



### Film Capacitors Selector Guide



High-Performance Film Capacitors

**DC-Link**

- MKP1848
- MKP1848C
- MKP1848S
- MKP1849

**AC Filter**

- MKP1847

**Snubber**

- MKP386M

**RFI**

- F1772-2 310V-X2
- MKP339 X2
- F339X1 330 / 480
- MKP338 6 Y2
- F1773
- MKP338 1 X1

**AC and Pulse**

- MKP385
- MMKP383
- KP1836
- MKP1839HQ

**Precision**

- KP1830
- MKP1839

**DC Capacitors**

- MKT1820
- MKT37x
- MKT1813

**RESOURCES**

- Film capacitor product portfolio: [www.vishay.com/capacitors/film/](http://www.vishay.com/capacitors/film/)
- Technical contact: [dc-film@vishay.com](mailto:dc-film@vishay.com)
- Sales contact: [www.vishay.com/company/contacts/](http://www.vishay.com/company/contacts/)

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## CAPACITORS

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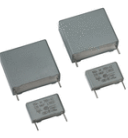




		DC-Link				AC Filter	Snubber
		MKP1848	MKP1848C	MKP1848S	MKP1849	MKP1847	MKP386M
<b>Series</b>			 <b>HALOGEN FREE</b> <b>NEW</b>	 <b>HALOGEN FREE</b> <b>NEW</b>	 <b>NEW</b>	 <b>NEW</b>	 <b>HALOGEN FREE</b>
<b>Applications</b>		Solar inverters, motor drives, frequency converters, UPS, charging systems		PV micro inverters, LED street lighting, on-board chargers	HEV / EV powertrains, on-board chargers	UPS, solar and wind inverters, welding systems	Power inverters, direct IGBT mount
<b>Market Segment</b>	<b>Lighting</b>			x			
	<b>Power Supplies</b>	x	x	x		x	x
	<b>Automotive</b>	x	x	x	x		
	<b>Industrial</b>	x	x	x		x	x
	<b>Telecom</b>						
	<b>White Goods</b>						
	<b>Consumer</b>						
<b>Max Temp (°C)</b>		105	105	105	110	105	105
<b>Tolerance (%)</b>		± 5	± 5	± 5	-5 +10	± 5, ± 10	± 5
<b>Technology</b>		Metalized polypropylene					
<b>Rated Voltage (V) at 85 °C</b>		450 V <sub>DC</sub> , 700 V <sub>DC</sub> , 800 V <sub>DC</sub> , 900 V <sub>DC</sub> , 1100 V <sub>DC</sub> , 1200 V <sub>DC</sub>	500 V <sub>DC</sub> , 600 V <sub>DC</sub> , 800 V <sub>DC</sub> , 900 V <sub>DC</sub> , 1000 V <sub>DC</sub> , 1200 V <sub>DC</sub>	500 V <sub>DC</sub> , 700 V <sub>DC</sub> , 1000 V <sub>DC</sub>	500 V <sub>DC</sub>	230 V <sub>AC</sub> , 250 V <sub>AC</sub> , 275 V <sub>AC</sub> , 310 V <sub>AC</sub> , 350 V <sub>AC</sub> , 440 V <sub>AC</sub>	700 V <sub>DC</sub> , 850 V <sub>DC</sub> , 1000 V <sub>DC</sub> , 1250 V <sub>DC</sub> , 1600 V <sub>DC</sub> , 2000 V <sub>DC</sub> , 2500 V <sub>DC</sub>
<b>Capacitance Range</b>		1 μF to 400 μF	1 μF to 500 μF	2 μF to 100 μF	500 μF and 1000 μF	1 μF to 70 μF	0.047 μF to 10 μF
<b>Pitch (mm)</b>		27.5 to 52.5	27.5 to 52.5	27.5 to 52.5	Not Applicable	27.5 to 52.5	28.0 to 57.3
<b>Technical Information</b>		DC-link capacitor, low ESR, low ESL, high ripple current, long lifetime	Compact DC-link, low ESR, low ESL, high ripple current, long lifetime	Slim DC-link, low ESR, low ESL, high ripple current, long lifetime	Very low ESR, very low ESL, high ripple current, long lifetime	Segmented film, long lifetime, high RMS current, low ESL	High pulse strength, low ESL, low ESR, reduce or eliminate current and voltage spikes
<b>Features</b>		Automotive Grade (AEC-Q200)	Compact DC-link, more capacitance per mm <sup>3</sup>	Low building height	Automotive Grade (AEC-Q200)	UL810 compliant	Tab terminal for direct IGBT mount



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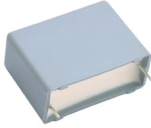

		RFI					
		F1772-2 310V-X2	MKP339 X2	F339X1 330 V / 480 V	MKP338 6 Y2	F1773	MKP338 1 X1
<b>Series</b>		 HALOGEN FREE		 HALOGEN FREE NEW			
<b>Applications</b>		For standard across the line X2 application (310 V <sub>AC</sub> ) and line impedance	For standard across the line X2 application (310 V <sub>AC</sub> )	For standard across the line X1 application (330 / 480 V <sub>AC</sub> )	For line bypass (between line and ground) Y2 application	For standard across the line X2 application (253 V <sub>AC</sub> )	For standard across the line X1 application (440 V <sub>AC</sub> )
<b>Market Segment</b>	<b>Lighting</b>		x		x		
	<b>Power Supplies</b>	x	x	x	x	x	x
	<b>Automotive</b>	x	x		x		
	<b>Industrial</b>	x		x	x	x	x
	<b>Telecom</b>	x				x	
	<b>White goods</b>	x	x			x	
	<b>Consumer</b>	x	x			x	
<b>Max Temp (°C)</b>		110	110	110	105	100	105
<b>Tolerance (%)</b>		± 10, ± 20	± 5, ± 10, ± 20	± 5, ± 10, ± 20	± 5, ± 10, ± 20	± 10, ± 20	± 5, ± 10, ± 20
<b>Technology</b>		Metalized polyester	Metalized polypropylene			Metalized polyester	Metalized polypropylene
<b>Rated Voltage (V)</b>		310 V <sub>AC</sub> (50 Hz to 60 Hz)	310 V <sub>AC</sub> (50 Hz to 60 Hz)	330 V <sub>AC</sub> and 480 V <sub>AC</sub> (50 Hz to 60 Hz)	300 V <sub>AC</sub> (50 Hz to 60 Hz)	253 V <sub>AC</sub> (50 Hz to 60 Hz)	440 V <sub>AC</sub> (50 Hz to 60 Hz)
<b>Capacitance Range</b>		10 nF to 2.2 µF	1 nF to 4.7 µF	1 nF to 2.2 µF	1 nF to 470 nF	10 nF to 2.2 µF	10 nF to 1 µF
<b>Pitch (mm)</b>		15 to 37.5	7.5 to 27.5	7.5 / 10 to 27.5	7.5 to 27.5	19 to 41.5 (length)	15 to 27.5
<b>Technical Information</b>		IEC, EN, UL, CSA, and CQC safety standards	IEC, EN, UL, CSA, and CQC safety standards	IEC, EN, UL, CSA, and CQC safety standards, halogen-free	IEC, EN, UL, and CSA safety standards	IEC, EN, UL, and CSA safety standards	IEC, EN, UL, and CSA safety standards
<b>Features</b>		Automotive Grade (AEC-Q200)	Automotive Grade (AEC-Q200)	480 V <sub>AC</sub> with internal series construction	Automotive Grade (AEC-Q200)	Axial mounting	



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		AC and Pulse			
		MKP385	MMKP383	KP1836	MKP1839HQ
Series					
		<b>NEW</b>	<b>NEW</b>		
Applications		Where step pulses occur e.g. SMPS, high-frequency, and pulse operations, fly-back and resonant converters, snubbing, sample and hold		High-voltage, very high current and high pulse operations	High-current and high-pulse operations, resonant and quasi-resonant converters, induction cooking
Market Segment	Lighting	x	x	x	
	Power Supplies	x	x	x	x
	Automotive	x	x		
	Industrial	x	x	x	
	Telecom	x	x		x
	White goods	x	x	x	x
	Consumer	x	x		x
Max Temp (°C)		110 (125 limited time)	105	100	110
Tolerance (%)		± 5	± 5	± 5, ± 10	± 5
Technology		Metalized polypropylene	Double metalized polypropylene	Film / Foil (aluminum / polypropylene)	Metalized polypropylene
Rated Voltage (V)		160 V <sub>DC</sub> , 250 V <sub>DC</sub> , 400 V <sub>DC</sub> , 630 V <sub>DC</sub> , 850 V <sub>DC</sub> , 1000 V <sub>DC</sub> , 1250 V <sub>DC</sub> , 1600 V <sub>DC</sub> , 2000 V <sub>DC</sub> , 2500 V <sub>DC</sub>	250 V <sub>DC</sub> , 400 V <sub>DC</sub> , 630 V <sub>DC</sub> , 1000 V <sub>DC</sub> , 1400 V <sub>DC</sub> , 1600 V <sub>DC</sub> , 2000 V <sub>DC</sub> , 2500 V <sub>DC</sub>	630 V <sub>DC</sub> , 1000 V <sub>DC</sub> , 1250 V <sub>DC</sub> , 1600 V <sub>DC</sub> , 2000 V <sub>DC</sub>	630 V <sub>DC</sub> , 850 V <sub>DC</sub> , 1250 V <sub>DC</sub> , 1600 V <sub>DC</sub>
Capacitance Range		470 pF to 82 μF	470 pF to 4.7 μF	100 pF to 220 nF	100 nF to 3.3 μF
Pitch (mm)		5 to 52.5	7.5 to 37.5	15 to 37.5	26.5 and 31.5 (length)
Technical Information		High pulse strength, mono and internal serial construction, low ESL and low ESR, 125 °C max operation temperature for limited time	High pulse strength, mono and internal serial construction, low ESL and low ESR	High pulse rise time (dv/dt), internal series connection	High current capabilities
Features		High density packaging	High density packaging	Long life time	Long life time



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		Precision		DC Capacitors		
		KP1830	MKP1839	MKT1820	MKT37x	MKT1813
<b>Series</b>						
<b>Applications</b>		Oscillator, timing and LC / RC filter circuits, high-frequency coupling of fast digital and analog ICs	Pulse application, high-frequency, sample and hold	General purpose, high-temperature operation, automotive applications	General purpose, blocking and coupling, bypass and energy reservoir	
<b>Market Segment</b>	<b>Lighting</b>			x	x	
	<b>Power Supplies</b>	x	x	x	x	x
	<b>Automotive</b>			x		x
	<b>Industrial</b>			x	x	x
	<b>Telecom</b>	x	x	x	x	x
	<b>White goods</b>	x		x	x	x
	<b>Consumer</b>					
<b>Max Temp (°C)</b>		100	100	125 (150 limited time)	105	100
<b>Tolerance (%)</b>		± 1, ± 2, ± 2.5, ± 5, ± 10	± 1, ± 2, ± 2.5, ± 5, ± 10	± 5, ± 10, ± 20	± 5, ± 10	± 5, ± 10, ± 20
<b>Technology</b>		Film / Foil (aluminum / polypropylene)	Metalized polypropylene	Metalized polyester		
<b>Rated Voltage (V)</b>		63 V <sub>DC</sub> , 250 V <sub>DC</sub> , 630 V <sub>DC</sub>	160 V <sub>DC</sub> , 250 V <sub>DC</sub> , 400 V <sub>DC</sub> , 630 V <sub>DC</sub>	63 V <sub>DC</sub> , 100 V <sub>DC</sub> , 250 V <sub>DC</sub> , 400 V <sub>DC</sub> , 630 V <sub>DC</sub> , 1000 V <sub>DC</sub>	63 V <sub>DC</sub> , 100 V <sub>DC</sub> , 250 V <sub>DC</sub> , 400 V <sub>DC</sub> , 630 V <sub>DC</sub>	63 V <sub>DC</sub> , 100 V <sub>DC</sub> , 250 V <sub>DC</sub> , 400 V <sub>DC</sub> , 630 V <sub>DC</sub> , 1000 V <sub>DC</sub>
<b>Capacitance Range</b>		100 pF to 22 nF	47 pF to 22 μF	1 nF to 15 μF	0.68 nF to 15 μF	470 pF to 22 μF
<b>Pitch (mm)</b>		5	11 to 41.5 (length)	10 to 27.5	5 to 27.5	11 to 41.5 (length)
<b>Technical Information</b>		High pulse rise time (dv/dt), precision capacitor	Precision capacitor for pulse operations	Series construction on 630 V <sub>DC</sub> and 1000 V <sub>DC</sub> , 150 °C maximum operation temperature for limited time and voltage derating	Mono and series internal construction	Mono and series internal construction
<b>Features</b>				Automotive Grade (AEC-Q200)		Long lifetime



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