7,5	11	DCB1905100*J#	
900	1125	1035	12	20	40	41,5	1,2	37,5	-	16	192	9	9,7	DCB1905120*J#	
900	1125	1035	12	20	40	41,5	1,2	37,5	10,2	16	192	10,5	8,9	DCB1905120*JSD	
900	1125	1035	15	28	37	42,5	1,2	37,5	-	16	240	10	8,5	DCB1905150*J#	
900	1125	1035	15	28	37	42,5	1,2	37,5	10,2	16	240	11,5	7,7	DCB1905150*JSD	
900	1125	1035	16	24	44	41,5	1,2	37,5	-	16	256	11	8,2	DCB1905160*J#	
900	1125	1035	16	24	44	41,5	1,2	37,5	10,2	16	256	12,5	7,4	DCB1905160*JSD	
900	1125	1035	20	30	45	42,5	1,2	37,5	-	16	320	12	7,2	DCB1905200*J#	
900	1125	1035	20	30	45	42,5	1,2	37,5	20,3	16	320	14	6,4	DCB1905200*JSD	
900	1125	1035	30	30	45	57,5	1,2	52,5	-	11	330	13	7,0	DCB1905300*R#	
900	1125	1035	30	30	45	57,5	1,2	52,5	20,3	11	330	15,5	6,2	DCB1905300*RSD	
900	1125	1035	40	35	50	57,5	1,2	52,5	-	11	440	14	6,0	DCB1905400*R#	
900	1125	1035	40	35	50	57,5	1,2	52,5	20,3	11	440	19	5,2	DCB1905400*RSD	
900	1125	1035	50	38	57,5	57,5	1,2	52,5	20,3	11	550	20,5	4,6	DCB1905500*RSD	
1100	1375	1265	7,5	22	33,5	42,5	1,2	37,5	-	20	150	7	12	DCB2114750*J#	
1100	1375	1265	10	28	37	42,5	1,2	37,5	-	20	200	9	9,8	DCB2115100*J#	
1100	1375	1265	10	28	37	42,5	1,2	37,5	10,2	20	200	10,5	8,9	DCB2115100*JSD	
1100	1375	1265	12,5	30	45	42,5	1,2	37,5	-	20	250	11	8,5	DCB2115125*J#	
1100	1375	1265	12,5	30	45	42,5	1,2	37,5	20,3	20	250	12,5	7,7	DCB2115125*JSD	
1100	1375	1265	20	30	45	57,5	1,2	52,5	-	13	260	12	8,0	DCB2115200*R#	
1100	1375	1265	20	30	45	57,5	1,2	52,5	20,3	13	260	14	7,2	DCB2115200*RSD	
1100	1375	1265	25	35	50	57,5	1,2	52,5	-	13	325	14	7,1	DCB2115250*R#	
1100	1375	1265	25	35	50	57,5	1,2	52,5	20,3	13	325	16	6,3	DCB2115250*RSD	
1100	1375	1265	30	38	57,5	57,5	1,2	52,5	20,3	13	390	17,5	5,9	DCB2115300*RSD	
1100	1375	1265	35	38	57,5	57,5	1,2	52,5	20,3	13	390	18,5	5,4	DCB2115350*RSD	

<sup>(1)</sup>Change the \* symbol with the needed capacitance tolerance code: J=±5%, K=±10% and the # symbol with S for 5,5mm lead length and with L for 25 mm lead length - <sup>(2)</sup> Maximum values at 10kHz, +70°C, Cap. tol.≤ ±10% (for wider C tolerances, ESR variation must be taken in consideration)- <sup>(3)</sup> Typical values at 10kHz (for operating frquencies far from the reference, ESR variation and related different power dissipation must be taken in consideration)