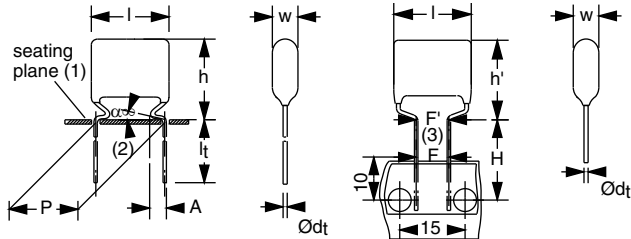
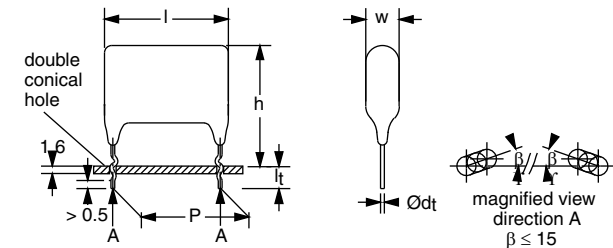


# AC and Pulse Polypropylene Film Capacitors MKP Radial Epoxy Lacquered Type



Dimensions in mm  
 Hole  $\varnothing$  1.0 for  $d_t = 0.6$  mm  
 Hole  $\varnothing$  1.3 for  $d_t = 0.8$  mm  
 $0 \leq \alpha < 50^\circ$   
 $|F - F'| < 0.3$  mm  
 $F = 7.5$  mm + 0.6 mm / - 0.1 mm  
 $A = 2.0$  mm + 1.0 mm / - 0.5 mm (pitch = 10.0 mm)  
 $A = 2.5$  mm + 1.4 mm / - 0.5 mm (pitch = 15.0 mm; 22.5 mm and 27.5 mm)



Dimensions in mm

## APPLICATIONS

Low losses due to low contact resistance and low loss dielectric result in applications where high currents at high frequency occur or high stability is preferred. Their small dimensions make them suitable for circuits with high packaging density.

## MARKING

Manufacturer's emblem; C-value; tolerance; rated voltage; manufacturer's type designation; code for dielectric material

## DIELECTRIC

Polypropylene film

## ELECTRODES

Metallized

## COATING

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

## LEADS

Tinned wire

## FEATURES

- 7.5 mm bent back pitch
- 10 mm to 27.5 mm lead pitch
- Low contact resistance
- Low loss dielectric
- Supplied loose in box (including lock lead versions) and taped on reel
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

## CONSTRUCTION

Wound mono construction

## CAPACITANCE RANGE (E24 SERIES)

0.01  $\mu$ F to 3.9  $\mu$ F

## CAPACITANCE TOLERANCE

$\pm 5\%$

## RATED (DC) VOLTAGE

160 V; 250 V; 400 V; 630 V

## RATED (AC) VOLTAGE

100 V; 160 V; 200 V

## RATED PEAK-TO-PEAK VOLTAGE

280 V; 450 V; 560 V

## CLIMATIC CATEGORY

55/105/56

## RATED TEMPERATURE

85 °C

## MAXIMUM APPLICATION TEMPERATURE

105 °C

## REFERENCE SPECIFICATIONS

IEC 60384-17

## PERFORMANCE GRADE

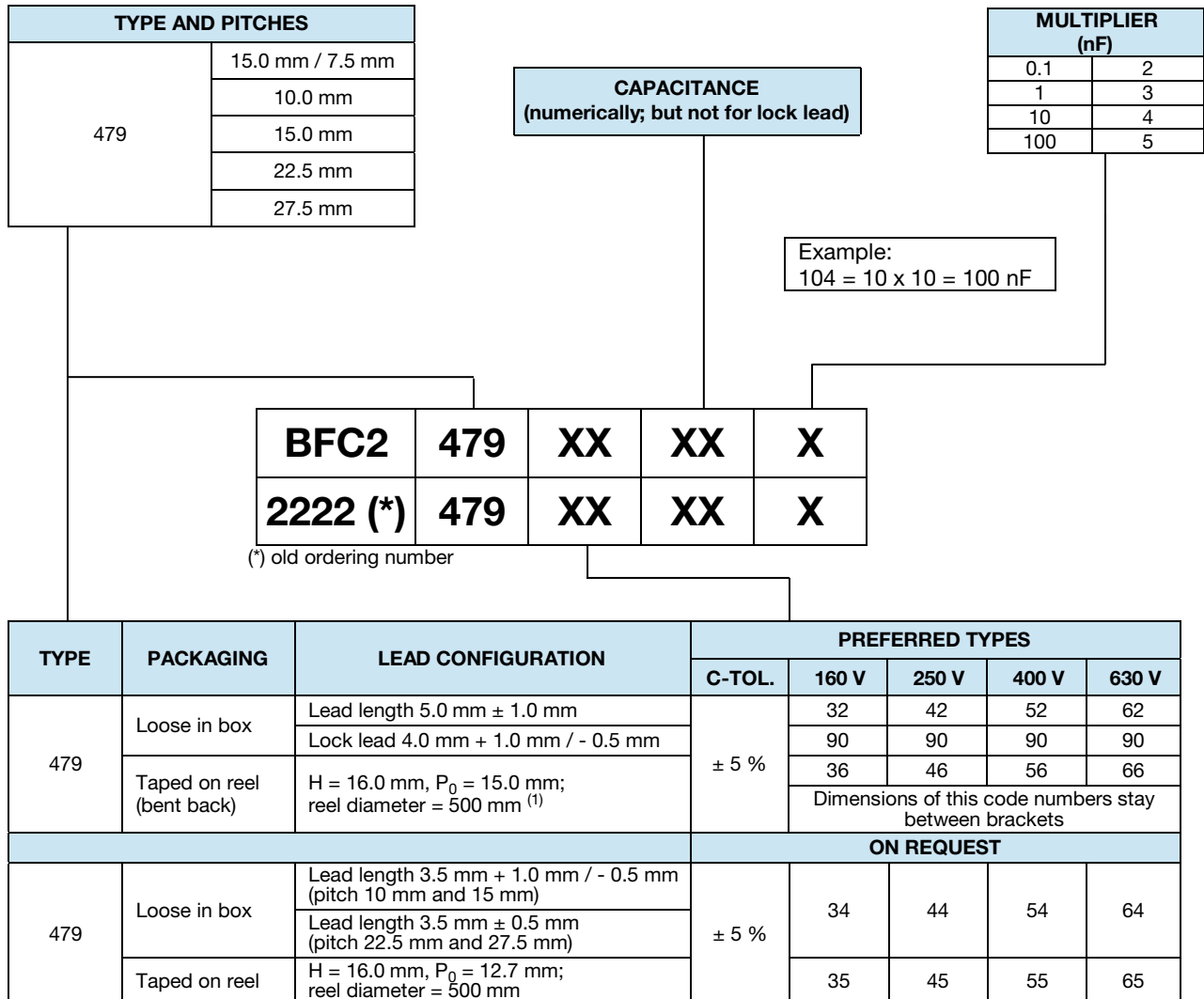
Grade 1 (long life)

## STABILITY GRADE

Grade 2

## DETAIL SPECIFICATION

For more detailed data and test requirements contact: [dc-film@vishay.com](mailto:dc-film@vishay.com)

**COMPOSITION OF CATALOG NUMBER**

**Notes**

- <sup>(1)</sup> Small reel diameter = 356 mm is available on request
- For detailed tape specifications refer to packaging information [www.vishay.com/doc?28139](http://www.vishay.com/doc?28139)



**SPECIFIC REFERENCE DATA (160 V<sub>DC</sub>)**

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle:		
C = 0.075 µF	≤ 10 x 10 <sup>-4</sup>	≤ 25 x 10 <sup>-4</sup>
0.075 µF < C ≤ 0.11 µF	≤ 10 x 10 <sup>-4</sup>	≤ 30 x 10 <sup>-4</sup>
0.11 µF < C ≤ 0.18 µF	≤ 10 x 10 <sup>-4</sup>	≤ 35 x 10 <sup>-4</sup>
0.18 µF < C ≤ 0.3 µF	≤ 10 x 10 <sup>-4</sup>	≤ 40 x 10 <sup>-4</sup>
0.3 µF < C ≤ 0.47 µF	≤ 10 x 10 <sup>-4</sup>	≤ 60 x 10 <sup>-4</sup>
0.47 µF < C ≤ 0.82 µF	≤ 15 x 10 <sup>-4</sup>	≤ 90 x 10 <sup>-4</sup>
0.82 µF < C ≤ 1.1 µF	≤ 15 x 10 <sup>-4</sup>	≤ 100 x 10 <sup>-4</sup>
1.1 µF < C ≤ 1.2 µF	≤ 15 x 10 <sup>-4</sup>	≤ 120 x 10 <sup>-4</sup>
1.2 µF < C ≤ 1.3 µF	≤ 15 x 10 <sup>-4</sup>	≤ 125 x 10 <sup>-4</sup>
1.3 µF < C ≤ 1.8 µF	≤ 15 x 10 <sup>-4</sup>	≤ 135 x 10 <sup>-4</sup>
1.8 µF < C ≤ 2.4 µF	≤ 15 x 10 <sup>-4</sup>	≤ 145 x 10 <sup>-4</sup>
2.4 µF < C ≤ 3.0 µF	≤ 15 x 10 <sup>-4</sup>	≤ 155 x 10 <sup>-4</sup>
3.0 µF < C ≤ 3.3 µF	≤ 15 x 10 <sup>-4</sup>	≤ 165 x 10 <sup>-4</sup>
3.3 µF < C ≤ 3.6 µF	≤ 15 x 10 <sup>-4</sup>	≤ 175 x 10 <sup>-4</sup>
3.6 µF < C ≤ 3.9 µF	≤ 15 x 10 <sup>-4</sup>	≤ 185 x 10 <sup>-4</sup>
Rated voltage pulse slope (dU/dt) <sub>R</sub> at 160 V <sub>DC</sub> :		
P = 10 mm	60 V/µs	
P = 15 mm	50 V/µs	
P = 22.5 mm	25 V/µs	
P = 27.5 mm	15 V/µs	
R between leads, for C ≤ 1.0 µF at 100 V; 1 min	> 100 000 MΩ	
RC between leads, for C > 1 µF at 100 V; 1 min	> 100 000 s	
R between leads and case; 100 V; 1 min	> 100 000 MΩ	
Ionization (AC) voltage (typical value) at 50 pC peak discharge	> 220 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s <sup>(1)</sup>	256 V; 1 min	
Withstanding (DC) voltage between leads and case	2840 V; 1 min	

**Note**

<sup>(1)</sup> See "Voltage Proof Test for Metalized Film Capacitors": [www.vishay.com/doc?28169](http://www.vishay.com/doc?28169)

**U<sub>RDC</sub> = 160 V; U<sub>RAC</sub> = 100 V; U<sub>p-p</sub> = 280 V (standard); C-tol. = ± 5 %**

C (µF)	DIMENSIONS w <sub>max.</sub> x h (h') <sub>max.</sub> x l <sub>max.</sub> (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING				
			LOOSE IN BOX		REEL		
			l <sub>t</sub> = 5.0 mm ± 1.0 mm	ALL LEADS	PITCH 7.5 mm (BENT BACK)		ORIGINAL PITCH
					SPQ		
Pitch = 10.0 mm ± 0.4 mm; d <sub>t</sub> = 0.60 mm ± 0.06 mm			Pitch = 7.5 mm (bent back)		Pitch = 10.0 mm		
0.075	6.0 x 15.0 x 12.5	0.9	32753	1000			1000
0.082			32823				
0.091			32913				
0.10			32104				
0.11			32114				
0.12			32124				
0.13			32134				
0.15	6.5 x 15.5 x 12.5	1.0	32154	1000			900
0.16			32164				



C ( $\mu$ F)	DIMENSIONS $w_{max.} \times h (h'_{max.}) \times l_{max.}$ (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING				
			LOOSE IN BOX		REEL		
			$l_t = 5.0 \text{ mm} \pm 1.0 \text{ mm}$	ALL LEADS	PITCH 7.5 mm (BENT BACK)		ORIGINAL PITCH
				SPQ		SPQ	SPQ
<b>Pitch = 15.0 mm <math>\pm</math> 0.4 mm; <math>d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}</math></b>					<b>Pitch = 7.5 mm (bent back)</b>		<b>Pitch = 15.0 mm</b>
0.18	6.0 x 15.0 (16.5) x 18.5	1.2	32184	2000	36184	800	1000
0.20	6.5 x 15.5 (17.0) x 18.5	1.3	32204	1500	36204	750	900
0.22			32224		36224		
0.24			32244		36244		
0.27	7.0 x 16.0 (17.5) x 18.5	1.4	32274	1250	36274	700	800
0.30			32304		36304		
0.33			32334		36334		
0.36			32364		36364		
0.39			32394		36394		
0.43	7.5 x 16.5 (18.0) x 18.5	1.5	32434	1250	36434	650	800
0.47			32474		36474		
0.51	8.0 x 17.0 (18.5) x 18.5	1.6	32514	1250	36514	600	700
0.56			32564		36564		
0.62	8.5 x 17.5 (19.0) x 18.5	1.7	32624	1000	36624	550	700
0.68	9.0 x 18.0 (19.5) x 18.5	1.8	32684	1000	36684	550	600
0.75	9.5 x 18.5 (20.0) x 18.5	1.9	32754	900	36754	500	600
<b>Pitch = 22.5 mm <math>\pm</math> 0.4 mm; <math>d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}</math></b>					<b>Pitch = 7.5 mm (bent back)</b>		<b>Pitch = 22.5 mm</b>
0.82	7.0 x 20.0 x 26.0	1.8	32824	650			550
0.91	7.5 x 20.5 x 26.0	1.9	32914	600			500
1.0			32105				500
1.1	8.0 x 21.0 x 26.0	2.0	32115	550			500
1.2	8.5 x 21.5 x 26.0	2.1	32125	500			450
1.3			32135				450
1.5	9.5 x 22.5 x 26.0	2.4	32155	450			400
1.6			32165				400
1.8	10.0 x 23.0 x 26.0	2.5	32185	400	400		
<b>Pitch = 27.5 mm <math>\pm</math> 0.4 mm; <math>d_t = 0.80 \pm 0.08 \text{ mm}</math></b>					<b>Pitch = 7.5 mm (bent back)</b>		<b>Pitch = 27.5 mm</b>
2.0	10.0 x 23.0 x 30.0	5.0	32205	450			
2.2	10.5 x 23.5 x 30.0	5.0	32225	450			
2.4	11.0 x 24.0 x 30.0	5.5	32245	400			
2.7	11.5 x 24.5 x 30.0	5.5	32275	400			
3.0	12.0 x 25.0 x 30.0	6.0	32305	350			
3.3	13.0 x 26.0 x 30.0	6.5	32335	300			
3.6	13.5 x 26.5 x 30.0	7.0	32365	300			
3.9	14.0 x 27.0 x 30.0	7.0	32395	300			



U<sub>RDC</sub> = 160 V; U<sub>RAC</sub> = 100 V; U<sub>p-p</sub> = 280 V (lock lead); C-tol. = ± 5 %

C (µF)	DIMENSIONS W <sub>max.</sub> x h <sub>max.</sub> x l <sub>max.</sub> (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING	
			LOOSE IN BOX	
			l <sub>t</sub> = 4.0 mm + 1.0 mm / - 0.5 mm	
			SPQ	
<b>Pitch = 10.0 mm ± 1.0 mm; d<sub>t</sub> = 0.60 mm ± 0.06 mm</b>				
0.075	6.0 x 18.0 x 12.5	0.9	90089	1400
0.082			90091	
0.091			90092	
0.10			90093	
0.11			90094	
0.12			90095	
0.13			90096	
0.15	6.5 x 18.5 x 12.5	1.0	90097	1250
0.16			90098	
<b>Pitch = 15.0 mm ± 1.0 mm; d<sub>t</sub> = 0.80 mm ± 0.08 mm</b>				
0.18	6.0 x 18.0 x 18.5	1.2	90099	1500
0.20	6.5 x 18.5 x 18.5	1.3	90101	1250
0.22			90102	
0.24	7.0 x 19.0 x 18.5	1.4	90103	1250
0.27			90104	
0.30			90105	
0.33			90106	
0.36			90107	
0.39			90108	
0.43	7.5 x 19.5 x 18.5	1.5	90109	1000
0.47			90111	
0.51	8.0 x 20.0 x 18.5	1.6	90112	1000
0.56			90113	
0.62	8.5 x 20.5 x 18.5	1.7	90114	900
0.68	9.0 x 21.0 x 18.5	1.8	90115	800
0.75	9.5 x 21.5 x 18.5	1.9	90116	800
<b>Pitch = 22.5 mm ± 1.0 mm; d<sub>t</sub> = 0.80 mm ± 0.08 mm</b>				
0.82	7.0 x 23.0 x 26.0	1.8	90117	850
0.91	7.5 x 23.5 x 26.0	1.9	90118	750
1.0			90119	
1.1	8.0 x 24.0 x 26.0	2.0	90121	700
1.2	8.5 x 24.5 x 26.0	2.1	90122	650
1.3			90036	
1.5	9.5 x 25.5 x 26.0	2.4	90037	550
1.6			90038	
1.8	10.0 x 26.0 x 26.0	2.5	90039	500
<b>Pitch = 27.5 mm ± 1.0 mm; d<sub>t</sub> = 0.80 mm ± 0.08 mm</b>				
2.0	10.0 x 26.0 x 30.0	5.0	90041	400
2.2	10.5 x 26.5 x 30.0	5.0	90042	400
2.4	11.0 x 27.0 x 30.0	5.5	90123	350
2.7	11.5 x 27.5 x 30.0	5.5	90124	350
3.0	12.0 x 28.0 x 30.0	6.0	90125	350
3.3	13.0 x 29.0 x 30.0	6.5	90126	300
3.6	13.5 x 29.5 x 30.0	7.0	90127	250
3.9	14.0 x 30.0 x 30.0	7.0	90128	250



**SPECIFIC REFERENCE DATA (250 V<sub>DC</sub>)**

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle:		
0.047 μF ≤ C ≤ 0.075 μF	≤ 10 x 10 <sup>-4</sup>	≤ 25 x 10 <sup>-4</sup>
0.075 μF < C ≤ 0.11 μF	≤ 10 x 10 <sup>-4</sup>	≤ 30 x 10 <sup>-4</sup>
0.11 μF < C ≤ 0.18 μF	≤ 10 x 10 <sup>-4</sup>	≤ 35 x 10 <sup>-4</sup>
0.18 μF < C ≤ 0.30 μF	≤ 10 x 10 <sup>-4</sup>	≤ 40 x 10 <sup>-4</sup>
0.30 μF < C ≤ 0.47 μF	≤ 10 x 10 <sup>-4</sup>	≤ 60 x 10 <sup>-4</sup>
0.47 μF < C ≤ 0.82 μF	≤ 15 x 10 <sup>-4</sup>	≤ 90 x 10 <sup>-4</sup>
0.82 μF < C ≤ 1.1 μF	≤ 15 x 10 <sup>-4</sup>	≤ 100 x 10 <sup>-4</sup>
1.1 μF < C ≤ 1.2 μF	≤ 15 x 10 <sup>-4</sup>	≤ 120 x 10 <sup>-4</sup>
1.2 μF < C ≤ 1.3 μF	≤ 15 x 10 <sup>-4</sup>	≤ 125 x 10 <sup>-4</sup>
1.3 μF < C ≤ 1.8 μF	≤ 15 x 10 <sup>-4</sup>	≤ 135 x 10 <sup>-4</sup>
1.8 μF < C ≤ 2.4 μF	≤ 15 x 10 <sup>-4</sup>	≤ 145 x 10 <sup>-4</sup>
2.4 μF < C ≤ 3.0 μF	≤ 15 x 10 <sup>-4</sup>	≤ 155 x 10 <sup>-4</sup>
Rated voltage pulse slope (dU/dt) <sub>R</sub> :		
P = 10.0 mm		70 V/μs
P = 15.0 mm		60 V/μs
P = 22.5 mm		30 V/μs
P = 27.5 mm		20 V/μs
R between leads, for C ≤ 1.0 μF at 100 V; 1 min		> 100 000 MΩ
RC between leads, for C > 1 μF at 100 V; 1 min		> 100 000 s
R between leads and case; 100 V; 1 min		> 100 000 MΩ
Ionization (AC) voltage (typical value) at 50 pC peak discharge		> 220 V
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s <sup>(1)</sup>		400 V; 1 min
Withstanding (DC) voltage between leads and case		2840 V; 1 min

**Note**

<sup>(1)</sup> See "Voltage Proof Test for Metalized Film Capacitors": [www.vishay.com/doc?28169](http://www.vishay.com/doc?28169)

**U<sub>RDC</sub> = 250 V; U<sub>RAC</sub> = 160 V; U<sub>p-p</sub> = 450 V (standard); C-tol. = ± 5 %**

C (μF)	DIMENSIONS w <sub>max.</sub> x h (h' <sub>max.</sub> ) x l <sub>max.</sub> (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING			
			LOOSE IN BOX		REEL	
			l <sub>t</sub> = 5.0 mm ± 1.0 mm	ALL LEADS SPQ	PITCH 7.5 mm (BENT BACK) SPQ	ORIGINAL PITCH SPQ
Pitch = 10.0 mm ± 0.4 mm; d <sub>t</sub> = 0.60 mm ± 0.06 mm			Pitch = 7.5 mm (bent back)		Pitch = 10.0 mm	
0.047	6.0 x 15.0 x 12.5	0.9	42473	1000		1000
0.051			42513			
0.056			42563			
0.062			42623			
0.068			42683			
0.075			42753			
0.082			42823			
0.091			42913			
0.10	6.5 x 15.5 x 12.5	1.0	42104	1000		900



C ( $\mu$ F)	DIMENSIONS $W_{max.} \times h (h')_{max.} \times l_{max.}$ (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING								
			LOOSE IN BOX		REEL						
			$l_t = 5.0 \text{ mm} \pm 1.0 \text{ mm}$	ALL LEADS	PITCH 7.5 mm (BENT BACK)		ORIGINAL PITCH				
				SPQ		SPQ	SPQ				
<b>Pitch = 15.0 mm <math>\pm</math> 0.4 mm; <math>d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}</math></b>					<b>Pitch = 7.5 mm (bent back)</b>		<b>Pitch = 15.0 mm</b>				
0.11	6.5 x 15.5 (17.0) x 18.5	1.3	42114	1500	46114	750	900				
0.12			42124		46124						
0.13			42134		46134						
0.15			42154		46154						
0.16			42164		46164						
0.18			42184		46184						
0.20			42204		46204						
0.22			42224		46224						
0.24	7.0 x 16.0 (17.5) x 18.5	1.4	42244	1250	46244	700	800				
0.27	7.5 x 16.5 (18.0) x 18.5	1.5	42274	1250	46274	650	800				
0.30			42304		46304						
0.33	8.0 x 17.0 (18.5) x 18.5	1.6	42334	150	46334	600	700				
0.36	8.5 x 17.5 (19.0) x 18.5	1.7	42364	1000	46364	550	700				
0.39			42394		46394						
0.43	9.0 x 18.0 (19.5) x 18.5	1.8	42434	1000	46434	550	600				
0.47	9.5 x 18.5 (20.0) x 18.5	1.9	42474	900	46474	500	600				
<b>Pitch = 22.5 mm <math>\pm</math> 0.4 mm; <math>d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}</math></b>					<b>Pitch = 7.5 mm (bent back)</b>		<b>Pitch = 22.5 mm</b>				
0.51	7.0 x 20.0 x 26.0	1.8	42514	650			550				
0.56			42564								
0.62	7.5 x 20.5 x 26.0	1.9	42624	600					500		
0.68			42684								
0.75	8.0 x 21.0 x 26.0	2.0	42754	550							500
0.82	8.5 x 21.5 x 26.0	2.1	42824	500							450
0.91	9.0 x 22.0 x 26.0	2.4	42914	450							450
1.0	9.5 x 22.5 x 26.0	2.5	42105	450							400
1.1	10.0 x 23.0 x 26.0	2.6	42115	400							400
1.2	10.5 x 23.5 x 26.0	2.7	42125	350							350
<b>Pitch = 27.5 mm <math>\pm</math> 0.4 mm; <math>d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}</math></b>					<b>Pitch = 7.5 mm (bent back)</b>						<b>Pitch = 27.5 mm</b>
1.3	10.0 x 23.0 x 30.0	5.0	42135	450							
1.5	10.5 x 23.5 x 30.0	5.0	42155	450							
1.6	11.0 x 24.0 x 30.0	5.5	42165	400							
1.8	11.5 x 24.5 x 30.0	5.5	42185	400							
2.0	12.5 x 25.0 x 30.0	6.5	42205	350							
2.2	13.0 x 26.0 x 30.0	6.5	42225	300							
2.4	13.5 x 26.5 x 30.0	7.0	42245	300							
2.7	14.0 x 27.0 x 30.0	7.0	42275	300							
3.0	15.0 x 28.0 x 30.0	7.5	42305	250							



$U_{Rdc} = 250\text{ V}$ ;  $U_{Rac} = 160\text{ V}$ ;  $U_{p-p} = 450\text{ V}$  (lock lead); C-tol. =  $\pm 5\%$

C ( $\mu\text{F}$ )	DIMENSIONS $w_{max.} \times h_{max.} \times l_{max.}$ (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING	
			LOOSE IN BOX	
			$l_t = 4.0\text{ mm} + 1.0\text{ mm} / - 0.5\text{ mm}$	
			SPQ	
<b>Pitch = 10.0 mm <math>\pm</math> 1.0 mm; <math>d_t = 0.60 \pm 0.06\text{ mm}</math></b>				
0.047	6.0 x 18.0 x 12.5	0.9	90052	1400
0.051			90129	
0.056			90131	
0.062			90132	
0.068			90133	
0.075			90134	
0.082			90135	
0.091			90136	
0.10	6.5 x 18.5 x 12.5	1.0	90137	1250
<b>Pitch = 15.0 mm <math>\pm</math> 1.0 mm; <math>d_t = 0.80\text{ mm} \pm 0.08\text{ mm}</math></b>				
0.11	6.5 x 18.5 x 18.5	1.3	90138	1250
0.12			90051	
0.13			90139	
0.15			90141	
0.16			90142	
0.18			90012	
0.20			90013	
0.22			90014	
0.24	7.0 x 19.0 x 18.5	1.4	90015	1250
0.27	7.5 x 19.5 x 18.5	1.5	90016	1000
0.30			90017	
0.33	8.0 x 20.0 x 18.5	1.6	90018	1000
0.36	8.5 x 20.5 x 18.5	1.7	90019	900
0.39			90021	
0.43	9.0 x 21.0 x 18.5	1.8	90022	800
0.47	9.5 x 21.5 x 18.5	1.9	90023	800
<b>Pitch = 22.5 mm <math>\pm</math> 1.0 mm; <math>d_t = 0.80\text{ mm} \pm 0.08\text{ mm}</math></b>				
0.51	7.0 x 23.0 x 26.0	1.8	90024	850
0.56			90025	
0.62	7.5 x 23.5 x 26.0	1.9	90026	750
0.68			90027	
0.75	8.0 x 24.0 x 26.0	2.0	90028	700
0.82	8.5 x 24.5 x 26.0	2.1	90029	650
0.91	9.0 x 25.0 x 26.0	2.4	90031	600
1.0	9.5 x 25.5 x 26.0	2.5	90032	550
1.1	10.0 x 26.0 x 26.0	2.6	90033	500
1.2	10.5 x 26.5 x 26.0	2.7	90034	500
<b>Pitch = 27.5 mm <math>\pm</math> 1.0 mm; <math>d_t = 0.80\text{ mm} \pm 0.08\text{ mm}</math></b>				
1.3	10.0 x 26.0 x 30.0	5.0	90143	400
1.5	10.5 x 26.5 x 30.0	5.0	90144	400
1.6	11.0 x 27.0 x 30.0	5.5	90145	350
1.8	11.5 x 27.5 x 30.0	5.5	90146	350
2.0	12.5 x 28.5 x 30.0	6.5	90147	300
2.2	13.0 x 29.0 x 30.0	6.5	90148	300
2.4	13.5 x 29.5 x 30.0	7.0	90149	250
2.7	14.0 x 30.0 x 30.0	7.0	90151	250
3.0	15.0 x 31.0 x 30.0	7.5	90152	200





**SPECIFIC REFERENCE DATA (400 V<sub>DC</sub>)**

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle:		
0.022 ≤ C ≤ 0.027	≤ 10 x 10 <sup>-4</sup>	≤ 20 x 10 <sup>-4</sup>
0.027 < C ≤ 0.075	≤ 10 x 10 <sup>-4</sup>	≤ 25 x 10 <sup>-4</sup>
0.075 μF < C ≤ 0.11 μF	≤ 10 x 10 <sup>-4</sup>	≤ 30 x 10 <sup>-4</sup>
0.11 μF < C ≤ 0.18 μF	≤ 10 x 10 <sup>-4</sup>	≤ 35 x 10 <sup>-4</sup>
0.18 μF < C ≤ 0.3 μF	≤ 10 x 10 <sup>-4</sup>	≤ 40 x 10 <sup>-4</sup>
0.3 μF < C ≤ 0.47 μF	≤ 10 x 10 <sup>-4</sup>	≤ 60 x 10 <sup>-4</sup>
0.47 μF < C ≤ 0.82 μF	≤ 15 x 10 <sup>-4</sup>	≤ 90 x 10 <sup>-4</sup>
0.82 μF < C ≤ 1.1 μF	≤ 15 x 10 <sup>-4</sup>	≤ 100 x 10 <sup>-4</sup>
1.1 μF < C ≤ 1.2 μF	≤ 15 x 10 <sup>-4</sup>	≤ 120 x 10 <sup>-4</sup>
Rated voltage pulse slope (dU/dt) <sub>R</sub> at 400 V <sub>DC</sub> :		
P = 10.0 mm	80 V/μs	
P = 15.0 mm	70 V/μs	
P = 22.5 mm	35 V/μs	
P = 27.5 mm	25 V/μs	
R between leads, for C ≤ 1.0 μF at 100 V; 1 min	> 100 000 MΩ	
RC between leads, for C > 1.0 μF at 100 V; 1 min	> 100 000 s	
R between leads and case; 100 V; 1 min	> 100 000 MΩ	
Ionization (AC) voltage (typical value) at 50 pC peak discharge	> 220 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s <sup>(1)</sup>	640 V; 1 min	
Withstanding (DC) voltage between leads and case	2840 V; 1 min	

**Note**

<sup>(1)</sup> See "Voltage Proof Test for Metalized Film Capacitors": [www.vishay.com/doc?28169](http://www.vishay.com/doc?28169)

**U<sub>RDC</sub> = 400 V; U<sub>RAC</sub> = 200 V; U<sub>p-p</sub> = 560 V (standard); C-tol. = ± 5 %**

C (μF)	DIMENSIONS w <sub>max.</sub> x h (h <sup>1</sup> ) <sub>max.</sub> x l <sub>max.</sub> (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING				
			LOOSE IN BOX		REEL		
			l <sub>t</sub> = 5.0 mm ± 1.0 mm	ALL LEADS	PITCH 7.5 mm (BENT BACK)		ORIGINAL PITCH
				SPQ		SPQ	SPQ
Pitch = 10.0 mm ± 0.4 mm; d <sub>t</sub> = 0.60 mm ± 0.06 mm			Pitch = 7.5 mm (bent back)		Pitch = 10.0 mm		
0.022	6.0 x 15.0 x 12.5	0.9	52223	1000		1000	
0.024			52243				
0.027			52273				
0.030			52303				
0.033			52333				
0.036			52363				
0.039			52393				
0.043			52433				
0.047			52473				



C ( $\mu$ F)	DIMENSIONS $W_{max.} \times h (h')_{max.} \times l_{max.}$ (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING				
			LOOSE IN BOX		REEL		
			$l_t = 5.0 \text{ mm} \pm 1.0 \text{ mm}$	ALL LEADS	PITCH 7.5 mm (BENT BACK)		ORIGINAL PITCH
				SPQ		SPQ	SPQ
<b>Pitch = 15.0 mm <math>\pm</math> 0.4 mm; <math>d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}</math></b>					<b>Pitch = 7.5 mm (bent back)</b>		<b>Pitch = 15.0 mm</b>
0.051	6.5 x 15.5 (17.0) x 18.5	1.3	52513	1500	56513	750	900
0.056			52563		56563		
0.062			52623		56623		
0.068			52683		56683		
0.075			52753		56753		
0.082			52823		56823		
0.091	7.0 x 16.0 (17.5) x 18.5	1.4	52913	1250	56913	700	800
0.10			52104		56104		
0.11			52114		56114		
0.12			52124		56124		
0.13	7.5 x 16.5 (18.0) x 18.5	1.5	52134	1250	56134	650	800
0.15			52154		56154		
0.16	8.0 x 17.0 (18.5) x 18.5	1.6	52164	1250	56164	600	700
0.18	8.5 x 17.5 (19.0) x 18.5	1.7	52184	1000	56184	550	700
0.20			52204		56204		
0.22	9.0 x 18.0 (19.5) x 18.5	1.8	52224	1000	56224	550	600
<b>Pitch = 22.5 mm <math>\pm</math> 0.4 mm; <math>d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}</math></b>					<b>Pitch = 7.5 mm (bent back)</b>		<b>Pitch = 22.5 mm</b>
0.24	6.5 x 19.5 x 26.0	1.7	52244	750			600
0.27	7.0 x 20.0 x 26.0	1.8	52274	650			550
0.30	7.5 x 20.5 x 26.0	1.9	52304	600			500
0.33			52334				500
0.36	8.0 x 21.0 x 26.0	2.0	52364	550			500
0.39	8.5 x 21.5 x 26.0	2.1	52394	500			450
0.43			52434				450
0.47	9.0 x 22.0 x 26.0	2.4	52474	450			450
0.51	9.5 x 22.5 x 26.0	2.5	52514	450			400
0.56	10.0 x 23.0 x 26.0	2.6	52564	400			400
0.62	10.5 x 23.5 x 26.0	2.7	52624	350	350		
<b>Pitch = 27.5 mm <math>\pm</math> 0.4 mm; <math>d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}</math></b>					<b>Pitch = 7.5 mm (bent back)</b>		<b>Pitch = 27.5 mm</b>
0.68	10.0 x 23.0 x 30.0	5.0	52684	450			
0.75	10.5 x 23.5 x 30.0	5.0	52754	450			
0.82	11.0 x 24.0 x 30.0	5.5	52824	400			
0.91	11.5 x 24.5 x 30.0	5.5	52914	400			
1.0	12.0 x 25.0 x 30.0	6.0	52105	350			
1.1	12.5 x 25.5 x 30.0	6.5	52115	350			
1.2	13.0 x 26.0 x 30.0	6.5	52125	300			



U<sub>RDC</sub> = 400 V; U<sub>RAC</sub> = 200 V; U<sub>p-p</sub> = 560 V (lock lead); C-tol. = ± 5 %

C (µF)	DIMENSIONS W <sub>max.</sub> x h <sub>max.</sub> x l <sub>max.</sub> (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING	
			LOOSE IN BOX	
			l <sub>t</sub> = 4.0 mm + 1.0 mm / - 0.5 mm	
			SPQ	
<b>Pitch = 10.0 mm ± 1.0 mm; d<sub>t</sub> = 0.60 mm ± 0.06 mm</b>				
0.022	6.0 x 18.0 x 12.5	0.9	90153	1400
0.024			90154	
0.027			90155	
0.030			90156	
0.033			90157	
0.036	6.0 x 18.0 x 12.5	0.9	90158	1400
0.039			90159	
0.043			90161	
0.047			90162	
<b>Pitch = 15.0 mm ± 1.0 mm; d<sub>t</sub> = 0.80 mm ± 0.08 mm</b>				
0.051	6.5 x 18.5 x 18.5	1.3	90163	1250
0.056			90164	
0.062			90165	
0.068			90166	
0.075			90167	
0.082			90168	
0.091	7.0 x 19.0 x 18.5	1.4	90169	1250
0.10			90171	
0.11			90172	
0.12			90173	
0.13	7.5 x 19.5 x 18.5	1.5	90174	1000
0.15			90175	
0.16	8.0 x 20.0 x 18.5	1.6	90176	1000
0.18	8.5 x 20.5 x 18.5	1.7	90177	900
0.20			90178	
0.22	9.0 x 21.0 x 18.5	1.8	90179	800
<b>Pitch = 22.5 mm ± 1.0 mm; d<sub>t</sub> = 0.80 mm ± 0.08 mm</b>				
0.24	6.5 x 22.5 x 26.0	1.7	90181	900
0.27	7.0 x 23.0 x 26.0	1.8	90182	850
0.30	7.5 x 23.5 x 26.0	1.9	90183	750
0.33			90184	
0.36	8.0 x 24.0 x 26.0	2.0	90185	700
0.39	8.5 x 24.5 x 26.0	2.1	90186	650
0.43			90187	
0.47	9.0 x 25.0 x 26.0	2.4	90188	600
0.51	9.5 x 25.5 x 26.0	2.5	90189	550
0.56	10.0 x 26.0 x 26.0	2.6	90191	500
0.62	10.5 x 26.5 x 26.0	2.7	90192	500
<b>Pitch = 27.5 mm ± 1.0 mm; d<sub>t</sub> = 0.80 mm ± 0.08 mm</b>				
0.68	10.0 x 26.0 x 30.0	5.0	90193	400
0.75	10.5 x 26.5 x 30.0	5.0	90194	400
0.82	11.0 x 27.0 x 30.0	5.5	90195	350
0.91	11.5 x 27.5 x 30.0	5.5	90196	350
1.0	12.0 x 28.0 x 30.0	6.0	90086	350
1.1	12.5 x 28.5 x 30.0	6.5	90197	300
1.2	13.0 x 29.0 x 30.0	6.5	90198	300



**SPECIFIC REFERENCE DATA (630 V<sub>DC</sub>)**

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle:		
0.01 μF < C ≤ 0.027 μF	≤ 10 x 10 <sup>-4</sup>	≤ 20 x 10 <sup>-4</sup>
0.027 μF < C ≤ 0.075 μF	≤ 10 x 10 <sup>-4</sup>	≤ 25 x 10 <sup>-4</sup>
0.075 μF < C ≤ 0.11 μF	≤ 10 x 10 <sup>-4</sup>	≤ 30 x 10 <sup>-4</sup>
0.11 μF < C ≤ 0.18 μF	≤ 10 x 10 <sup>-4</sup>	≤ 35 x 10 <sup>-4</sup>
0.18 μF < C ≤ 0.3 μF	≤ 10 x 10 <sup>-4</sup>	≤ 40 x 10 <sup>-4</sup>
0.3 μF < C ≤ 0.47 μF	≤ 10 x 10 <sup>-4</sup>	≤ 60 x 10 <sup>-4</sup>
0.47 μF < C ≤ 0.68 μF	≤ 15 x 10 <sup>-4</sup>	≤ 90 x 10 <sup>-4</sup>
Rated voltage pulse slope (dU/dt) <sub>R</sub> at 630 V <sub>DC</sub> :		
P = 10.0 mm	100 V/μs	
P = 15.0 mm	90 V/μs	
P = 22.5 mm	45 V/μs	
P = 27.5 mm	30 V/μs	
R between leads, for C ≤ 1.0 μF at 500 V; 1 min	> 100 000 MΩ	
R between leads and case; 500 V; 1 min	> 100 000 MΩ	
Ionization (AC) voltage (typical value) at 50 pC peak discharge	> 220 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s <sup>(1)</sup>	1008 V; 1 min	
Withstanding (DC) voltage between leads and case	2840 V; 1 min	

**Note**

<sup>(1)</sup> See "Voltage Proof Test for Metalized Film Capacitors": [www.vishay.com/doc?28169](http://www.vishay.com/doc?28169)

**U<sub>RDC</sub> = 630 V; U<sub>RAC</sub> = 200 V; U<sub>p-p</sub> = 560 V (standard); C-tol. = ± 5 %**

C (μF)	DIMENSIONS w <sub>max.</sub> x h (h <sub>max.</sub> ) x l <sub>max.</sub> (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING				
			LOOSE IN BOX		REEL		
			l <sub>t</sub> = 5.0 mm ± 1.0 mm	ALL LEADS	PITCH 7.5 mm (BENT BACK)		ORIGINAL PITCH
				SPQ		SPQ	SPQ
<b>Pitch = 10.0 mm ± 0.4 mm; d<sub>t</sub> = 0.60 mm ± 0.06 mm</b>			<b>Pitch = 7.5 mm (bent back)</b>		<b>Pitch = 10.0 mm</b>		
0.010	6.0 x 15.0 x 12.5	0.9	62103	1000			1000
0.011			62113				
0.012			62123				
0.013			62133				
0.015			62153				
0.016			62163				
0.018			62183				
0.020			62203				
0.022			62223				
0.024			62243				
0.027	6.5 x 15.5 x 12.5	1.0	62273	1000			900
<b>Pitch = 15.0 mm ± 0.4 mm; d<sub>t</sub> = 0.80 mm ± 0.08 mm</b>			<b>Pitch = 7.5 mm (bent back)</b>		<b>Pitch = 15.0 mm</b>		
0.030	6.5 x 15.5 (17.0) x 18.5	1.3	62303	1500		750	900
0.033			62333				
0.036			62363				
0.039			62393				
0.043			62433				
0.047			62473				
0.051			62513				
0.056			62563				
0.062			62623				
0.068			62683				
0.075	7.0 x 16.0 (17.5) x 18.5	1.4	62623	1250	66623	700	800
0.082	7.5 x 16.5 (18.0) x 18.5	1.5	62683	1250	66683	650	800
0.091	8.0 x 17.0 (18.5) x 18.5	1.6	62753	1250	66753	600	700
0.10	8.5 x 17.5 (19.0) x 18.5	1.7	62823	1000	66823	550	700
0.11	9.0 x 18.0 (19.5) x 18.5	1.8	62913	1000	66913	500	700
0.11	9.5 x 18.5 (20.0) x 18.5	1.9	62104	900	66104	500	600
0.11	9.5 x 18.5 (20.0) x 18.5	1.9	62114	900	66114	500	600



C ( $\mu$ F)	DIMENSIONS $w_{max.} \times h (h')_{max.} \times l_{max.}$ (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING			
			LOOSE IN BOX		REEL	
			$l_t = 5.0 \text{ mm} \pm 1.0 \text{ mm}$	ALL LEADS	PITCH 7.5 mm (BENT BACK)	
SPQ		SPQ		SPQ		
Pitch = 22.5 mm $\pm$ 0.4 mm; $d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}$					Pitch = 7.5 mm (bent back)	Pitch = 10.0 mm
0.12	6.5 x 19.5 x 26.0	1.7	62124	750		600
0.13	7.0 x 20.0 x 26.0	1.8	62134	650		550
0.15	7.5 x 20.5 x 26.0	1.9	62154	600		500
0.16			62164			500
0.18	8.0 x 21.0 x 26.0	2.0	62184	550		500
0.20	8.5 x 21.5 x 26.0	2.1	62204	500		450
0.22	9.0 x 22.0 x 26.0	2.4	62224	450		450
0.24			62244			400
0.27	9.5 x 22.5 x 26.0	2.5	62274	450		400
0.30	10.0 x 23.0 x 26.0	2.7	62304	400		400
Pitch = 27.5 mm $\pm$ 0.4 mm; $d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}$					Pitch = 7.5 mm (bent back)	Pitch = 10.0 mm
0.33	9.5 x 22.5 x 30.0	5.0	62334	550		
0.36	10.0 x 22.5 x 30.0	5.0	62364	500		
0.39	10.5 x 23.0 x 30.0	5.0	62394	450		
0.43	11.0 x 23.0 x 30.0	5.5	62434	450		
0.47	11.5 x 24.5 x 30.0	5.5	62474	400		
0.51	12.0 x 25.0 x 30.0	6.0	62514	350		
0.56	13.0 x 26.0 x 30.0	6.5	62564	300		
0.62	13.5 x 26.5 x 30.0	6.5	62624	300		
0.68	14.0 x 27.0 x 30.0	7.0	62684	300		

$U_{RDC} = 630 \text{ V}$ ;  $U_{RAC} = 200 \text{ V}$ ;  $U_{p-p} = 560 \text{ V}$  (lock lead); C-tol. =  $\pm 5 \%$

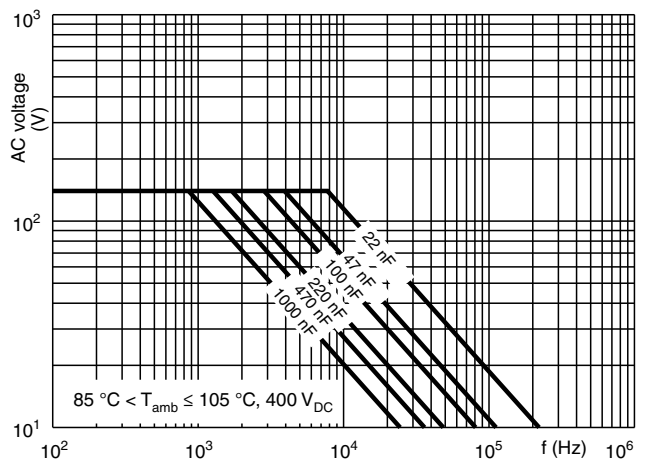
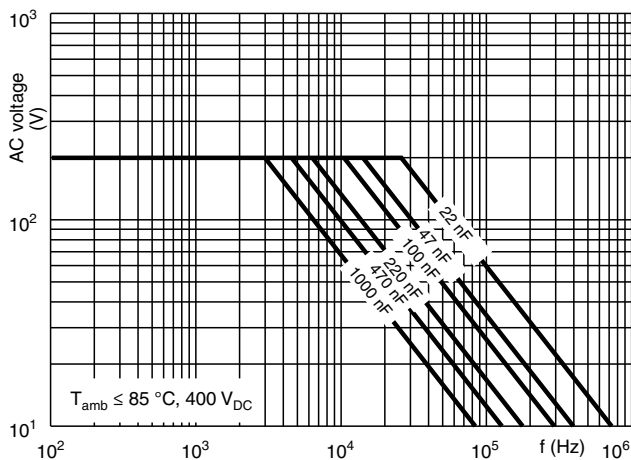
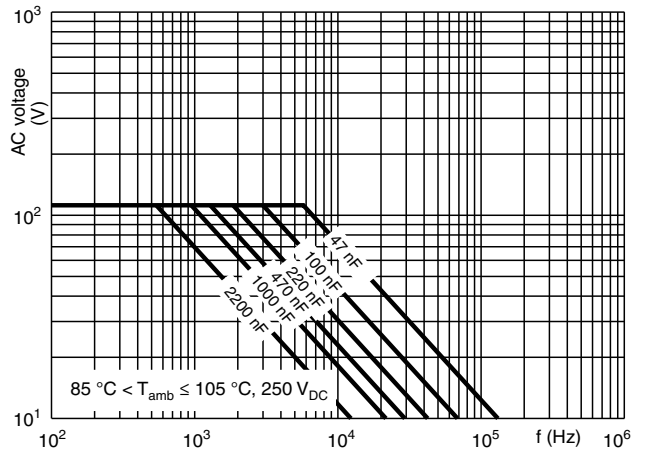
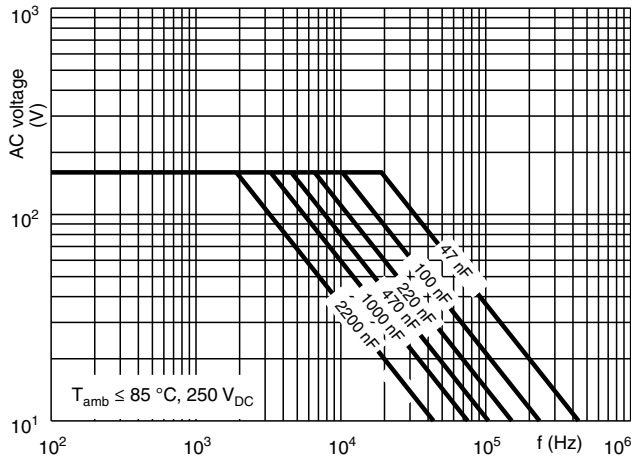
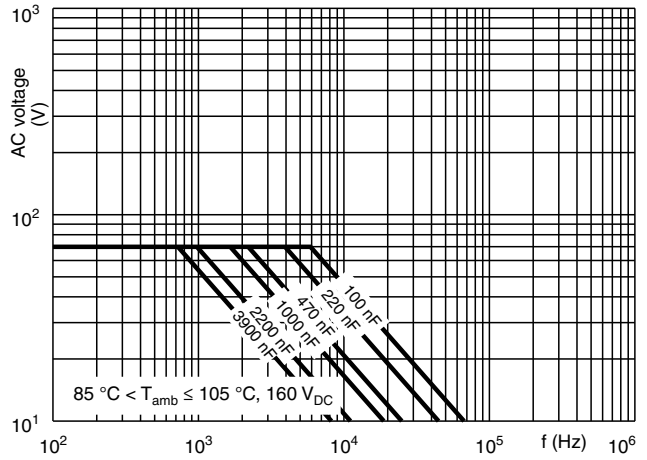
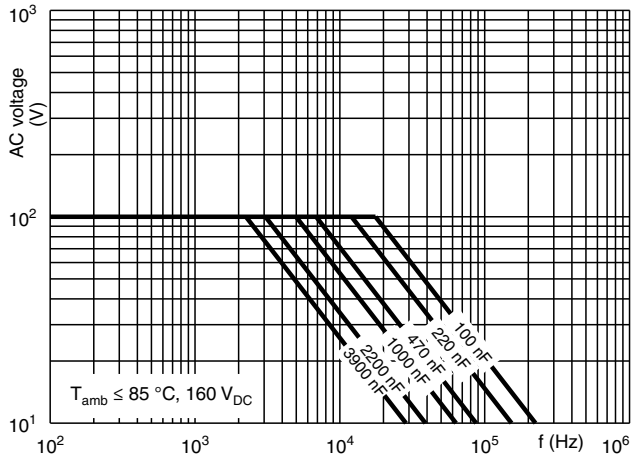
C ( $\mu$ F)	DIMENSIONS $w_{max.} \times h_{max.} \times l_{max.}$ (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING	
			LOOSE IN BOX	
			$l_t = 4.0 \text{ mm} + 1.0 \text{ mm} / - 0.5 \text{ mm}$	
Pitch = 10.0 mm $\pm$ 1.0 mm; $d_t = 0.60 \text{ mm} \pm 0.06 \text{ mm}$				SPQ
0.010	6.0 x 18.0 x 12.5	0.9	90199	1400
0.011			90201	
0.012			90202	
0.013			90203	
0.015			90204	
0.016			90205	
0.018			90206	
0.020			90207	
0.022			90208	
0.024			90209	
0.027	6.5 x 18.5 x 12.5	1.0	90211	1250

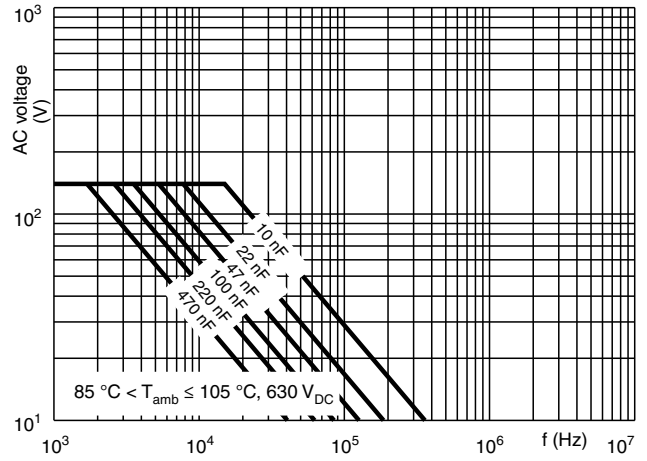
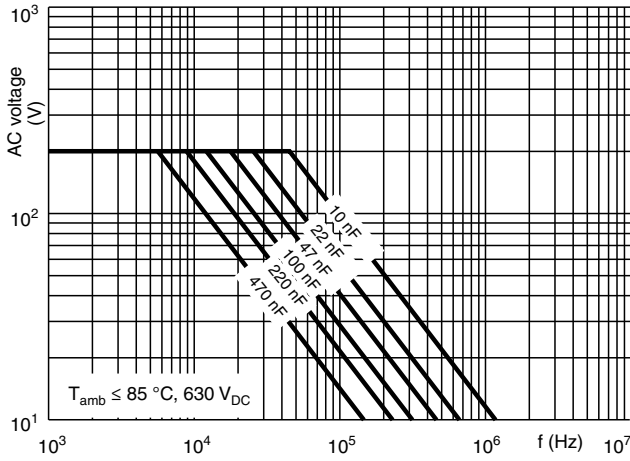


C ( $\mu$ F)	DIMENSIONS $w_{max.} \times h_{max.} \times l_{max.}$ (mm)	MASS (g)	CATALOG NUMBER BFC2479..... AND PACKAGING	
			LOOSE IN BOX	
			$l_t = 4.0 \text{ mm} + 1.0 \text{ mm} / - 0.5 \text{ mm}$	
			SPQ	
<b>Pitch = 15.0 mm <math>\pm</math> 1.0 mm; <math>d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}</math></b>				
0.030	6.5 x 18.5 x 18.5	1.3	90212	1250
0.033			90213	
0.036			90214	
0.039			90215	
0.043			90216	
0.047			90217	
0.051			90218	
0.056			90219	
0.062			7.0 x 19.0 x 18.5	
0.068	7.5 x 19.5 x 18.5	1.5	90222	1000
0.075	8.0 x 20.0 x 18.5	1.6	90223	1000
0.082			90224	
0.091	8.5 x 20.5 x 18.5	1.7	90225	900
0.10	9.0 x 21.0 x 18.5	1.8	90226	800
0.11	9.5 x 21.5 x 18.5	1.9	90227	800
<b>Pitch = 22.5 mm <math>\pm</math> 1.0 mm; <math>d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}</math></b>				
0.12	6.5 x 22.5 x 26.0	1.7	90228	900
0.13	7.0 x 23.0 x 26.0	1.8	90229	850
0.15	7.5 x 23.5 x 26.0	1.9	90231	750
0.16			90232	
0.18	8.0 x 24.0 x 26.0	2.0	90233	700
0.20	8.5 x 24.5 x 26.0	2.1	90234	650
0.22	9.0 x 25.0 x 26.0	2.4	90235	600
0.24			90236	
0.27	9.5 x 25.5 x 26.0	2.5	90237	550
0.30	10.0 x 26.0 x 26.0	2.7	90238	500
<b>Pitch = 27.5 mm <math>\pm</math> 1.0 mm; <math>d_t = 0.80 \text{ mm} \pm 0.08 \text{ mm}</math></b>				
0.33	9.5 x 25.5 x 30.0	5.0	90239	450
0.36	10.0 x 25.5 x 30.0	5.0	90241	450
0.39	10.5 x 26.0 x 30.0	5.0	90242	400
0.43	11.0 x 26.0 x 30.0	5.5	90243	400
0.47	11.5 x 27.5 x 30.0	5.5	90244	350
0.51	12.0 x 28.0 x 30.0	6.0	90245	350
0.56	13.0 x 29.0 x 30.0	6.5	90246	300
0.62	13.5 x 29.5 x 30.0	6.5	90247	250
0.68	14.0 x 30.0 x 30.0	7.0	90248	250

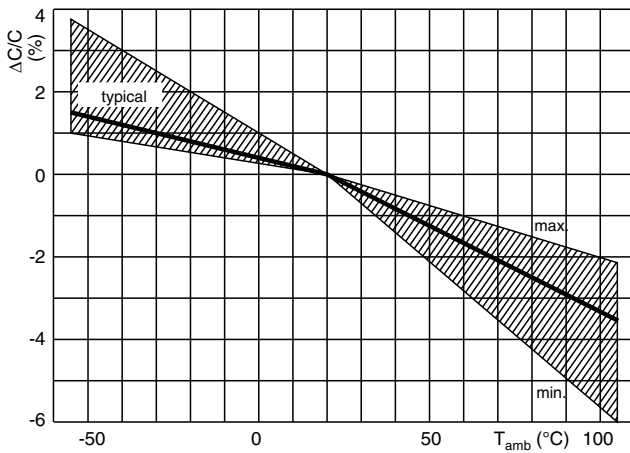


MAXIMUM RMS VOLTAGE (SINEWAVE) AS A FUNCTION OF FREQUENCY

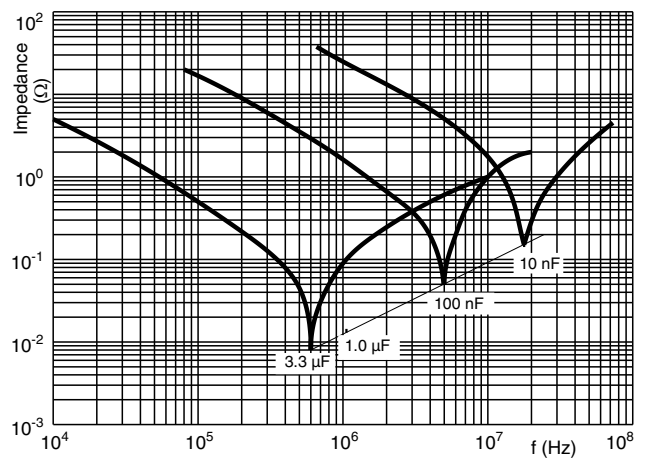




**CAPACITANCE**



**IMPEDANCE**







## **Disclaimer**

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.