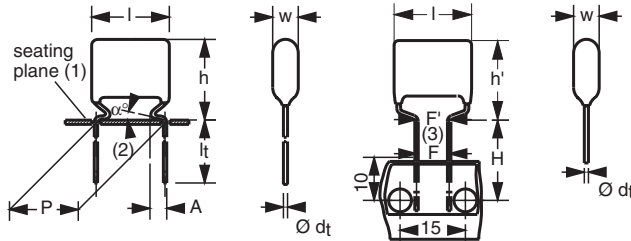
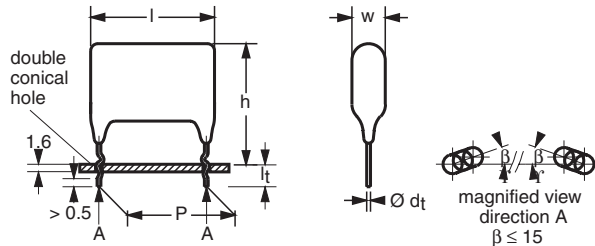


AC and Pulse Metallized Polypropylene Film Capacitors KP/MKP Radial Lacquered Type



Dimensions in mm

- (1) Hole \varnothing 1.3 for $d_t = 0.8$ mm
- (2) $0 \leq \alpha < 50^\circ$
- (3) $|F - F'| < 0.3$ mm
 $F = 7.5 + 0.6/-0.1$ mm
- (4) $A = 2.0 + 1.0/-0.5$ mm for 10 mm pitch
 $A = 2.5 + 1.5/-0.5$ mm for 15 mm pitch
 $A = 2.5 + 1.4/-0.5$ mm for pitch > 22.5 mm



Dimensions in mm

APPLICATIONS

Where high currents and steep pulses occur. For deflection circuits in television sets.

REFERENCE SPECIFICATIONS

IEC 60384-17

MARKING

C-value; tolerance; rated voltage; manufacturer's type; manufacturer's location

DIELECTRIC

Polypropylene film

ELECTRODES

Metallized and aluminum

CONSTRUCTION

Internal serial construction

RATED (DC) VOLTAGE

630 V, 1000 V, 1600 V, 2000 V

RATED (AC) VOLTAGE

300 V, 400 V, 500 V, 600 V

RATED PEAK-TO-PEAK VOLTAGE

850 V, 1100 V, 1400 V, 1700 V

FEATURES

- 10 mm to 27.5 mm pitch.
- Supplied loose in box (including lock lead versions) and taped
- Bent back version for automatic insertion available
- RoHS compliant



RoHS
COMPLIANT

ENCAPSULATION

Flame retardant epoxy material
(UL-class 94 V-0)

CLIMATIC TESTING CLASS ACC. TO IEC 60068-1

55/105/56

CAPACITANCE RANGE (E24 SERIES)

0.1 nF to 270 nF

CAPACITANCE TOLERANCE

$\pm 5\%$; $\pm 3.5\%$

LEADS

Tinned wire

RATED TEMPERATURE

85 °C

MAXIMUM APPLICATION TEMPERATURE

105 °C

PERFORMANCE GRADE

for $C > 5.6$ nF: grade 1 (long life)
for $C \leq 5.6$ nF: grade 2

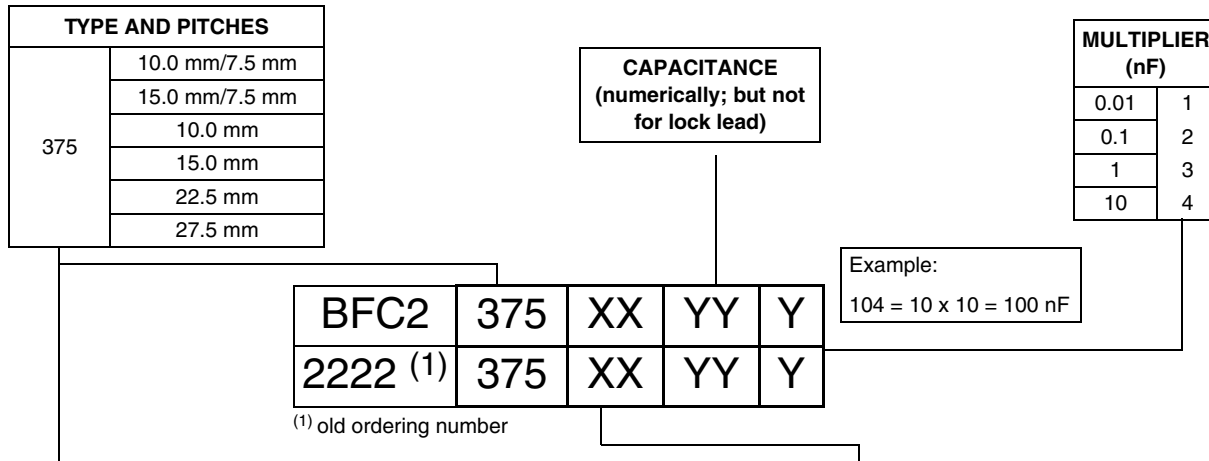
STABILITY GRADE

Grade 2

DETAIL SPECIFICATION

For more detailed data and test requirements contact:
dc-film@vishay.com

COMPOSITION OF CATALOG NUMBER



TYPE	PACKAGING	LEAD CONFIGURATION	PREFERRED TYPES				
			C-TOL.	630 V	1000 V	1600 V	2000 V
375	Loose in box	Lead length 5.0 ± 1.0 mm	± 5 %	14	24	34	44
		Lock lead 4.0 + 1.0/- 0.5 mm	± 5 %	90	90	90	90
	Taped on reel ⁽²⁾ (bent back)	H = 16.0 mm; P ₀ = 15.0 mm; Reel diameter 500 mm	± 5 %	16	26	36	46
Dimensions of this code numbers stays between brackets							
ON REQUEST							
375	Loose in box	Lead length 5.0 ± 1.0 mm	± 3.5 %	15	25	35	45
		Lead length 3.5 ± 0.5 mm	± 5 %	10	20	30	40
			± 3.5 %	11	21	31	41
	Taped on reel ⁽²⁾	H = 16.0 mm; P ₀ = 12.7 mm; Reel diameter = 500 mm	± 5 %	12	22	32	42
			± 3.5 %	13	23	33	43
	Taped on reel ⁽²⁾ (bent back)	H = 16.0 mm; P ₀ = 15.0 mm; Reel diameter = 500 mm	± 3.5 %	17	27	37	47
dimensions of this code numbers stays between brackets							
		H = 16.0 mm; P ₀ = 15.0 mm; Reel diameter = 356 mm	± 5 %	18	28	38	48

Notes

⁽¹⁾ For detailed tape specifications refer to "Packaging Information" www.vishay.com/doc?28139 or end of catalog

⁽²⁾ SPQ = Standard Packing Quantity

SPECIFIC REFERENCE DATA (630 Vdc)

DESCRIPTION	VALUE	
	10 kHz	100 kHz
Tangent of loss angle at (x 10 ⁻⁴) Pitch = 10 mm, 15 mm and 7.5 mm (bent back)	≤ 6	≤ 10
Pitch = 22.5 mm	≤ 8	≤ 15
Pitch = 27.5 mm	≤ 8	≤ 20
Rated voltage pulse slope (dU/dt) _R : Pitch = 10 mm	15 000 V/μs	
Pitch = 15 mm and 7.5 mm (bent back)	8000 V/μs	
Pitch = 22.5 mm	2800 V/μs	
Pitch = 27.5 mm	1900 V/μs	
R between leads at 500 V, 1 min	> 100 000 MΩ	
R between interconnected leads and case, 500 V, 1 min	> 100 000 MΩ	
Ionisation (AC) voltage (typical value) at 50 pC peak discharge	> 400 V	
at 20 pC peak discharge		
Withstanding (DC) voltage (cut off current 10 mA), rise time 100 V/s For C ≤ 47 nF For C > 47 nF	1008 V, 1 min	
Withstanding (DC) voltage between leads and case	2840 V, 1 min	
Maximum application temperature	105 °C	



AC and Pulse Metallized Polypropylene Film Capacitors Vishay BCcomponents
 KP/MKP Radial Lacquered Type

$U_{Rdc} = 630\text{ V}$; $U_{Rac} = 300\text{ V}$; $U_{p-p} = 850\text{ V}$ (kinked); $C\text{-tol.} = \pm 5\%$

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XXYYY AND PACKAGING				
			LOOSE IN BOX	REEL			C VALUE
			Leads 5 ± 1.0 mm	Original pitch	Pitch = 7.5 mm (bent back)		..YYY
				Ø 500 mm	Ø 500 mm	Ø 356 mm	
XX (SPQ)	XX (SPQ)	XX (SPQ)	XX (SPQ)				
C (pF)	Pitch = 10.0 ± 0.4 mm; d _t = 0.60 ± 0.06 mm	Pitch = 10.0 mm	Pitch = 7.5 mm (bent back)				
680	5.0 x 13.0 x 14.5	0.65	14... (2000)	12... (1200)		681	
750						751	
820	5.5 x 13.5 x 14.5	0.70	14... (2000)	12... (1100)		821	
910						911	
1000		102					
1100		112					
1200		122					
1300		132					
1500	0.80					152	
1600	0.85					162	
1800	6.0 x 14.0 x 14.5	0.80	14... (1750)	12... (1000)		182	
2000		0.85				202	
2200		0.90				222	
2400		1.0				242	
2700	6.5 x 14.5 x 14.5	1.1	14... (1500)	12... (900)		272	

KP/MKP 375



Vishay BCcomponents AC and Pulse Metallized Polypropylene Film Capacitors KP/MKP Radial Lacquered Type

$U_{Rdc} = 630 \text{ V}$; $U_{Rac} = 300 \text{ V}$; $U_{p-p} = 850 \text{ (kinked)}$; $C\text{-tol.} = \pm 5 \%$

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XXYYY AND PACKAGING				C VALUE ..YYY
			LOOSE IN BOX	REEL			
			Leads 5 ± 1.0 mm	Original pitch	Pitch = 7.5 mm (bent back)		
				Ø 500 mm	Ø 500 mm	Ø 356 mm	
XX (SPQ)	XX (SPQ)	XX (SPQ)	XX (SPQ)				
C (pF)	Pitch = 15.0 ± 0.4 mm; d_t = 0.80 ± 0.08 mm			Pitch = 7.5 mm (bent back)			
3000 3300	5.0 x 14.0 (16.0) x 18.5	1.0	14... (2000)	12... (1200)	16 ... (1000)	18 ... (550)	302 332
3600 3900 4300 4700 5100 5600	5.5 x 14.5 (16.0) x 18.5	1.1	14... (2000)	12... (1100)	16 ... (900)	18 ... (500)	362 392 432 472 512 562
6200 6800 7500 8200 9100 10 000 11 000 12 000 13 000 15 000 16 000	6.0 x 15.0 (16.0) x 18.5	1.2	14... (2000)	12... (1000)	16 ... (800)	18 ... (450)	622 682 752 822 912 103 113 123 133 153 163
18 000 20 000	6.5 x 15.5 (17.0) x 18.5	1.3	14... (1500)	12... (900)	16... (750)	18... (400)	183 203
22 000	7.0 x 16.0 (17.5) x 18.5	1.5	14... (1500)	12... (800)	16... (700)	18... (400)	223
24 000	7.5 x 16.5 (18.0) x 18.5	1.6	14... (1250)	12... (800)	16... (650)	18... (350)	243
27 000 30 000	8.0 x 17.0 (18.5) x 18.5	1.9	14... (1250)	12... (750)	16... (600)	18... (350)	273 303
33 000	8.5 x 17.5 (19.0) x 18.5	2	14... (1000)	12... (700)	16... (550)	18... (300)	333
36 000 39 000	9.0 x 18.5 (20.0) x 18.5	2.3	14... (900)	12... (600)	16... (500)	18... (300)	ON REQUEST
C (µF)	Pitch = 22.5 ± 0.4 mm; d_t = 0.80 ± 0.08 mm			Pitch = 22.5 mm	Pitch = 7.5 mm (bent back)		
0.036 0.039 0.043 0.047 0.056 0.062	7.0 x 20.0 x 26.0	2.7	14... (650)	-	-	-	363 393 433 473 563 623
0.068	7.5 x 20.5 x 26.0	3	14... (600)	-	-	-	683
0.075 0.082	8.0 x 21.0 x 26.0	3.3	14... (550)	-	-	-	753 823
0.091	8.5 x 21.5 x 26.0	3.8	14... (500)	-	-	-	913
0.1	9.0 x 22.0 x 26.0	4	14... (450)	-	-	-	104



AC and Pulse Metallized Polypropylene Film Capacitors Vishay BCcomponents
 KP/MKP Radial Lacquered Type

$U_{Rdc} = 630 V$; $U_{Rac} = 300 V$; $U_{p-p} = 850$ (kinked); $C-tol = \pm 5 \%$

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XYYYY AND PACKAGING				
			LOOSE IN BOX	REEL			C VALUE
			Leads 5 ± 1.0 mm	Original pitch	Pitch = 7.5 mm (bent back)		..YYY
				Ø 500 mm	Ø 500 mm	Ø 356 mm	
XX (SPQ)	XX (SPQ)	XX (SPQ)	XX (SPQ)				
C (µF)	Pitch = 22.5 ± 0.4 mm; d_t = 0.80 ± 0.08 mm		Pitch = 22.5 mm	Pitch = 7.5 mm (bent back)			
0.11	9.5 x 22.5 x 26.0	4.3	14... (400)	-	-	114	
0.12	10.0 x 23.0 x 26.0	4.7	14... (400)	-	-	124	
C (µF)	Pitch = 27.5 ± 0.5 mm; d_t = 0.80 ± 0.08 mm		Pitch = 27.5mm	Pitch = 7.5 mm (bent back)			
0.13	9.5 x 22.5 x 30.0	4.7	14... (500)	-	-	134	
0.15	10.0 x 23.0 x 30.0	5.2	14... (500)	-	-	154	
0.16	10.5 x 23.5 x 30.0	5.5	14... (450)	-	-	164	
0.18	11.0 x 24.0 x 30.0	6	14... (400)	-	-	184	
0.2	11.5 x 24.5 x 30.0	6.6	14... (400)	-	-	204	
0.22	12.5 x 25.5 x 30.0	7.1	14... (350)	-	-	224	
0.24	13.0 x 26.0 x 30.0	7.7	14... (300)	-	-	244	
0.27	13.5 x 26.5 x 30.0	8.5	14... (300)	-	-	274	

Notes

- (1) Net weight for short lead product only
- (2) Loose in box, all lengths have same SPQ

$U_{Rdc} = 630 V$; $U_{Rac} = 300 V$; $U_{p-p} = 850 V$ (lock lead); $C-tol. = \pm 5 \%$

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XYYYY AND PACKAGING	
			LOOSE IN BOX	
			$l_t = 4.0 + 1.0/- 0.5$ mm	
			(SPQ)	
C (pF)	Pitch = 10.0 ± 1.0 mm; d_t = 0.60 ± 0.06 mm			
680 750	5.0 x 16.0 x 14.5	0.65	90308 90309	(2000)
820 910 1000 1100 1300 1500 1600	5.5 x 16.5 x 14.5	0.7 0.7 0.7 0.75 0.75 0.80 0.85	90311 90312 90313 90314 90316 90317 90318	(2000)
1800 2000 2200 2400	6.0 x 17.0 x 14.5	0.80 0.85 0.90 1.0	90319 90321 90322 90323	(1750)
2700	6.5 x 17.5 x 14.5	1.1	90324	(1500)

Note

- (1) Net weight for short lead product only

KP/MKP 375



Vishay BCcomponents AC and Pulse Metallized Polypropylene Film Capacitors KP/MKP Radial Lacquered Type

$U_{Rdc} = 630\text{ V}$; $U_{Rac} = 300\text{ V}$; $U_{p-p} = 850\text{ V}$ (lock lead); C-tol. = $\pm 5\%$

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XXYYY AND PACKAGING	
			LOOSE IN BOX	
			$l_t = 4.0 + 1.0/- 0.5\text{ mm}$	
			(SPQ)	
C (pF)	Pitch = 15.0 \pm 1.0 mm; $d_t = 0.80 \pm 0.08\text{ mm}$			
3000	5.0 x 17.0 x 18.5	1	90325	(2000)
3300			90326	
3600	5.5 x 17.5 x 18.5	1.1	90327	(2000)
3900			90328	
4300			90329	
4700			90331	
5100			90332	
5600			90333	
6200			6.0 x 18.0 x 18.5	
6800	90335			
7500	90336			
8200	90337			
9100	90338			
10 000	90339			
11 000	90236			
12 000	90341			
13 000	90342			
15 000	90343			
16 000	90344			
18 000	6.5 x 18.5 x 18.5	1.4	90218	(1750)
20 000			90345	
22 000	7.0 x 19.0 x 18.5	1.5	90219	(1500)
24 000	7.5 x 19.5 x 18.5	1.6	90221	(1400)
27 000	8.0 x 20.0 x 18.5	1.9	90223	(1250)
30 000			90346	
33 000	8.5 x 20.5 x 18.5	2	90347	(1200)
36 000	9.0 x 21.5 x 18.5	2.3	ON REQUEST	
39 000				
C (μF)	Pitch = 22.5 \pm 1.0 mm; $d_t = 0.80 \pm 0.08\text{ mm}$			
0.036	7.0 x 23.0 x 26.0	2.7	90348	(600)
0.039			90349	
0.043			90351	
0.047			90352	
0.051			90353	
0.056			90354	
0.062			90355	
0.068			7.5 x 23.5 x 26.0	
0.075	8.0 x 24.0 x 26.0	3.3	90357	(500)
0.082			90358	
0.091	8.5 x 24.5 x 26.0	3.8	90359	(450)

Note

⁽¹⁾ Net weight for short lead product only



AC and Pulse Metallized Polypropylene Film Capacitors Vishay BCcomponents
 KP/MKP Radial Lacquered Type

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XXYYY AND PACKAGING	
			LOOSE IN BOX	
			l _t = 4.0 + 1.0/- 0.5 mm	
			(SPQ)	
C (μF)	Pitch = 22.5 ± 1.0 mm; d_t = 0.80 ± 0.08 mm			
0.1	9.0 x 25.0 x 26.0	4.0	90361	(450)
0.11	9.5 x 25.5 x 26.0	4.3	90362	(400)
0.12	10.0 x 26.0 x 26.0	4.7	90363	(350)
C (μF)	Pitch = 27.5 ± 1.0 mm; d_t = 0.80 ± 0.08 mm			
0.13	9.5 x 25.5 x 30.0	4.7	90364	(450)
0.15	10.0 x 26.0 x 30.0	5.2	90365	(400)
0.16	10.5 x 26.5 x 30.0	5.5	90366	(350)
0.18	11.0 x 27.0 x 30.0	6.0	90367	(350)
0.2	11.5 x 27.5 x 30.0	6.6	90368	(350)
0.22	12.5 x 28.5 x 30.0	7.1	90369	(300)
0.24	13.0 x 29.0 x 30.0	7.7	90371	(250)
0.27	13.5 x 29.5 x 30.0	8.5	90372	(250)

Note

⁽¹⁾ Net weight for short lead product only

SPECIFIC REFERENCE DATA (1000 Vdc)

DESCRIPTION	VALUE	
	10 kHz	100 kHz
Tangent of loss angle at (x 10 ⁻⁴) Pitch = 10 mm, 15 mm and 7.5 mm (bent back) Pitch = 22.5 mm Pitch = 27.5 mm	≤ 6 ≤ 8 ≤ 8	≤ 10 ≤ 15 ≤ 20
Rated voltage pulse slope (dU/d _t): Pitch = 10 mm Pitch = 15 mm and 7.5 mm (bent back) Pitch = 22.5 mm Pitch = 27.5 mm	27 000 V/μs 15 000 V/μs 5000 V/μs 3300 V/μs	
R between leads at 500 V, 1 min	> 100 000 MΩ	
R between interconnected leads and case, 500 V, 1 min	> 100 000 MΩ	
Ionisation (AC) voltage (typical value) at 50 pC peak discharge at 20 pC peak discharge	> 500 V	
Withstanding (DC) voltage (cut off current 10 mA), rise time 100 V/s For C ≤ 47 nF For C > 47 nF	1600 V, 1 min [1.6 - (0.0364 x (C - 47))] x 1000 V, 1 min	
Withstanding (DC) voltage between leads and case	2840 V, 1 min	
Maximum application temperature	105 °C	

KP/MKP 375



Vishay BCcomponents AC and Pulse Metallized Polypropylene Film Capacitors KP/MKP Radial Lacquered Type

$U_{Rdc} = 1000\text{ V}$; $U_{Rac} = 400\text{ V}$; $U_{p-p} = 1100\text{ V}$ (kinked); $C\text{-tol.} = \pm 5\%$

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XXYYY AND PACKAGING				C VALUE
			LOOSE IN BOX	REEL			
			Leads 5 ± 1.0 mm	Original pitch	Pitch = 7.5 mm (bent back)		..YYY
				Ø 500 mm	Ø 500 mm	Ø 356 mm	
XX (SPQ)	XX (SPQ)	XX (SPQ)	XX (SPQ)				
C (pF)	Pitch = 10.0 ± 0.4 mm; d_t = 0.60 ± 0.06 mm		Pitch = 10.0 mm	Pitch = 7.5 mm (bent back)			
100	5.0 x 13.0 x 14.5	0.5	24... (2000)	22... (1200)	-	101	
110						111	
120						121	
130						131	
150						151	
160	5.5 x 13.5 x 14.5	0.55	24... (2000)	22... (1100)	-	161	
180		0.55				181	
200		0.55				201	
220		0.60				221	
240		0.60				241	
270		0.60				271	
300		0.60				301	
330		0.60				331	
360		0.60				361	
390		0.65				391	
430		0.70				431	
470		0.75				471	
510		0.75				511	
560		0.80				561	
620		0.80				621	
680	0.80	681					
750	0.70	751					
820	0.70	821					
910	0.70	911					
1000	6.0 x 14.0 x 14.5	0.75	24... (1750)	22... (1000)	-	102	
1100		0.85				112	
1200		0.90				122	
1300		0.85				132	
1500		0.90				152	
C (pF)	Pitch = 15.0 ± 0.4 mm; d_t = 0.80 ± 0.08 mm		Pitch = 15.0 mm	Pitch = 7.5 mm (bent back)			
1600	5.5 x 14.5 (16.0) x 18.5	1.1	24... 2000	22... (1100)	26... (900)	28... (500)	162
1800							182
2000							202
2200							222
2400							242
2700	6.0 x 15.0 (16.5) x 18.5	1.2	24... (2000)	22... (1000)	26... (800)	28... (450)	272
3000							302
3300							332
3600							362
3900							392
4300							432
4700							472
5100							512
5600	562						

Notes

⁽¹⁾ Net weight for short lead product only

⁽²⁾ Loose in box, all lengths have same SPQ



AC and Pulse Metallized Polypropylene Film Capacitors Vishay BCcomponents
 KP/MKP Radial Lacquered Type

U_{Rdc} = 1000 V; U_{Rac} = 400 V; U_{p-p} = 1100 V (kinked); C-tol. = ± 5 %

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XXYYY AND PACKAGING				C VALUE ..YYY	
			LOOSE IN BOX	REEL				
				Leads 5 ± 1.0 mm	Original pitch	Pitch = 7.5 mm (bent back)		
					XX (SPQ)	Ø 500 mm		Ø 500 mm
C (pF)	Pitch = 15.0 ± 0.4 mm; d_t = 0.80 ± 0.08 mm		Pitch = 15.0 mm	Pitch = 7.5 mm (bent back)				
6200 6800	6.0 x 15.0 (16.5) x 18.5	1.2	24... (2000)	22... (1000)	26... (800)	28... (450)	622 682	
7500 8200 9100	7.0 x 16.0 (17.5) x 18.5	1.4	24... (1500)	22... (800)	26... (700)	28... (400)	752 822 912	
10 000	7.5 x 16.5 (18.0) x 18.5	1.6	24... (1250)	22... (800)	26... (650)	28... (350)	103	
11 000 12 000	8.0 x 17.0 (18.5) x 18.5	1.8	24... (1250)	22... (750)	26... (600)	28... (350)	113 123	
13 000	8.5 x 17.5 (19.0) x 18.5	1.9	24... (1000)	22... (700)	26... (550)	28... (300)	133	
15 000	9.0 x 18.5 (19.5) x 18.5	2.1	24... (1000)	22... (650)	26... (550)	28... (300)	153	
C (µF)	Pitch = 22.5 ± 0.4 mm; d_t = 0.80 ± 0.08 mm		Pitch = 22.5 mm	Pitch = 7.5 mm (bent back)				
0.016 0.018	6.0 x 19.0 x 26.0	2.2	24... (800)				163 183	
0.02 0.022	6.5 x 19.5 x 26.0	2.5	24... (750)				203 223	
0.024	7.0 x 20.0 x 26.0	2.7	24...				243	
0.027 0.03	7.5 x 20.5 x 26.0	3.1	24... (600)				273 303	
0.033	8.0 x 21.0 x 26.0	3.4	24... (550)				333	
0.036 0.039	8.5 x 21.5 x 26.0	3.7	24... (500)				363 393	
0.043	9.0 x 22.0 x 26.0	4.1	24... (450)				433	
C (µF)	Pitch = 27.5 ± 0.5 mm; d_t = 0.80 ± 0.08 mm		Pitch = 27.5 mm	Pitch = 7.5 mm (bent back)				
0.047	7.0 x 20.0 x 30.0	3.1	24... (100)				473	
0.051 0.056	7.5 x 20.5 x 30.0	3.4	24... (750)				513 563	
0.062	8.0 x 21.0 x 30.0	3.8	24... (650)				623	
0.068	8.5 x 21.5 x 30.0	4.0	24... (550)				683	
0.075	9.0 x 22.0 x 30.0	4.4	24... (550)				753	
0.082	9.5 x 22.5 x 30.0	4.7	24... (500)				823	
0.091	10.0 x 23.0 x 30.0	5.1	24... (500)				913	
0.10	10.5 x 23.5 x 30.0	5.5	24... (450)				104	
0.11	11.0 x 24.0 x 30.0	5.9	24... (400)				114	
0.12	11.5 x 24.5 x 30.0	6.3	24... (400)				124	
0.13	12.0 x 25.0 x 30.0	6.8	24 ... (350)				134	
0.15	12.5 x 25.5 x 30.0	7.6	24 ... (350)				154	

Notes

- ⁽¹⁾ Net weight for short lead product only
- ⁽²⁾ Loose in box, all lengths have same SPQ

KP/MKP 375



Vishay BCcomponents AC and Pulse Metallized Polypropylene Film Capacitors KP/MKP Radial Lacquered Type

$U_{Rdc} = 1000\text{ V}$; $U_{Rac} = 400\text{ V}$; $U_{p-p} = 1100\text{ V}$ (lock lead); C-tol = $\pm 5\%$

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XXYYY AND PACKAGING	
			LOOSE IN BOX	
			$l_t = 4.0 + 1.0/-0.5\text{ mm}$	
			(SPQ)	
C (pF)	Pitch = $10.0 \pm 1.0\text{ mm}$; $d_t = 0.60 \pm 0.06\text{ mm}$			
100	5.0 x 16.0 x 14.5	0.5	90373	(2000)
110			90374	
120			90375	
130			90376	
150	5.5 x 16.5 x 14.5	0.55	90377	(2000)
160		0.55	90378	
180		0.55	90379	
200		0.55	90281	
220		0.60	90382	
240		0.60	90383	
270		0.60	90384	
300		0.60	90385	
330		0.60	90386	
360		0.60	90387	
390		0.65	90388	
430		0.70	90389	
470		0.75	90391	
510		0.75	90392	
560		0.80	90393	
620		0.80	90394	
680	0.80	90395		
750	0.70	90396		
820	0.70	90397		
910	0.70	90398		
1000	6.0 x 17.0 x 14.5	0.75	90399	(1750)
1100		0.85	90401	
1200		0.90	90402	
1300		0.85	90403	
1500		0.90	90404	
C (pF)	Pitch = $15.0 \pm 1.0\text{ mm}$; $d_t = 0.80 \pm 0.08\text{ mm}$			
1600	5.5 x 17.5 x 18.5	1.1	90405	(2000)
1800			90406	
2000			90407	
2200			90408	
2400			90409	
2700	6.0 x 18.0 x 18.5	1.2	90411	(2000)
3000			90412	
3300			90413	
3600			90414	
3900			90415	
4300			90416	
4700			90417	
5100			90418	
5600			90419	
6200			90421	
6800	90422			

Note

⁽¹⁾ Net weight for short lead product only



AC and Pulse Metallized Polypropylene Film Capacitors Vishay BCcomponents
 KP/MKP Radial Lacquered Type

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XYYYY AND PACKAGING	
			LOOSE IN BOX	
			l _t = 4.0 + 1.0/- 0.5 mm	
				(SPQ)
C (pF)	Pitch = 15.0 ± 1.0 mm; d_t = 0.80 ± 0.08 mm			
7500	7.0 x 19.0 x 18.5	1.5	90232	(1500)
8200			90423	
9100			90424	
10 000	7.5 x 19.5 x 18.5	1.6	90425	(1400)
11 000	8.0 x 20.0 x 18.5	1.8	90426	(1250)
12 000			90427	
13000	8.5 x 20.5 x 18.5	1.9	90428	(1200)
15000	9.0 x 21.0 x 18.5	2.1	90429	(1100)
C (μF)	Pitch = 22.5 ± 1.0 mm; d_t = 0.80 ± 0.08 mm			
0.016	6.0 x 22.0 x 26.0	2.2	90431	(750)
0.018			90432	
0.02	6.5 x 22.5 x 26.0	2.5	90433	(700)
0.022			90434	
0.024	7.0 x 23.0 x 26.0	2.7	90435	(600)
0.027	7.5 x 23.5 x 26.0	3.1	90436	(550)
0.03			90437	
0.033	8.0 x 24.0 x 26.0	3.4	90438	(500)
0.036	8.5 x 24.5 x 26.0	3.8	90439	(450)
0.039			90224	
0.043	9.0 x 25.0 x 26.0	4.1	90441	(450)
C (μF)	Pitch = 27.5 ± 1.0 mm; d_t = 0.80 ± 0.08 mm			
0.047	7.0 x 23.0 x 30.0	3.1	90442	(800)
0.051	7.5 x 23.5 x 30.0	3.4	90443	(600)
0.056			90444	
0.062	8.0 x 24.0 x 30.0	3.8	90445	(550)
0.068	8.5 x 24.5 x 30.0	4.0	90446	(550)
0.075	9.0 x 25.0 x 30.0	4.4	90447	(450)
0.082	9.5 x 25.5 x 30.0	4.7	90448	(450)
0.091	10.0 x 26.0 x 30.0	5.1	90449	(400)
0.1	10.5 x 26.5 x 30.0	5.5	90451	(350)
0.11	11.0 x 27.0 x 30.0	5.9	90452	(350)
0.12	11.5 x 27.5 x 30.0	6.3	90453	(350)
0.13	12.0 x 28.0x 30.0	6.8	90454	(350)
0.15	12.0 x 28.5x 30.0	7.6	90455	(300)

Note

⁽¹⁾ Net weight for short lead product only

Vishay BCcomponents AC and Pulse Metallized Polypropylene Film Capacitors
KP/MKP Radial Lacquered Type

SPECIFIC REFERENCE DATA (1600 Vdc)

DESCRIPTION	VALUE	
	10 kHz	100 kHz
Tangent of loss angle at ($\times 10^{-4}$): Pitch = 10 mm, 15 mm and 7.5 mm (bent back) Pitch = 22.5 mm Pitch = 27.5 mm	≤ 6 ≤ 6 ≤ 6	≤ 10 ≤ 15 ≤ 20
Rated voltage pulse slope (dU/dt): Pitch = 10 mm Pitch = 15 mm and 7.5 mm (bent back) Pitch = 22.5 mm Pitch = 27.5 mm	21 000 V/ μ s 7000 V/ μ s 4700 V/ μ s	
R between leads at 500 V, 1 min	$> 100\ 000\ M\Omega$	
R between interconnected leads and case, 500 V, 1 min	$> 100\ 000\ M\Omega$	
Ionisation (AC) voltage (typical value) at 50 pC peak discharge at 10 pC peak discharge	$> 550\ V$	
Withstanding (DC) voltage (cut off current 10 mA), rise time 100 V/s For $C \leq 47\ nF$ For $C > 47\ nF$	2560 V, 1 min	
Withstanding (DC) voltage between leads and case	2840 V, 1 min	
Maximum application temperature	105 °C	

$U_{Rdc} = 1600\ V$; $U_{Rac} = 500\ V$; $U_{p-p} = 1400\ V$ (kinked); $C-tol. = \pm 5\ %$

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XXYYY AND PACKAGING				C VALUE ..YYY
			LOOSE IN BOX	REEL			
			Leads 5 ± 1.0 mm	Original pitch	Pitch = 7.5 mm (bent back)		
				Ø 500 mm	Ø 500 mm	Ø 356 mm	
XX (SPQ)	XX (SPQ)	XX (SPQ)	XX (SPQ)				
C (pF)	Pitch = 15.0 ± 0.4 mm; $d_t = 0.80 \pm 0.08\ mm$		Pitch = 15.0 mm	Pitch = 7.5 mm (bent back)			
680	5.5 x 14.5 (15.0) x 18.5	0.75	34... (2000)	32... (1100)	36... (900)	38... (500)	681
750							751
820							821
910	6.0 x 15.0 (15.5) x 18.5	0.8	34...(2000)	32... (1000)	36... (800)	38... (450)	911
1000		0.85					102
1100		0.85					112
1200		0.90					122
1300		0.95					132
1500	5.5 x 14.5 (16.0) x 18.5	1.1	34... (2000)	32... (1100)	36... (900)	38... (500)	152
1600							162
1800	6.0 x 15.0 (16.5) x 18.5	1.2	34... (2000)	32... (1000)	36... (800)	38... (450)	182
2000	6.5 x 15.5 (17.0) x 18.5	1.3	34... (1500)	32... (900)	36... (750)	38... (400)	202
2200							222
2400	7.0 x 16.0 (17.5) x 18.5	1.4	34... (1500)	32... (800)	36... (700)	38... (400)	242
2700	7.5 x 16.5 (18.0) x 18.5	1.6	34... (1250)	32... (800)	36... (650)	38... (350)	272
3000							302
3300	8.0 x 17.0 (18.5) x 18.5	1.7	34... (1250)	32... (750)	36... (600)	38... (350)	332
3600	8.5 x 17.5 (19.0) x 18.5	1.8	34... (1000)	32... (700)	36... (550)	38... (300)	362
3900	9.0 x 18.5 (19.5) x 18.5	2.0	34... (1000)	32... (650)	36... (550)	38... (300)	392
4300							432

Notes

- ⁽¹⁾ Net weight for short lead product only
- ⁽²⁾ Loose in box, all lengths have same SPQ



AC and Pulse Metallized Polypropylene Film Capacitors Vishay BCcomponents
 KP/MKP Radial Lacquered Type

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XYYYY AND PACKAGING				C VALUE ..YYY	
			LOOSE IN BOX	REEL				
				Leads 5 ± 1.0 mm	Original pitch	Pitch = 7.5 mm (bent back)		
					Ø 500 mm	Ø 500 mm		Ø 356 mm
XX (SPQ)	XX (SPQ)	XX (SPQ)	XX (SPQ)					
C (µF)	Pitch = 22.5 ± 0.4 mm; d_t = 0.80 ± 0.08 mm		Pitch = 22.5 mm	Pitch = 7.5 mm (bent back)				
0.0047 0.0051 0.0056	6.0 x 19.0 x 26.0	2.0	34... (800)			472 512 562		
0.0062 0.0068	6.5 x 19.5 x 26.0	2.1	34... (750)			622 682		
0.0075 0.0082	7.0 x 20.0 x 26.0	2.3	34... (650)			752 822		
0.0091	7.5 x 20.5 x 26.0	2.5	34... (600)			912		
0.01	8.0 x 21.0 x 26.0	2.6	34... (550)	-	-	103		
0.011 0.012	8.5 x 21.5 x 26.0	2.9	34... (500)			113 123		
0.013	9.0 x 22.0 x 26.0	3.1	34... (450)			133		
0.015	9.5 x 22.5 x 26.0	3.5	34... (400)			153		
0.016	10.0 x 23.0 x 26.0	3.6	34... (400)			163		
0.018	10.5 x 23.5 x 26.0	4.0	34... (350)			183		
C (µF)	Pitch = 27.5 ± 0.5 mm; d_t = 0.80 ± 0.08 mm		Pitch = 27.5 mm	Pitch = 7.5 mm (bent back)				
0.02	9.0 x 22.0 x 30.0	4.2	34... (550)			203		
0.022	9.5 x 22.5 x 30.0	4.4	34... (500)			223		
0.024	10.0 x 23.0 x 30.0	4.7	34... (500)			243		
0.027	10.5 x 23.5 x 30.0	5.2	34... (450)			273		
0.03	11.0 x 24.0 x 30.0	5.6	34... (400)			303		
0.033	11.5 x 24.5 x 30.0	6.0	34... (400)			333		
0.036	12.0 x 25.0 x 30.0	6.5	34... (350)			363		
0.039	12.5 x 25.5 x 30.0	6.9	34... (350)			393		

Notes

- (1) Net weight for short lead product only
- (2) Loose in box, all lengths have same SPQ

KP/MKP 375



Vishay BCcomponents AC and Pulse Metallized Polypropylene Film Capacitors KP/MKP Radial Lacquered Type

$U_{Rdc} = 1600\text{ V}$; $U_{Rac} = 500\text{ V}$; $U_{p-p} = 1400\text{ V}$ (lock lead); C-tol. = $\pm 5\%$

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XXYYY AND PACKAGING	
			LOOSE IN BOX	
			$l_t = 4.0 + 1.0/- 0.5\text{ mm}$	
			(SPQ)	
C (pF)	Pitch = $15.0 \pm 1.0\text{ mm}$; $d_t = 0.80 \pm 0.08\text{ mm}$			
680	5.5 x 17.5 x 18.5	0.75	90456	(2000)
750			90457	
820			90458	
910	6.0 x 18.0 x 18.5	0.80	90459	(2000)
1000		0.85	90461	
1100		0.85	90462	
1200		0.90	90463	
1300		0.95	90464	
1500	5.5 x 17.5 x 18.5	1.1	90465	(2000)
1600			90466	
1800	6.0 x 18.0 x 18.5	1.2	90467	(2000)
2000	6.5 x 18.5 x 18.5	1.3	90468	(1750)
2200			90469	
2400	7.0 x 19.0 x 18.5	1.4	90471	(1500)
2700	7.5 x 19.5 x 18.5	1.6	90472	(1400)
3000			90473	
3300	8.0 x 20.0 x 18.5	1.9	90141	(1250)
3600	8.5 x 20.5 x 18.5	2.3	90142	(1200)
3900	9.0 x 21.5 x 18.5	2.5	90143	(1100)
4300			90144	
C (μF)	Pitch = $22.5 \pm 1.0\text{ mm}$; $d_t = 0.80 \pm 0.08\text{ mm}$			
0.0047	6.0 x 22.0 x 26.0	2.4	90145	(750)
0.0051			90146	
0.0056			90147	
0.0062	6.5 x 22.5 x 26.0	2.6	90148	(700)
0.0068			90149	
0.0075	7.0 x 23.0 x 26.0	2.8	90151	(600)
0.0082			90152	
0.0083			90202	
0.0091	7.5 x 23.5 x 26.0	2.9	90153	(550)
0.01	8.0 x 24.0 x 26.0	3.2	90154	(500)
0.011	8.5 x 24.5 x 26.0	3.4	90155	(450)
0.012			90156	
0.013	9.0 x 25.0 x 26.0	3.6	90157	(450)
0.015	9.5 x 25.5 x 26.0	4.0	90158	(400)
0.016	10.0 x 26.0 x 26.0	4.3	90159	(350)
0.018	10.5 x 26.5 x 26.0	4.7	90161	(350)
C (μF)	Pitch = $27.5 \pm 1.0\text{ mm}$; $d_t = 0.80 \pm 0.08\text{ mm}$			
0.02	9.0 x 25.0 x 30.0	4.2	90474	(450)
0.022	9.5 x 25.5 x 30.0	4.4	90475	(450)
0.024	10.0 x 26.0 x 30.0	4.7	90476	(400)
0.027	10.5 x 26.5 x 30.0	5.2	90477	(350)
0.03	11.0 x 27.0 x 30.0	5.6	90478	(350)
0.033	11.5 x 27.5 x 30.0	6.0	90479	(350)
0.036	12.0 x 28.0 x 30.0	6.5	90481	(300)
0.039	12.5 x 28.5 x 30.0	6.9	90482	(300)

Note

⁽¹⁾ Net weight for short lead product only



AC and Pulse Metallized Polypropylene Film Capacitors Vishay BCcomponents
 KP/MKP Radial Lacquered Type

SPECIFIC REFERENCE DATA (2000 Vdc)

DESCRIPTION	VALUE	
	10 kHz	100 kHz
Tangent of loss angle at ($\times 10^{-4}$): Pitch = 10 mm, 15 mm and 7.5 mm (bent back)	≤ 6	≤ 10
Pitch = 22.5 mm	≤ 6	≤ 10
Pitch = 27.5 mm	≤ 6	≤ 15
Rated voltage pulse slope (dU/d_t): Pitch = 10 mm Pitch = 15 mm and 7.5 mm (bent back) Pitch = 22.5 mm Pitch = 27.5 mm	30 000 V/ μ s 10 000 V/ μ s 6700 V/ μ s	
R between leads at 500 V, 1 min	$> 100\ 000\ M\Omega$	
R between interconnected leads and case, 500 V, 1 min	$> 100\ 000\ M\Omega$	
Ionisation (AC) voltage (typical value) at 50 pC peak discharge at 20 pC peak discharge	$> 600\ V$	
Withstanding (DC) voltage (cut off current 10 mA), rise time 100 V/s For $C \leq 47\ nF$ For $C > 47\ nF$	3200 V, 1 min	
Withstanding (DC) voltage between leads and case	2840 V, 1 min	
Maximum application temperature	105 °C	

$U_{Rdc} = 2000\ V$; $U_{Rac} = 600\ V$; $U_{p-p} = 1700$ (kinked); C-tol = $\pm 5\ %$

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XXYYY AND PACKAGING				C VALUE ..YYY
			LOOSE IN BOX	REEL			
			Leads 5 \pm 1.0 mm	Original pitch	Pitch = 7.5 mm (bent back)		
				\varnothing 500 mm	\varnothing 500 mm	\varnothing 356 mm	
XX (SPQ)	XX (SPQ)	XX (SPQ)	XX (SPQ)				
C (pF)	Pitch = 15.0 \pm 0.4 mm; $d_t = 0.80 \pm 0.08$ mm		Pitch = 15.0 mm	Pitch = 7.5 mm (bent back)			
100		0.75				101	
110		0.75				111	
120		0.75				121	
130		0.75				131	
150		0.75				151	
160		0.75				161	
180		0.75				181	
200		0.75				201	
220		0.75				221	
240	5.5 x 14.5 (15.0) x 18.5	0.75	44... (2000)	42... (1100)	46... (900)	48... (500)	241
270		0.75					271
300		0.75					301
330		0.75					331
360		0.75					361
390		0.75					391
430		0.75					431
470		0.80					471
510		0.80					511
560		0.80					561

Note

⁽¹⁾ Net weight for short lead product only

KP/MKP 375



Vishay BCcomponents AC and Pulse Metallized Polypropylene Film Capacitors KP/MKP Radial Lacquered Type

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XYYYY AND PACKAGING				C VALUE
			LOOSE IN BOX	REEL			
			Leads 5 ± 1.0 mm	Original pitch	Pitch = 7.5 mm (bent back)		..YYY
				Ø 500 mm	Ø 500 mm	Ø 356 mm	
XX (SPQ)	XX (SPQ)	XX (SPQ)	XX (SPQ)				
C (pF)	Pitch = 15.0 ± 0.4 mm; d_t = 0.80 ± 0.08 mm		Pitch = 15.0 mm	Pitch = 7.5 mm (bent back)			
620	6.0 x 15.0 (15.5) x 18.5	0.85	44...	42...	46...	48...	621
680		0.85	(2000)	(1000)	(800)	(450)	681
750		0.90					751
820	6.5 x 15.5 (16.0) x 18.5	0.95	44... (1500)	42... (900)	46... (750)	48... (400)	821
910	5.5 x 14.5 (16.0) x 18.5	1.1	44... (2000)	42... (420)	46... (900)	48... (500)	911
1000	6.0 x 15.0 (16.5) x 18.5	1.2	44... (2000)	42... (1000)	46... (800)	48... (450)	102
1100							112
1200							122
1300	6.5 x 15.5 (17.0) x 18.5	1.3	44... (1500)	42... (900)	46... (750)	48... (400)	132
1500	7.0 x 16.0 (17.5) x 18.5	1.4	44... (1500)	42... (800)	46... (700)	48... (400)	152
1600	7.5 x 16.5 (18.0) x 18.5	1.5	44... (1250)	42... (800)	46... (650)	48... (350)	162
1800							182
2000	8.0 x 17.0 (18.5) x 18.5	1.6	44... (1250)	42... (750)	46... (600)	48... (350)	202
2200	8.5 x 17.5 (19.0) x 18.5	1.7	44... (1000)	42... (700)	46... (550)	48... (300)	222
2400	9.0 x 18.0 (19.5) x 18.5	1.8	44... (1000)	42... (650)	46... (550)	48... (300)	242
2700	9.5 x 18.5 (20.0) x 18.5	2.0	44... (900)	42... (600)	46... (500)	48... (300)	272
C (µF)	Pitch = 22.5 ± 0.4 mm; d_t = 0.80 ± 0.08 mm		Pitch = 22.5 mm	Pitch = 7.5 mm (bent back)			
0.003	6.0 x 19.0 x 26.0	2.1	44... (800)				302
0.0033							332
0.0036							362
0.0039							392
0.0043	6.5 x 19.5 x 26.0	2.3	44... (750)				432
0.0047							472
0.0051	7.0 x 20.0 x 26.0	2.6	44... (650)				512
0.0056							562
0.0062	7.5 x 20.5 x 26.0	2.8	44... (600)				622
0.0068	8.0 x 21.0 x 26.0	3.0	44... (550)				682
0.0075							752
0.0082	8.5 x 21.5 x 26.0	3.3	44... (500)				822
0.0091	9.0 x 22.0 x 26.0	3.6	44... (450)				912
0.01	9.5 x 22.5 x 26.0	3.8	44... (400)				103



AC and Pulse Metallized Polypropylene Film Capacitors Vishay BCcomponents
 KP/MKP Radial Lacquered Type

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XYYYY AND PACKAGING				C VALUE ..YYY
			LOOSE IN BOX	REEL			
				Leads 5 ± 1.0 mm	Original pitch Ø 500 mm	Pitch = 7.5 mm (bent back) Ø 500 mm Ø 356 mm	
			XX (SPQ)	XX (SPQ)	XX (SPQ)	XX (SPQ)	
C (µF)	Pitch = 27.5 ± 0.5 mm; d_t = 0.80 ± 0.08 mm		Pitch = 27.5 mm	Pitch = 7.5 mm (bent back)			
0.011	9.0 x 22.0 x 30.0	3.8	44... (550)			113	
0.012	9.5 x 22.5 x 30.0	4.1	44... (500)			123	
0.013	10.0 x 23.0 x 30.0	4.4	44... (500)			133	
0.015	10.5 x 23.5 x 30.0	4.9	44... (450)			153	
0.016	11.0 x 24.0 x 30.0	5.1	44... (400)			163	
0.018	11.5 x 24.5 x 30.0	5.6	44... (400)			183	
0.02	12.5 x 25.5 x 30.0	6.1	44... (350)			203	
0.022	13.0 x 26.0 x 30.0	6.5	44... (300)			223	

Notes

- (1) Net weight for short lead product only
- (2) Loose in box, all lengths have same SPQ

U_{Rdc} = 2000 V; U_{Rac} = 600 V; U_{p-p} = 1700 V (lock lead)

C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XYYYY AND PACKAGING	
			LOOSE IN BOX	
			l _t = 4.0 + 1.0/- 0.5 mm	
			(SPQ)	
C (pF)	Pitch = 15.0 ± 1.0 mm; d_t = 0.80 ± 0.08 mm			
100	5.5 x 17.5 x 18.5	0.75	90483	(2000)
110		0.75	90484	
120		0.75	90485	
130		0.75	90486	
150		0.75	90487	
160		0.75	90488	
180		0.75	90489	
200		0.75	90491	
220		0.75	90276	
240		0.75	90492	
270		0.75	90493	
300		0.75	90494	
330		0.75	90495	
360		0.75	90496	
390		0.75	90188	
430		0.75	90497	
470		0.80	90498	
510		0.80	90499	
560		0.80	90501	

KP/MKP 375



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C	DIMENSIONS w x h (h') x l (mm)	MASS (g) ⁽¹⁾	CATALOG NUMBER BFC2 375 XYYYY AND PACKAGING	
			LOOSE IN BOX	
			l _t = 4.0 + 1.0/- 0.5 mm	
			(SPQ)	
C (pF)	Pitch = 15.0 ± 1.0 mm; d_t = 0.80 ± 0.08 mm			
620	6.0 x 18.0 x 18.5	0.85	90502	(2000)
680		0.85	90229	
750		0.90	90503	
820	6.5 x 18.5 x 18.5	0.95	90504	(1750)
910	5.5 x 17.5 x 18.5	1.1	90505	(2000)
1000	6.0 x 18.0 x 18.5	1.3	90225	(2000)
1100			90506	
1200			90226	
1300	6.5 x 18.5 x 18.5	1.3	90507	(1750)
1500	7.0 x 19.0 x 18.5	1.5	90266	(1500)
1600	7.5 x 19.5 x 18.5	1.7	90508	(1400)
1800			90237	
2000	8.0 x 20.0 x 18.5	1.7	90509	(1250)
2200	8.5 x 20.5 x 18.5	2.3	90227	(1200)
2400	9.0 x 21.0 x 18.5	1.8	90511	(1100)
2700	9.5 x 21.5 x 18.5	2.7	90228	(1000)
C (μF)	Pitch = 22.5 ± 1.0 mm; d_t = 0.80 ± 0.08 mm			
0.003	6.0 x 22.0 x 26.0	2.2	90512	(750)
0.0033			90162	
0.0036			90163	
0.0039			90164	
0.0043	6.5 x 22.5 x 26.0	2.4	90165	(700)
0.0047			90166	
0.0051	7.0 x 23.0 x 26.0	2.6	90167	(600)
0.0056			90168	
0.0062	7.5 x 23.5 x 26.0	2.8	90169	(550)
0.0068	8.0 x 24.0 x 26.0	3.0	90171	(500)
0.0075			90172	
0.0082	8.5 x 24.5 x 26.0	3.2	90173	(450)
0.0091	9.0 x 25.0 x 26.0	3.5	90174	(450)
0.01	9.5 x 25.5 x 26.0	3.8	90175	(400)
C (μF)	Pitch = 27.5 ± 1.0 mm; d_t = 0.80 ± 0.08 mm			
0.011	9.0 x 25.0 x 30.0	4.4	90176	(450)
0.012	9.5 x 25.5 x 30.0	4.6	90177	(450)
0.013	10.0 x 26.0 x 30.0	5.0	90178	(400)
0.015	10.5 x 26.5 x 30.0	5.4	90179	(350)
0.016	11.0 x 27.0 x 30.0	5.8	90181	(350)
0.018	11.5 x 27.5 x 30.0	6.2	90182	(350)
0.02	12.5 x 28.5 x 30.0	6.1	90513	(300)
0.022	13.0 x 29.0 x 30.0	6.5	90514	(250)

Note

⁽¹⁾ Net weight for short lead product only

**MOUNTING****Normal Use**

The capacitors are designed for mounting on printed-circuit boards. The capacitors packed in bandoliers are designed for mounting in printed-circuit boards by means of automatic insertion machines.

For detailed tape specifications refer to "Packaging information" www.vishay.com/doc?28139 or end of catalog

Specific Method of Mounting to Withstand Vibration and Shock

- For pitches ≤ 15 mm capacitors shall be mechanically fixed by the leads
- For larger pitches the capacitors shall be mounted in the same way and the body clamped

Storage Temperature

- Storage temperature: $T_{stg} = -25$ °C to $+40$ °C with RH maximum 80 % without condensation

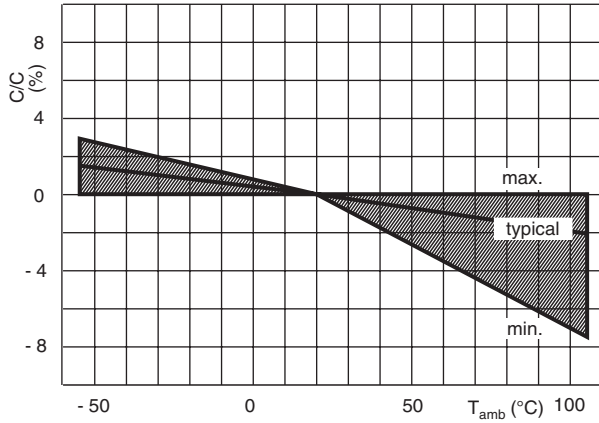
Ratings and Characteristics Reference Conditions

Unless otherwise specified, all electrical values apply to an ambient temperature of 23 ± 1 °C, an atmospheric pressure of 86 kPa to 106 kPa and a relative humidity of 50 ± 2 %.

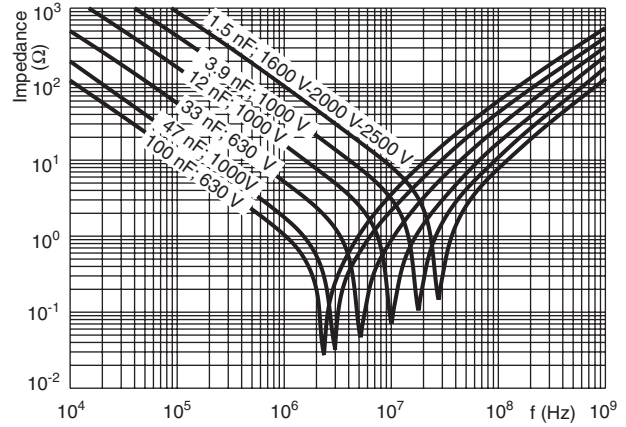
For reference testing, a conditioning period shall be applied over 96 ± 4 h by heating the products in a circulating air oven at the rated temperature and a relative humidity not exceeding 20 %.

CHARACTERISTICS

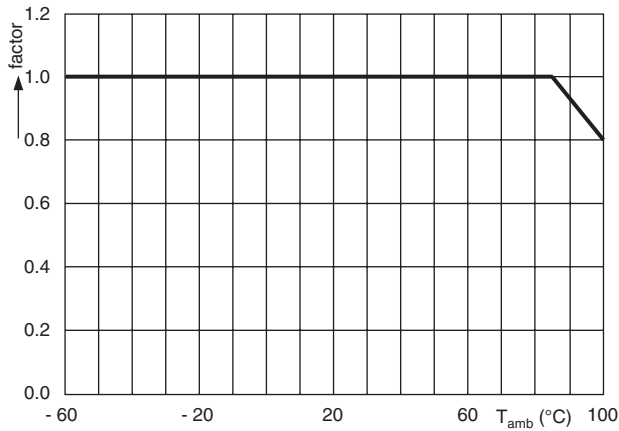
Capacitance as a function of ambient temperature
(typical curve)



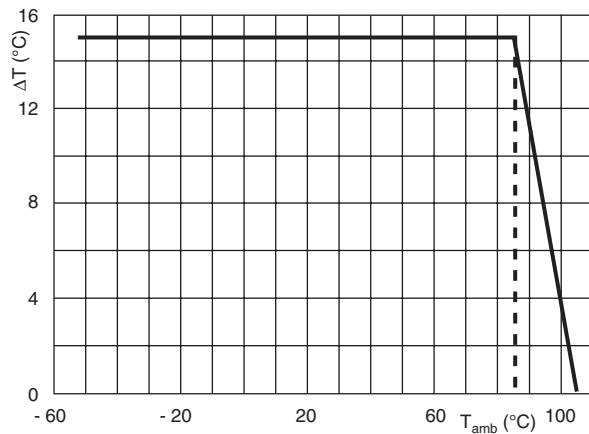
Impedance as a function of frequency
(typical curve)



Max. DC voltage as a function of temperature



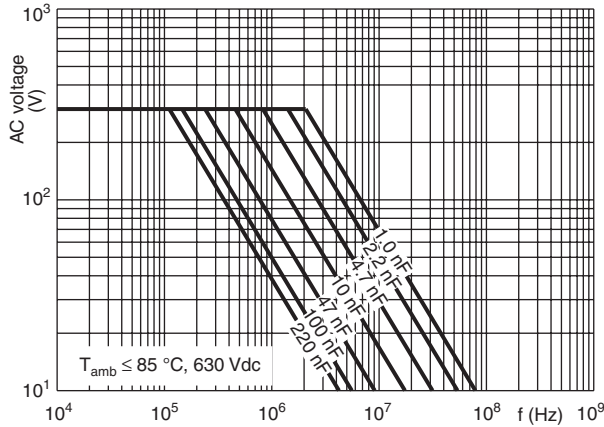
Max. allowed component temperature rise
as a function of ambient temperature



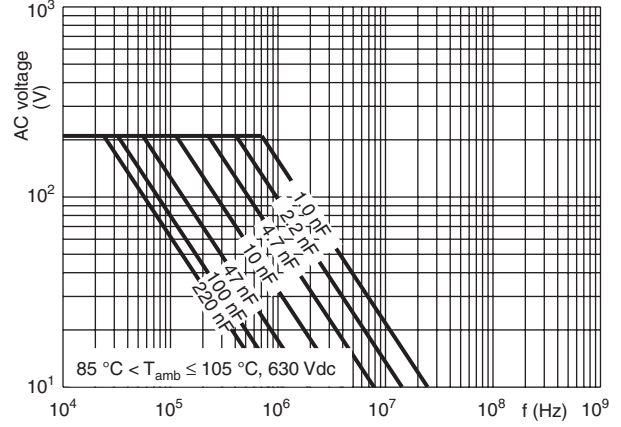


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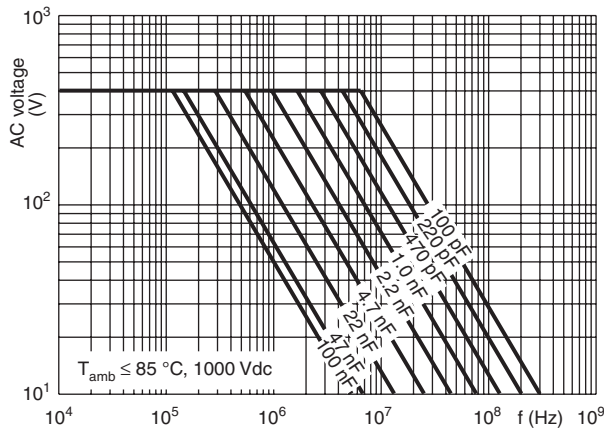
Max. RMS voltage (sinewave) as a function of frequency



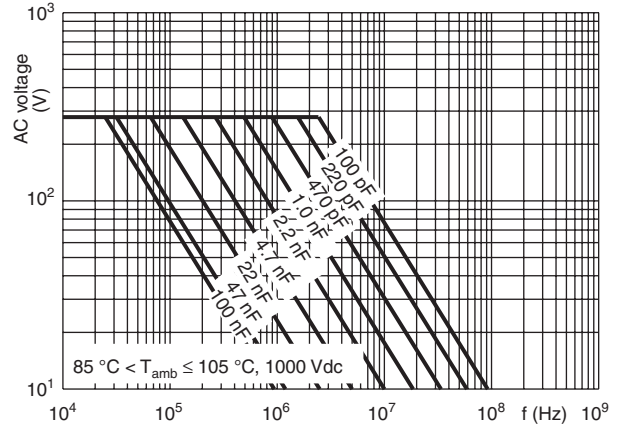
Max. RMS voltage (sinewave) as a function of frequency



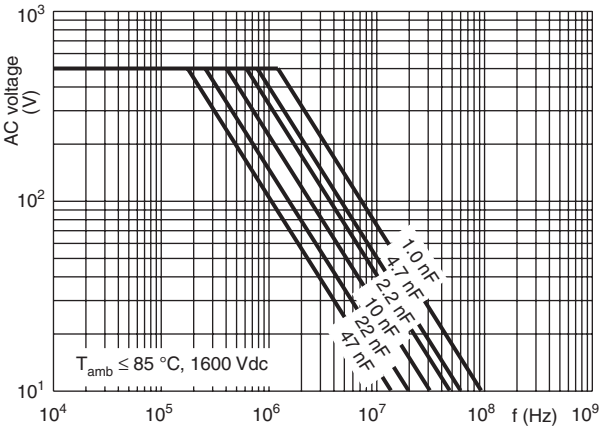
Max. RMS voltage (sinewave) as a function of frequency



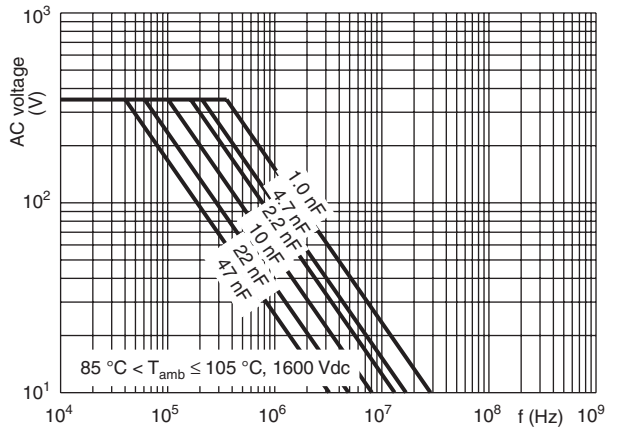
Max. RMS voltage (sinewave) as a function of frequency



Max. RMS voltage (sinewave) as a function of frequency

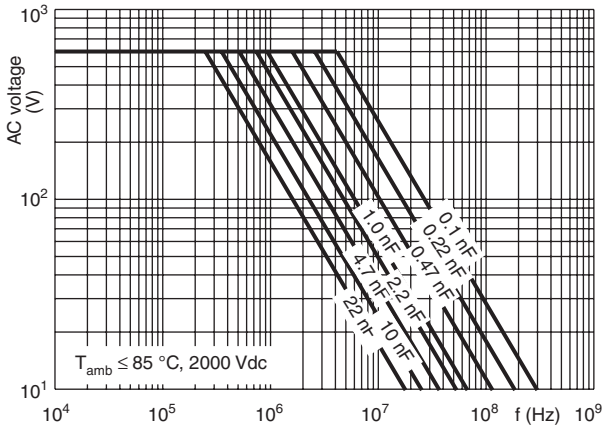


Max. RMS voltage (sinewave) as a function of frequency

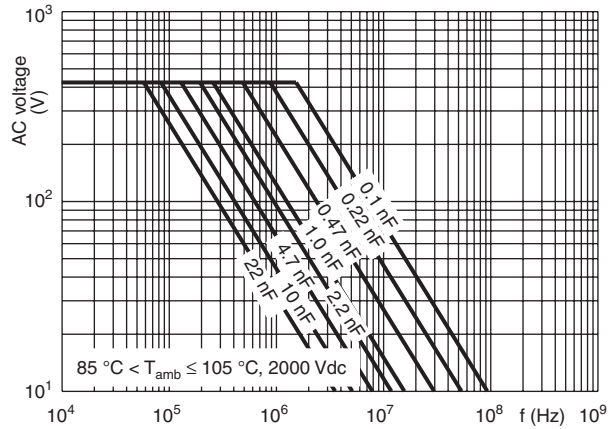


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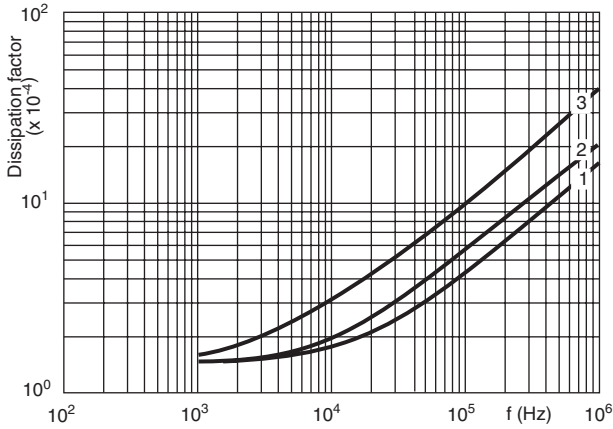
Max. RMS voltage (sinewave) as a function of frequency



Max. RMS voltage (sinewave) as a function of frequency

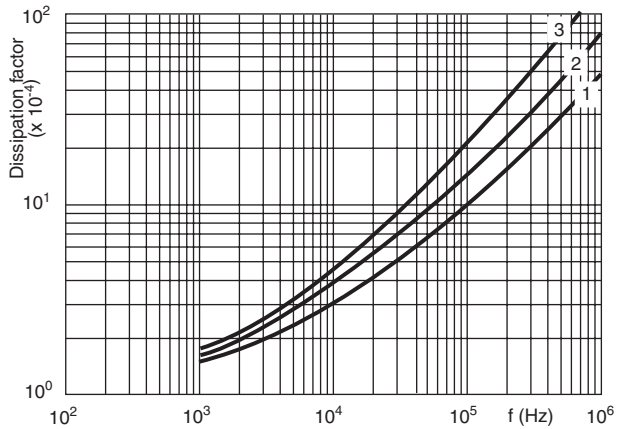


Tangent of loss angle (typical curve)



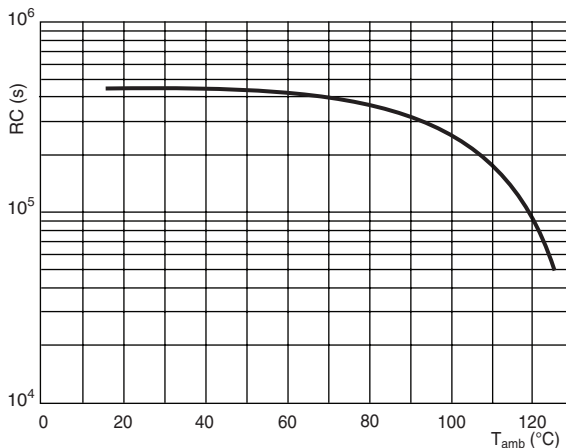
1. KP/MPK 10.0 mm and 15 mm pitch all versions
22.5 mm pitch, 1000 V, 1600 V, 2000 V and 2500 V versions
2. KP/MPK 22.5 mm pitch, 630 V versions
27.5 mm pitch, 1000 V, 1600 V and 2000 V versions
3. KP/MPK 27.5 mm pitch, 630 V versions

Maximum curves



1. KP/MPK 10.0 mm and 15 mm pitch all versions
22.5 mm pitch, 1000 V, 1600 V, 2000 V and 2500 V versions
2. KP/MPK 22.5 mm pitch, 630 V versions
27.5 mm pitch, 1000 V, 1600 V and 2000 V versions
3. KP/MPK 27.5 mm pitch, 630 V versions

Insulation resistance as a function of ambient temperature



**HEAT CONDUCTIVITY (G) AS A FUNCTION OF (ORIGINAL) PITCH AND CAPACITOR BODY THICKNESS IN mW/°C**

W_{max.} (mm)	HEAT CONDUCTIVITY (mW/°C)			
	PITCH 10 mm	PITCH 15 mm	PITCH 22.5 mm	PITCH 27.5 mm
4.0	4.0	5.0	-	-
4.5	4.5	6.0	-	-
5.0	5.0	6.0	12.0	13.0
5.5	6.0	6.5	13.0	15.0
6.0	6.0	6.5	13.0	15.0
6.5	6.5	8.0	15.0	17.0
7.0	-	8.0	15.0	17.0
7.5	-	9.0	17.0	18.0
8.0	-	9.0	17.0	20.0
8.5	-	11.0	18.0	20.0
9.0	-	11.0	18.0	22.0
9.5	-	12.0	20.0	22.0
10.0	-	12.0	20.0	23.0
10.5	-	-	22.0	25.0
11.0	-	-	22.0	25.0
11.5	-	-	23.0	27.0
12.0	-	-	-	27.0
12.5	-	-	-	30.0
13.0	-	-	-	30.0
13.5	-	-	-	30.0
14.0	-	-	-	30.0
14.5	-	-	-	33.0
15.0	-	-	-	33.0
15.5	-	-	-	37.0
16.0	-	-	-	37.0

POWER DISSIPATION AND MAXIMUM COMPONENT TEMPERATURE RISE

The power dissipation must be limited in order not to exceed the maximum allowed component temperature rise as a function of the free ambient temperature.

The power dissipation can be calculated according Type detail specification "HQN-384-01/101: Technical Information Film Capacitors"

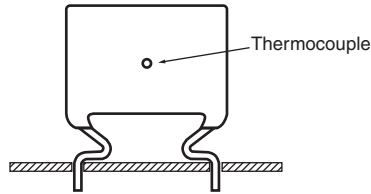
The component temperature rise (ΔT) can be measured (see section "Measuring the component temperature" for more details) or calculated by

$$\Delta T = P/G:$$

- ΔT = Component temperature rise (°C)
- P = Power dissipation of the component (mW)
- G = Heat conductivity of the component (mW/°C)

MEASURING THE COMPONENT TEMPERATURE

A thermocouple must be attached to the capacitor body as in:



The temperature is measured in unloaded (T_{amb}) and maximum loaded condition (T_C).

The temperature rise is given by $\Delta T = T_C - T_{amb}$.

To avoid radiation or convection, the capacitor should be tested in a wind-free box.

APPLICATION NOTE AND LIMITING CONDITIONS

To select the capacitor for a certain application, the following conditions must be checked:

1. The peak voltage (U_P) shall not be greater than the rated DC voltage (U_{Rdc})
2. The peak-to-peak voltage (U_{P-P}) shall not be greater than the maximum (U_{P-P}) to avoid the ionisation inception level
3. The voltage pulse slope (dU/dt) shall not exceed the rated voltage pulse slope in an RC-circuit at rated voltage and without ringing. If the pulse voltage is lower than the rated DC voltage, the rated voltage pulse slope may be multiplied by U_{Rdc} and divided by the applied voltage.

For all other pulses following equation must be fulfilled:

$$2 \times \int_0^T \left(\frac{dU}{dt} \right)^2 \times dt < U_{Rdc} \times \left(\frac{dU}{dt} \right)_{rated}$$

T is the pulse duration.

4. The maximum component surface temperature rise must be lower than the limits

EXAMPLE

$C = 10 \text{ nF}$ 1600 V, KP/MPK

This is a signal as in the drawing below

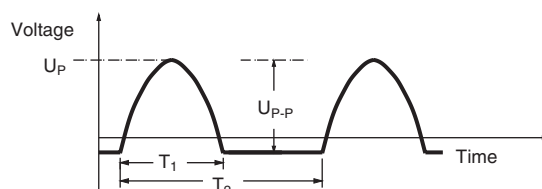
$U_{P-P} = 1200 \text{ V}$; $U_P = 1100 \text{ V}$; $T_1 = 12 \text{ } \mu\text{s}$; $T_2 = 64 \text{ } \mu\text{s}$

The ambient temperature is $50 \text{ }^\circ\text{C}$

Checking conditions:

1. The peak voltage $U_P = 1100 \text{ V}$ is lower than 1600 Vdc
2. The peak-to-peak voltage 1200 V is lower than $2\sqrt{2} \times 550 \text{ Vac} = 1414 \text{ } U_{P-P}$
3. The voltage pulse slope (dU/dt) = 320 V is much lower than 7000 V/ μs
4. The dissipated power is 170 mW as calculated with fourier terms

This gives a temperature rise of $170 \text{ mW} / (17 \text{ mW}/^\circ\text{C}) = 10 \text{ }^\circ\text{C}$ which is allowed acc. fig. "max. allowed temperature rise as a function of ambient temperature" for an ambient temperature of $50 \text{ }^\circ\text{C}$





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INSPECTION REQUIREMENTS

General Notes:

Sub-clause numbers of tests and performance requirements refer to the “Sectional Specification, Publication IEC 60384-17 and Specific Reference Data”.

Group C Inspection Requirements

SUB-CLAUSE NUMBER AND TEST	CONDITIONS	PERFORMANCE REQUIREMENTS
SUB-GROUP C1A PART OF SAMPLE OF SUB-GROUP C1		
4.1 Dimensions (detail)		As specified in chapters “General Data” of this specification
4.3.1 Initial measurements	Capacitance Tangent of loss angle at 100 kHz	
4.3 Robustness of terminations	Tensile: Load 10 N; 10 s Bending: Load 5 N; 4 x 90°	No visible damage
4.4 Resistance to soldering heat	Method: 1A Solder bath: 280 °C ± 5 °C Duration: 10 s	
4.14 Component solvent resistance	Isopropylalcohol at room temperature Method: 2 Immersion time: 5 ± 0.5 min Recovery time: Min. 1 h, max. 2 h	
4.4.2 Final measurements	Visual examination Capacitance Tangent of loss angle	No visible damage Legible marking $ \Delta C/C \leq 1\% + 5\text{ pF}$ of the value measured initially Increase of $\tan \delta: \leq 0.0005$ Compared to values measured in 4.3.1
SUB-GROUP C1B PART OF SAMPLE OF SUB-GROUP C1		
4.6.1 Initial measurements	Capacitance Tangent of loss angle at 100 kHz	
4.15 Solvent resistance of the marking	Isopropylalcohol at room temperature Method: 1 Rubbing material: cotton wool Immersion time: 5 ± 0.5 min	No visible damage Legible marking
4.6 Rapid change of temperature	θA = - 55 °C θB = + 105 °C 5 cycles Duration t = 30 min	
4.7 Vibration	Visual examination Mounting: See section “Mounting” of this specification Procedure B4 Frequency range: 10 Hz to 55 Hz Amplitude: 0.75 mm or Acceleration 98 m/s ² (whichever is less severe) Total duration 6 h	No visible damage

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SUB-CLAUSE NUMBER AND TEST	CONDITIONS	PERFORMANCE REQUIREMENTS
4.7.2 Final inspection 4.9 Shock 4.9.3 Final measurements	Visual examination Mounting: See section "Mounting" of this specification Pulse shape: Half sine Acceleration: 490 m/s ² Duration of pulse: 11 ms Visual examination Capacitance Tangent of loss angle Insulation resistance	No visible damage No visible damage For C > 0.027μF: ΔC/C ≤ 2 % or for C ≤ 0.027μF: ΔC/C ≤ 3 % + 5 pF of the value measured in 4.6.1. Increase of tan δ: ≤ 0.0005 Compared to values measured in 4.6.1 As specified in chapter "General data" of this specification
SUB-GROUP C1 COMBINED SAMPLE OF SPECIMENS OF SUB-GROUPS C1A AND C1B		
4.10 Climatic sequence 4.10.2 Dry heat 4.10.3 Damp heat cyclic Test Db, first cycle 4.10.4 Cold 4.10.6 Damp heat cyclic Test Db, remaining cycles 4.10.6.2 Final measurements	Temperature: + 105 °C Duration: 16 h Temperature: - 55 °C Duration: 2 h Voltage proof = U _{Rdc} for 1 min within 15 min after removal from testchamber Visual examination Capacitance Tangent of loss angle Insulation resistance	No breakdown of flash-over No visible damage Legible marking ΔC/C ≤ 3 % of the value measured in 4.4.2 or 4.9.3 Increase of tan δ: ≤ 0.001 Compared to values measured in 4.3.1 or 4.6.1 ≥ 50 % of values specified in chapters "General data" of this specification
SUB-GROUP C2		
4.11 Damp heat steady state 4.11.1 Initial measurements 4.11.3 Final measurements	56 days, 40 °C, 90 % to 95 % RH Capacitance Tangent of loss angle at 1 kHz Voltage proof = U _{Rdc} for 1 min within 15 min after removal from testchamber Visual examination Capacitance Tangent of loss angle Insulation resistance	No breakdown of flash-over No visible damage Legible marking ΔC/C ≤ 1 % + 5 pF of the value measured in 4.11.1. Increase of tan δ ≤ 0.0005 Compared to values measured in 4.11.1 ≥ 50 % of values specified in section "Insulation Resistance" of this specification



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SUB-CLAUSE NUMBER AND TEST	CONDITIONS	PERFORMANCE REQUIREMENTS
SUB GROUP C3		
4.12.1 Endurance	Duration: 2000 h Temperature: 85 °C Voltage: 1.25 x max. $U_{Rdc} V_{rms}$, 50 Hz Duration: 2000 h Temperature: 105 °C	
4.12.1.1 Initial measurements 4.12.1.3 Final measurements	Voltage: 0.875 x max. $U_{Rdc} V_{rms}$, 50 Hz Capacitance Tangent of loss angle at 100 kHz Visual examination Capacitance Tangent of loss angle Insulation resistance	No visible damage Legible marking Temperature: 85 °C For $C > 0.056 \mu F$: $ \Delta C/C \leq 2\% + 5 \text{ pF}$ or for $C > 0.056 \mu F$: $ \Delta C/C \leq 3\% + 5 \text{ pF}$ of the value measured in 4.12.1.1 Temperature: 105 °C $ \Delta C/C \leq 5\% + 5 \text{ pF}$ Increase of $\tan \delta$: ≤ 0.001 Compared to values measured in 4.12.1 $\geq 50\%$ of values specified in chapters "General data" of this specification
SUB-GROUP C4		
4.2.6 Temperature characteristics	Capacitance Insulation resistance	As specified in section "Capacitance" of this specification As specified in chapters "General data" of this specification



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