



DCB

- MKP • box with multiple radial terminals • DC-Link
- medium-high current • medium-high frequency
- not suitable for AC applications



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)

Please refer also to paragraph C10 (humid ambient) of the General Technical Information

Operating temperature range (case)

-40°...+85°C

Max. permissible ambient temperature

+70°C (operation at rated power, current, voltage and natural cooling)
(+85°C without power applied)

Nominal Capacitance (Cn) μF

7,5 μF to 125 μF . 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 General Technical Information

Long term stability (at 1kHz)

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

Rated voltage (Ur) (Vdc) at 85°C

450, 700, 900, 1100 Vdc

Non recurrent surge voltage (Upk) at 85°C

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 V/ μs

Refer to article table

Maximum peak current (Ipeak)

Refer to article table

Dissipation factor (DF), max.

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

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

Insulation resistance (R_{INS})

$\geq 3000\text{s}$ 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 \div 60Hz 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 ≤ 0.0010 at 1kHz for Cn $\leq 60 \mu\text{F}$
DF change ≤ 0.0015 at 1kHz for Cn $> 60 \mu\text{F}$
R_{INS} $\geq 50\%$ of initial limit value

Typical capacitance change versus operating time

-5% after 100000 hours at Ur

Life expectancy

≥ 100000 hours (Ur)

Failure quota

300/10⁹ 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 ≤ 0.0010 at 1kHz
R_{INS} $\geq 50\%$ of initial limit value

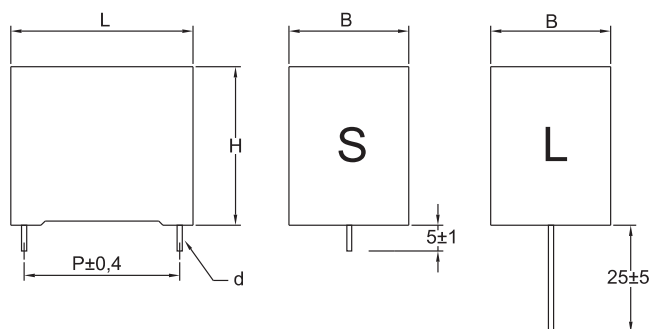


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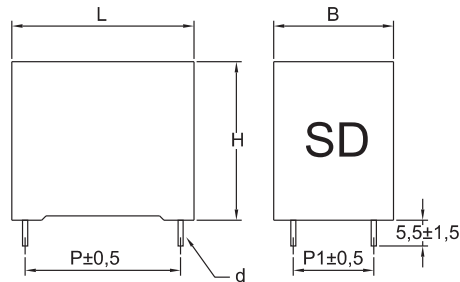
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2 terminals execution



4 terminals execution



DCB article table (different values available upon request)

Voltage at +85°C			Cn μF	Dimensions (mm)						du/dt V/μs	Ipeak A	I _{rms} ⁽²⁾ A	ESR ⁽³⁾ mΩ	ICEL CODE ⁽¹⁾ -
Ur (Vdc)	Upk (Vdc)	Upkr (Vdc)		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	68	35	50	42	1,2	37,5	-	7	476	14	5,2	DCB1455680*J#
450	560	515	68	35	50	42	1,2	37,5	20,3	7	476	18,5	4,4	DCB1455680*JSD
450	560	515	70	30	45	57,5	1,2	52,5	-	7	490	14	6	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	40	35	50	42	1,2	37,5	-	13	520	14	5,4	DCB1705400*J#
700	875	805	40	35	50	42	1,2	37,5	20,3	13	520	18	4,6	DCB1705400*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*R#
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

⁽¹⁾ 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

⁽²⁾ Maximum values at 10kHz, +70°C, Cap. tol. ≤ ±10% (for wider C tolerances, ESR variation must be taken in consideration)

⁽³⁾ Typical values at 10kHz (for operating frequencies far from the reference, ESR variation and related different power dissipation must be taken in consideration)



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Voltage at +85°C			Cn μF	Dimensions (mm)						du/dt V/μs	Ipeak A	Irms ⁽²⁾ A	ESR ⁽³⁾ mΩ	ICEL CODE ⁽¹⁾ -
Ur (Vdc)	Upk (Vdc)	Upkr (Vdc)		B	H	L	d	P	P1					
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	25	35	50	42	1,2	37,5	-	16	400	14	6,3	DCB1905250*J#
900	1125	1035	25	35	50	42	1,2	37,5	20,3	16	400	16,5	5,7	DCB1905250*JSD
900	1125	1035	30	30	45	57,5	1,2	52,5	-	11	330	13	7	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	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	15	35	50	42	1,2	37,5	-	20	300	14	7,6	DCB2115150*J#
1100	1375	1265	15	35	50	42	1,2	37,5	20,3	20	300	15	6,8	DCB2114150*JSD
1100	1375	1265	17,5	35	50	42	1,2	37,5	-	20	350	14	7,1	DCB2114175*J#
1100	1375	1265	17,5	35	50	42	1,2	37,5	20,3	20	350	15,5	6,3	DCB2114175*JSD
1100	1375	1265	20	30	45	57,5	1,2	52,5	-	13	260	12	8	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

⁽¹⁾ 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

⁽²⁾ Maximum values at 10kHz, +70°C, Cap. tol. ≤ ±10% (for wider C tolerances, ESR variation must be taken in consideration)

⁽³⁾ Typical values at 10kHz (for operating frequencies far from the reference, ESR variation and related different power dissipation must be taken in consideration)

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