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SMD

metallized

SMD-PET

Dielectric	Polyester film
Temperature range	-55° C to 125° C
Capacitance tolerances	±20%, ±10% (±5%*)
Dissipation factor tan δ at 1 kHz and +20° C	≤ 8x10^{-3} > 1 µF: ≤ 10 x10^{-3}
Insulation resistance at +20° C*	≥3.75 x10^{3} MΩ > 0.33 µF: ≥1250 sec.

Voltage ranges: 63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC, 1000 VDC

Capacitances	63 VDC	100 VDC	250 VDC	400 VDC	630 VDC	1000 VDC
27 pF						
...						
68 pF						
100 pF						
680 pF						
1000 pF						
1500 pF						
2200 pF						
3300 pF						
4700 pF						
6800 pF						
0.01 µF	1812 2220 2824 4030 5040 6054	1812 2220 2824 4030 5040 6054	1812 2220 2824 4030 5040 6054	2824 4030 5040 6054	4030 5040 6054	5040 6054
0.015 µF						
0.022 µF						
0.033 µF						
0.047 µF						
0.068 µF						
0.1 µF						
0.15 µF						
0.22 µF						
0.33 µF						
0.47 µF						
0.68 µF						
1.0 µF						
1.5 µF						
2.2 µF						
3.3 µF						
4.7 µF						
6.8 µF						
10 µF						
15 µF						
22 µF						
33 µF						
47 µF						
68 µF						
100 µF						
150 µF						
220 µF						

SMD-PPS

Dielectric	Polyphenylene-sulphide film
Temperature range	-55° C to 125° C
Capacitance tolerances	±20%, ±10% (±5%*)
Dissipation factor tan δ at 1 kHz and +20° C	≤ 15x10^{-4} > 0.1 µF: ≤ 20 x10^{-4}
Insulation resistance at +20° C*	≥1 x10^{4} MΩ > 0.33 µF: ≥3000 sec.

Voltage ranges: 63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC, 1000 VDC

Capacitances	63 VDC	100 VDC	250 VDC	400 VDC	630 VDC	1000 VDC
27 pF						
...						
68 pF						
100 pF						
680 pF						
1000 pF						
1500 pF						
2200 pF						
3300 pF						
4700 pF						
6800 pF						
0.01 µF	1812 2220 2824 4030 5040 6054	1812 2220 2824 4030 5040 6054	2220 2824 4030 5040 6054	4030 5040 6054	5040 6054	5040 6054
0.015 µF						
0.022 µF						
0.033 µF						
0.047 µF						
0.068 µF						
0.1 µF						
0.15 µF						
0.22 µF						
0.33 µF						
0.47 µF						
0.68 µF						
1.0 µF						
1.5 µF						
2.2 µF						
3.3 µF						
4.7 µF						
6.8 µF						
10 µF						
15 µF						
22 µF						
33 µF						
47 µF						
68 µF						
100 µF						
150 µF						
220 µF						

PCM 2.5 mm

metallized

MKS 02

Dielectric	Polyester film
Temperature range	-55° C to 105° C
Capacitance tolerances	±20%, ±10% (±5%*)
Dissipation factor tan δ at 1 kHz and +20° C	≤ 8x10^{-3}
Insulation resistance at +20° C*	≥3.75 x10^{3} MΩ >0.33 µF: ≥1250 sec.

Voltage ranges: 63 VDC, 100 VDC, 250 VDC, 400 VDC

Capacitances	63 VDC	100 VDC	250 VDC	400 VDC
27 pF				
...				
68 pF				
100 pF				
680 pF				
1000 pF				
1500 pF				
2200 pF				
3300 pF				
4700 pF				
6800 pF				
0.01 µF				
0.015 µF				
0.022 µF				
0.033 µF				
0.047 µF				
0.068 µF				
0.1 µF				
0.15 µF				
0.22 µF				
0.33 µF				
0.47 µF				
0.68 µF	2.5	2.5	2.5	2.5
1.0 µF				
1.5 µF				
2.2 µF				
3.3 µF				
4.7 µF				
6.8 µF				
10 µF				
15 µF				
22 µF				
33 µF				
47 µF				
68 µF				
100 µF				
150 µF				
220 µF				

PCM 5 - 52.5 mm

film/foil

FKS 2

Dielectric	Polyester film
Temperature range	-55° C to 105° C
Capacitance tolerances	±20%, ±10%, ±5%
Dissipation factor tan δ at 1 kHz and +20° C	≤ 7x10^{-3}
Insulation resistance at +20° C*	≥1 x10^{5} MΩ

Voltage ranges: 63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC

Capacitances	63 VDC	100 VDC	250 VDC	400 VDC	630 VDC
27 pF					
...					
68 pF					
100 pF					
680 pF					
1000 pF					
1500 pF					
2200 pF					
3300 pF					
4700 pF					
6800 pF					
0.01 µF	5	5	5	5	5
0.015 µF					
0.022 µF					
0.033 µF					
0.047 µF					
0.068 µF					
0.1 µF					
0.15 µF					
0.22 µF					
0.33 µF					
0.47 µF					
0.68 µF					
1.0 µF					
1.5 µF					
2.2 µF					
3.3 µF					
4.7 µF					
6.8 µF					
10 µF					
15 µF					
22 µF					
33 µF					
47 µF					
68 µF					
100 µF					
150 µF					
220 µF					

FKP 2

Dielectric	Polypropylene film
Temperature range	-55° C to 100° C
Capacitance tolerances	±20%, ±10%, ±5%, 2.5% (±2%, ±1.5%, ±1%*)
Dissipation factor tan δ at 1 kHz and +20° C	≤ 5x10^{-4}
Insulation resistance at +20° C*	≥5x10^{5} MΩ

Voltage ranges: 63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC, 800 VDC, 1000 VDC

Capacitances	63 VDC	100 VDC	250 VDC	400 VDC	630 VDC	800 VDC	1000 VDC
27 pF							
...							
68 pF							
100 pF							
680 pF							
1000 pF							
1500 pF							
2200 pF							
3300 pF							
4700 pF							
6800 pF							
0.01 µF	5	5	5	5	5	5	5
0.015 µF							
0.022 µF							
0.033 µF							
0.047 µF							
0.068 µF							
0.1 µF							
0.15 µF							
0.22 µF							
0.33 µF							
0.47 µF							
0.68 µF							
1.0 µF							
1.5 µF							
2.2 µF							
3.3 µF							
4.7 µF							
6.8 µF							
10 µF							
15 µF							
22 µF							
33 µF							
47 µF							
68 µF							
100 µF							
150 µF							
220 µF							

metallized

MKS 2

Dielectric	Polyester film
Temperature range	-55° C to 125° C
Capacitance tolerances	±20%, ±10%, ±5%
Dissipation factor tan δ at 1 kHz and +20° C	≤ 8x10^{-3} >1 µF: ≤ 10 x10^{-3}
Insulation resistance at +20° C*	≥1 x10^{4} MΩ > 0.33 µF: ≥1250 sec.

Voltage ranges: 63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC

Capacitances	63 VDC	100 VDC	250 VDC	400 VDC	630 VDC
27 pF					
...					
68 pF					
100 pF					
680 pF					
1000 pF					
1500 pF					
2200 pF					
3300 pF					
4700 pF					
6800 pF					
0.01 µF	5	5	5	5	5
0.015 µF					
0.022 µF					
0.033 µF					
0.047 µF					
0.068 µF					
0.1 µF					
0.15 µF					
0.22 µF					
0.33 µF					
0.47 µF					
0.68 µF					
1.0 µF					
1.5 µF					
2.2 µF					
3.3 µF					
4.7 µF					
6.8 µF					
10 µF					
15 µF					
22 µF					
33 µF					
47 µF					
68 µF					
100 µF					
150 µF					
220 µF					

MKP 2

Dielectric	Polypropylene film
Temperature range	-55° C to 100° C
Capacitance tolerances	±20%, ±10%, ±5%
Dissipation factor tan δ at 1 kHz and +20° C	≤ 5x10^{-4}
Insulation resistance at +20° C*	≥1 x10^{5} MΩ

Voltage ranges: 63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC, 800 VDC, 1000 VDC

Capacitances	63 VDC	100 VDC	250 VDC	400 VDC	630 VDC	800 VDC	1000 VDC
27 pF							
...							
68 pF							
100 pF							
680 pF							
1000 pF							
1500 pF							
2200 pF							
3300 pF							
4700 pF							
6800 pF							
0.01 µF				5	5	5	5
0.015 µF							
0.022 µF							
0.033 µF							
0.047 µF							
0.068 µF							
0.1 µF							
0.15 µF							
0.22 µF							
0.33 µF							
0.47 µF							
0.68 µF							
1.0 µF							
1.5 µF							
2.2 µF							
3.3 µF							
4.7 µF							
6.8 µF							
10 µF							
15 µF							
22 µF							
33 µF							
47 µF							
68 µF							
100 µF							
150 µF							
220 µF							

MKS 4

Dielectric	Polyester film
Temperature range	-55° C to 125° C
Capacitance tolerances	±20%, ±10%, ±5%
Dissipation factor tan δ at 1 kHz and +20° C	≤ 8x10^{-3} >1 µF: ≤ 10 x10^{-3}
Insulation resistance at +20° C*	≥1 x10^{4} MΩ > 0.33 µF: ≥3000 sec.

Voltage ranges: 63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC, 1000 VDC, 1500 VDC, 2000 VDC

Capacitances	63 VDC	100 VDC	250 VDC	400 VDC	630 VDC	1000 VDC	1500 VDC	2000 VDC
27 pF								
...								
68 pF								
100 pF								
680 pF								
1000 pF								
1500 pF								
2200 pF								
3300 pF								
4700 pF								
6800 pF								
0.01 µF						7.5 10	10	10
0.015 µF							15	15
0.022 µF							22.5	22.5
0.033 µF							27.5	27.5
0.047 µF							37.5	37.5
0.068 µF							52.5	52.5
0.1 µF	7.5 10	7.5 10	7.5 10	7.5 10	7.5 10	15		
0.15 µF						22.5		
0.22 µF						27.5		
0.33 µF						37.5		
0.47 µF						52.5		
0.68 µF								
1.0 µF	15	15	15	15	15			
1.5 µF	22.5	22.5	22.5	22.5	22.5			
2.2 µF	27.5	27.5	27.5	27.5	27.5			
3.3 µF	37.5	37.5	37.5	37.5	37.5			
4.7 µF	52.5	52.5	52.5	52.5	52.5			
6.8 µF								
10 µF								
15 µF								
22 µF								
33 µF								
47 µF								
68 µF								
100 µF								
150 µF								
220 µF								

MKP 4

Dielectric	Polypropylene film
Temperature range	-55° C to 105° C
Capacitance tolerances	±20%, ±10%, ±5%
Dissipation factor tan δ at 1 kHz and +20° C	≤ 6x10^{-4}
Insulation resistance at +20° C*	≥1 x10^{5} MΩ > 0.33 µF: ≥3000 sec.

Voltage ranges: 100 VDC, 250 VDC, 400 VDC, 630 VDC, 1000 VDC, 1250 VDC

Capacitances	100 VDC	250 VDC	400 VDC	630 VDC	1000 VDC	1250 VDC
27 pF						
...						
68 pF						
100 pF						
680 pF						
1000 pF						
1500 pF						
2200 pF						
3300 pF						
4700 pF						
6800 pF						
0.01 µF						
0.015 µF						
0.022 µF						
0.033 µF						
0.047 µF						
0.068 µF						
0.1 µF	7.5	7.5	7.5	7.5 10	7.5 10	15
0.15 µF	10	10	10	15	15	22.5
0.22 µF	15	15	15	22.5	22.5	27.5
0.33 µF	22.5	22.5	22.5	27.5	27.5	37.5
0.47 µF	27.5	27.5	27.5	37.5	37.5	
0.68 µF	37.5	37.5	37.5			
1.0 µF						
1.5 µF						
2.2 µF						
3.3 µF						
4.7 µF						
6.8 µF						
10 µF						
15 µF						
22 µF						
33 µF						
47 µF						
68 µF						
100 µF						
150 µF						
220 µF						

The figures in the tables of capacitances refer to the PCM = Printed circuit module (pin spacing) at the pin exit points.

Pin length = 6 mm

* The insulation resistance data refers to the lowest rated voltage of each range. Further details concerning higher rated voltages see main catalogue. * Closer tolerances are subject to special enquiry.
New box sizes.

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For high current ratings

with double-metallized film electrodes

MKP 10

Dielectric	Polypropylene film
Temperature range	-55° C to 105° C
Capacitance tolerances	±20%, ±10%, ±5%
Dissipation factor tan δ at 1 kHz and +20° C	≤ 6x10^{-4}
Insulation resistance at +20° C*	≥1 x10^{5} MΩ > 0.33 µF: ≥30000 sec.

Voltage ranges: 100 VDC, 250 VDC, 400 VDC, 630 VDC, 850 VDC, 1000 VDC, 1600 VDC, 2000 VDC, 2500 VDC, 3000 VDC

Capacitances	100 VDC	250 VDC	400 VDC	630 VDC	850 VDC	1000 VDC	1600 VDC	2000 VDC	2500 VDC	3000 VDC
100 pF										
...										
680 pF										
1000 pF			7.5	7.5	7.5	7.5	10	10	15	
1500 pF					10	10		15		
2200 pF										
3300 pF										
4700 pF										
6800 pF										
0.01 µF	7.5	7.5 10	10	10	15	15	22.5	22.5	22.5	22.5
0.015 µF										
0.022 µF										
0.033 µF										
0.047 µF					22.5	22.5		27.5	27.5	27.5
0.068 µF										
0.1 µF	10		15	15	27.5	27.5	27.5	37.5	37.5	37.5
0.15 µF										
0.22 µF	15	15	22.5	22.5			37.5			
0.33 µF										
0.47 µF	22.5	27.5	27.5	27.5				52.5	52.5	52.5
0.68 µF										
1.0 µF	27.5		37.5	37.5			52.5			
1.5 µF		37.5								
2.2 µF	37.5									
3.3 µF			52.5	52.5						
4.7 µF		52.5								
6.8 µF	52.5									
10 µF										
15 µF										
22 µF										
33 µF										
47 µF										
68 µF										
100 µF										
150 µF										
220 µF										

FKP 1

Dielectric	Polypropylene film
Temperature range	-55° C to 105° C
Capacitance tolerances	±20%, ±10%, ±5% (other tolerances*)
Dissipation factor tan δ at 1 kHz and +20° C	≤ 5x10^{-4}
Insulation resistance at +20° C*	≥1 x10^{5} MΩ > 0.1 µF: ≥30000 sec.

Voltage ranges: 400 VDC, 630 VDC, 1000 VDC, 1250 VDC, 1600 VDC, 2000 VDC, 4000 VDC, 6000 VDC

Capacitances	400 VDC	630 VDC	1000 VDC	1250 VDC	1600 VDC	2000 VDC	4000 VDC	6000 VDC
100 pF								
...								
680 pF								
1000 pF					15	15		
1500 pF							22.5	22.5
2200 pF					22.5	22.5		
3300 pF							27.5	27.5
4700 pF					27.5	27.5		
6800 pF							37.5	37.5
0.01 µF	15	15	15	15				
0.015 µF					22.5	22.5		
0.022 µF	22.5	22.5	22.5	22.5				
0.033 µF					27.5	27.5		
0.047 µF	27.5	27.5	27.5	27.5				
0.068 µF					37.5	37.5		
0.1 µF	37.5	37.5	37.5	37.5				
0.15 µF					52.5	52.5		
0.22 µF	52.5	52.5	52.5	52.5				
0.33 µF								
0.47 µF								
0.68 µF								
1.0 µF								
1.5 µF								
2.2 µF								
3.3 µF								
4.7 µF								
6.8 µF								
10 µF								
15 µF								
22 µF								
33 µF								
47 µF								
68 µF								
100 µF								
150 µF								
220 µF								
330 µF								
400 µF								

RFI capacitors

in accordance with IEC 60384-14

MKP-X2

Dielectric	Polypropylene film
Temperature range	-55° C to 105° C
Capacitance tolerances	±20%, ±10%, ±5%
Dissipation factor tan δ at 1 kHz and +20° C	≤ 18x10^{-4} > 0.1 µF: ≤ 20 x10^{-4}
Insulation resistance at +20° C*	≥1.5 x10^{4} MΩ > 0.33 µF: ≥5000 sec.

Voltage ranges: 305 VAC

Capacitances	305 VAC
100 pF	
...	
680 pF	
1000 pF	
1500 pF	
2200 pF	
3300 pF	
4700 pF	
6800 pF	
0.01 µF	
0.015 µF	
0.022 µF	7.5
0.033 µF	
0.047 µF	10
0.068 µF	
0.1 µF	15
0.15 µF	
0.22 µF	22.5
0.33 µF	
0.47 µF	27.5
0.68 µF	
1.0 µF	37.5
1.5 µF	
2.2 µF	
3.3 µF	
4.7 µF	
6.8 µF	
10 µF	
15 µF	
22 µF	
33 µF	
47 µF	
68 µF	
100 µF	
150 µF	
220 µF	
330 µF	
400 µF	

MKP-Y2

Dielectric	Polypropylene film
Temperature range	-55° C to 105° C
Capacitance tolerances	±20%, ±10%, ±5%
Dissipation factor tan δ at 1 kHz and +20° C	≤ 18x10^{-4} > 0.1 µF: ≤ 20 x10^{-4}
Insulation resistance at +20° C*	≥1.5 x10^{4} MΩ > 0.33 µF: ≥5000 sec.

Voltage ranges: 300 VAC

Capacitances	300 VAC
100 pF	
...	
680 pF	
1000 pF	
1500 pF	
2200 pF	
3300 pF	
4700 pF	
6800 pF	
0.01 µF	
0.015 µF	
0.022 µF	10
0.033 µF	
0.047 µF	15
0.068 µF	
0.1 µF	22.5
0.15 µF	
0.22 µF	27.5
0.33 µF	
0.47 µF	37.5
0.68 µF	
1.0 µF	
1.5 µF	
2.2 µF	
3.3 µF	
4.7 µF	
6.8 µF	
10 µF	
15 µF	
22 µF	
33 µF	
47 µF	
68 µF	
100 µF	
150 µF	
220 µF	
330 µF	
400 µF	

MKP-X1 R

Dielectric	Polypropylene film
Temperature range	-55° C to 105° C
Capacitance tolerances	±20%, ±10%, ±5%
Dissipation factor tan δ at 1 kHz and +20° C	≤ 18x10^{-4} > 0.1 µF: ≤ 20 x10^{-4} > 1 µF: ≤ 30 x10^{-4}
Insulation resistance at +20° C*	≥1.5 x10^{4} MΩ > 0.33 µF: ≥5000 sec.

Voltage ranges: 440 VAC

Capacitances	440 VAC
100 pF	
...	
680 pF	
1000 pF	
1500 pF	
2200 pF	
3300 pF	
4700 pF	
6800 pF	
0.01 µF	
0.015 µF	
0.022 µF	10
0.033 µF	
0.047 µF	15
0.068 µF	
0.1 µF	22.5
0.15 µF	
0.22 µF	27.5
0.33 µF	
0.47 µF	37.5
0.68 µF	
1.0 µF	
1.5 µF	
2.2 µF	
3.3 µF	
4.7 µF	
6.8 µF	
10 µF	
15 µF	
22 µF	
33 µF	
47 µF	
68 µF	
100 µF	
150 µF	
220 µF	
330 µF	
400 µF	

Snubber capacitors◇

with double-metallized film electrodes

Snubber MKP

Dielectric	Polypropylene film
Temperature range	-55° C to 105° C
Capacitance tolerances	±20%, ±10%, ±5% (other tolerances*)
Dissipation factor tan δ at 1 kHz and +20° C	≤ 6x10^{-4}
Insulation resistance at +20° C*	≥1 x10^{5} MΩ > 0.33 µF: ≥30000 sec.

Voltage ranges: 700 VDC, 850 VDC, 1000 VDC, 1250 VDC, 1700 VDC, 2000 VDC, 2500 VDC, 3000 VDC

Capacitances	700 VDC	850 VDC	1000 VDC	1250 VDC	1700 VDC	2000 VDC	2500 VDC	3000 VDC
100 pF								
...								
680 pF								
1000 pF								
1500 pF								
2200 pF								
3300 pF								
4700 pF								
6800 pF								
0.01 µF								
0.015 µF								
0.022 µF								
0.033 µF								
0.047 µF								
0.068 µF								
0.1 µF								
0.15 µF								
0.22 µF								
0.33 µF								
0.47 µF								
0.68 µF								
1.0 µF								
1.5 µF								
2.2 µF								
3.3 µF								
4.7 µF								
6.8 µF								
10 µF								
15 µF								
22 µF								
33 µF								
47 µF								
68 µF								
100 µF								
150 µF								
220 µF								
330 µF								
400 µF								

with metal foil electrodes, internally series-connected

Snubber FKP

Dielectric	Polypropylene film
Temperature range	-55° C to 105° C
Capacitance tolerances	±20%, ±10%, ±5% (other tolerances*)
Dissipation factor tan δ at 1 kHz and +20° C	≤ 5x10^{-4}
Insulation resistance at +20° C*	≥1 x10^{5} MΩ > 0.33 µF: ≥30000 sec.

Voltage ranges: 530 VDC, 1000 VDC, 1250 VDC, 1600 VDC, 2000 VDC, 3000 VDC, 4000 VDC

Capacitances	530 VDC	1000 VDC	1250 VDC	1600 VDC	2000 VDC	3000 VDC	4000 VDC
100 pF							
...							
680 pF							
1000 pF							
1500 pF							
2200 pF							
3300 pF							
4700 pF							
6800 pF							
0.01 µF							
0.015 µF							
0.022 µF							
0.033 µF							
0.047 µF							
0.068 µF							
0.1 µF							
0.15 µF							
0.22 µF							
0.33 µF							
0.47 µF							
0.68 µF							
1.0 µF							
1.5 µF							
2.2 µF							
3.3 µF							
4.7 µF							
6.8 µF							
10 µF							
15 µF							
22 µF							
33 µF							
47 µF							