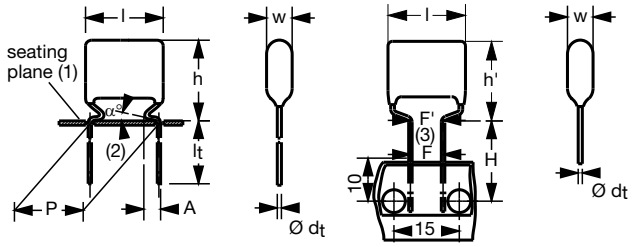
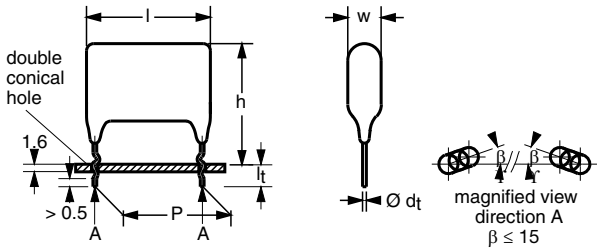
THE DATASHEET OF

BFC237534333

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



Dimensions in mm
(1) Hole Ø 1.3 for d_t = 0.8 mm
(2) $0 \leq \alpha < 50°$
(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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

ENCAPSULATION
Flame retardant epoxy material
(Class UL 94 V-0)

CLIMATIC TESTING CLASS ACCORDING TO IEC 60068-1
55/105/56

CAPACITANCE RANGE (E24 SERIES)
0.1 nF to 270 nF

CAPACITANCE TOLERANCE
± 5 %; ± 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 ≤ 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 AND PITCHES	
375	10.0 mm/7.5 mm
	15.0 mm/7.5 mm
	10.0 mm
	15.0 mm
	22.5 mm
	27.5 mm

CAPACITANCE (numerically; but not for lock lead)

MULTIPLIER (nF)	
0.01	1
0.1	2
1	3
10	4

Example:
104 = 10 x 10 = 100 nF

BFC2	375	XX	YY	Y
2222 (1)	375	XX	YY	Y

(1) old ordering number

TYPE	PACKAGING	LEAD CONFIGURATION	C-TOL.	630 V	1000 V	1600 V	2000 V
				PREFERRED TYPES			
375	Loose in box	Lead length 5.0 mm ± 1.0 mm	± 5 %	14	24	34	44
		Lock lead 4.0 mm + 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

Note

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

SPECIFIC REFERENCE DATA (630 V_{DC})

DESCRIPTION	VALUE	
Tangent of loss angle at (x 10^{-4})	10 kHz	100 kHz
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	
Ionization (AC) voltage (typical value) at 50 pC peak discharge at 50 pC peak discharge at 20 pC peak discharge	> 400 V	
Withstanding (DC) voltage (cut off current 10 mA), rise time 1000 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	

U_{RDC} = 630 V; U_{RAC} = 300 V; U_{PP} = 850 V (KINKED); C-TOL. = ± 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 mm ± 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 mm ± 0.4 mm; d_t = 0.60 mm ± 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		0.75					**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**

Notes

- SPQ = Standard Packing Quantity

(1) Net weight for short lead product only

U_{RDC} = 630 V; U_{RAC} = 300 V; U_{PP} = 850 (KINKED); C-TOL. = ± 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 mm ± 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 mm ± 0.4 mm; d_t = 0.80 mm ± 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 mm ± 0.4 mm; d_t = 0.80 mm ± 0.08 mm			PITCH = 22.5 mm	PITCH = 7.5 mm (BENT BACK)		
0.036 0.039 0.043 0.047 0.051 0.056 0.062	7.0 x 20.0 x 26.0	2.7	**14...** (650)	-	-	-	**363** **393** **433** **473** **513** **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**

Notes

- SPQ = Standard Packing Quantity

(1) Net weight for short lead product only

U_{RDC} = 630 V; U_{RAC} = 300 V; U_{PP} = 850 (KINKED); C-TOL. = ± 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 mm ± 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 mm ± 0.4 mm; d_t = 0.80 mm ± 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 mm ± 0.5 mm; d_t = 0.80 mm ± 0.08 mm			PITCH = 27.5 mm	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

- Loose in box, all lengths have same SPQ
- SPQ = Standard Packing Quantity

(1) Net weight for short lead product only

U_{RDC} = 630 V; U_{RAC} = 300 V; U_{PP} = 850 V (LOCK LEAD); C-TOL. = ± 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 mm + 1.0 mm/- 0.5 mm	
				(SPQ)
C (pF)	PITCH = 10.0 mm ± 1.0 mm; d_t = 0.60 mm ± 0.06 mm			
680	5.0 x 16.0 x 14.5	0.65	**90308**	(2000)
750			**90309**	
820	5.5 x 16.5 x 14.5	0.7	**90311**	(2000)
910		0.7	**90312**	
1000		0.7	**90313**	
1100		0.75	**90314**	
1300		0.75	**90316**	
1500		0.80	**90317**	
1600		0.85	**90318**	
1800	6.0 x 17.0 x 14.5	0.80	**90319**	(1750)
2000		0.85	**90321**	
2200		0.90	**90322**	
2400		1.0	**90323**	
2700	6.5 x 17.5 x 14.5	1.1	**90324**	(1500)

Notes

- SPQ = Standard Packing Quantity

(1) Net weight for short lead product only

U_{RDC} = 630 V; U_{RAC} = 300 V; U_{PP} = 850 V (LOCK LEAD); C-TOL. = ± 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 mm + 1.0 mm/- 0.5 mm	
				(SPQ)
C (pF)	**PITCH = 15.0 mm ± 1.0 mm; d_t = 0.80 mm ± 0.08 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	1.3	**90334**	(2000)
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**	(1000)
39 000				
C (µF)	**PITCH = 22.5 mm ± 1.0 mm; d_t = 0.80 mm ± 0.08 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	3	**90356**	(550)
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)

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 mm + 1.0 mm/- 0.5 mm	
				(SPQ)
C (µF)	**PITCH = 22.5 mm ± 1.0 mm; d_t = 0.80 mm ± 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 mm ± 1.0 mm; d_t = 0.80 mm ± 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)

Notes

- SPQ = Standard Packing Quantity

(1) Net weight for short lead product only

SPECIFIC REFERENCE DATA (1000 V_{DC})

DESCRIPTION	VALUE	
Tangent of loss angle at (x 10^{-4})	10 kHz	100 kHz
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/d_t):		
Pitch = 10 mm	27 000 V/µs	
Pitch = 15 mm and 7.5 mm (bent back)	15 000 V/µs	
Pitch = 22.5 mm	5000 V/µs	
Pitch = 27.5 mm	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	
Ionization (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 1000 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	

U_{RDC} = 1000 V; U_{RAC} = 400 V; U_{PP} = 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				
			LOOSE IN BOX	REEL			C VALUE
			LEADS 5 mm ± 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 mm ± 0.4 mm; d_t = 0.60 mm ± 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	5.5 x 13.5 x 14.5	0.55	**24…** (2000)	**22…** (1100)	-	-	**151**
160		0.55					**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 mm ± 0.4 mm; d_t = 0.80 mm ± 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

- Loose in box, all lengths have same SPQ
- SPQ = Standard Packing Quantity

(1) Net weight for short lead product only

U_{RDC} = 1000 V; U_{RAC} = 400 V; U_{PP} = 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				
			LOOSE IN BOX	REEL			C VALUE
			LEADS 5 mm ± 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 mm ± 0.4 mm; d_t = 0.80 mm ± 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 mm ± 0.4 mm; d_t = 0.80 mm ± 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…** (650)				**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 mm ± 0.5 mm; d_t = 0.80 mm ± 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…** (1000)				**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

- Loose in box, all lengths have same SPQ
- SPQ = Standard Packing Quantity

(1) Net weight for short lead product only

U_{RDC} = 1000 V; U_{RAC} = 400 V; U_{PP} = 1100 V (LOCK LEAD); C-TOL. = ± 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 mm + 1.0 mm/- 0.5 mm	
				(SPQ)
C (pF)	**PITCH = 10.0 mm ± 1.0 mm; d_t = 0.60 mm ± 0.06 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 mm ± 1.0 mm; d_t = 0.80 mm ± 0.08 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**	

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 mm + 1.0 mm/- 0.5 mm	
				(SPQ)
C (pF)	**PITCH = 15.0 mm ± 1.0 mm; d_t = 0.80 mm ± 0.08 mm**			
7500 8200 9100	7.0 x 19.0 x 18.5	1.5	**90232** **90423** **90424**	(1500)
10 000	7.5 x 19.5 x 18.5	1.6	**90425**	(1400)
11 000 12 000	8.0 x 20.0 x 18.5	1.8	**90426** **90427**	(1250)
13 000	8.5 x 20.5 x 18.5	1.9	**90428**	(1200)
15 000	9.0 x 21.0 x 18.5	2.1	**90429**	(1100)
C (µF)	**PITCH = 22.5 mm ± 1.0 mm; d_t = 0.80 mm ± 0.08 mm**			
0.016 0.018	6.0 x 22.0 x 26.0	2.2	**90431** **90432**	(750)
0.02 0.022	6.5 x 22.5 x 26.0	2.5	**90433** **90434**	(700)
0.024	7.0 x 23.0 x 26.0	2.7	**90435**	(600)
0.027 0.03	7.5 x 23.5 x 26.0	3.1	**90436** **90437**	(550)
0.033	8.0 x 24.0 x 26.0	3.4	**90438**	(500)
0.036 0.039	8.5 x 24.5 x 26.0	3.8	**90439** **90224**	(450)
0.043	9.0 x 25.0 x 26.0	4.1	**90441**	(450)
C (µF)	**PITCH = 27.5 mm ± 1.0 mm; d_t = 0.80 mm ± 0.08 mm**			
0.047	7.0 x 23.0 x 30.0	3.1	**90442**	(800)
0.051 0.056	7.5 x 23.5 x 30.0	3.4	**90443** **90444**	(600)
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 28.0 x 30.0	6.8	**90454**	(350)
0.15	12.0 x 28.5 x 30.0	7.6	**90455**	(300)

Notes

- SPQ = Standard Packing Quantity

(1) Net weight for short lead product only

SPECIFIC REFERENCE DATA (1600 V_{DC})

DESCRIPTION	VALUE	
Tangent of loss angle at (x 10^{-4}):	10 kHz	100 kHz
Pitch = 10 mm, 15 mm and 7.5 mm (bent back)	≤ 6	≤ 10
Pitch = 22.5 mm	≤ 6	≤ 15
Pitch = 27.5 mm	≤ 6	≤ 20
Rated voltage pulse slope (dU/d_t):		
Pitch = 10 mm		
Pitch = 15 mm and 7.5 mm (bent back)	21 000 V/µs	
Pitch = 22.5 mm	7000 V/µs	
Pitch = 27.5 mm	4700 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	
Ionization (AC) voltage (typical value)		
at 50 pC peak discharge	> 550 V	
at 10 pC peak discharge		
Withstanding (DC) voltage (cut off current 10 mA), rise time 1000 V/s		
for C ≤ 47 nF	2560 V, 1 min	
for C > 47 nF		
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_{PP} = 1400 V (KINKED); C-TOL. = ± 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 mm ± 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 mm ± 0.4 mm; d_t = 0.80 mm ± 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**

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 mm ± 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 mm ± 0.4 mm; d_t = 0.80 mm ± 0.08 mm**			**PITCH = 22.5 mm**	**PITCH = 7.5 mm (BENT BACK)**		
0.0047	6.0 x 19.0 x 26.0	2.0	**34…** (800)	-	-	-	**472**
0.0051							**512**
0.0056							**562**
0.0062	6.5 x 19.5 x 26.0	2.1	**34…** (750)				**622**
0.0068							**682**
0.0075	7.0 x 20.0 x 26.0	2.3	**34…** (650)				**752**
0.0082							**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	8.5 x 21.5 x 26.0	2.9	**34…** (500)				**113**
0.012							**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 mm ± 0.5 mm; d_t = 0.80 mm ± 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

- Loose in box, all lengths have same SPQ
- SPQ = Standard Packing Quantity

[1] Net weight for short lead product only

U_{RDC} = 1600 V; U_{RAC} = 500 V; U_{PP} = 1400 V (LOCK LEAD); C-TOL. = ± 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 mm + 1.0 mm/- 0.5 mm	
				(SPQ)
C (pF)	**PITCH = 15.0 mm ± 1.0 mm; d_t = 0.80 mm ± 0.08 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 mm ± 1.0 mm; d_t = 0.80 mm ± 0.08 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 mm ± 1.0 mm; d_t = 0.80 mm ± 0.08 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)

Notes

- SPQ = Standard Packing Quantity

(1) Net weight for short lead product only

SPECIFIC REFERENCE DATA (2000 V_{DC})

DESCRIPTION	VALUE	
Tangent of loss angle at (x 10^{-4}):	10 kHz	100 kHz
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)	30 000 V/µs	
Pitch = 22.5 mm	10 000 V/µs	
Pitch = 27.5 mm	6700 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	
Ionization (AC) voltage (typical value)		
at 50 pC peak discharge	> 600 V	
at 20 pC peak discharge		
Withstanding (DC) voltage (cut off current 10 mA), rise time 1000 V/s		
for C ≤ 47 nF	3200 V, 1 min	
for C > 47 nF		
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_{PP} = 1700 (KINKED); C-TOL. = ± 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 mm ± 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 mm ± 0.4 mm; d_t = 0.80 mm ± 0.08 mm			PITCH = 15.0 mm	PITCH = 7.5 mm (BENT BACK)		
100	5.5 x 14.5 (15.0) x 18.5	0.75	44… (2000)	42… (1100)	46… (900)	48… (500)	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		0.75					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

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 mm ± 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 mm ± 0.4 mm; d_t = 0.80 mm ± 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…** (2000)	**42…** (1000)	**46…** (800)	**48…** (450)	**621**
680		0.85					**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 mm ± 0.4 mm; d_t = 0.80 mm ± 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**

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 mm ± 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 = 27.5 mm ± 0.5 mm; d_t = 0.80 mm ± 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

- Loose in box, all lengths have same SPQ
- SPQ = Standard Packing Quantity

(1) Net weight for short lead product only

U_{RDC} = 2000 V; U_{RAC} = 600 V; U_{PP} = 1700 V (LOCK LEAD)

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 mm + 1.0 mm/- 0.5 mm	
				(SPQ)
C (pF)	PITCH = 15.0 mm ± 1.0 mm; d_t = 0.80 mm ± 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**	

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 mm + 1.0 mm/- 0.5 mm	
				(SPQ)
C (pF)	**PITCH = 15.0 mm ± 1.0 mm; d_t = 0.80 mm ± 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 mm ± 1.0 mm; d_t = 0.80 mm ± 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 mm ± 1.0 mm; d_t = 0.80 mm ± 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)

Notes

- SPQ = Standard Packing Quantity

(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

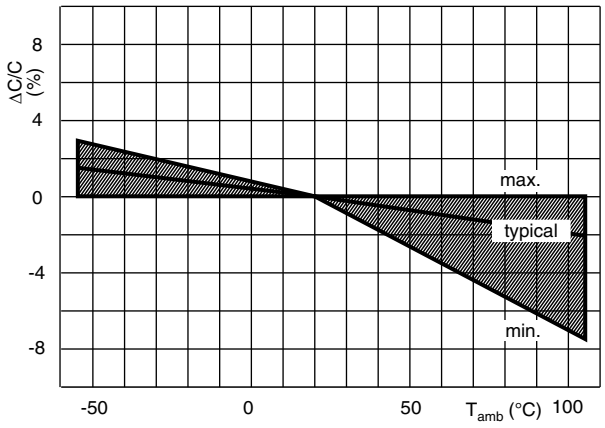
T_{stg} = -25 °C to +35 °C with RH maximum 75 % without condensation

Ratings and Characteristics Reference Conditions

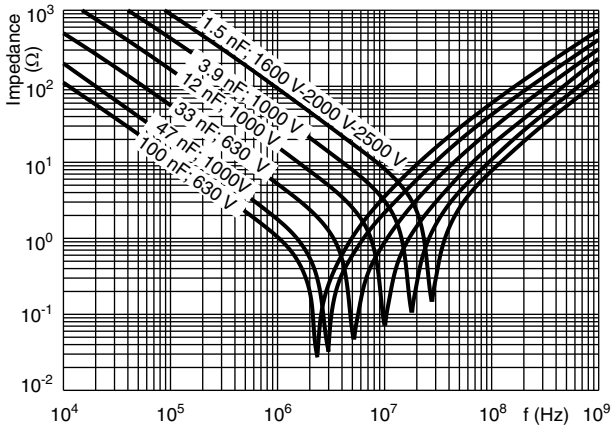
Unless otherwise specified, all electrical values apply to an ambient temperature of 23 °C ± 1 °C, an atmospheric pressure of 86 kPa to 106 kPa and a relative humidity of 50 % ± 2 %.

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

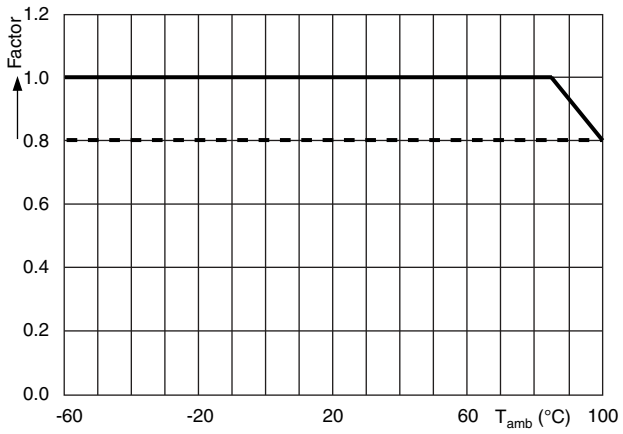
CHARACTERISTICS



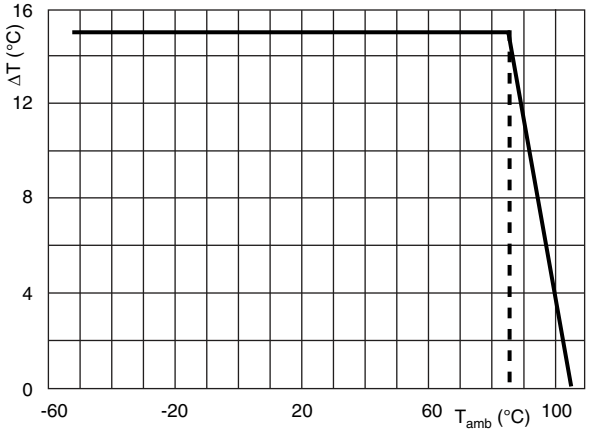
Capacitance as a function of ambient temperature (typical curve)



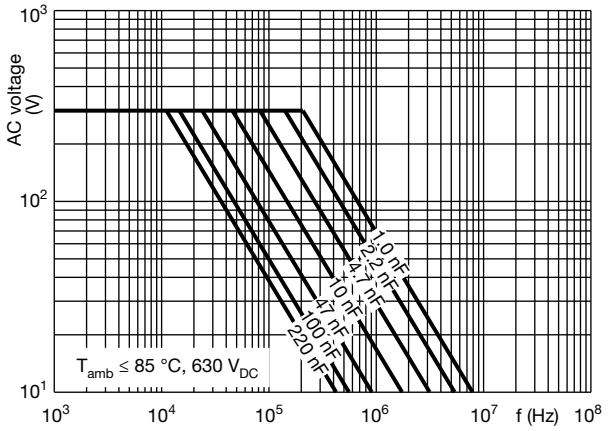
Impedance as a function of frequency (typical curve)



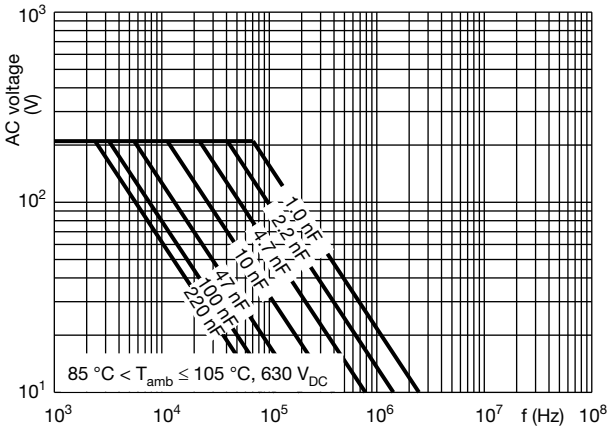
Maximum DC voltage as a function of temperature



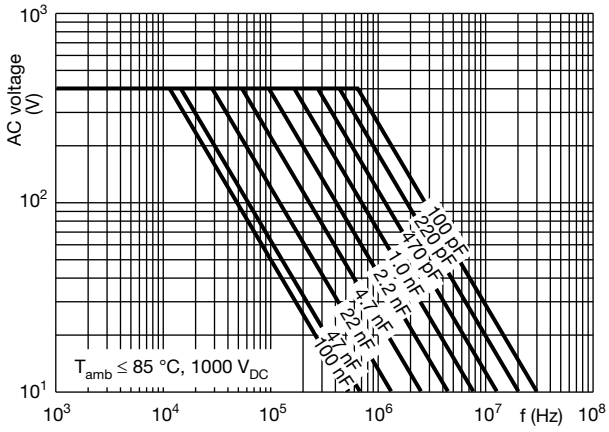
Maximum allowed component temperature rise as a function of ambient temperature



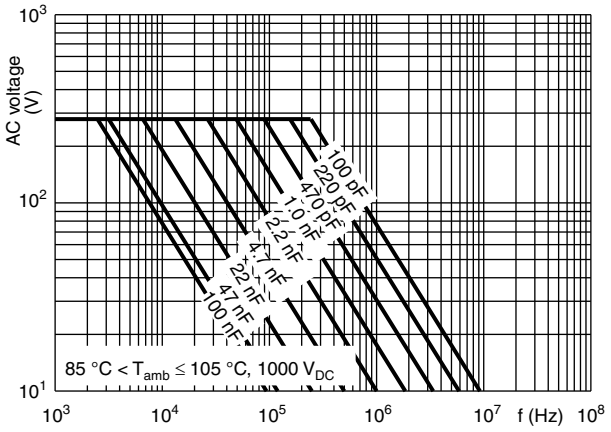
Max. RMS voltage (sinewave) as a function of frequency



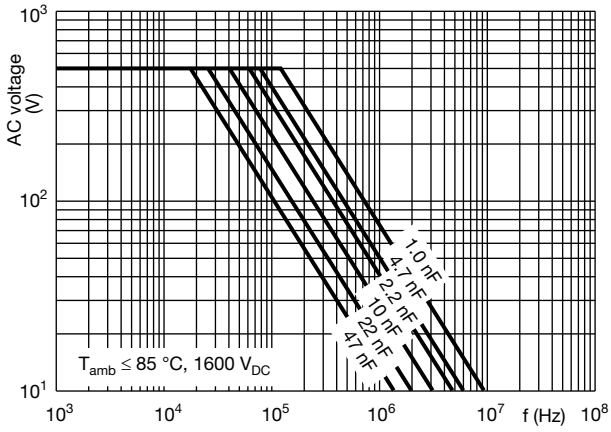
Max. RMS voltage (sinewave) as a function of frequency



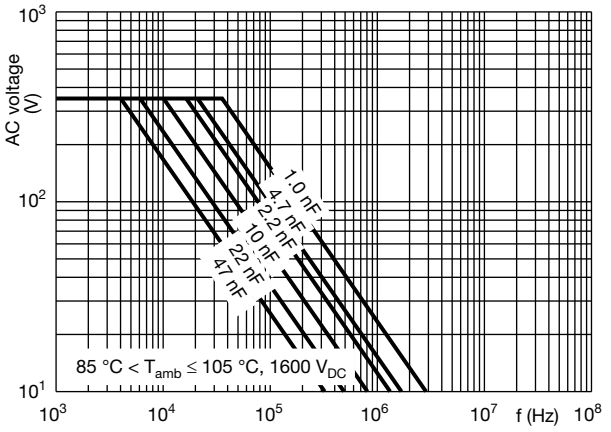
Max. RMS voltage (sinewave) as a function of frequency



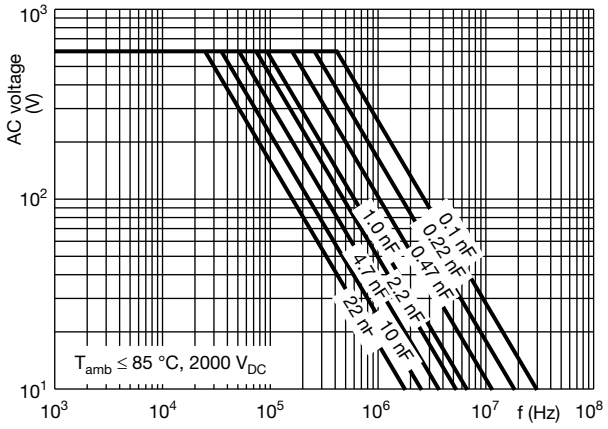
Max. RMS voltage (sinewave) as a function of frequency



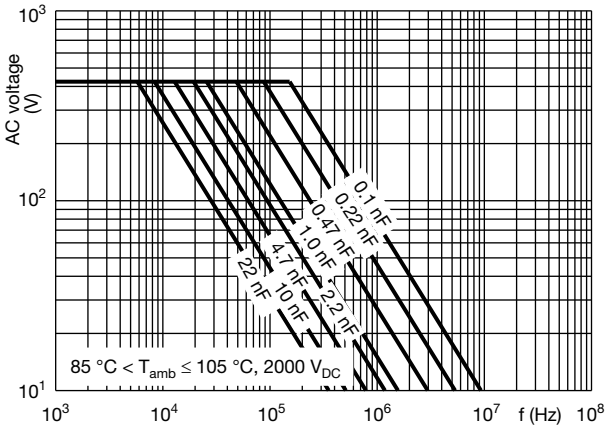
Max. RMS voltage (sinewave) as a function of frequency



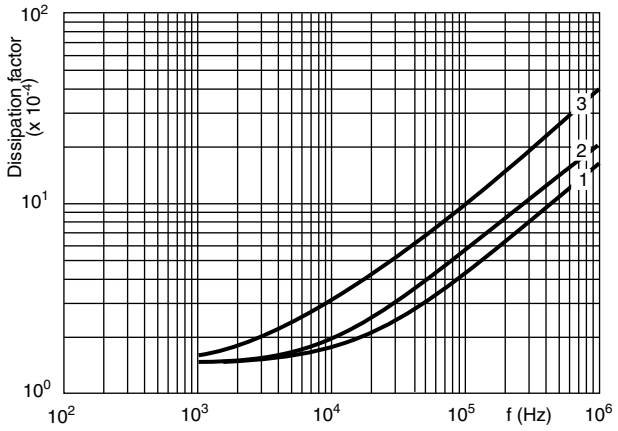
Max. RMS voltage (sinewave) as a function of frequency



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

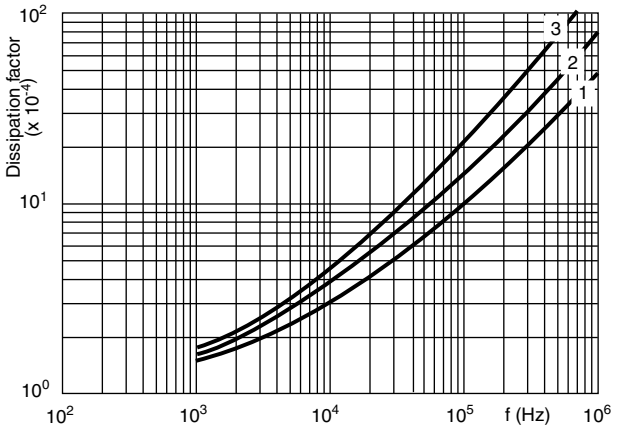


Max. RMS voltage (sinewave) as a function of frequency



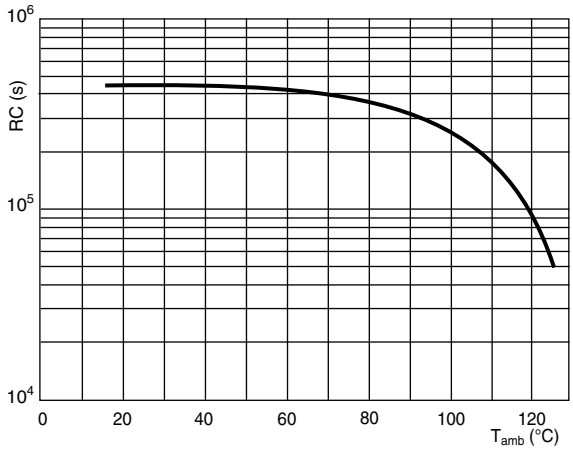
1. KP/MPK 10.0 mm and 15 mm pitch all versions
   22.5 mm pitch, 1000 V, 1600 V, 2000 V and 2500 V versions
2. KP/MPK 22.5 mm pitch, 630 V versions
   27.5 mm pitch, 1000 V, 1600 V and 2000 V versions
3. KP/MPK 27.5 mm pitch, 630 V versions

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



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.

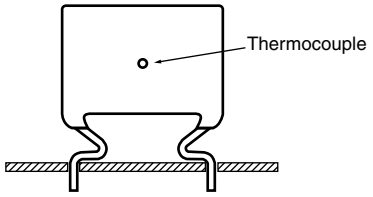
The power dissipation can be calculated according type detail specification “HQN-384-01/101: Technical Information Film Capacitors”

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_{PP}) shall not be greater than the maximum (U_{p-p}) to avoid the ionization 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:

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

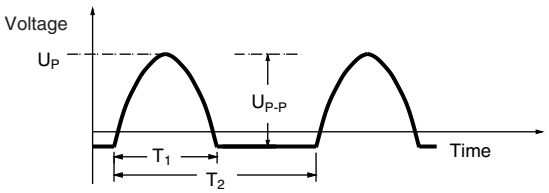
   T is the pulse duration.
4. The maximum component surface temperature rise must be lower than the limits.

Example

C = 10 nF 1600 V, KP/MPK
This is a signal as in the drawing below
U_{P-P} = 1200 V; U_P = 1100 V; T_1 = 12 µs; T_2 = 64 µs
The ambient temperature is 50 °C

Checking conditions:

1. The peak voltage U_P = 1100 V is lower than 1600 V_{DC}
2. The peak-to-peak voltage 1200 V is lower than $2\sqrt{02} \times 550\ V_{AC}$ = 1414 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 mW/(17 mW/°C) = 10 °C which is allowed according Fig. “Max. allowed temperature rise as a function of ambient temperature” for an ambient temperature of 50 °C



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 min ± 0.5 min Recovery time: min. 1 h, max. 2 h	
4.4.2	Final measurements	Visual examination	No visible damage Legible marking
		Capacitance	$\lvert\Delta C/C\rvert \leq 1\ \% + 5$ pF of the value measured initially
		Tangent of loss angle	Increase of tan δ: ≤ 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 min ± 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/s² (whichever is less severe) Total duration 6 h	No visible damage

SUB-CLAUSE NUMBER AND TEST	CONDITIONS	PERFORMANCE REQUIREMENTS
4.7.2 Final inspection	Visual examination	No visible damage
4.9 Shock	Mounting: see section “Mounting” of this specification Pulse shape: half sine Acceleration: 490 m/s² Duration of pulse: 11 ms	
4.9.3 Final measurements	Visual examination	No visible damage
	Capacitance	For C > 0.027µF: $\|\Delta C/C\| \leq 2$ % or for C ≤ 0.027µF: $\|\Delta C/C\| \leq 3$ % + 5 pF of the value measured in 4.6.1.
	Tangent of loss angle	Increase of tan δ: ≤ 0.0005 Compared to values measured in 4.6.1
	Insulation resistance	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	Temperature: +105 °C Duration: 16 h	
4.10.3 Damp heat cyclic Test Db, first cycle		
4.10.4 Cold	Temperature: -55 °C Duration: 2 h	
4.10.6 Damp heat cyclic Test Db, remaining cycles		
4.10.6.2 Final measurements	Voltage proof = U_{RDC} for 1 min within 15 min after removal from testchamber	No breakdown of flash-over
	Visual examination	No visible damage Legible marking
	Capacitance	$\|\Delta C/C\| \leq 3$ % of the value measured in 4.4.2 or 4.9.3
	Tangent of loss angle	Increase of tan δ: ≤ 0.001 Compared to values measured in 4.3.1 or 4.6.1
	Insulation resistance	≥ 50 % of values specified in chapters “General data” of this specification

SUB-CLAUSE NUMBER AND TEST	CONDITIONS	PERFORMANCE REQUIREMENTS
SUB-GROUP C2		
4.11 Damp heat steady state	56 days, 40 °C, 90 % to 95 % RH	
4.11.1 Initial measurements	Capacitance Tangent of loss angle at 1 kHz	
4.11.3 Final measurements	Voltage proof = U_{RDC} for 1 min within 15 min after removal from testchamber	No breakdown of flash-over
	Visual examination	No visible damage Legible marking
	Capacitance	$\|\Delta C/C\| \leq 1$ % + 5 pF of the value measured in 4.11.1.
	Tangent of loss angle	Increase of tan $\delta \leq 0.0005$ Compared to values measured in 4.11.1
	Insulation resistance	≥ 50 % of values specified in section “Insulation Resistance” of this specification
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	Voltage: 0.875 x max. U_{RDC} V_{RMS}, 50 Hz Capacitance Tangent of loss angle at 100 kHz	
4.12.1.3 Final measurements	Visual examination	No visible damage Legible marking Temperature: 85 °C
	Capacitance	For C > 0.056 µF: $\|\Delta C/C\| \leq 2$ % + 5 pF or for C > 0.056 µF: $\|\Delta C/C\| \leq 3$ % + 5 pF of the value measured in 4.12.1.1 Temperature: 105 °C $\|\Delta C/C\| \leq 5$ % + 5 pF
	Tangent of loss angle	Increase of tan δ: ≤ 0.001 Compared to values measured in 4.12.1
	Insulation resistance	≥ 50 % of values specified in chapters “General data” of this specification
SUB-GROUP C4		
4.2.6 Temperature characteristics	Capacitance	As specified in section “Capacitance” of this specification
	Insulation resistance	As specified in chapters “General data” of this specification

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