

Metallized Polypropylene (PP) - Capacitors for DC-Link Applications

Special Features

- Capacitances up to 150 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

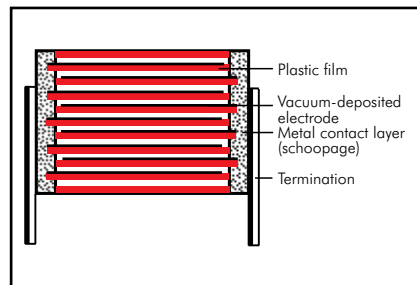
Dielectric:

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: 2 μF to 150 μF (intermediate values on request)

Rated voltages: 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

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

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

(mean value: 100 000 sec)

Measuring voltage: 100 V/1 min.

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

$\tan \delta \leq 10 \times 10^{-4}$ at 1 kHz ($C \leq 50\text{ }\mu\text{F}$)

$\tan \delta \leq 15 \times 10^{-4}$ at 1 kHz ($C > 50\text{ }\mu\text{F}$)

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
$\Pi \leq 10\,000$	$< 2\text{ fit}$
$10\,000 < \Pi \leq 25\,000$	$< 5\text{ fit}$
$25\,000 < \Pi \leq 50\,000$	$< 10\text{ fit}$
$50\,000 < \Pi \leq 100\,000$	$< 20\text{ fit}$
$\Pi > 100\,000$	$< 30\text{ fit}$

Maximum pulse rise time:

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

for pulses equal to the rated voltage

Test voltage: $1.2 U_r$, 2sec

Dielectric absorption: 0.05 %

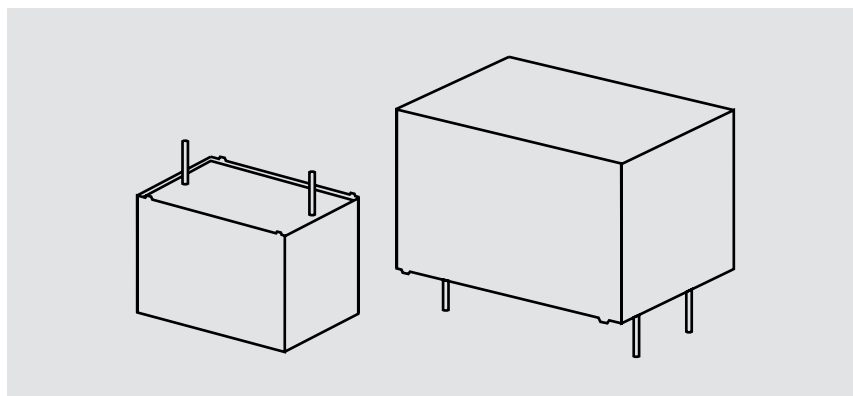
Specific dissipation:

Box size WxHxL in mm	Specific dissipation in Watts per K above the ambient temperature
9x19x31.5	0.021
11x21x31.5	0.025
13x24x31.5	0.030
15x26x31.5	0.034
17x29x31.5	0.039
27x15x41.5	0.043
17x34.5x31.5	0.044
20x39.5x31.5	0.053
19x32x41.5	0.054
20x39.5x41.5	0.065
24x45.5x41.5	0.080
31x46x41.5	0.092
35x50x41.5	0.106
40x55x41.5	0.123
35x50x57	0.132
45x55x57	0.164
45x65x57	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	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

New box size

* General guide

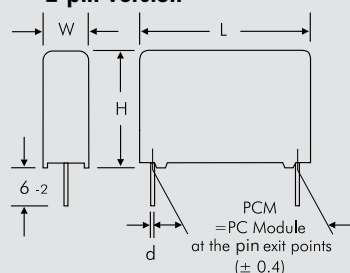
** PCM = Printed circuit module = pin spacing

Dims. in mm.

Part number completion:

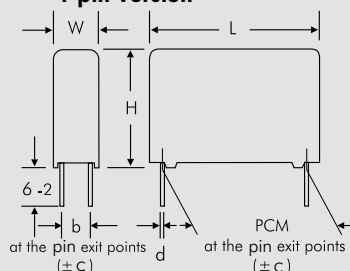
Version code: 2-pin = D2
4-pin = D4
Tolerance: 20 % = M
10 % = K
5 % = J
Packing: bulk = S
Pin length: 6-2 = SD
Taped version see page 140.

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_____

New box size

* 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

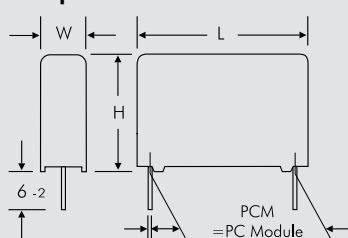
New value

** PCM = Printed circuit module = pin spacing

Dims. in mm.

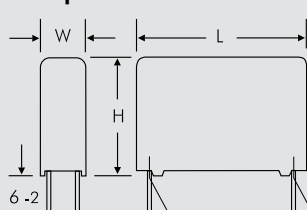
Part number completion:	
Version code:	2-pin = D2 4-pin = D4
Tolerance:	20 % = M 10 % = K 5 % = J
Packing:	bulk = S
Pin length:	6-2 = SD
Taped version see page 140.	

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
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

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

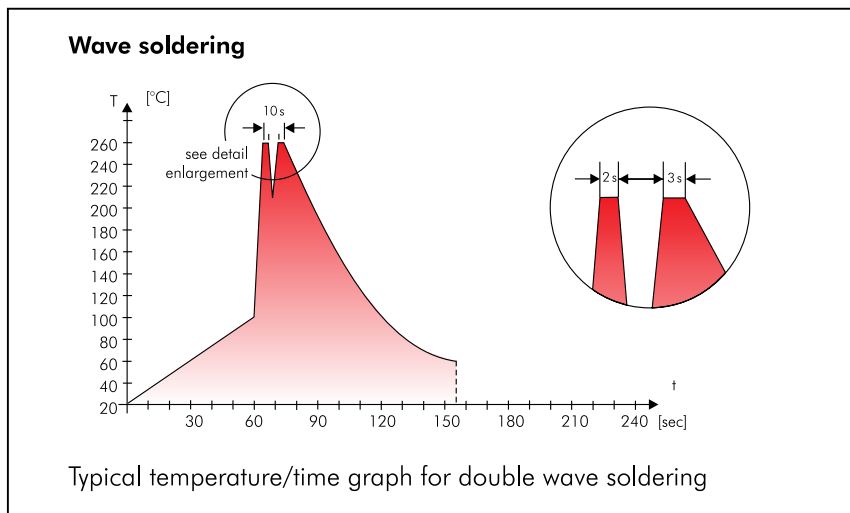
Dwell time: $t < 5\text{ sec}$

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 VDE inspectorate 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 of WPCS 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

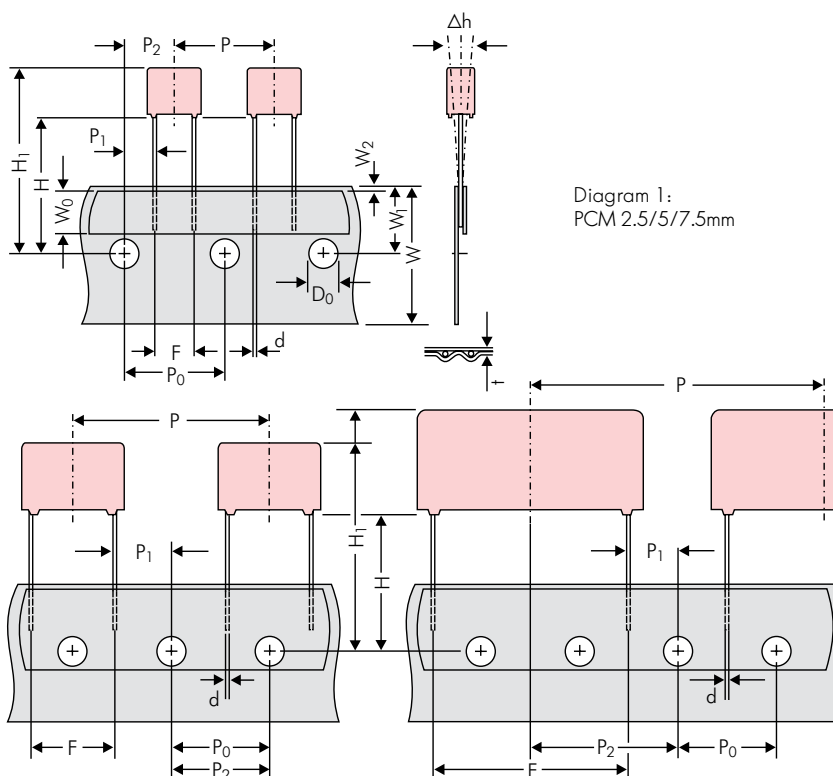


Diagram 2: PCM 10/15 mm

Diagram 3: PCM 22.5 and 27.5*mm

*PCM 27.5 tapping possible with two feed holes between components

Dimensions for Radial Taping								
Designation	Symbol	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	16.5 ±0.3	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5
		18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±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 141)		ROLL/AMMO			AMMO			
		REEL ø 360 max. ø 30 ±1	B 52 ±2 B 58 ±2 } depending on comp. dimensions		REEL ø 360 max. ø 30 ±1	52 ±2 B 58 ±2 or 66 ±2	REEL ø 500 max. ø 25 ±1	54 ±2 B 60 ±2 68 ±2 } depending on PCM and component dimensions
Unit		see details page 142.						

Dims in mm.

* Diameter of pins see General Data.

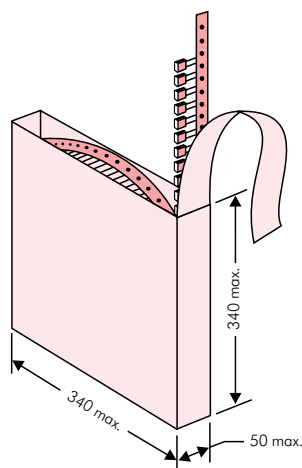
Please clarify customer-specific deviations with the manufacturer.

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

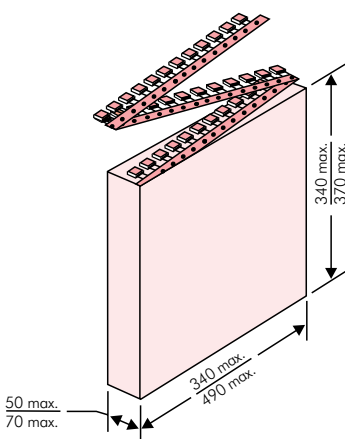
Position of components according to PCM 7.5 (sketch 11). P₀ = 12.7 or 15.0 is possible

Types of Tape Packaging of Capacitors for Automatic Radial Insertion

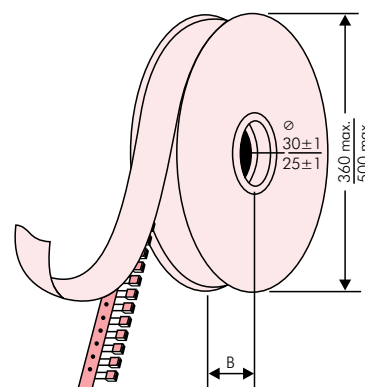
■ ROLL Packaging



■ 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.: 0001004063000100	WIMA Part No.: MKS2C034701C00K88D		
Handling Unit: 1000067326	MKS 2 MKS 2 0.47 µF 63 VDC 3.5x8.5x7.2 RMS	QTY: 5.000	COO: DE
	Standard 10% Loss - Standard Drähte 6-2		Week 03/2011
	Vorlage Debitur 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			2500		–		2800		–	
	3	7.5	4.6	0C	5000	2200		2300		–		2300		–	
	3.8	8.5	4.6	0D	5000	2000		1800		–		1800		–	
	4.6	9	4.6	0E	5000	1500		1500		–		1500		–	
	5.5	10	4.6	0F	5000	1200		1200		–		1200		–	
5 mm	2.5	6.5	7.2	1A	5000	900		2500		–		2800		–	
	3	7.5	7.2	1B	5000	2200		2300		–		2300		–	
	3.5	8.5	7.2	1C	5000	2000		2000		–		2000		–	
	4.5	6	7.2	1D	6000	1600		1500		–		1500		–	
	4.5	9.5	7.2	1E	4000	1300		1500		–		1500		–	
	5	10	7.2	1F	3500	1300		1400		–		1400		–	
	5.5	7	7.2	1G	4000	1100		1200		–		1200		–	
	5.5	11.5	7.2	1H	2500	1000		1200		–		1200		–	
	6.5	8	7.2	1I	2500	1000		1000		–		1000		–	
	7.2	8.5	7.2	1J	2500	800		1000		–		1000		–	
	7.2	13	7.2	1K	2000	700		950		–		1000		–	
	8.5	10	7.2	1L	2000	700		800		–		800		–	
	8.5	14	7.2	1M	1500	600		800		–		800		–	
	11	16	7.2	1N	1000	600		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		2800	
	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	540*	–		–		420		–		380	
	10.5	19	26.5	5G	680*	–		–		400		–		360	
	10.5	20.5	26.5	5H	680*	–		–		400		–		360	
	11	21	26.5	5I	680*	–		–		380		–		350	
	12	24	28	FJ	450*	–		–		350		–		310	

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

■ Moulded versions.

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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 × 340	490 × 370	H16.5	H18.5	H16.5	H18.5
					S	N	O	F	I	H	J	A	C	B	D
27.5 mm	9	19	31.5	6A	640*	–	–	–	–	460/340*	–	–	–	420	–
	11	21	31.5	6B	544*	–	–	–	–	380/280*	–	–	–	350	–
	13	24	31.5	6D	448*	–	–	–	–	300	–	–	–	290	–
	13	25	33	FK	336*	–	–	–	–	–	–	–	–	–	–
	15	26	31.5	6F	384*	–	–	–	–	270	–	–	–	250	–
	15	26	33	FL	288*	–	–	–	–	–	–	–	–	–	–
	17	29	31.5	6G	176*	–	–	–	–	–	–	–	–	–	–
	17	34.5	31.5	6I	176*	–	–	–	–	–	–	–	–	–	–
	20	32	33	FM	216*	–	–	–	–	–	–	–	–	–	–
	20	39.5	31.5	6J	144*	–	–	–	–	–	–	–	–	–	–
37.5 mm	9	19	41.5	7A	480*	–	–	–	–	–	–	–	–	–	–
	11	22	41.5	7B	408*	–	–	–	–	–	–	–	–	–	–
	13	24	41.5	7C	252*	–	–	–	–	–	–	–	–	–	–
	15	26	41.5	7D	144*	–	–	–	–	–	–	–	–	–	–
	17	29	41.5	7E	132*	–	–	–	–	–	–	–	–	–	–
	19	32	41.5	7F	108*	–	–	–	–	–	–	–	–	–	–
	20	39.5	41.5	7G	108*	–	–	–	–	–	–	–	–	–	–
	24	45.5	41.5	7H	84*	–	–	–	–	–	–	–	–	–	–
	27	15	41.5	7M	100*	–	–	–	–	–	–	–	–	–	–
	31	46	41.5	7I	72*	–	–	–	–	–	–	–	–	–	–
	35	50	41.5	7J	35*	–	–	–	–	–	–	–	–	–	–
	40	55	41.5	7K	28*	–	–	–	–	–	–	–	–	–	–
48.5 mm	19	31	56	8D	50*	–	–	–	–	–	–	–	–	–	–
	23	34	56	8E	72*	–	–	–	–	–	–	–	–	–	–
	27	37.5	56	8H	60*	–	–	–	–	–	–	–	–	–	–
	33	48	56	8J	48*	–	–	–	–	–	–	–	–	–	–
	37	54	56	8L	25*	–	–	–	–	–	–	–	–	–	–
52.5 mm	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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WIMA Part Number System

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				2.5×6.5×7.2		-		20%	bulk	6 -2					
Type description: SMD-PET = SMDT SMD-PEN = SMDN SMD-PPS = SMDI FKP 02 = FKPO MKS 02 = MKS0 FKS 2 = FKS2 FKP 2 = FKP2 MKS 2 = MKS2 MKP 2 = MKP2 FKS 3 = FKS3 FKP 3 = FKP3 MKS 4 = MKS4 MKP 4 = MKP4 MKP 10 = MKP1 FKP 4 = FKP4 FKP 1 = FKP1 MKP-X2 = MKX2 MKP-X2 R = MKXR MKP-X1 R = MKX1 MKP-Y2 = MKY2 MP 3-X2 = MPX2 MP 3-X1 = MPX1 MP 3-Y2 = MPY2 MP 3R-Y2 = MPRY 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				Rated voltage: 50 VDC = B0 63 VDC = C0 100 VDC = D0 250 VDC = F0 400 VDC = G0 450 VDC = H0 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 = 0W 275 VAC = 1W 300 VAC = 2W 305 VAC = AW 400 VAC = 3W 440 VAC = 4W 500 VAC = 5W ...		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: 4.8×3.3×3 Size 1812 = KA 4.8×3.3×4 Size 1812 = KB 5.7×5.1×3.5 Size 2220 = QA 5.7×5.1×4.5 Size 2220 = QB 7.2×6.1×3 Size 2824 = TA 7.2×6.1×5 Size 2824 = TB 10.2×7.6×5 Size 4030 = VA 12.7×10.2×6 Size 5040 = XA 15.3×13.7×7 Size 6054 = YA 2.5×7×4.6 PCM 2.5 = 0B 3×7.5×4.6 PCM 2.5 = 0C 2.5×6.5×7.2 PCM 5 = 1A 3×7.5×7.2 PCM 5 = 1B 2.5×7×10 PCM 7.5 = 2A 3×8.5×10 PCM 7.5 = 2B 3×9×13 PCM 10 = 3A 4×9×13 PCM 10 = 3C 5×11×18 PCM 15 = 4B 6×12.5×18 PCM 15 = 4C 5×14×26.5 PCM 22.5 = 5A 6×15×26.5 PCM 22.5 = 5B 9×19×31.5 PCM 27.5 = 6A 11×21×31.5 PCM 27.5 = 6B 9×19×41.5 PCM 37.5 = 7A 11×22×41.5 PCM 37.5 = 7B 19×31×56 PCM 48.5 = 8D 35×50×57 PCM 52.5 = 9F ...				Tolerance: ±20% = M ±10% = K ±5% = J ±2.5% = H ±1% = E ...				Packing: AMMO H16.5 340×340 = A AMMO H16.5 490×370 = B AMMO H18.5 340×340 = C AMMO H18.5 490×370 = 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 ...			

Mouser Electronics

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[DCP4I057009FD4KYSD](#) [DCP4I057509FD4KYSD](#) [DCP4I058009FD2KYSD](#) [DCP4I058009FD4KYSD](#)
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[DCP4I061209JD2KYSD](#) [DCP4I061309JD2KYSD](#) [DCP4I061309JD4KYSD](#) [DCP4I061409JD2KYSD](#)
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[DCP4N054009FD4KYSD](#) [DCP4N054509FD2KYSD](#) [DCP4N054509FD4KYSD](#) [DCP4N055009FD2KYSD](#)
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[DCP4N056509HD2KYSD](#) [DCP4N056509HD4KYSD](#) [DCP4N057009JD2KYSD](#) [DCP4N057509JD2KYSD](#)
[DCP4N057509JD4KYSD](#) [DCP4N058009JD2KYSD](#) [DCP4N058009JD4KYSD](#) [DCP4P053009FD2KYSD](#)
[DCP4P053509FD2KYSD](#) [DCP4P053509FD4KYSD](#) [DCP4P054009HD2KYSD](#) [DCP4P054009HD4KYSD](#)
[DCP4P054509HD2KYSD](#) [DCP4P055009JD2KYSD](#) [DCP4P055009JD4KYSD](#) [DCP4P055509JD2KYSD](#)
[DCP4P055509JD4KYSD](#) [DCP4P056009JD2KYSD](#) [DCP4P056009JD4KYSD](#) [DCP4R252009FD4KYSD](#)
[DCP4R252509FD2KYSD](#) [DCP4R253009HD2KYSD](#) [DCP4R253009HD4KYSD](#) [DCP4R253509JD2KYSD](#)
[DCP4R253509JD4KYSD](#) [DCP4R254009JD2KYSD](#) [DCP4R252009FD2KYSD](#) [DCP4I045006DD2KYSD](#)
[DCP4I051506ID2KSSD](#) [DCP4I053007HD4KYSD](#) [DCP4I054507ID4KYSD](#) [DCP4I056007JD4KYSD](#)
[DCP4I057507KD4KYSD](#) [DCP4I059008AD4KSSD](#) [DCP4I061208CD4KSSD](#) [DCP4I061508CD4KSSD](#)
[DCP4L047006GD2KYSD](#) [DCP4L052007GD4KYSD](#) [DCP4L053507ID4KYSD](#) [DCP4L055007JD4KYSD](#)
[DCP4L056508AD4KSSD](#) [DCP4L058008BD4KSSD](#) [DCP4L061008CD4KSSD](#) [DCP4N042006BD2KYSD](#)
[DCP4N051006JD2KYSD](#) [DCP4N052507ID4KYSD](#) [DCP4N054007KD4KYSD](#) [DCP4N055508BD4KSSD](#)