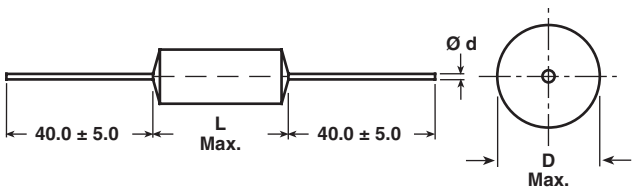
Metallized Polypropylene Film Capacitor
Related Document: IEC 60384-16

Dimensions in millimeters



D	Ø d
≤ 7.0	0.7
< 16.0	0.8
≥ 16.0	1.0

MAIN APPLICATIONS
High voltage, high current and high pulse operations, deflection circuits in TV sets (S-correction and fly-back tuning). Protection circuits in SMPS's. Snubber and electronic ballast circuits. Input and output filtering in SPS designs, storage, timing and integrating circuits.

MARKING
Manufacturer's logo/type/C-value/rated voltage/tolerance/ date of manufacture

DIELECTRIC
Polypropylene film

ELECTRODES
Vacuum deposited aluminum

COATING
Metal-foil-wrapped, insulated, epoxy resin sealed, flame retardant

CONSTRUCTION
Extended double-sided metallized polyester film, internal series connection (630 to 2000 VDC), double-sided metallized polyester carrier film, (refer to general information)

LEADS
Tinned wire

IEC TEST CLASSIFICATION
55/100/56, according to IEC 60068

OPERATING TEMPERATURE RANGE
- 55 °C to + 100 °C

CAPACITANCE RANGE
1000 pF to 4.7 µF

FEATURES
Product is completely lead (Pb)-free.
Product is RoHS compliant.

Pb-free

e3

RoHS COMPLIANT

CAPACITANCE TOLERANCES
± 20 % (M), ± 10 % (K), ± 5 % (J)

RATED VOLTAGES (U_R):
160 VDC, 250 VDC, 400 VDC, 630 VDC, 1000 VDC, 1600 VDC, 2000 VDC

PERMISSIBLE AC VOLTAGES (RMS) UP TO 60Hz
100 VAC, 160 VAC, 220 VAC, 400 VAC, 600 VAC, 650 VAC, 700 VAC

TEST VOLTAGE (ELECTRODE/ELECTRODE)
1.6 x U_R for 2 s

INSULATION RESISTANCE
Measured at 100 VDC after one minute
For C ≤ 0.33 µF:
100000 MΩ minimum value (150000 MΩ typical value)

TIME CONSTANT
Measured at 100 VDC after one minute
For C > 0.33 µF:
30000 s minimum value (50000 s typical value)

TEMPERATURE COEFFICIENT
- 250 x 10^{-6}/°C (typical value)

CAPACITANCE DRIFT
Up to + 40 °C, ± 0.5 % for a period of two years

DERATING FOR DC AND AC.CATEGORY VOLTAGE U_C
At + 85 °C: $U_C = 1.0\ U_R$
At + 100 °C: $U_C = 0.7\ U_R$

SELF INDUCTANCE
~ 12 nH measured with 6mm long leads

PULL TEST ON LEADS
≥ 20 N in direction of leads according to IEC 60068-2-21

BEND TEST ON LEADS
2 bends through 90 °C with half of the force used in pull test

RELIABILITY
Operational life > 300000 h
Failure rate < 10 FIT (40 °C and 0.5 x U_R)

For further details, please refer to the general information available at www.vishay.com/?26033.

MAXIMUM PULSE RISE TIME

CAPACITOR LENGTH (MM)	Maximum Pulse Rise Time d_v/d_t [V/µs]						
	160 VDC	250 VDC	400 VDC	630 VDC	1000 VDC	1600 VDC	2000 VDC
17	900	1140	1840	—	—	—	—
22	450	560	910	3430	—	—	—
29	260	320	520	2120	2800	3800	6200
34	202	240	400	1524	2000	2680	4200
44	140	170	280	980	1280	1690	2600

If the maximum pulse voltage is less than the rated voltage higher d_v/d_t values can be permitted.

DISSIPATION FACTOR TAN δ

MEASURED AT	C ≤ 0.1 µF	0.1µF < C ≤ 1.0 µF	C > 1.0 µF
1 kHz	0.3×10^{-3}	0.3×10^{-3}	0.3×10^{-3}
10 kHz	0.4×10^{-3}	0.4×10^{-3}	-
100 kHz	1.5×10^{-3}	-	-
	Maximum values		

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 16 160 VDC/100 VAC		VOLTAGE CODE 25 250 VDC/160 VAC		VOLTAGE CODE 40 400 VDC/220 VAC		VOLTAGE CODE 63 630 VDC/250 VAC	
		D	L	D	L	D	L	D	L
1000 pF	- 210	-	-	-	-	-	-	-	-
1500 pF	- 215	-	-	-	-	-	-	-	-
2200 pF	- 222	-	-	-	-	-	-	-	-
3300 pF	- 233	-	-	-	-	-	-	-	-
4700 pF	- 247	-	-	-	-	-	-	-	-
6800 pF	- 268	-	-	-	-	-	-	-	-
0.01 µF	- 310	-	-	-	-	6.0	17.0	7.0	22.0
0.015 µF	- 315	-	-	-	-	6.5	17.0	8.0	22.0
0.022 µF	- 322	-	-	6.0	17.0	7.5	17.0	9.5	22.0
0.033 µF	- 333	6.0	17.0	7.0	17.0	7.0	22.0	9.0	29.0
0.047 µF	- 347	6.5	17.0	8.0	17.0	8.0	22.0	10.5	29.0
0.068 µF	- 368	7.5	17.0	7.0	22.0	9.0	22.0	12.5	29.0
0.1 µF	- 410	7.0	22.0	8.0	22.0	11.0	22.0	12.5	34.0
0.15 µF	- 415	8.0	22.0	9.5	22.0	10.0	29.0	15.0	34.0
0.22 µF	- 422	9.5	22.0	9.0	29.0	12.0	29.0	14.5	44.0
0.33 µF	- 433	9.0	29.0	10.5	29.0	13.5	29.0	17.5	44.0
0.47 µF	- 447	10.0	29.0	12.0	29.0	15.0	34.0	21.0	44.0
0.68 µF	- 468	12.0	29.0	13.0	34.0	17.5	34.0	25.0	44.0
1.0 µF	- 510	12.5	34.0	15.5	34.0	17.5	44.0	-	-
1.5 µF	- 515	15.5	34.0	15.5	44.0	21.5	44.0	-	-
2.2 µF	- 522	15.5	44.0	18.5	44.0	26.0	44.0	-	-
3.3 µF	- 533	18.5	44.0	22.5	44.0	-	-	-	-
4.7 µF	- 547	22.0	44.0		-	-	-	-	-

Further C-values on request.
pcm = L + 3.5.

RECOMMENDED PACKAGING

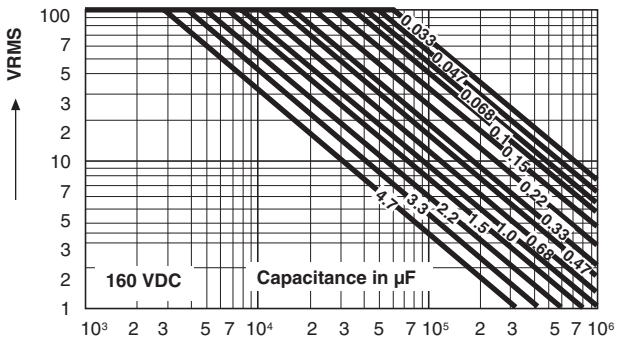
LETTER CODE	TYPE OF PACKAGING	REEL DIAMETER (mm)	ORDERING CODE EXAMPLES	
G	AMMO	-	MKP 1845-310-135-G	X
R	REEL	350	MKP 1845-310-135-R	X
-	BULK for L > 31.5 mm	-	MKP 1845-410-135	X

CAPACITANCE	CAPACITANCE CODE	VOLTAGE CODE 10 1000 VDC/600VAC		VOLTAGE CODE 13 1600 VDC/650 VAC		VOLTAGE CODE 20 2000 VDC/700 VAC	
		D	L	D	L	D	L
1000 pF	- 210	-	-	-	-	6.5	29.0
1500 pF	- 215	-	-	-	-	6.5	29.0
2200 pF	- 222	-	-	-	-	6.5	29.0
3300 pF	- 233	-	-	-	-	7.0	29.0
4700 pF	- 247	-	-	-	-	8.0	29.0
6800 pF	- 268	-	-	-	-	9.5	29.0
0.01 µF	- 310	6.5	29.0	8.0	29.0	11.0	29.0
0.015 µF	- 315	8.0	29.0	9.5	29.0	11.5	34.0
0.022 µF	- 322	9.0	29.0	11.0	29.0	13.0	34.0
0.033 µF	- 333	11.0	29.0	11.5	34.0	16.0	34.0
0.047 µF	- 347	11.0	34.0	13.5	34.0	15.0	44.0
0.068 µF	- 368	13.0	34.0	16.0	34.0	18.0	44.0
0.1 µF	- 410	15.5	34.0	15.0	44.0	21.0	44.0
0.15 µF	- 415	15.0	44.0	18.5	44.0	-	-
0.22 µF	- 422	18.0	44.0	22.0	44.0	-	-
0.33 µF	- 433	-	-	-	-	-	-
0.47 µF	- 447	-	-	-	-	-	-
0.68 µF	- 468	-	-	-	-	-	-
1.0 µF	- 510	-	-	-	-	-	-
1.5 µF	- 515	-	-	-	-	-	-
2.2 µF	- 522	-	-	-	-	-	-
3.3 µF	- 533	-	-	-	-	-	-
4.7 µF	- 547	-	-	-	-	-	-

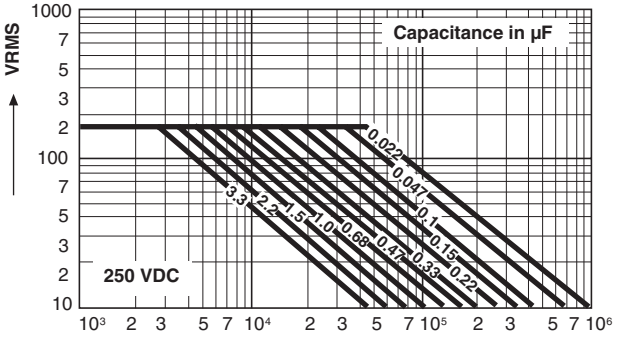
Further C-values on request.
pcm = L + 3.5.

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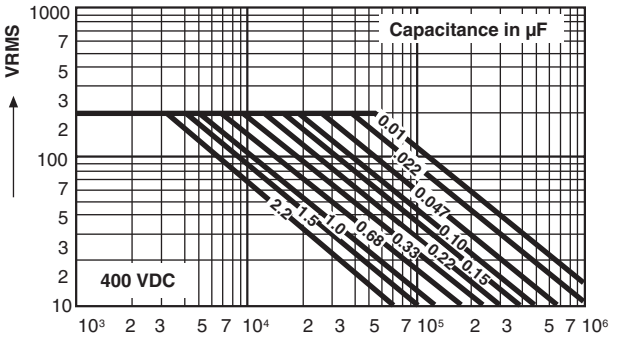
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G	AMMO	-	MKP 1845-310-135-G	X
R	REEL	350	MKP 1845-310-135-R	X
-	BULK for L > 31.5 mm	-	MKP 1845-410-135	X



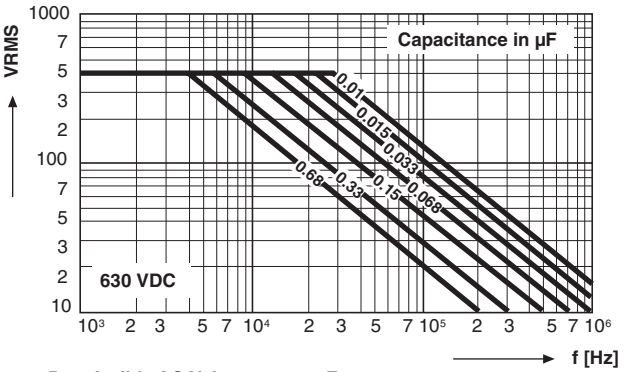
Permissible AC Voltage versus Frequency



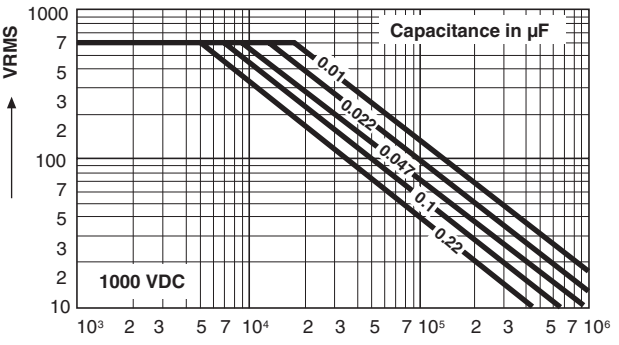
Permissible AC Voltage versus Frequency



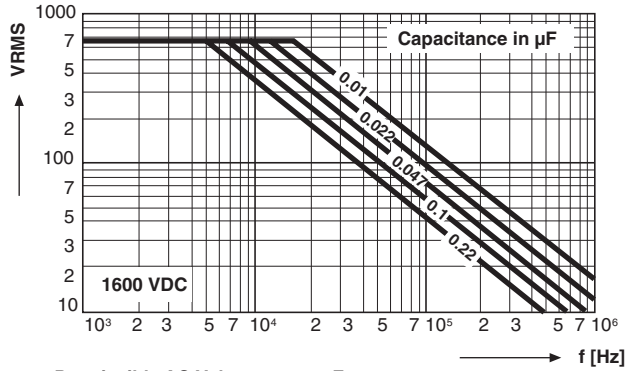
Permissible AC Voltage versus Frequency



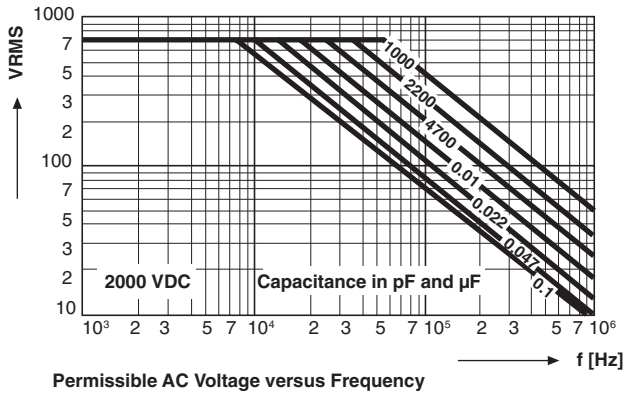
Permissible AC Voltage versus Frequency



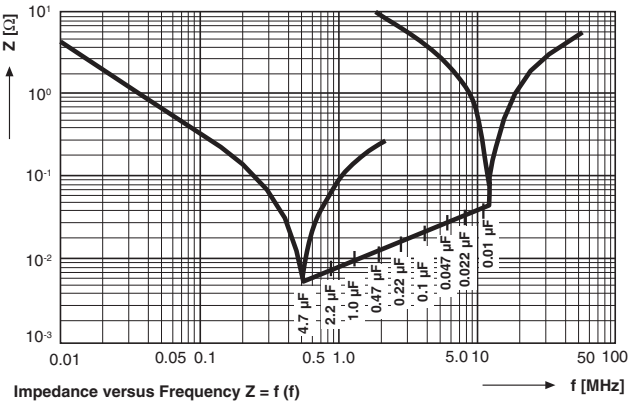
Permissible AC Voltage versus Frequency



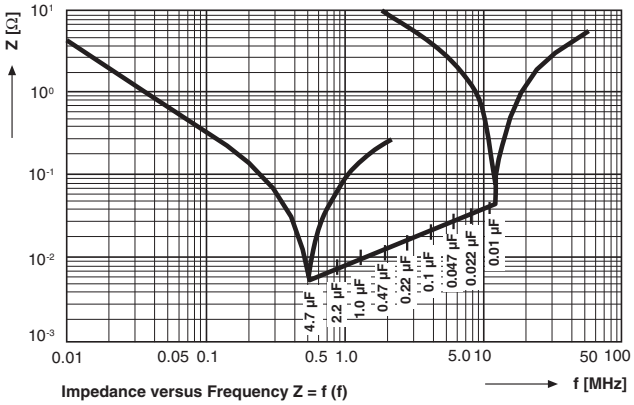
Permissible AC Voltage versus Frequency



Permissible AC Voltage versus Frequency



Impedance versus Frequency Z = f (f)
(Lead length 6.0 mm) 160 VDC to 630 VDC



Impedance versus Frequency Z = f (f)
(Lead length 6.0 mm) 1000 VDC to 2000 VDC

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