

Metallized Polypropylene (PP) - Capacitors for DC-Link Applications.
Capacitances from 1.0 μF to 400 μF .
Rated Voltages from 400 VDC to 1300 VDC.

Special Features

- Capacitances up to 400 μF
- High volume/capacitance ratio
- Excellent self-healing properties
- Very low dissipation factor
- High reliability
- 2-pin and 4-pin contact configuration (plate versions on request)
- AEC-Q200 qualified
- According to RoHS 2011/65/EU

Typical Applications

As intermediate circuit capacitor e.g. in high power converter technology, power supplies, solar inverters etc.

Construction

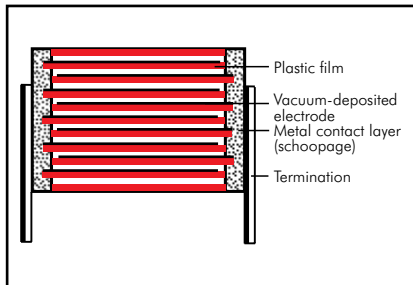
Dielectric:

Polypropylene (PP) film

Capacitor electrodes:

Vacuum-deposited

Internal construction:



Encapsulation:

Solvent-resistant, flame-retardant plastic case with epoxy resin seal, UL 94 V-0

Terminations:

Tinned wire (plate versions on request).

Marking:

Colour: Red. Marking: Black.

Epoxy resin seal: Red

Electrical Data

Capacitance range: 1 μF to 400 μF
 (intermediate values on request)

Rated voltages: 400 VDC, 500 VDC, 600 VDC, 800 VDC, 900 VDC, 1100 VDC, 1300 VDC

Capacitance tolerances: $\pm 20\%$, $\pm 10\%$, $\pm 5\%$

Operating temperature range:
 -55°C to $+105^\circ\text{C}$ (hot spot including self-heating)

Climatic test category: 55/085/56
 in accordance with IEC

Dissipation factors at $+20^\circ\text{C}$:

PCM	1 kHz	10 kHz
27.5	$\leq 15 \times 10^{-4}$	$\leq 160 \times 10^{-4}$
37.5	$\leq 30 \times 10^{-4}$	$\leq 210 \times 10^{-4}$
52.5	$\leq 50 \times 10^{-4}$	$\leq 260 \times 10^{-4}$

Voltage and current derating:

A derating factor of 1.35% per K must be applied from $+85^\circ\text{C}$ for DC voltages and from $+70^\circ\text{C}$ for AC currents (I_{rms}). Additionally a derating factor of 4.5% per K must be applied from $+85^\circ\text{C}$ for AC currents (I_{rms})

Reliability: Operational life $> 100\,000$ hours (U_r and 70°C)

Failure rate λ_0 ($0.5 \times U_r$ and 40°C)

$\Pi = C_N [\mu\text{F}] \times U_r [\text{V}] $	λ_0
$\Pi \leq 10\,000$	< 2 fit
$10\,000 < \Pi \leq 25\,000$	< 5 fit
$25\,000 < \Pi \leq 50\,000$	< 10 fit
$50\,000 < \Pi \leq 100\,000$	< 20 fit
$\Pi > 100\,000$	< 30 fit

Maximum pulse rise time:

PCM	max. pulse rise time V/ μsec at $T_A < 40^\circ\text{C}$						
	400 VDC	500 VDC	600 VDC	800 VDC	900 VDC	1100 VDC	1300 VDC
27.5	11	15	27	29	35	43	50
37.5	8	10	19	21	22	29	35
52.5	5	7	13	15	18	21	25

for pulses equal to the rated voltage

Insulation resistance at $+20^\circ\text{C}$:

$\geq 30\,000$ sec ($M\Omega \times \mu\text{F}$)

(mean value: $100\,000$ sec)

Measuring voltage: 100 V/1 min.

Test voltage: $1.2 U_r$, 2 sec

Dielectric absorption: 0.05 %

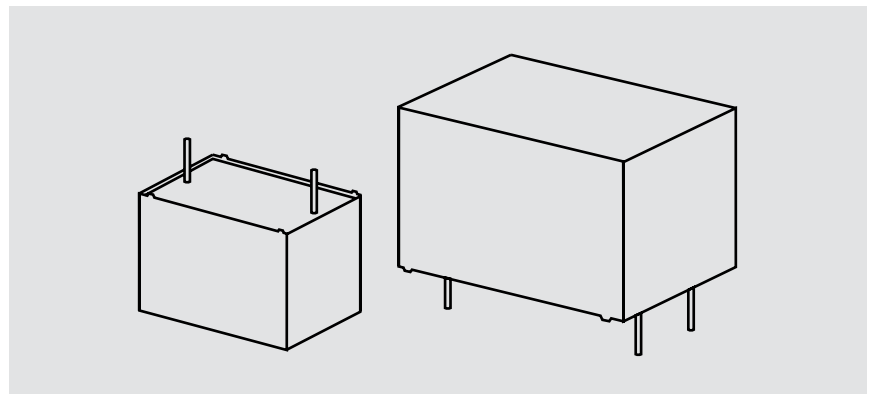
Specific dissipation:

Box size W x H x L in mm	Specific dissipation in Watts per K above the ambient temperature
9 x 19 x 31.5	0.021
11 x 21 x 31.5	0.025
13 x 24 x 31.5	0.030
15 x 26 x 31.5	0.034
17 x 29 x 31.5	0.039
27 x 15 x 41.5	0.043
17 x 34.5 x 31.5	0.044
20 x 39.5 x 31.5	0.053
19 x 32 x 41.5	0.054
20 x 39.5 x 41.5	0.065
24 x 45.5 x 41.5	0.080
31 x 46 x 41.5	0.092
35 x 50 x 41.5	0.106
40 x 55 x 41.5	0.123
35 x 50 x 57	0.132
45 x 55 x 57	0.164
45 x 65 x 57	0.184

Packing

Packing units at the end of the catalogue

For further details and graphs please refer to Technical Information.



Continuation

General Data

Capacitance	400 VDC (70° C) / 300 VDC (85° C)								Part number
	W	H	L	PCM**	Pin	I _S A	I _{rms} * (10 kHz)* A	ESR (10 kHz)* mΩ	
1 µF	9	19	31.5	27.5	2	11	1	238.7	DCP4G041006A
2 "	9	19	31.5	27.5	2	22	1.5	119.4	DCP4G042006A
3 "	9	19	31.5	27.5	2	33	1.5	79.6	DCP4G043006A
4 "	9	19	31.5	27.5	2	44	2	59.7	DCP4G044006A
5 "	9	19	31.5	27.5	2	55	2	47.7	DCP4G045006A
7 "	9	19	31.5	27.5	2	77	2.5	34.1	DCP4G047006A
10 µF	11	21	31.5	27.5	2/4	110	3.5	23.9	DCP4G051006B
15 "	13	24	31.5	27.5	2/4	165	4.5	15.9	DCP4G051506D
20 "	15	26	31.5	27.5	2/4	220	5.5	11.9	DCP4G052006F
25 "	17	29	31.5	27.5	2/4	275	6.5	9.5	DCP4G052506G
30 "	17	34.5	31.5	27.5	2/4	330	7	8	DCP4G053006I
40 "	20	39.5	31.5	27.5	2/4	440	9.5	6	DCP4G054006J
50 "	20	39.5	41.5	37.5	2/4	400	11	5.4	DCP4G055007G
60 "	20	39.5	41.5	37.5	2/4	480	11.5	4.8	DCP4G056007G
70 "	24	45.5	41.5	37.5	2/4	560	15	3.6	DCP4G057007H
80 "	24	45.5	41.5	37.5	2/4	640	17	2.7	DCP4G058007H
90 "	24	45.5	41.5	37.5	2/4	720	17.5	2.6	DCP4G059007H
100 µF	31	46	41.5	37.5	2/4	800	19	2.5	DCP4G061007I
120 "	31	46	41.5	37.5	2/4	960	20	2.3	DCP4G061207I
140 "	35	50	41.5	37.5	2/4	1120	22.5	2.1	DCP4G061407J
150 "	35	50	41.5	37.5	2/4	1200	23	2	DCP4G061507J
160 "	40	55	41.5	37.5	2/4	1280	28	1.6	DCP4G061607K
180 "	40	55	41.5	37.5	2/4	1440	29.5	1.4	DCP4G061807K
190 "	40	55	41.5	37.5	2/4	1520	31.5	1.2	DCP4G061907K
200 "	40	55	41.5	37.5	2/4	1600	32.5	1.2	DCP4G062007K
220 "	35	50	57	52.5	4	1100	27	1.8	DCP4G062209F
250 "	45	55	57	52.5	4	1250	32	1.6	DCP4G062509H
270 "	45	55	57	52.5	4	1350	33.5	1.5	DCP4G062709H
300 "	45	55	57	52.5	4	1500	35	1.3	DCP4G063009H
330 "	45	65	57	52.5	4	1650	37	1.2	DCP4G063309J
350 "	45	65	57	52.5	4	1750	40	1.1	DCP4G063509J
370 "	45	65	57	52.5	4	1850	41.5	1.1	DCP4G063709J
400 "	45	65	57	52.5	4	2000	43	1	DCP4G064009J

New voltage range

* General guide

* Permissible I_{rms} at 10° C internal temperature rise (general guide)

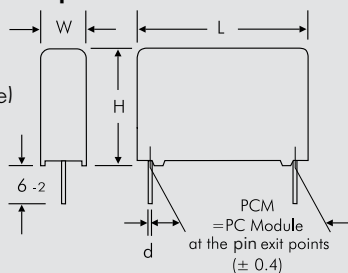
** PCM = Printed circuit module = pin spacing

Dims. in mm.

Part number completion:

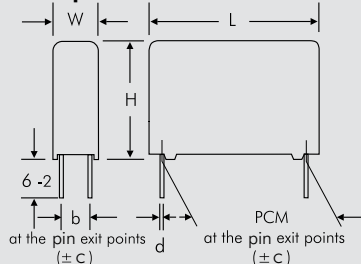
Version code: 2-pin = D2
4-pin = D4
Tolerance: 20 % = M
10 % = K
5 % = J
Packing: bulk = S
Pin length: 6-2 = SD
Taped version see page 145.

2-pin version



PCM	d
27.5	0.8
37.5	1

4-pin version



W	PCM	b	d	c
11	27.5	5	0.8	0.4
13	27.5	7.5	0.8	0.4
15	27.5	7.5	0.8	0.4
17	27.5	10	0.8	0.4
20	27.5	12.5	0.8	0.4
20	37.5	12.5	1	0.4
24	37.5	12.5	1	0.4
31	37.5	20	1	0.4
35	37.5	20	1	0.4
40	37.5	20	1	0.4
35	52.5	20	1.2	0.8
45	52.5	20	1.2	0.8

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Continuation

General Data

Capacitance	500 VDC (70° C) / 400 VDC (85° C)								Part number
	W	H	L	PCM**	Pin	I _S A	I _{rms} * (10 kHz)* A	ESR (10 kHz)* mΩ	
1 µF	9	19	31.5	27.5	2	15	1	238.7	DCP4H141006A_____
2 "	9	19	31.5	27.5	2	30	1.5	119.4	DCP4H142006A_____
3 "	9	19	31.5	27.5	2	45	1.5	79.6	DCP4H143006A_____
5 "	9	19	31.5	27.5	2	75	2.5	47.7	DCP4H145006A_____
7 "	11	21	31.5	27.5	2/4	105	3	34.1	DCP4H147006B_____
8 "	13	24	31.5	27.5	2/4	120	3	29.8	DCP4H148006D_____
10 µF	13	24	31.5	27.5	2/4	150	4	23.9	DCP4H151006D_____
12 "	15	26	31.5	27.5	2/4	180	4	19.9	DCP4H151206F_____
15 "	17	29	31.5	27.5	2/4	225	5	15.9	DCP4H151506G_____
20 "	17	34.5	31.5	27.5	2/4	300	6	11.9	DCP4H152006I_____
22 "	20	39.5	31.5	27.5	2/4	330	7	10.9	DCP4H152206J_____
25 "	20	39.5	31.5	27.5	2/4	375	7.5	9.5	DCP4H152506J_____
30 "	20	39.5	41.5	37.5	2/4	300	9	7.9	DCP4H153007G_____
35 "	20	39.5	41.5	37.5	2/4	350	8.5	9.1	DCP4H153507G_____
40 "	20	39.5	41.5	37.5	2/4	400	10	5.7	DCP4H154007G_____
	24	45.5	41.5	37.5	2/4	400	10	8	DCP4H154007H_____
45 "	24	45.5	41.5	37.5	2/4	450	12.5	5	DCP4H154507H_____
50 "	24	45.5	41.5	37.5	2/4	500	13	4.8	DCP4H155007H_____
55 "	24	45.5	41.5	37.5	2/4	550	14	4	DCP4H155507H_____
60 "	31	46	41.5	37.5	2/4	600	14	4.7	DCP4H156007I_____
65 "	31	46	41.5	37.5	2/4	650	16.5	3.3	DCP4H156507I_____
70 "	31	46	41.5	37.5	2/4	700	18	2.9	DCP4H157007I_____
75 "	31	46	41.5	37.5	2/4	750	17	3.2	DCP4H157507I_____
80 "	31	46	41.5	37.5	2/4	800	18	2.8	DCP4H158007I_____
85 "	35	50	41.5	37.5	2/4	850	10.5	3.2	DCP4H158507J_____
90 "	35	50	41.5	37.5	2/4	900	21	2.4	DCP4H159007J_____
95 "	35	50	41.5	37.5	2/4	950	21.5	2.2	DCP4H159507J_____
100 µF	35	50	41.5	37.5	2/4	1000	24	1.9	DCP4H161007J_____
	35	50	57	52.5	4	700	18	4	DCP4H161009F_____
110 "	40	55	41.5	37.5	2/4	1100	19	2.9	DCP4H161107K_____
	35	50	57	52.5	4	770	19	3.6	DCP4H161109F_____
120 "	40	55	41.5	37.5	2/4	840	22.5	2.7	DCP4H161207K_____
	35	50	57	52.5	4	840	20	3.3	DCP4H161209F_____
130 "	40	55	41.5	37.5	2/4	910	23	2.4	DCP4H161307K_____
	35	50	57	52.5	4	910	21	3.1	DCP4H161309F_____
140 "	35	50	57	52.5	4	980	21.5	2.8	DCP4H161409F_____
150 "	35	50	57	52.5	4	1050	22.5	2.7	DCP4H161509F_____
160 "	45	55	57	52.5	4	1120	25.5	2.5	DCP4H161609H_____
170 "	45	55	57	52.5	4	1190	26.5	2.3	DCP4H161709H_____
180 "	45	55	57	52.5	4	1260	27	2.2	DCP4H161809H_____
190 "	45	55	57	52.5	4	1330	28	2.1	DCP4H161909H_____
200 "	45	55	57	52.5	4	1400	28.5	2	DCP4H162009H_____
210 "	45	55	57	52.5	4	1470	29.5	1.9	DCP4H162109H_____
220 "	45	65	57	52.5	4	1540	32	1.8	DCP4H162209J_____
240 "	45	65	57	52.5	4	1680	33.5	1.7	DCP4H162409J_____

New voltage range

* General guide

* Permissible I_{rms} at 10° C internal temperature rise (general guide)

** PCM = Printed circuit module = pin spacing

Dims. in mm.

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Continuation

General Data

Capacitance	600 VDC (70° C) / 450 VDC (85° C)								Part number
	W	H	L	PCM**	Pin	I _S A	I _{rms} (10 kHz)* A	ESR (10 kHz)* mΩ	
2 µF	9	19	31.5	27.5	2	38	2	56	DCP4I042006A_____
5 "	13	24	31.5	27.5	2/4	95	3.5	22	DCP4I045006D_____
7 "	15	26	31.5	27.5	2/4	133	4.5	16	DCP4I047006F_____
10 µF	17	29	31.5	27.5	2/4	190	6	11	DCP4I051006G_____
	27	15	41.5	37.5	2/4	140	6.5	10	DCP4I051007M_____
15 "	17	34.5	31.5	27.5	2/4	285	7.5	7.4	DCP4I051506I_____
20 "	20	39.5	31.5	27.5	2/4	380	9	6.2	DCP4I052006J_____
	20	39.5	41.5	37.5	2/4	280	10	6.2	DCP4I052007G_____
25 "	20	39.5	41.5	37.5	2/4	350	11.5	5	DCP4I052507G_____
30 "	24	45.5	41.5	37.5	2/4	420	14	4.1	DCP4I053007H_____
35 "	24	45.5	41.5	37.5	2/4	490	14.5	3.8	DCP4I053507H_____
40 "	31	46	41.5	37.5	2/4	560	16.5	3.3	DCP4I054007I_____
45 "	31	46	41.5	37.5	2/4	630	17	3.2	DCP4I054507I_____
50 "	35	50	41.5	37.5	2/4	700	19	2.9	DCP4I055007J_____
55 "	35	50	41.5	37.5	2/4	770	17	3.8	DCP4I055507J_____
60 "	35	50	41.5	37.5	2/4	840	17.5	3.4	DCP4I056007J_____
65 "	40	55	41.5	37.5	2/4	910	19.5	3.3	DCP4I056507K_____
	35	50	57	52.5	4	650	20	3.3	DCP4I056509F_____
70 "	40	55	41.5	37.5	2/4	980	20	3.1	DCP4I057007K_____
	35	50	57	52.5	4	700	20.5	3.1	DCP4I057009F_____
75 "	40	55	41.5	37.5	2/4	1050	20.5	3	DCP4I057507K_____
	35	50	57	52.5	4	750	21	3	DCP4I057509F_____
80 "	40	55	41.5	37.5	2/4	1120	22	2.6	DCP4I058007K_____
	35	50	57	52.5	4	800	22	2.6	DCP4I058009F_____
85 "	35	50	57	52.5	4	850	22.5	2.1	DCP4I058509F_____
90 "	35	50	57	52.5	4	900	23.5	1.9	DCP4I059009F_____
95 "	45	55	57	52.5	4	950	24	2.8	DCP4I059509H_____
100 µF	45	55	57	52.5	4	1000	25	2.6	DCP4I061009H_____
110 "	45	55	57	52.5	4	1100	26.5	2.3	DCP4I061109H_____
115 "	45	65	57	52.5	4	1150	27.5	2.5	DCP4I061159J_____
120 "	45	65	57	52.5	4	1200	28	2.3	DCP4I061209J_____
130 "	45	65	57	52.5	4	1300	29.5	2.1	DCP4I061309J_____
140 "	45	65	57	52.5	4	1400	31	1.9	DCP4I061409J_____
150 "	45	65	57	52.5	4	1500	33	1.7	DCP4I061509J_____

* General guide

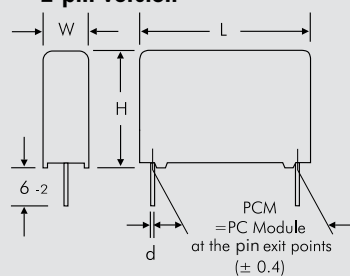
** PCM = Printed circuit module = pin spacing

Dims. in mm.

Part number completion:

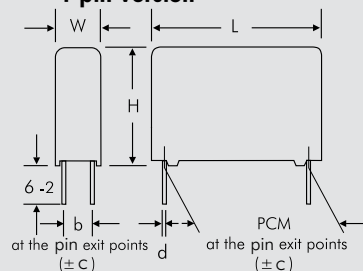
Version code: 2-pin = D2
4-pin = D4
Tolerance: 20 % = M
10 % = K
5 % = J
Packing: bulk = S
Pin length: 6-2 = SD
Taped version see page 145.

2-pin version



PCM	d
27.5	0.8
37.5	1

4-pin version



W	PCM	b	d	c
11	27.5	5	0.8	0.4
13	27.5	7.5	0.8	0.4
15	27.5	7.5	0.8	0.4
17	27.5	10	0.8	0.4
20	27.5	12.5	0.8	0.4
19	37.5	10	1	0.4
20	37.5	12.5	1	0.4
24	37.5	12.5	1	0.4
27	37.5	20	1	0.4
31	37.5	20	1	0.4
35	37.5	20	1	0.4
40	37.5	20	1	0.4
35	52.5	20	1.2	0.8
45	52.5	20	1.2	0.8

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Continuation

General Data

Capacitance	800 VDC (70° C) / 700 VDC (85° C)								Part number
	W	H	L	PCM**	Pin	I _s A	I _{rms} (10 kHz)* A	ESR (10 kHz)* mΩ	
2 µF	9	19	31.5	27.5	2	42	2	52	DCP4L042006A_____
5 "	13	24	31.5	27.5	2/4	105	4	21	DCP4L045006D_____
7 "	17	29	31.5	27.5	2/4	147	5	15	DCP4L047006G_____
10 µF	17	34.5	31.5	27.5	2/4	210	6.5	10	DCP4L051006I_____
15 "	20	39.5	31.5	27.5	2/4	315	9	6.9	DCP4L051506J_____
	20	39.5	41.5	37.5	2/4	225	9.5	6.9	DCP4L051507G_____
20 "	20	39.5	41.5	37.5	2/4	300	10	6.2	DCP4L052007G_____
25 "	24	45.5	41.5	37.5	2/4	375	12.5	5	DCP4L052507H_____
30 "	24	45.5	41.5	37.5	2/4	450	14	4.1	DCP4L053007H_____
35 "	31	46	41.5	37.5	2/4	525	15.5	3.8	DCP4L053507I_____
40 "	31	46	41.5	37.5	2/4	600	16.5	3.3	DCP4L054007I_____
45 "	35	50	41.5	37.5	2/4	675	17.5	3.4	DCP4L054507J_____
50 "	35	50	41.5	37.5	2/4	750	19	3	DCP4L055007J_____
55 "	40	55	41.5	37.5	2/4	825	19.5	3.2	DCP4L055507K_____
	35	50	57	52.5	4	660	20.4	3.2	DCP4L055509F_____
60 "	40	55	41.5	37.5	2/4	900	20.5	2.9	DCP4L056007K_____
	35	50	57	52.5	4	720	21.5	2.9	DCP4L056009F_____
65 "	35	50	57	52.5	4	780	22.5	2.2	DCP4L056509F_____
70 "	45	55	57	52.5	4	840	23.5	3	DCP4L057009H_____
75 "	45	55	57	52.5	4	900	24	2.9	DCP4L057509H_____
80 "	45	55	57	52.5	4	960	24.5	3	DCP4L058009H_____
85 "	45	65	57	52.5	4	1020	25	2.6	DCP4L058509J_____
90 "	45	65	57	52.5	4	1080	25.5	2.5	DCP4L059009J_____
95 "	45	65	57	52.5	4	1140	26	2.4	DCP4L059509J_____
100 µF	45	65	57	52.5	4	1200	26.5	2.3	DCP4L061009J_____
110 "	45	65	57	52.5	4	1320	27.5	2.2	DCP4L061109J_____
115 "	45	65	57	52.5	4	1380	28	2.1	DCP4L061159J_____

Capacitance	900 VDC (70° C) / 760 VDC (85° C)								Part number
	W	H	L	PCM**	Pin	I _s A	I _{rms} (10 kHz)* A	ESR (10 kHz)* mΩ	
2 µF	11	21	31.5	27.5	2/4	50	2.5	44	DCP4N042006B_____
5 "	17	29	31.5	27.5	2/4	125	4.5	18	DCP4N045006G_____
7 "	17	34.5	31.5	27.5	2/4	175	6	13	DCP4N047006I_____
10 µF	20	39.5	31.5	27.5	2/4	250	8	8.8	DCP4N051006J_____
	20	39.5	41.5	37.5	2/4	160	8.5	8.8	DCP4N051007G_____
15 "	20	39.5	41.5	37.5	2/4	240	10.5	5.8	DCP4N051507G_____
20 "	24	45.5	41.5	37.5	2/4	320	13	4.8	DCP4N052007H_____
25 "	31	46	41.5	37.5	2/4	400	15.5	3.8	DCP4N052507I_____
30 "	31	46	41.5	37.5	2/4	480	15.5	3.7	DCP4N053007I_____
35 "	35	50	41.5	37.5	2/4	560	18	3.2	DCP4N053507J_____
40 "	40	55	41.5	37.5	2/4	640	19.5	3.2	DCP4N054007K_____
	35	50	57	52.5	4	520	20.5	3.2	DCP4N054009F_____
45 "	35	50	57	52.5	4	585	21	2.8	DCP4N054509F_____
50 "	35	50	57	52.5	4	650	22	3.3	DCP4N055009F_____
55 "	35	50	57	52.5	4	715	22.5	3.2	DCP4N055509F_____
	45	55	57	52.5	4	715	22.5	3.2	DCP4N055509H_____
60 "	45	55	57	52.5	4	780	23	3	DCP4N056009H_____
65 "	45	55	57	52.5	4	845	24	2.9	DCP4N056509H_____
70 "	45	65	57	52.5	4	910	24.5	3.3	DCP4N057009J_____
75 "	45	65	57	52.5	4	975	25	2.9	DCP4N057509J_____
80 "	45	65	57	52.5	4	1040	25.5	2.8	DCP4N058009J_____

* General guide

** PCM = Printed circuit module = pin spacing

Dims. in mm.

Rights reserved to amend design data without prior notification.

Continuation

General Data

Capacitance	1100 VDC (70° C) / 920 VDC (85° C)								Part number
	W	H	L	PCM**	Pin	I _S A	I _{rms} (10 kHz)* A	ESR (10 kHz)* mΩ	
2 µF	13	24	31.5	27.5	2/4	62	3	36	DCP4P042006D_____
3 "	15	26	31.5	27.5	2/4	129	4	23	DCP4P043006F_____
5 "	17	34.5	31.5	27.5	2/4	155	5.5	14	DCP4P045006I_____
7 "	20	39.5	31.5	27.5	2/4	217	7.5	10	DCP4P047006J_____
	19	32	41.5	37.5	2/4	147	7.5	10	DCP4P047007F_____
10 µF	20	39.5	41.5	37.5	2/4	210	9.5	7.2	DCP4P051007G_____
15 "	31	46	41.5	37.5	2/4	315	13	5.4	DCP4P051507I_____
20 "	31	46	41.5	37.5	2/4	420	14	5.2	DCP4P052007I_____
	35	50	41.5	37.5	2/4	420	15	4.7	DCP4P052007J_____
25 "	40	55	41.5	37.5	2/4	525	16.5	4.6	DCP4P052507K_____
30 "	35	50	57	52.5	4	450	17.5	4.4	DCP4P053009F_____
35 "	35	50	57	52.5	4	525	18	4	DCP4P053509F_____
40 "	45	55	57	52.5	4	600	19	4.5	DCP4P054009H_____
45 "	45	55	57	52.5	4	675	20	4.1	DCP4P054509H_____
50 "	45	65	57	52.5	4	750	21	4.1	DCP4P055009J_____
55 "	45	65	57	52.5	4	825	22	3.8	DCP4P055509J_____
60 "	45	65	57	52.5	4	900	23	3.5	DCP4P056009J_____

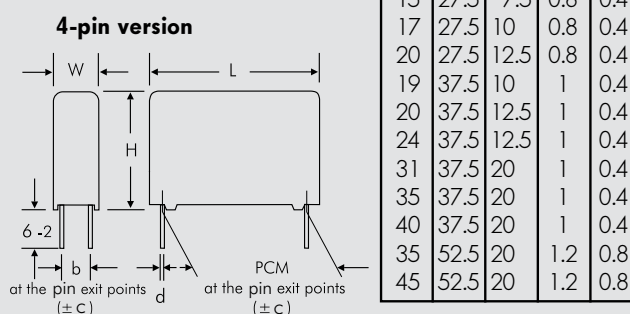
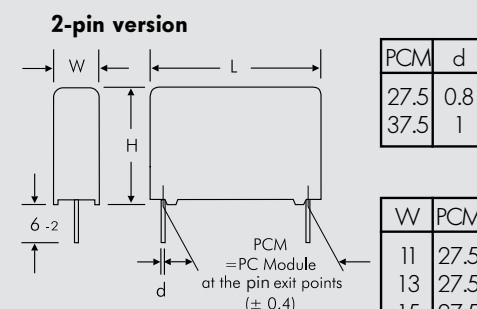
Capacitance	1300 VDC (70° C) / 1100 VDC (85° C)								Part number
	W	H	L	PCM**	Pin	I _S A	I _{rms} (10 kHz)* A	ESR (10 kHz)* mΩ	
2 µF	15	26	31.5	27.5	2/4	72	3	36	DCP4R242006F_____
5 "	20	39.5	31.5	27.5	2/4	180	6	14	DCP4R245006J_____
	20	39.5	41.5	37.5	2/4	125	7	14	DCP4R245007G_____
7 "	20	39.5	41.5	37.5	2/4	175	8	10	DCP4R247007G_____
10 µF	24	45.5	41.5	37.5	2/4	250	10.5	7.2	DCP4R251007H_____
15 "	31	46	41.5	37.5	2/4	375	14	4.8	DCP4R251507I_____
20 "	40	55	41.5	37.5	2/4	500	17.5	4	DCP4R252007K_____
	35	50	57	52.5	4	360	18	4	DCP4R252009F_____
25 "	35	50	57	52.5	4	450	19	3.6	DCP4R252509F_____
30 "	45	55	57	52.5	4	540	20	4	DCP4R253009H_____
35 "	45	65	57	52.5	4	630	21	4.1	DCP4R253509J_____
40 "	45	65	57	52.5	4	720	22	3.7	DCP4R254009J_____

* General guide

** PCM = Printed circuit module = pin spacing

Dims. in mm.

Part number completion:	
Version code:	2-pin = D2 4-pin = D4
Tolerance:	20 % = M 10 % = K 5 % = J
Packing:	bulk = S
Pin length:	6-2 = SD
Taped version see page 145.	



Rights reserved to amend design data without prior notification.

Recommendation for Processing and Application of Through-Hole Capacitors

Soldering Process

Internal temperature of the capacitor must be kept as follows:

Polyester: preheating: $T_{\max.} \leq 125^{\circ}\text{C}$
soldering: $T_{\max.} \leq 135^{\circ}\text{C}$

Polypropylene: preheating: $T_{\max.} \leq 100^{\circ}\text{C}$
soldering: $T_{\max.} \leq 110^{\circ}\text{C}$

Single wave soldering

Soldering bath temperature: $T < 260^{\circ}\text{C}$

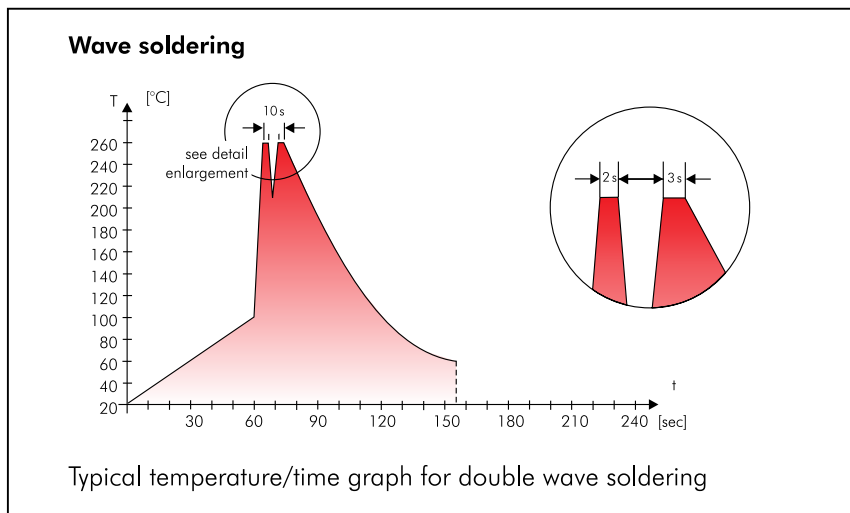
Dwell time: $t < 5\text{ sec}$

Double wave soldering

Soldering bath temperature: $T < 260^{\circ}\text{C}$

Dwell time: $\Sigma t < 5\text{ sec}$

Due to different soldering processes and heat requirements the graphs are to be regarded as a recommendation only.



WIMA Quality and Environmental Philosophy

ISO 9001:2008 Certification

ISO 9001:2008 is an international basic standard of quality assurance systems for all branches of industry. The approval according to ISO 9001:2008 of our factories by the infaz (Institut für Auditierung und Zertifizierung) certifies that organisation, equipment and monitoring of quality assurance in our factories correspond to internationally recognized standards.

WIMA WPCS

The WIMA Process Control System (WPCS) is a quality surveillance and optimization system developed by WIMA. WPCS is a major part of the quality-oriented WIMA production. Points of application during production process:

- incoming material inspection
- metallization
- film inspection
- schoopage
- pre-healing
- pin attachment
- cast resin preparation/encapsulation
- 100% final inspection
- Testing as per customer requirements

WIMA Environmental Policy

All WIMA capacitors, irrespective of whether through-hole devices or SMD, are made of environmentally friendly materials. Neither during manufacture nor in the product itself any toxic substances are used, e.g.

- | | |
|------------------------|------------|
| – Lead | – PBB/PBDE |
| – PCB | – Arsenic |
| – CFC | – Cadmium |
| – Hydrocarbon chloride | – Mercury |
| – Chromium 6+ | – etc. |

We merely use pure, recyclable materials for packing our components, such as:

- carton
- cardboard
- adhesive tape made of paper
- polystyrene

We almost completely refrain from using packing materials such as:

- foamed polystyrene (Styropor®)
- adhesive tapes made of plastic
- metal clips

RoHS Compliance

According to the RoHS Directive 2011/65/EU certain hazardous substances like e.g. lead, cadmium, mercury must not be used any longer in electronic equipment as of July 1st, 2006. For the sake of the environment WIMA has refrained from using such substances since years already.



WIMA Kondensatoren sind bleifrei
konform RoHS 2011/65/EU

WIMA capacitors are lead free
in accordance with RoHS 2011/65/EU

Tape for lead-free WIMA capacitors

DIN EN ISO 14001:2004

WIMA's environmental management has been established in accordance with the guidelines of DIN EN ISO 14001:2004 to optimize the production processes with regard to energy and resources.

Typical Dimensions for Taping Configuration

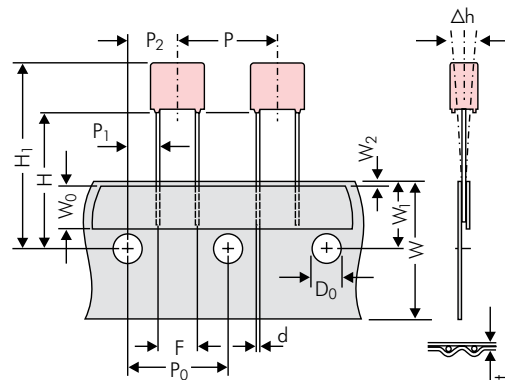


Diagram 1:
PCM 2.5/5/7.5mm

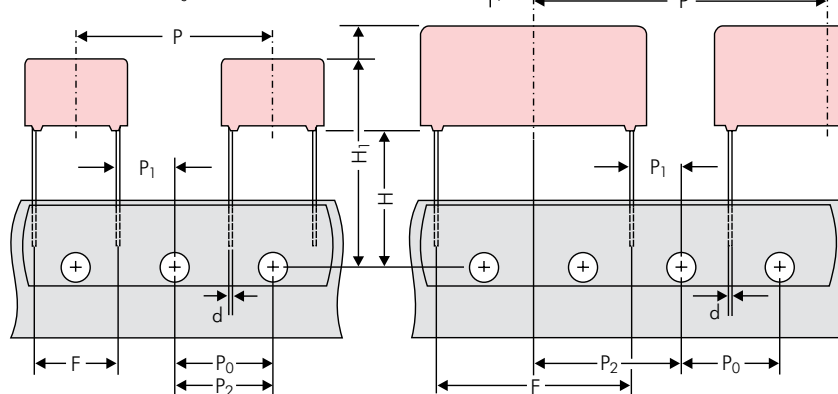


Diagram 2: PCM 10/15 mm

Diagram 3: PCM 22.5 and 27.5*mm

*PCM 27.5 taping possible with two feed holes between components

Designation	Symbol	Dimensions for Radial Taping						
		PCM 2.5 taping	PCM 5 taping	PCM 7.5 taping	PCM 10 taping*	PCM 15 taping*	PCM 22.5 taping	PCM 27.5 taping
Carrier tape width	W	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5
Hold-down tape width	W ₀	6.0 for hot-sealing adhesive tape	6.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape
Hole position	W ₁	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5
Hold-down tape position	W ₂	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.
Feed hole diameter	D ₀	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2
Pitch of component	P	12.7 ±1.0	12.7 ±1.0	12.7 ±1.0	25.4 ±1.0	25.4 ±1.0	38.1 ±1.5	38.1 ±1.5 or 50.8 ±1.5
Feed hole pitch	P ₀	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch
Feed hole centre to pin	P ₁	5.1 ±0.5	3.85 ±0.7	2.6 ±0.7	7.7 ±0.7	5.2 ±0.7	7.8 ±0.7	5.3 ±0.7
Hole centre to component centre	P ₂	6.35 ±1.3	6.35 ±1.3	6.35 ±1.3	12.7 ±1.3	12.7 ±1.3	19.05 ±1.3	19.05 ±1.3
Feed hole centre to bottom edge of the component	H	16.5 ±0.3 18.5 ±0.5	16.5 ±0.3 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5
Feed hole centre to top edge of the component	H ₁	H+H _{component} < H ₁ 32.25 max.	H+H _{component} < H ₁ 32.25 max.	H+H _{component} < H ₁ 24.5 to 31.5	H+H _{component} < H ₁ 25.0 to 31.5	H+H _{component} < H ₁ 26.0 to 37.0	H+H _{component} < H ₁ 30.0 to 43.0	H+H _{component} < H ₁ 35.0 to 45.0
Pin spacing at upper edge of carrier tape	F	2.5 ±0.5	5.0 ^{+0.8} _{-0.2}	7.5 ±0.8	10.0 ±0.8	15 ±0.8	22.5 ±0.8	27.5 ±0.8
Pin diameter	d	0.4 ±0.05	0.5 ±0.05	0.5 ±0.05 or 0.6 ^{+0.06} _{-0.05}	0.5 ±0.05 or 0.6 ^{+0.06} _{-0.05}	0.8 ^{+0.08} _{-0.05}	0.8 ^{+0.08} _{-0.05}	0.8 ^{+0.08} _{-0.05}
Component alignment	Δh	± 2.0 max.	± 2.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.
Total tape thickness	t	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2
Package (see also page 146)		ROLL/AMMO			AMMO			
		REEL Ø 360 max. Ø 30 ±1	B 52 ±2 58 ±2 } depending on comp. dimensions		REEL Ø 360 max. Ø 30 ±1	52 ±2 58 ±2 or 66 ±2	REEL Ø 500 max. Ø 25 ±1	54 ±2 60 ±2 68 ±2 } depending on PCM and component dimensions
Unit		see details page 147.						

Dims in mm.

* Diameter of pins see General Data.

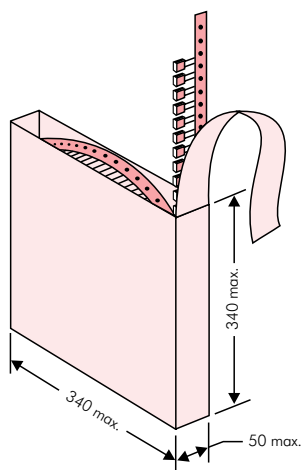
Please clarify customer-specific deviations with the manufacturer.

* PCM 10 and PCM 15 can be crimped to PCM 7.5.

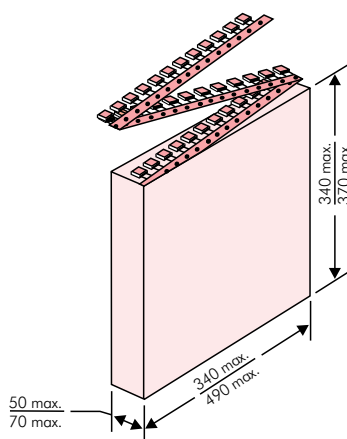
Position of components according to PCM 7.5 (sketch 11). P₀ = 12.7 or 15.0 is possible

Types of Tape Packaging of Capacitors for Automatic Radial Insertion

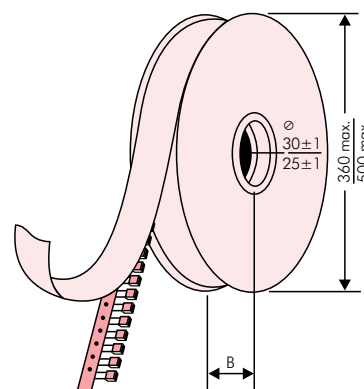
■ ROLL Packaging



■ AMMO Packaging



■ REEL Packaging



BAR CODE (Labelling)

Labelling of package units in plain text and with alphanumerical Bar Code

Scanner decoding of

- WIMA supplier number
- Customer's P/O number
- Customer's part number
- WIMA confirmation number
- WIMA part number
- Lot number
- Date code
- Quantity

In addition part description of

- article
- capacitance value
- rated voltage
- dimensions
- capacitance tolerance
- packing

as well as gross weight and customer's name are indicated in plain text.

WIMA Best Capacitors Made in Germany		Werk Unna	
Supplier-ID: 123456789	RoHS 2011/65/EU	Date Code: 08.10.10	
Purchase Order No. (P/O): Bestellung xyz		Quantity: 5.000	
Customer Part No.: KUNDETEILENUMMER		Customer No.: 0000100002	
		Gross Weight [g]: 1870	
WIMA Confirmation No.: 0001004053000100		WIMA Part No.: MKS2C034701C00K88D	
Handling Unit:	MKS 2	QTY: 5.000	COO: DE
	MKS 2 0.47 µF 63 VDC 3.5x8.5x7.2 RM5		
	Standard 10% Loss - Standard	Drühte 6-2	Week 03/2011
1000067326	Vorlage Debitor Inland		

BARCODE „Code 39“

Packing Quantities for Capacitors with Radial Pins in PCM 2.5 mm to 22.5 mm



PCM	Size				bulk	pcs. per packing unit									
						ROLL		REEL				AMMO			
	H16.5	H18.5	ø 360	ø 500		340 × 340		490 × 370							
	W	H	L	Codes	S	N	O	F	I	H	J	A	C	B	D
2.5 mm	2.5	7	4.6	0B	5000		2200		2500		–		2800		–
	3	7.5	4.6	0C	5000		2000		2300		–		2300		–
	3.8	8.5	4.6	0D	5000		1500		1800		–		1800		–
	4.6	9	4.6	0E	5000		1200		1500		–		1500		–
	5.5	10	4.6	0F	5000		900		1200		–		1200		–
5 mm	2.5	6.5	7.2	1A	5000		2200		2500		–		2800		–
	3	7.5	7.2	1B	5000		2000		2300		–		2300		–
	3.5	8.5	7.2	1C	5000		1600		2000		–		2000		–
	4.5	6	7.2	1D	6000		1300		1500		–		1500		–
	4.5	9.5	7.2	1E	4000		1300		1500		–		1500		–
	5	10	7.2	1F	3500		1100		1400		–		1400		–
	5.5	7	7.2	1G	4000		1000		1200		–		1200		–
	5.5	11.5	7.2	1H	2500		1000		1200		–		1200		–
	6.5	8	7.2	1I	2500		800		1000		–		1000		–
	7.2	8.5	7.2	1J	2500		700		1000		–		1000		–
	7.2	13	7.2	1K	2000		700		950		–		1000		–
	8.5	10	7.2	1L	2000		600		800		–		800		–
	8.5	14	7.2	1M	1500		600		800		–		800		–
	11	16	7.2	1N	1000		500		600		–		400		–
7.5 mm	2.5	7	10	2A	5000		–		2500		4400		2500		–
	3	8.5	10	2B	5000		–		2200		4300		2300		4150
	4	9	10	2C	4000		–		1700		3200		1700		3100
	4.5	9.5	10.3	2D	3500		–		1500		2900		1400		2700
	5	10.5	10.3	2E	3000		–		1300		2500		1300		–
	5.7	12.5	10.3	2F	2000		–		1000		2200		1100		–
	7.2	12.5	10.3	2G	1500		–		900		1800		1000		–
10 mm	3	9	13	3A	3000		–		1100		2200		–		1900
	4	8.5	13.5	FA	3000		–		900		1600		–		1450
	4	9	13	3C	3000		–		900		1600		–		1450
	4	9.5	13	3D	3000		–		900		1600		–		1400
	5	10	13.5	FB	2000		–		700		1300		–		1200
	5	11	13	3F	3000		–		700		1300		–		1200
	6	12	13	3G	2400		–		550		1100		–		1000
	6	12.5	13	3H	2400		–		550		1100		–		1000
8	12	13	3I	2000		–		400		800		–		740	
15 mm	5	11	18	4B	2400		–		600		1200		–		1150
	5	13	19	FC	1000		–		600		1200		–		1200
	6	12.5	18	4C	2000		–		500		1000		–		1000
	6	14	19	FD	1000		–		500		1000		–		1000
	7	14	18	4D	1600		–		450		900		–		850
	7	15	19	FE	1000		–		450		900		–		850
	8	15	18	4F	1200		–		400		800		–		740
	8	17	19	FF	500		–		400		800		–		740
	9	14	18	4H	1200		–		350		700		–		650
	9	16	18	4J	900		–		350		700		–		650
	10	18	19	FG	500		–		300		650		–		590
11	14	18	4M	1000		–		300		600		–		540	
22.5 mm	5	14	26.5	5A	1200		–		–		800		–		770
	6	15	26.5	5B	1000		–		–		700		–		640
	7	16.5	26.5	5D	760		–		–		600		–		550
	8	20	28	FH	500		–		–		500		–		480
	8.5	18.5	26.5	5F	500		–		–		480		–		450
	10	22	28	FI	570*		–		–		420		–		380
	10.5	19	26.5	5G	594*		–		–		400		–		360
	10.5	20.5	26.5	5H	594*		–		–		400		–		360
	11	21	26.5	5I	561*		–		–		380		–		350
	12	24	28	FJ	480*		–		–		350		–		310

* TPS (Tray-Packing-System). Plate versions may have different packing units.
Samples and pre-production needs on request.

■ Moulded versions.

Rights reserved to amend design data without prior notification.

Packing Quantities for Capacitors with Radial Pins in PCM 27.5 mm to 52.5 mm

PCM	Size				bulk	ROLL		pcs. per packing unit				AMMO			
								REEL							
	W	H	L	Codes		H16.5	H18.5	ø 360	ø 500	340 x 340	490 x 370				
					S	N	O	F	I	H	J	A	C	B	D
27.5 mm	9	19	31.5	6A	567*	–	–	–	–	460/340*	–	–	–	420	–
	11	21	31.5	6B	459*	–	–	–	–	380/280*	–	–	–	350	–
	13	24	31.5	6D	378*	–	–	–	–	300	–	–	–	290	–
	13	25	33	FK	405*	–	–	–	–	–	–	–	–	–	–
	15	26	31.5	6F	324*	–	–	–	–	270	–	–	–	250	–
	15	26	33	FL	324*	–	–	–	–	–	–	–	–	–	–
	17	29	31.5	6G	198*	–	–	–	–	–	–	–	–	–	–
	17	34.5	31.5	6I	198*	–	–	–	–	–	–	–	–	–	–
	20	32	33	FM	162*	–	–	–	–	–	–	–	–	–	–
	20	39.5	31.5	6J	162*	–	–	–	–	–	–	–	–	–	–
37.5 mm	9	19	41.5	7A	441*	–	–	–	–	–	–	–	–	–	–
	11	22	41.5	7B	357*	–	–	–	–	–	–	–	–	–	–
	13	24	41.5	7C	294*	–	–	–	–	–	–	–	–	–	–
	15	26	41.5	7D	252*	–	–	–	–	–	–	–	–	–	–
	17	29	41.5	7E	154*	–	–	–	–	–	–	–	–	–	–
	19	32	41.5	7F	140*	–	–	–	–	–	–	–	–	–	–
	20	39.5	41.5	7G	126*	–	–	–	–	–	–	–	–	–	–
	24	45.5	41.5	7H	112*	–	–	–	–	–	–	–	–	–	–
	31	46	41.5	7I	84*	–	–	–	–	–	–	–	–	–	–
	35	50	41.5	7J	35*	–	–	–	–	–	–	–	–	–	–
	40	55	41.5	7K	28*	–	–	–	–	–	–	–	–	–	–
48.5 mm	19	31	56	8D	120*	–	–	–	–	–	–	–	–	–	–
	23	34	56	8E	80*	–	–	–	–	–	–	–	–	–	–
	27	37.5	56	8H	84*	–	–	–	–	–	–	–	–	–	–
	33	48	56	8J	25*	–	–	–	–	–	–	–	–	–	–
	37	54	56	8L	25*	–	–	–	–	–	–	–	–	–	–
52.5 mm	25	45	57	9D	70*	–	–	–	–	–	–	–	–	–	–
	30	45	57	9E	60*	–	–	–	–	–	–	–	–	–	–
	35	50	57	9F	25*	–	–	–	–	–	–	–	–	–	–
	45	55	57	9H	20*	–	–	–	–	–	–	–	–	–	–
	45	65	57	9J	20*	–	–	–	–	–	–	–	–	–	–

* for 2-inch transport pitches.

* TPS (Tray-Packing-System). Plate versions may have different packing units.
Samples and pre-production needs on request.

■ Moulded versions.

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Updated data on www.wima.com

A WIMA part number consists of 18 digits and is composed as follows:

- Field 1 - 4: Type description
- Field 5 - 6: Rated voltage
- Field 7 - 10: Capacitance
- Field 11 - 12: Size and PCM
- Field 13 - 14: Version code (e.g. Snubber versions)
- Field 15: Capacitance tolerance
- Field 16: Packing
- Field 17 - 18: Pin length (untaped)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
M	K	S	2	C	0	2	1	0	0	1	A	0	0	M	S	S	D		
MKS 2				63 VDC		0.01 µF				2.5x6.5x7.2		-		20%	bulk	6 -2			
Type description: SMD-PET = SMDT SMD-PEN = SMDN SMD-PPS = SMDI FKP 02 = FKPO MKS 02 = MKSO FKS 2 = FKS2 FKP 2 = FKP2 FKS 3 = FKS3 FKP 3 = FKP 3 MKS 2 = MKS2 MKP 2 = MKP2 MKS 4 = MKS4 MKP 4C = MKPC MKP 4 = MKP4 MKP 10 = MKP1 FKP 1 = FKP1 MKP-X2 = MKX2 MKP-X1 R = MKX1 MKP-Y2 = MKY2 MP 3-X2 = MPX2 MP 3-X1 = MPX1 MP 3-Y2 = MPY2 MP 3R-Y2 = MPRY MKP 4F = MKPF Snubber MKP = SNMP Snubber FKP = SNFP GTO MKP = GTOM DC-LINK MKP 3 = DCP3 DC-LINK MKP 4 = DCP4 DC-LINK MKP 4S = DCP5 DC-LINK MKP 5 = DCP5 DC-LINK MKP 6 = DCP6 DC-LINK HC = DCHC DC-LINK HY = DCHY				Rated voltage: 50 VDC = B0 63 VDC = C0 100 VDC = D0 250 VDC = F0 400 VDC = G0 450 VDC = H0 520 VDC = H2 600 VDC = I0 630 VDC = J0 700 VDC = K0 800 VDC = L0 850 VDC = M0 900 VDC = N0 1000 VDC = O1 1100 VDC = P0 1200 VDC = Q0 1250 VDC = R0 1500 VDC = S0 1600 VDC = T0 2000 VDC = U0 2500 VDC = V0 3000 VDC = W0 4000 VDC = X0 6000 VDC = Y0 250 VAC = 0VV 275 VAC = 1VV 300 VAC = 2VV 305 VAC = AVV 350 VAC = BVV 440 VAC = 4VV 500 VAC = 5VV ...				Capacitance: 22 pF = 0022 47 pF = 0047 100 pF = 0100 150 pF = 0150 220 pF = 0220 330 pF = 0330 470 pF = 0470 680 pF = 0680 1000 pF = 1100 1500 pF = 1150 2200 pF = 1220 3300 pF = 1330 4700 pF = 1470 6800 pF = 1680 0.01 µF = 2100 0.022 µF = 2220 0.047 µF = 2470 0.1 µF = 3100 0.22 µF = 3220 0.47 µF = 3470 1 µF = 4100 2.2 µF = 4220 4.7 µF = 4470 10 µF = 5100 22 µF = 5220 47 µF = 5470 100 µF = 6100 220 µF = 6220 1000 µF = 7100 1500 µF = 7150 ...				Size: 4.8x3.3x3 Size 1812 = KA 4.8x3.3x4 Size 1812 = KB 5.7x5.1x3.5 Size 2220 = QA 5.7x5.1x4.5 Size 2220 = QB 7.2x6.1x3 Size 2824 = TA 7.2x6.1x5 Size 2824 = TB 10.2x7.6x5 Size 4030 = VA 12.7x10.2x6 Size 5040 = XA 15.3x13.7x7 Size 6054 = YA 2.5x7x4.6 PCM 2.5 = 0B 3x7.5x4.6 PCM 2.5 = 0C 2.5x6.5x7.2 PCM 5 = 1A 3x7.5x7.2 PCM 5 = 1B 2.5x7x10 PCM 7.5 = 2A 3x8.5x10 PCM 7.5 = 2B 3x9x13 PCM 10 = 3A 4x9x13 PCM 10 = 3C 5x11x18 PCM 15 = 4B 6x12.5x18 PCM 15 = 4C 5x14x26.5 PCM 22.5 = 5A 6x15x26.5 PCM 22.5 = 5B 9x19x31.5 PCM 27.5 = 6A 11x21x31.5 PCM 27.5 = 6B 9x19x41.5 PCM 37.5 = 7A 11x22x41.5 PCM 37.5 = 7B 19x31x56 PCM 48.5 = 8D 25x45x57 PCM 52.5 = 9D ...				Tolerance: ±20% = M ±10% = K ±5% = J ±2.5% = H ±1% = E ... Packing: AMMO H16.5 340x340 = A AMMO H16.5 490x370 = B AMMO H18.5 340x340 = C AMMO H18.5 490x370 = D REEL H16.5 360 = F REEL H16.5 500 = H REEL H18.5 360 = I REEL H18.5 500 = J ROLL H16.5 = N ROLL H18.5 = O BLISTER W12 180 = P BLISTER W12 330 = Q BLISTER W16 330 = R BLISTER W24 330 = T Bulk/TPS Standard = S ... Pin length (untaped) 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... Pin length (taped) none = 00			
Version code: Standard = 00 Version A1 = 1A Version A1.1.1 = 1B Version A2 = 2A ...																			

The data on this page is not complete and serves only to explain the part number system. Part number information is listed on the pages of the respective WIMA range.

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