

MKP

Class X2 EMI/RFI Boxed Metallized polypropylene film capacitors



Features

- Metallized polypropylene
- High dv/dt
- Small size
- Low self inductance
- Low ESR

Applications

- EMI Filter
- Line by pass
- Across the line
- Antenna coupling

Specifications

Operating Temperature Range	-40°C to +110°C			
Capacitance Tolerance	±10% at 1 kHz, 20°C			
AC voltage (50/60 Hz)	CSA	ENEC	CQC	UL
	250/310 VAC	275 VAC	275 VAC	250/310 VAC
Dissipation Factor at 1 kHz and 20°C	Tan δ			
	.1% Max			
Insulation Resistance @20°C (<70% RH) for 1 minute at 100VDC applied	Capacitance	Terminal to Terminal	Terminal to Case	
	≤0.33uF	15000 MΩ	>30000 MΩ at 100VDC >5000 MΩ at 500VDC	
	>0.33uF	5000 MΩxμF	>30000 MΩ at 100VDC >5000 MΩ at 500VDC	
Self Inductance	≤1 nano-Henry per mm of lead spacing and lead length			
Dielectric Strength	Terminal to Terminal	C≤.0068uF, 1500 VAC or 2121 VDC applied for 60 Seconds C>.0068uF, 1000 VAC or 1768 VDC applied for 60 seconds Cut-off current: 2A ac or 10mAdc Current limiting resistance: 1Ω/V		
	Terminal to case	2050VDC applied between the terminals and case for 60 Seconds and 20°C		
Life Expectancy	1000 hours at 110°C at 125% of rated voltage with once every hour the voltage is increased to 1000 VAC for 0.1 seconds			
	Capacitance change	≤5% of initially measured value		
	Dissipation Factor change	≤0.15% at 1kHz		
	Insulation resistance change	≥100% of initially specified value (T-T) ≥3000 MΩ (Terminal to case)		
Humidity test	500 Hours at 90 to 95% RH, 40C and no voltage applied after which the following voltage will be applied for 1 minute to each capacitor. C≤0.0068uF 1500VAC, C>0.0068uF 1075VAC			
	Capacitance change	≤5% of initially measured value		
	Dissipation Factor change	≤0.15% at 1kHz		
	Insulation resistance change	≥50% of initially specified value (T-T) ≥15000 MΩ (Terminal to case)		
Impulse voltage (24 pulses)	C≤ 1uF Vp=2.5kVDC C> 1uF Vp=2.5kV √C			
Capacitance temperature coefficient	-200ppm/°C, ±100ppm/°C			
Construction	Metallized Polypropylene film			
Electrodes	Vacuum deposited Metal layers			
Coating	Flame retardant Solvent resistant plastic case with epoxy end fill (UL94V-0)			
Lead terminations	Lead free tinned copper leads			



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Standard part listing

Capacitance (µF)	IC PART NUMBER	dv/dt (V/µs)	LxHxT (mm)	S Lead Spacing (mm)	d Lead Wire Diameter (mm)
0.0047	472MKP275K	400	13x8x4	10	0.6
0.0047	472MKP275KC	500	10x8x4	7.5	0.6
0.0047	472MKP275KG5	400	13x8x4	10	0.6
0.0056	562MKP275KC	500	10x8x4	7.5	0.6
0.0056	562MKP275KD	400	13x9x4	10	0.6
0.0068	682MKP275K	400	13x9x4	10	0.6
0.0068	682MKP275KC	500	10x8x4	7.5	0.6
0.0082	822MKP275KC	500	10x8x4	7.5	0.6
0.0082	822MKP275KD	400	13x9x4	10	0.6
0.01	103MKP275K	400	13x9x4	10	0.6
0.01	103MKP275KC	500	10x8x4	7.5	0.6
0.01	103MKP275KE	300	18x8x4	15	0.8
0.015	153MKP275K	400	13x9x4	10	0.6
0.015	153MKP275KC	500	10x8x4	7.5	0.6
0.015	153MKP275KE	300	18x8x4	15	0.8
0.022	223MKP275K	400	13x9x4	10	0.6
0.022	223MKP275KB	300	18x9x4	15	0.8
0.022	223MKP275KC	500	10x9x4	7.5	0.6
0.022	223MKP275KCG5	500	10x8x4	7.5	0.6
0.033	333MKP275K	400	13x9x4	10	0.6
0.033	333MKP275KC	500	10x9x5	7.5	0.6
0.033	333MKP275KCG4	500	10x10x5	7.5	0.6
0.033	333MKP275KE	300	18x9x4	15	0.8
0.047	473MKP275K	300	18x9x4	15	0.8
0.047	473MKP275KC	500	10x10x5	7.5	0.6
0.047	473MKP275KD	400	13x9x4	10	0.6
0.056	563MKP275KC	500	10x11x5	7.5	0.6
0.056	563MKP275KD	400	13x9.5x4.5	10	0.6
0.056	563MKP275KE	300	18x9x4	15	0.8
0.068	683MKP275K	300	18x10x4	15	0.8
0.068	683MKP275KC	500	10x12x6	7.5	0.6
0.068	683MKP275KD	400	13x10x5	10	0.6
0.082	823MKP275KC	500	10x12x6	7.5	0.6
0.082	823MKP275KD	400	13x11x5	10	0.6
0.082	823MKP275KE	300	18x10x5	15	0.8
0.1	104MKP275K	300	18x10x5	15	0.8
0.1	104MKP275KC	500	10x13x7	7.5	0.6
0.1	104MKP275KD	400	13x11x5	10	0.6
0.1	104MKP275KG5	300	18x10x5	15	0.8
0.12	124MKP275KD	400	13x12x6	10	0.6
0.12	124MKP275KE	300	18x10x5	15	0.8
0.15	154MKP275K	180	26x14.5x6	22.5	0.8
0.15	154MKP275KA	350	15x11.5x6	12.5	0.8
0.15	154MKP275KD	400	13x12x7	10	0.6
0.15	154MKP275KE	300	18x10.5x5	15	0.8
0.22	224MKP275K	180	26x11x5	22.5	0.8
0.22	224MKP275KA	350	15x12.5x7	12.5	0.8
0.22	224MKP275KB	300	18x11.5x6	15	0.8
0.22	224MKP275KBG4	300	18x13x7	15	0.8
0.22	224MKP275KD	400	13x14x8	10	0.6
0.22	224MKP275KG5	180	26x11x5	22.5	0.8

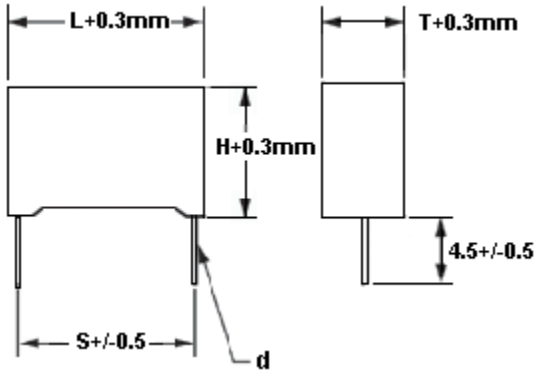
Capacitance (µF)	IC PART NUMBER	dv/dt (V/µs)	LxHxT (mm)	S Lead Spacing (mm)	d Lead Wire Diameter (mm)
0.33	334MKP275K	180	26x12x6	22.5	0.8
0.33	334MKP275KA	350	15x14x8.5	12.5	0.8
0.33	334MKP275KE	300	18x13x7	15	0.8
0.39	394MKP275KA	350	15x15x9	12.5	0.8
0.39	394MKP275KE	300	18x13.5x7.5	15	0.8
0.39	394MKP275KG	180	26x12x6	22.5	0.8
0.47	474MKP275KA	350	15x16x10	12.5	0.8
0.47	474MKP275KBG5	180	26x14x6	22.5	0.8
0.47	474MKP275KE	300	18x14x8	15	0.8
0.47	474MKP275K	120	31x13.5x6	27.5	0.8
0.47	474MKP275KG4	120	31x18x9	27.5	0.8
0.56	564MKP275KA	350	15x17x11	12.5	0.8
0.56	564MKP275KA	350	15x17x11	12.5	0.8
0.56	564MKP275KE	300	18x15x9	15	0.8
0.56	564MKP275KG	180	26x14x7	22.5	0.8
0.56	564MKP275KH	120	31x14x6.5	27.5	0.8
0.68	684MKP275K	120	31x15.5x6.5	27.5	0.8
0.68	684MKP275KE	300	18x16x10	15	0.8
0.68	684MKP275KG	180	26x17x8	22.5	0.8
0.82	824MKP275KE	300	18x17.5x10	15	0.8
0.82	824MKP275KG	180	26x16x8	22.5	0.8
0.82	824MKP275KH	120	31x16x7.5	27.5	0.8
1	105MKP275K	120	31x17x8	27.5	0.8
1	105MKP275KE	300	18x18.5x11	15	0.8
1	105MKP275KG	180	26x17x9	22.5	0.8
1	105MKP275KGG4	180	26x19x10	22.5	0.8
1.2	125MKP275KG	180	26x19.5x9	22.5	0.8
1.2	125MKP275KH	120	31x17.5x9	27.5	0.8
1.5	155MKP275K	120	31x18.5x10	27.5	0.8
1.5	155MKP275KG	180	26x21x10	22.5	0.8
1.8	185MKP275KG	180	26x23x12.5	22.5	0.8
1.8	185MKP275KH	120	31x20.5x12	27.5	0.8
2.2	225MKP275K	120	31x26x18	27.5	0.8
2.2	225MKP275KG	180	26x24x13.5	22.5	0.8
2.2	225MKP275KG5	120	31x22x13	27.5	0.8
2.2	225MKP275KGE	180	26x22x15	22.5	0.8
3.3	335MKP275KH	120	31x29x15.5	27.5	1
3.3	335MKP275KHF	120	31x26x17.5	27.5	1
3.3	335MKP275KJ	100	41.5x26x14.5	37.5	1
3.9	395MKP275KH	120	31x28x19	27.5	1
3.9	395MKP275KJ	100	41.5x27.5x16	37.5	1
4.7	475MKP275KH	120	31x30.5x20	27.5	1
4.7	475MKP275KHG	120	31x32.5x19	27.5	1
4.7	475MKP275KJ	100	41.5x30x17.5	37.5	1
5.6	565MKP275KH	120	31x34.5x21	27.5	1
5.6	565MKP275KJ	100	41.5x31.5x18.5	37.5	1
6.8	685MKP275KJ	100	41.5x35.5x22.5	37.5	1
8.2	825MKP275KJ	100	41.5x38x25	37.5	1
10	106MKP275KJ	100	41.5x41x27.5	37.5	1
10	106MKP275KJG4	100	41.5x45x30	37.5	1



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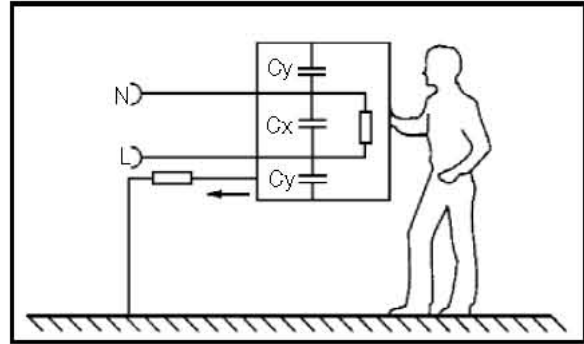
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All dimensions in (mm)

* 17mm lead length available upon request



X capacitors are used to suppress electrical noise by reducing the input impedance of the device incorporating the capacitor.

X capacitors are connected across the supply line where failure of the capacitor will not result in personal exposure to electrical shock.

X2 capacitors are to be used in applications where the peak voltage is $\leq 1200V$.

Safety agency	Standard	Voltage	Class	Certificate number	
UL	UL 1414 (.0047 to 1uF)	250	FOWX2*	E317135	
	UL 1283 (.0047 to 10uF)	310	FOKY2^ FOKY8^	E317132	
CSA	C22.2 class 2221 01	(.001 to 0.68uF)	250	Antenna coupling, Line isolation, Across the line	241565
		(.0047 to 1.0 uF)	250	Antenna coupling, Line isolation, Across the line, Line to Ground	
	Class 2221 02 (.0047 to 10uF)	310	EMI		
	Class 2221 51 (.0047 to 1.0uF)	250	Audio/video equipment		
ENEC (SEMKO)	IEC 60384-14/ SE/0252-3	275	X2	SE/07119	
CQC	GB/T14472-1998	275	X2	CQC07001021654 CQC07001021577	

*Antenna coupling, Line bypass, across the line

^Electromagnetic interference filter



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