

**METALLIZED POLYPROPYLENE CAPACITORS**

**Type PPM ... d/i**

**Applications**

- Alternating and direct Current Voltages
- Professional Applications
- Small Motors
- Coupling / decoupling, audio
- Instrumentation

**Main Characteristics**

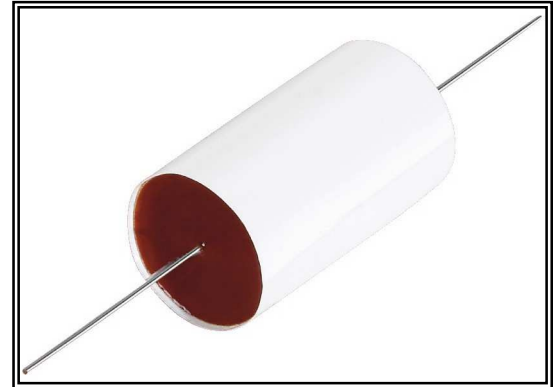
- Dry plastic film technology
- Nominal Voltage: 160 VDC to 1000 VDC
- Climatic Category: 40/100/56
- Tolerances  $\pm 10\%$   
on request:  $\pm 5\%$ ,  $\pm 2\%$ ,  $\pm 1\%$

**Design**

- Metallized polypropylene film
- Polyester wrap UL-V0
- Tinned copper axial leads
- Epoxy resin end-seal (UL-V0)

**Mounting**

- Indifferent positioning



**PPM... d/i**

**1.0 Rated Values and Operational Data**

DC	Nominal Voltage	$\leq 85^{\circ}\text{C}$	160	250	400	500	630	1000
	Category Voltage $U_c$	$\leq 100^{\circ}\text{C}$	130	200	320	400	500	800
	Test Voltage $U_T$	2s, $23^{\circ}\text{C}$	260	400	640	800	1200	1640
	Surge Voltage [ $\hat{V}$ ]	onde 1.2/50			800	1200	3000	4000
	Category					X2	X2	X1
AC	Nominal Voltage $U_N$ - $f \leq 400$ Hz compliant ASE 1029 / VDE 0560 f 50 Hz	$\leq 85^{\circ}\text{C}$	100	180	230	300	400	500
		$\leq 70^{\circ}\text{C}$	110 (125)	200	250 (280)	330	440 (480)	550 (630)
	Category Voltage $U_c$	$\leq 100^{\circ}\text{C}$	100	180	230	300	400	500

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**2.0 Capacitance Range**

Cn =>	10.0 nF	33 nF	47 nF			1.0 μF	3.3 μF	6.8 μF	15 μF	33 μF
160 VDC										
250 VDC										
400 VDC										
500 VDC										
630 VDC										
1000 VDC										

**3.0 Characteristics**

			Min	Typ	Min
Dissipation factor	tg δ	C ≤ 0.1 μF		3 ... 7	10 x 10 <sup>-4</sup>
	f = 10 kHz	C ≤ 1.0 μF		5 ... 8	20 x
		C ≤ 10 μF		15 ... 25	50 x
Insulation resistance	R <sub>i</sub> [MOhms]	100 V, 1min, 23°C, C ≤ 033 μF	1.0 x 10 <sup>5</sup>		
Time Constant	R <sub>i</sub> C [s]	100 V, 1 min, 23°C C > 033 μF	30000		
Temperature coefficient	α <sub>c</sub>	-30 ... + 80°C [ppm / °C]	-320	-200	-80
Long-term stability	ΔC / C [%]	23°C, 50% HR		± 0.5	

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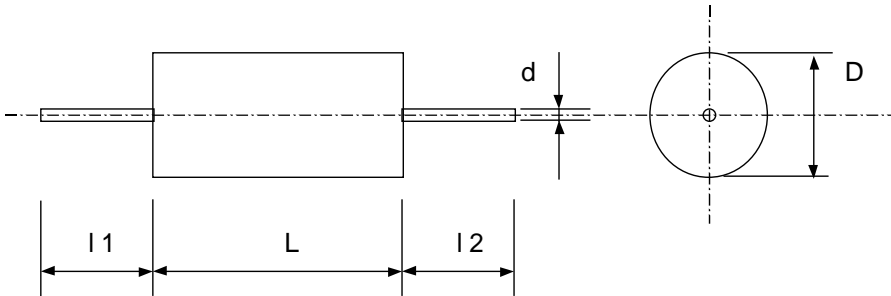
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**4.0 Operating limits**

L [mm]	Nominal Voltage [VDC]						
	160	250	400	500	630	1000	
11	85	120	180				
15	85	120	180	250			
20/22	85	120	180	250	360	600	
27	50	80	120	170	190	320	
33	40	60	90	130	130	230	
44	20	40	50	90	90	130	
(du/dt) <sub>N</sub> in V/μs							

**5.0 Dimensions, shapes:**



øD [mm]	≤ 7.5	8 .. 12	≥ 12.5
ø d [mm]	0.6	0.8	1.0
l <sub>1</sub> , l <sub>2</sub>	min 30 mm		

Capacitors are delivered in bulk.

On special request we can deliver tape-mounted.

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**METALLIZED POLYPROPYLENE CAPACITORS**

**Type PPM ... d/i**

**PPM ... d 160 VDC**

B4F1 Pos.	Type	Cn [ $\mu$ F]	Dimensions			dU / dt max [V / $\mu$ s]	$\hat{i}$ [A]
			$\varnothing$ [mm]	L [mm]	$\varnothing$ leads [mm]		
1	PPM 16-133 i K	0.033	7.0	11.0	0.6	85	3
3	PPM 16-147 i K	0.047	7.0	15.0	0.6	85	4
5	PPM 16-168 i K	0.068	7.0	15.0	0.6	85	6
7	PPM 16-010 i K	0.100	8.0	15.0	0.8	85	9
9	PPM 16-015 d K	0.150	7.5	15.0	0.8	85	13
11	PPM 16-022 d K	0.220	8.5	15.0	0.8	85	19
13	PPM 16-033 d K	0.33	8.0	20.0	0.8	85	28
15	PPM 16-047 d K	0.47	9.0	20.0	0.8	85	40
17	PPM 16-068 d K	0.68	8.5	27.0	0.8	50	34
19	PPM 16-1.0 d K	1.00	10.0	27.0	0.8	50	50
21	PPM 16-1.5 d K	1.50	12.0	27.0	0.8	50	75
23	PPM 16-2.2 d K	2.20	13.0	33.0	1.0	40	88
25	PPM 16-3.3 d K	3.30	15.5	33.0	1.0	40	132
27	PPM 16-4.7 d K	4.70	18.0	33.0	1.0	40	188
29	PPM 16-6.8 d K	6.80	22.0	33.0	1.0	40	272
31	PPM 16-10 d K	10.00	22.0	44.0	1.0	20	200
33	PPM 16-15 d K	15.00	26.5	44.0	1.0	20	300
35	PPM 16-22 d K	22.00	32.0	44.0	1.0	20	440
36	PPM 16-33 d K	33.00	38.0	44.0	1.0	20	660

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**METALLIZED POLYPROPYLENE CAPACITORS**

**Type PPM ... d/i**

**PPM ... d 250 VDC**

B4F1	Type	Cn [μF]	Dimensions			dU / dt max [V / μs]	î [A]
			ø [mm]	L [mm]	ø leads [mm]		
1	PPM 25-110 i K	0.010	6.0	11.0	0.6	120	1
3	PPM 25-115 i K	0.015	6.0	11.0	0.6	120	2
5	PPM 25-122 i K	0.022	7.0	11.0	0.6	120	3
7	PPM 25-133 i K	0.033	7.0	15.0	0.6	120	4
9	PPM 25-147 i K	0.047	8.0	15.0	0.8	120	6
11	PPM 25-168 i K	0.068	8.0	22.0	0.8	120	8
13	PPM 25-010 i K	0.10	8.0	22.0	0.8	120	12
15	PPM 25-015 d K	0.15	8.5	20.0	0.8	120	18
17	PPM 25-022 d K	0.22	9.0	20.0	0.8	120	26
19	PPM 25-033 d K	0.33	11.0	20.0	0.8	120	40
21	PPM 25-047 d K	0.47	10.0	27.0	0.8	80	38
23	PPM 25-068 d K	0.68	11.5	27.0	0.8	80	54
25	PPM 25-1.0 d K	1.00	14.0	27.0	1.0	80	80
27	PPM 25-1.5 d K	1.50	15.0	32.0	1.0	60	90
29	PPM 25-2.2 d K	2.20	18.0	32.0	1.0	60	132
31	PPM 25-3.3 d K	3.30	21.5	32.0	1.0	60	198
33	PPM 25-4.7 d K	4.70	25.5	32.0	1.0	60	282
35	PPM 25-6.8 d K	6.80	25.0	45.0	1.0	40	272
37	PPM 25-10 d K	10.00	32.0	45.0	1.0	40	400
38	PPM 25-15 d K	10.00	39.0	45.0	1.0	40	400

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**METALLIZED POLYPROPYLENE CAPACITORS**

**Type PPM ... d/i**

**PPM ... d 400 VDC**

B4F1	Type	Cn [ $\mu$ F]	Dimensions			dU / dt max [V / $\mu$ s]	$\hat{i}$ [A]
			$\varnothing$ [mm]	L [mm]	$\varnothing$ leads [mm]		
1	PPM 40-110 d K	0.010	6.0	11.0	0.6	180	2
3	PPM 40-115 d K	0.015	7.0	11.0	0.6	180	3
5	PPM 40-122 d K	0.022	7.0	15.0	0.6	180	4
7	PPM 40-133 d K	0.033	8.0	15.0	0.8	180	6
9	PPM 40-147 d K	0.047	8.0	22.0	0.8	180	8
11	PPM 40-168 d K	0.068	8.0	22.0	0.8	180	12
13	PPM 40-010 d K	0.10	8.5	20.0	0.8	180	18
15	PPM 40-015 d K	0.15	10.0	20.0	0.8	180	27
17	PPM 40-022 d K	0.22	11.5	20.0	0.8	180	40
19	PPM 40-033 d K	0.33	11.0	27.0	0.8	120	40
21	PPM 40-047 d K	0.47	12.5	27.0	1.0	120	56
23	PPM 40-068 d K	0.68	15.0	27.0	1.0	120	82
25	PPM 40-1.0 d K	1.00	16.0	32.0	1.0	90	90
27	PPM 40-1.5 d K	1.50	19.5	32.0	1.0	90	135
29	PPM 40-2.2 d K	2.20	23.5	32.0	1.0	90	198
31	PPM 40-3.3 d K	3.30	23.5	45.0	1.0	50	165
33	PPM 40 4.7 d K	4.70	27.5	45.0	1.0	50	235
35	PPM 40-6.8 d K	6.80	33.0	45.0	1.0	50	340

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**METALLIZED POLYPROPYLENE CAPACITORS**

**Type PPM ... d/i**

**PPM ... d 500 VDC**

B4F1	Type	Cn [μF]	Dimensions			dU / dt max [V / μs]	î [A]
			Pos.	∅ [mm]	L [mm]		
1	PPM 50-110 i K	0.010	7.0	15.0	0.6	250	3
3	PPM 50-115 i K	0.015	8.0	15.0	0.8	250	4
5	PPM 50-122 i K	0.022	8.0	22.0	0.8	250	6
7	PPM 50-133 i K	0.033	8.0	22.0	0.8	250	8
9	PPM 50-147 i K	0.047	8.5	20.0	0.8	250	12
11	PPM 50-168 i K	0.068	10.0	20.0	0.8	250	17
13	PPM 50-010 d K	0.10	11.5	20.0	0.8	250	25
15	PPM 50-015 d K	0.15	11.0	27.0	0.8	170	26
17	PPM 50-022 d K	0.22	13.0	27.0	1.0	170	37
19	PPM 50-033 d K	0.33	15.5	27.0	1.0	170	56
21	PPM 50-047 d K	0.47	16.5	32.0	1.0	130	61
23	PPM 50-068 d K	0.68	19.5	32.0	1.0	130	88
25	PPM 50-1.0 d K	1.00	23.5	32.0	1.0	130	130
27	PPM 50-1.5 d K	1.50	23.5	45.0	1.0	90	135
29	PPM 50-2.2 d K	2.20	28.5	45.0	1.0	90	198
30	PPM 50-3.3 d K	3.30	37.0	45.0	1.0	90	297

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**METALLIZED POLYPROPYLENE CAPACITORS**

**Type PPM ... d/i**

**PPM ... d 630 VDC**

B4F1	Type	Cn	Dimension			dU/dt max	î
			Pos.	[µF]	∅ [mm]		
1	PPM 63-147 d K	0.047	8.0	27.0	0.8	190	9
2	PPM 63-168 d K	0.068	9.0	27.0	0.8	190	13
3	PPM 63-010 d K	0.10	10.5	27.0	0.8	190	19
4	PPM 63-015 d K	0.15	12.5	27.0	1.0	190	29
5	PPM 63-022 d K	0.22	14.5	27.0	1.0	190	42
6	PPM 63-033 d K	0.33	15.5	32.0	1.0	130	43
7	PPM 63-047 d K	0.47	18.0	32.0	1.0	130	61
8	PPM 63-068 d K	0.68	21.0	32.0	1.0	130	88
9	PPM 63-1.0 d K	1.00	25.5	32.0	1.0	130	130
10	PPM 63-1.5 d K	1.50	24.0	45.0	1.0	90	135
11	PPM 63-2.2 d K	2.20	29.0	45.0	1.0	90	198
12	PPM 63-3.3 d K	3.30	38.0	45.0	1.0	90	297
13	PPM 63-4.0 d K	4.00	42.0	45.0	1.0	90	360

**PPM ... d 1000 VDC**

B4F1	Type	Cn	Dimensions			dU / dt max	î
			Pos.	[µF]	∅ [mm]		
1	PPM 100-110 d K	0.010	6.5	27.0	0.6	320	3
3	PPM 100-115 d K	0.015	7.5	27.0	0.8	320	5
5	PPM 100-122 d K	0.022	8.5	27.0	0.8	320	7
7	PPM 100-133 d K	0.033	10.0	27.0	0.8	320	11
9	PPM 100-147 d K	0.047	11.5	27.0	0.8	320	15
11	PPM 100-168 d K	0.068	11.5	32.0	0.8	230	16
13	PPM 100-010 d K	0.10	13.5	32.0	1.0	230	23
15	PPM 100-015 d K	0.15	16.5	32.0	1.0	230	35
17	PPM 100-022 d K	** 0.22	19.5	32.0	1.0	230	51
19	PPM 100-033 d K	** 0.33	23.5	32.0	1.0	230	76
21	PPM 100-047 d K	0.47	22.0	45.0	1.0	130	61
23	PPM 100-068 d K	** 0.68	26.0	45.0	1.0	130	88
25	PPM 100-1.0 d K	1.00	31.5	45.0	1.0	130	130

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