

DATA SHEET

KP/MKP 375 AC and Pulse metallized polypropylene film capacitors

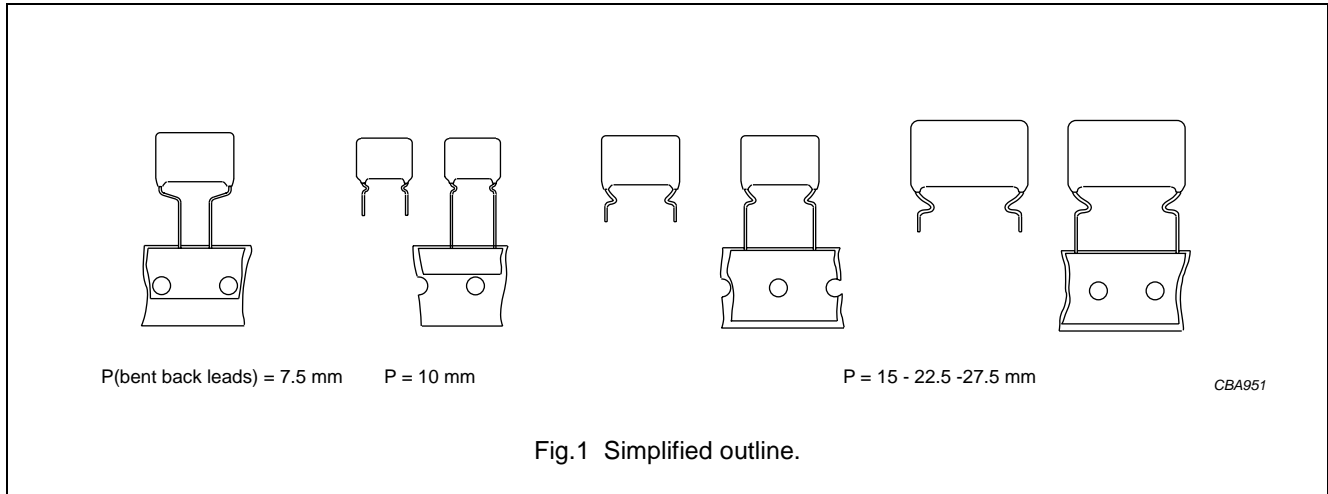
Product specification
Supersedes data of April 1999
File under BCcomponents, BC05

2000 Feb 01

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

KP/MKP RADIAL LACQUERED TYPE

 PITCH 10/15/22.5/27.5 mm
 PITCH 7.5 mm (bent back leads)


FEATURES

- 10 to 27.5 mm lead pitch
- Supplied loose and taped
- Taped products available on request.

APPLICATIONS

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

DETAIL SPECIFICATION

For more detailed data and test requirements see "*Type detail specification HQN-384-17/104*".

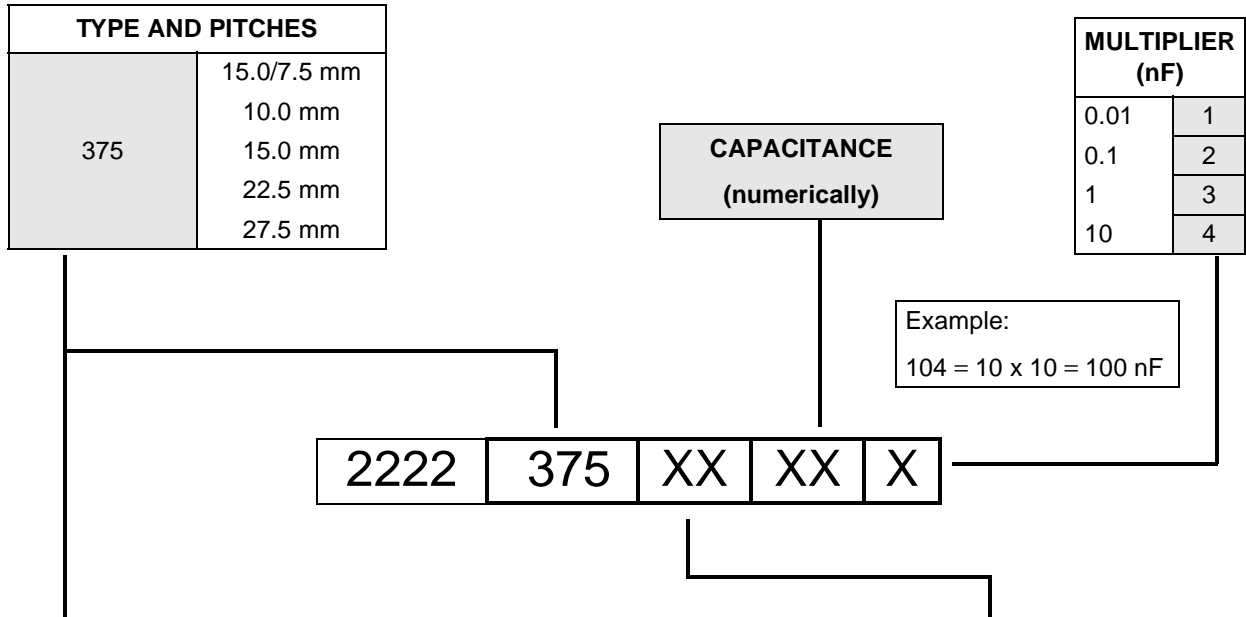
QUICK REFERENCE DATA

DESCRIPTION	VALUE
Capacitance range (E24 series)	100 pF to 270 nF
Capacitance tolerance	±5%; ±3.5%
Rated (DC) voltage	630 V; 1000 V; 1600 V; 2000 V; 2500 V
Rated (AC) voltage	300 V; 400 V; 500 V; 600 V; 880 V
Rated peak-to-peak voltage	850 V; 1100 V; 1400 V; 1700 V; 2500 V
Climatic category	55/105/56
Maximum application temperature	105 °C
Rated temperature	85 °C
Reference specification	IEC 60384-17
Performance grade:	
for C > 5.6 nF and 2500 V	grade 1 (long life)
for C ≤ 5.6 nF	grade 2 (general purpose)
Stability grade	grade 2

AC and Pulse
metallized polypropylene film capacitors

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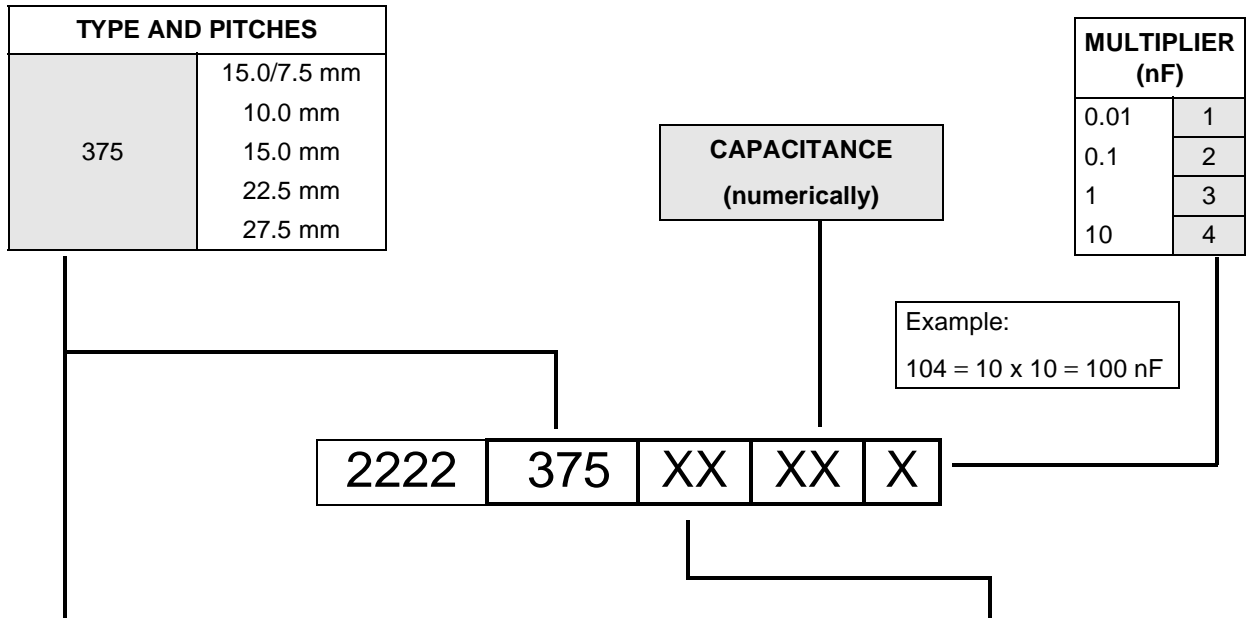
COMPOSITION OF CATALOGUE NUMBER



TYPE	PACKAGING	LEAD CONFIGURATION	C-TOL	630 V	1000 V	1600 V	1600 V monitor type
375	loose in box	lead length 5.0 mm	±5%	14	24	34	64
			±3.5%	15	25	35	65
		lead length 3.5 mm	±5%	10	20	30	60
			±3.5%	11	21	31	61
	taped on reel	H = 16.0 mm; P ₀ = 12.7 mm	±5%	12	22	32	62
			±3.5%	13	23	33	63
		H = 16.0 mm; P ₀ = 15.0 mm	±5%	16	26	36	66
			±3.5%	17	27	37	67

AC and Pulse
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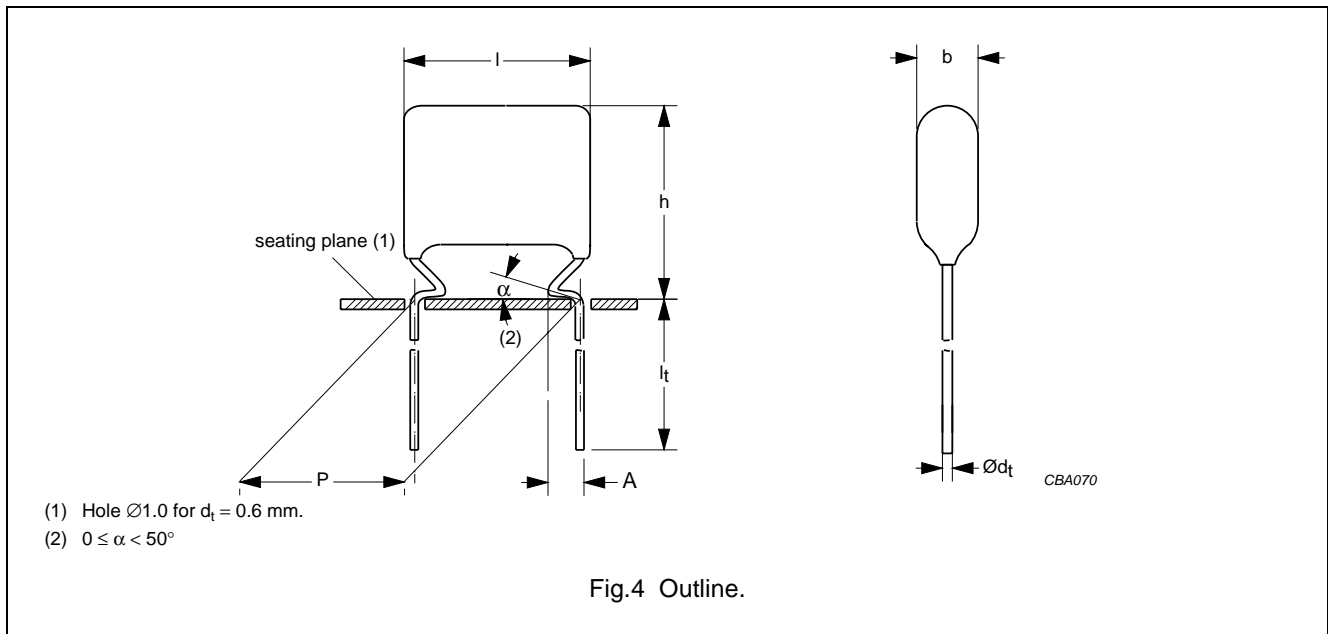
TYPE	PACKAGING	LEAD CONFIGURATION	C-TOL	2000 V	2000 V monitor type	2500 V	2500 V monitor type
375	loose in box	lead length 5.0 mm	±5%	44	74	91	84
			±3.5%	45	75	91	85
		lead length 3.5 mm	±5%	40	70	91	80
			±3.5%	41	71	91	81
	taped on reel	H = 16.0 mm; P ₀ = 12.7 mm	±5%	42	72	–	82
			±3.5%	43	73	–	83
taped on reel (bent back)	H = 16.0 mm; P ₀ = 15.0 mm	±5%	46	–	–	–	
		±3.5%	47	–	–	–	

AC and Pulse
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KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 10 mm



Specific reference data for the 630 V DC capacitors

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle	$\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 630 V (DC)	15000 V/ μ s	
R between leads at 500 V; 1 minute	>100000 M Ω	
R between interconnected leads and case; 500 V; 1 minute	>100000 M Ω	
Ionization (AC) voltage (typical value) at 50 pC peak discharge	>400 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	1008 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 630 V DC versions

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 14...	preferred
		$\pm 3.5\%$	2222 375 15...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 10...	on request
		$\pm 3.5\%$	2222 375 11...	on request
Taped on reel	$H = 16.0$ mm; $P_0 = 12.7$ mm; note 2	$\pm 5\%$	2222 375 12...	on request
		$\pm 3.5\%$	2222 375 13...	on request

Notes

1. For SPQ refer to this handbook, chapter "Packaging information".
2. H = in-tape height; P_0 = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

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$U_{Rdc} = 630 \text{ V}$; $U_{Rac} = 300 \text{ V}$ / $U_{p-p} = 850 \text{ V}$

C (pF)	DIMENSIONS $b_{max} \times h_{max} \times l_{max}$ (mm)	MASS (g)	CATALOGUE NUMBER ⁽¹⁾
			LOOSE IN BOX
			$l_t = 5.0 \pm 1.0 \text{ mm}$
			C-tol = $\pm 5\%$
Pitch = $10.0 \pm 0.4 \text{ mm}$; $d_t = 0.60 \pm 0.06 \text{ mm}$; $A = 2.0 +1.0/-0.5 \text{ mm}$			
680	5.0 × 13.0 × 14.5	0.65	2222 375 14681
750		0.65	2222 375 14751
820	5.5 × 13.5 × 14.5	0.70	2222 375 14821
910		0.70	2222 375 14911
1000		0.70	2222 375 14102
1100		0.75	2222 375 14112
1200		0.75	2222 375 14122
1300		0.75	2222 375 14132
1500		0.80	2222 375 14152
1600		0.85	2222 375 14162
1800	6.0 × 14.0 × 14.5	0.80	2222 375 14182
2000		0.85	2222 375 14202
2200		0.90	2222 375 14222
2400		1.0	2222 375 14242
2700	6.5 × 14.5 × 14.5	1.1	2222 375 14272

Note

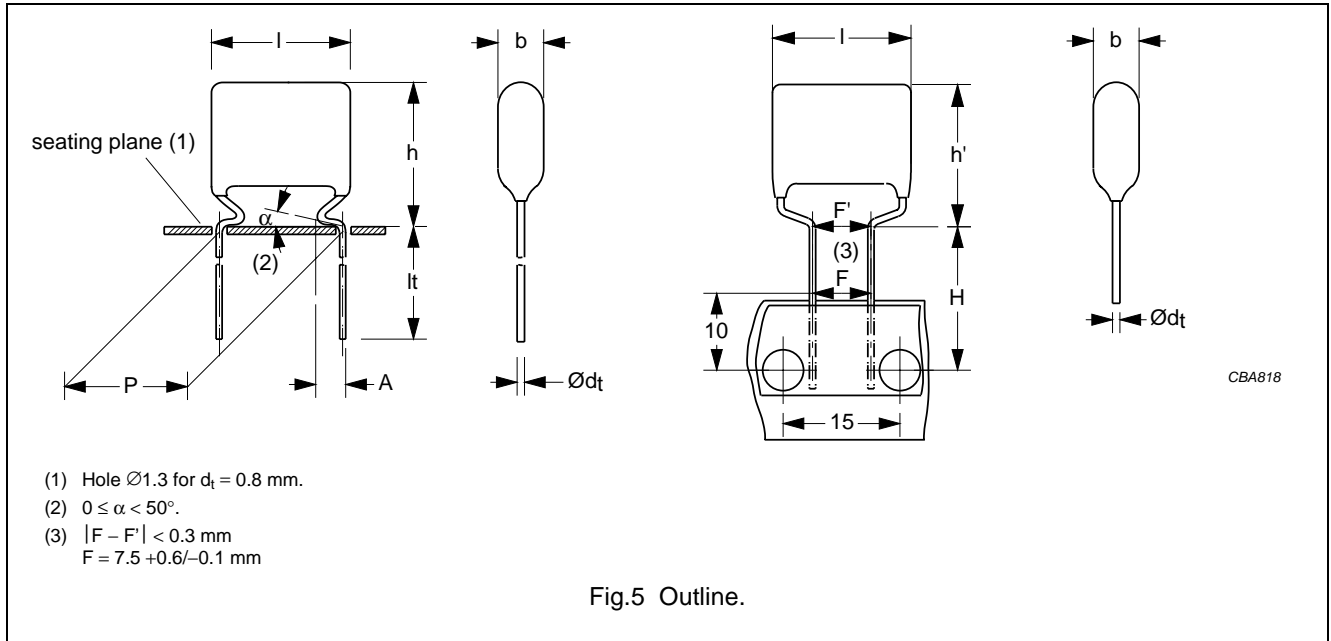
1. The shading indicates preferred types.

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

**PITCH 15 mm
PITCH 7.5 mm (bent back leads)**



Specific reference data for the 630 V DC capacitors

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle	$\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 630 V (DC)	8000 V/ μ s	
R between leads at 500 V; 1 minute	$> 100\,000$ M Ω	
R between interconnected leads and case; 500 V; 1 minute	$> 100\,000$ M Ω	
Ionization (AC) voltage (typical value) at 50 pC peak discharge	> 400 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	1008 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 630 V DC versions

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 14...	preferred
		$\pm 3.5\%$	2222 375 15...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 10...	on request
		$\pm 3.5\%$	2222 375 11...	on request
Taped on reel	$H = 16.0$ mm; $P_0 = 12.7$ mm; note 2	$\pm 5\%$	2222 375 12...	on request
		$\pm 3.5\%$	2222 375 13...	on request
Taped on reel (bent back)	$H = 16.0$ mm; $P_0 = 15.0$ mm; note 2	$\pm 5\%$	2222 375 16...	preferred
		$\pm 3.5\%$	2222 375 17...	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information".
- H = in-tape height; P_0 = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

 $U_{Rdc} = 630 \text{ V}; U_{Rac} = 300 \text{ V}/U_{p-p} = 850 \text{ V}$

C (pF)	DIMENSIONS ⁽¹⁾ $b_{max} \times h (h')_{max} \times l_{max}$ (mm)	MASS (g)	CATALOGUE NUMBER	
			LOOSE IN BOX	REEL DIAMETER = 500 mm; H = 16.0 mm; P ₀ = 15.0 mm ⁽²⁾
			$l_t = 5.0 \pm 1.0 \text{ mm}$	pitch 7.5 mm (bent back)
			C-tol = $\pm 5\%$	C-tol = $\pm 5\%$
			catalogue number ⁽³⁾	last 5 digits ⁽³⁾
Pitch = 15.0 \pm 0.4 mm (Pitch = 7.5 \pm 0.4 mm for bent back leads); $d_t = 0.80 \pm 0.08 \text{ mm}$; A = 2.5 +1.5/-0.5 mm				
3000	5.0 \times 14.0 (15.5) \times 18.5	1.0	2222 375 14302	.. 16302
3300			2222 375 14332	.. 16332
3600	5.5 \times 14.5 (16.0) \times 18.5	1.1	2222 375 14362	.. 16362
3900			2222 375 14392	.. 16392
4300			2222 375 14432	.. 16432
4700			2222 375 14472	.. 16472
5100			2222 375 14512	.. 16512
5600			2222 375 14562	.. 16562
6200	6.0 \times 15.0 (16.5) \times 18.5	1.2	2222 375 14622	.. 16622
6800			2222 375 14682	.. 16682
7500			2222 375 14752	.. 16752
8200			2222 375 14822	.. 16822
9100			2222 375 14912	.. 16912
10000			2222 375 14103	.. 16103
11000			2222 375 14113	.. 16113
12000			2222 375 14123	.. 16123
13000			2222 375 14133	.. 16133
15000			2222 375 14153	.. 16153
16000	2222 375 14163	.. 16163		
18000	6.5 \times 15.5 (17.0) \times 18.5	1.3	2222 375 14183	.. 16183
20000			2222 375 14203	.. 16203
22000	7.0 \times 16.0 (17.5) \times 18.5	1.5	2222 375 14223	.. 16223
24000	7.5 \times 16.5 (18.0) \times 18.5	1.6	2222 375 14243	.. 16243
27000	8.0 \times 17.0 (18.5) \times 18.5	1.9	2222 375 14273	.. 16273
30000			2222 375 14303	.. 16303
33000	8.5 \times 17.5 (19.0) \times 18.5	2.0	2222 375 14333	.. 16333
36000	9.5 \times 18.5 (20.0) \times 18.5	2.3	on request	on request
39000			on request	on request

Notes

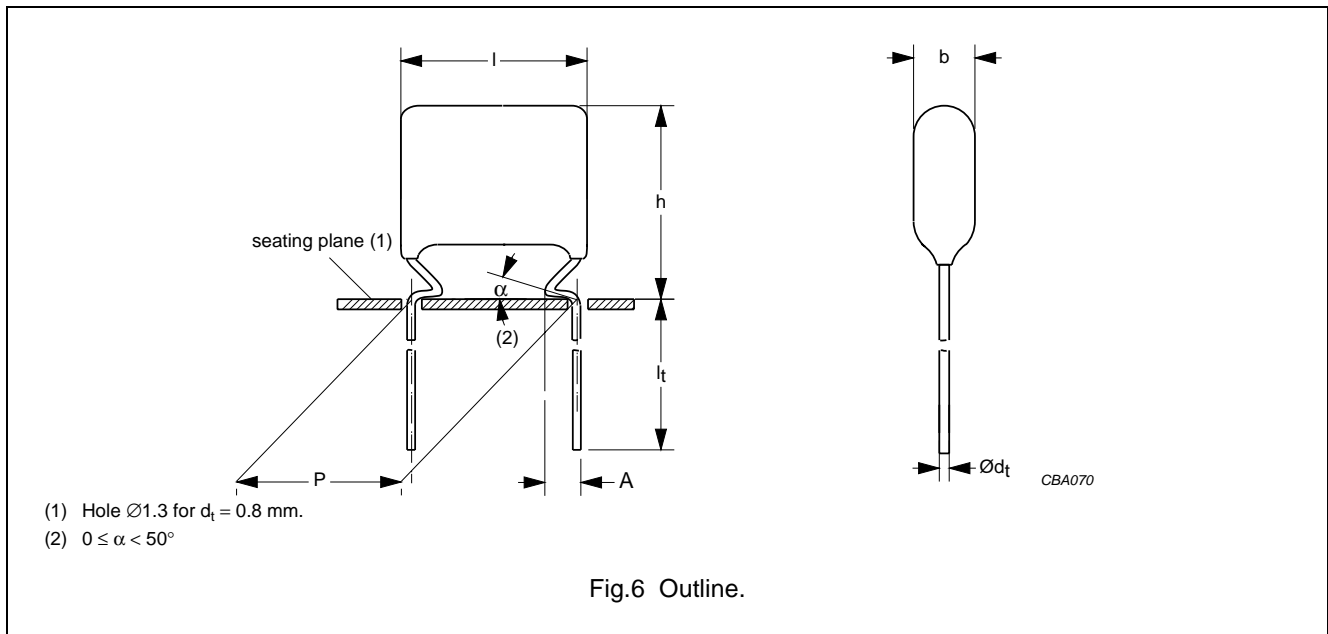
- Dimensions in brackets for bent back leads.
- H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".
 - For pitch = 15.0 mm: H = 16.0 mm and P₀ = 12.7 mm.
 - For pitch = 15/7.5 mm (bent back): H = 16.0 mm and P₀ = 15.0 mm.
Standard reel diameter = 500 mm. Small reel diameter = 356 mm is available on request.
- The shading indicates preferred types.

AC and Pulse
metallized polypropylene film capacitors

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KP/MKP 375 GENERAL DATA

PITCH 22.5/27.5 mm



Specific reference data for the 630 V DC capacitors

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle: P = 22.5 mm P = 27.5 mm	$\leq 8 \times 10^{-4}$ $\leq 8 \times 10^{-4}$	$\leq 15 \times 10^{-4}$ $\leq 20 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 630 V (DC): P = 22.5 mm P = 27.5 mm	2800 V/ μ s 1900 V/ μ s	
R between leads at 500 V; 1 minute	$> 100\,000$ M Ω	
R between interconnected leads and case; 500 V; 1 minute	$> 100\,000$ M Ω	
Ionization (AC) voltage (typical value) at 50 pC peak discharge	> 400 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	1008 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 630 V DC versions

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$h_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 14...	preferred
		$\pm 3.5\%$	2222 375 15...	on request
	$h_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 10...	on request
		$\pm 3.5\%$	2222 375 11...	on request
Taped on reel	H = 16.0 mm; P ₀ = 12.7 mm; note 2	$\pm 5\%$	2222 375 12...	on request
		$\pm 3.5\%$	2222 375 13...	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information"; taped on reel pitch = 27.5 mm is not available.
- H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

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 $U_{Rdc} = 630 \text{ V}; U_{Rac} = 300 \text{ V}/U_{p-p} = 850 \text{ V}$

C (μF)	DIMENSIONS $b_{\max} \times h_{\max} \times l_{\max}$ (mm)	MASS (g)	CATALOGUE NUMBER ⁽¹⁾
			LOOSE IN BOX
			$l_t = 5.0 \pm 1.0 \text{ mm}$
			C-tol = $\pm 5\%$
Pitch = $22.5 \pm 0.4 \text{ mm}$; $d_t = 0.80 \pm 0.08 \text{ mm}$; $A = 2.5 +1.4/-0.5 \text{ mm}$			
0.036	7.0 × 20.0 × 26.0	2.7	2222 375 14363
0.039			2222 375 14393
0.043			2222 375 14433
0.047			2222 375 14473
0.051			2222 375 14513
0.056			2222 375 14563
0.062			2222 375 14623
0.068	7.5 × 20.5 × 26.0	3.0	2222 375 14683
0.075	8.0 × 21.0 × 26.0	3.3	2222 375 14753
0.082			2222 375 14823
0.091	8.5 × 21.5 × 26.0	3.8	2222 375 14913
0.1	9.0 × 22.0 × 26.0	4.0	2222 375 14104
0.11	9.5 × 22.5 × 26.0	4.3	2222 375 14114
0.12	10.0 × 23.0 × 26.0	4.7	2222 375 14124
Pitch = $27.5 \pm 0.5 \text{ mm}$; $d_t = 0.80 \pm 0.08 \text{ mm}$; $A = 2.5 +1.4/-0.5 \text{ mm}$			
0.13	9.5 × 22.5 × 30.0	4.7	2222 375 14134
0.15	10.0 × 23.0 × 30.0	5.2	2222 375 14154
0.16	10.5 × 23.5 × 30.0	5.5	2222 375 14164
0.18	11.0 × 24.0 × 30.0	6.0	2222 375 14184
0.2	11.5 × 24.5 × 30.0	6.6	2222 375 14204
0.22	12.5 × 25.5 × 30.0	7.1	2222 375 14224
0.24	13.0 × 26.0 × 30.0	7.7	2222 375 14244
0.27	13.5 × 26.5 × 30.0	8.5	2222 375 14274

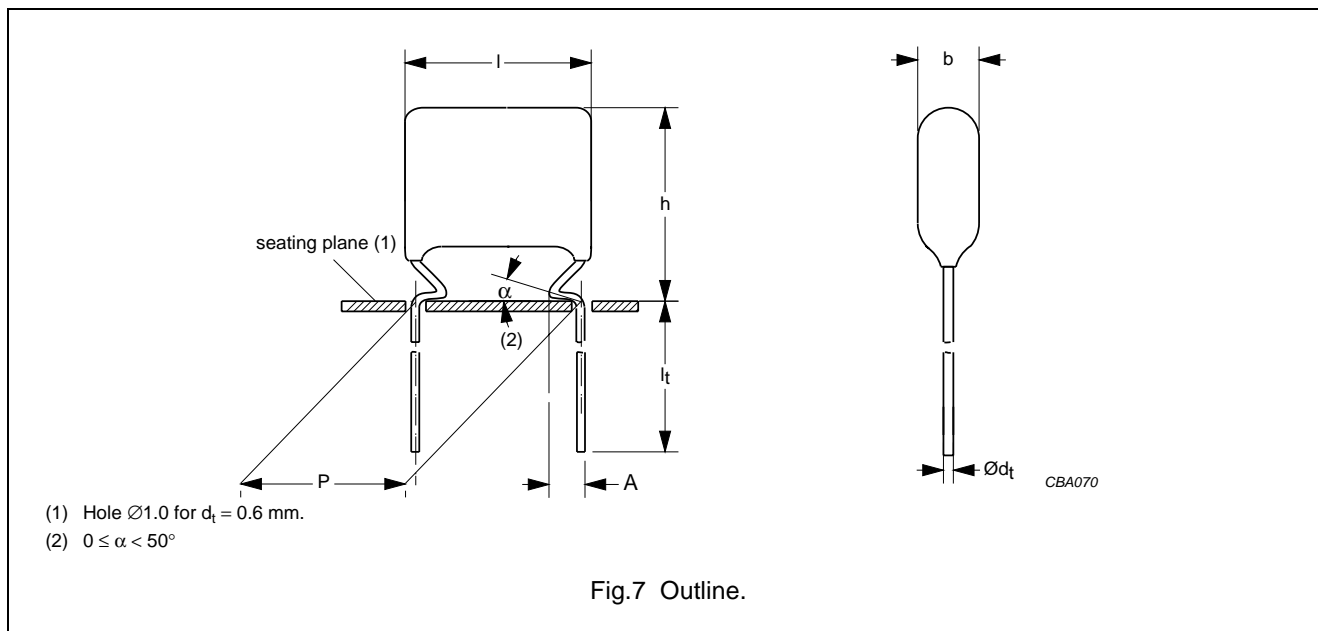
Note

1. The shading indicates preferred types.

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 10 mm


Specific reference data for the 1000 V DC capacitors

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle	$\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 1000 V (DC)	27000 V/ μ s	
R between leads at 500 V; 1 minute	>100000 M Ω	
R between interconnected leads and case; 500 V; 1 minute	>100000 M Ω	
Ionization (AC) voltage (typical value) at 50 pC peak discharge	>500 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	1600 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 1000 V DC versions

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 24...	preferred
		$\pm 3.5\%$	2222 375 25...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 20...	on request
		$\pm 3.5\%$	2222 375 21...	on request
Taped on reel	$H = 16.0$ mm; $P_0 = 12.7$ mm; note 2	$\pm 5\%$	2222 375 22...	on request
		$\pm 3.5\%$	2222 375 23...	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information".
- H = in-tape height; P_0 = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

$U_{Rdc} = 1000\text{ V}$; $U_{Rac} = 400\text{ V}$ / $U_{p-p} = 1100\text{ V}$

C (pF)	DIMENSIONS $b_{max} \times h_{max} \times l_{max}$ (mm)	MASS (g)	CATALOGUE NUMBER ⁽¹⁾
			LOOSE IN BOX
			$l_t = 5.0 \pm 1.0\text{ mm}$
			C-tol = $\pm 5\%$
Pitch = $10.0 \pm 0.4\text{ mm}$; $d_t = 0.60 \pm 0.06\text{ mm}$; $A = 2.0 +1.0/-0.5\text{ mm}$			
100	5.0 × 13.0 × 14.5	0.50	2222 375 24101
110			2222 375 24111
120			2222 375 24121
130			2222 375 24131
150	5.5 × 13.5 × 14.5	0.55	2222 375 24151
160		0.55	2222 375 24161
180		0.55	2222 375 24181
200		0.55	2222 375 24201
220		0.60	2222 375 24221
240		0.60	2222 375 24241
270		0.60	2222 375 24271
300		0.60	2222 375 24301
330		0.60	2222 375 24331
360		0.60	2222 375 24361
390		0.65	2222 375 24391
430		0.70	2222 375 24431
470		0.75	2222 375 24471
510		0.75	2222 375 24511
560		0.80	2222 375 24561
620		0.80	2222 375 24621
680		0.80	2222 375 24681
750	0.70	2222 375 24751	
820	0.70	2222 375 24821	
910	0.70	2222 375 24911	
1000	6.0 × 14.0 × 14.5	0.75	2222 375 24102
1100		0.85	2222 375 24112
1200		0.90	2222 375 24122
1300		0.85	2222 375 24132
1500		0.90	2222 375 24152

Note

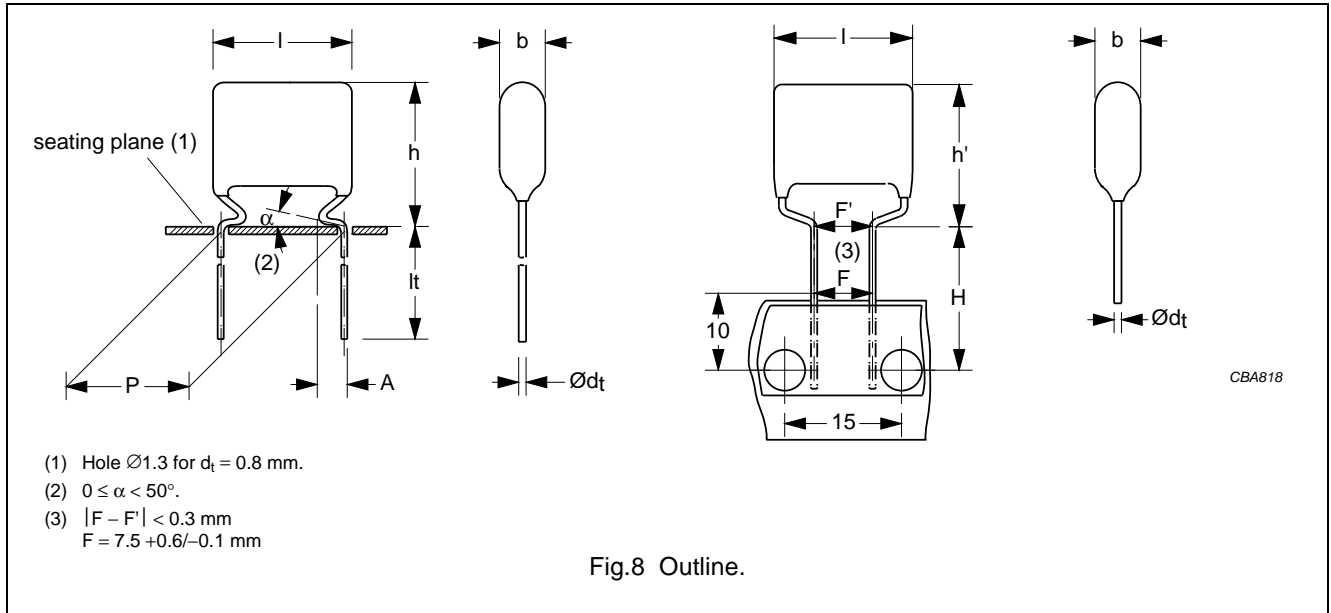
1. The shading indicates preferred types.

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 15 mm
PITCH 7.5 mm (bent back leads)



Specific reference data for the 1000 V DC capacitors

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle	$\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 1000 V (DC)	15000 V/ μ s	
R between leads at 500 V; 1 minute	> 100000 M Ω	
R between interconnected leads and case; 500 V; 1 minute	> 100000 M Ω	
Ionization (AC) voltage (typical value) at 50 pC peak discharge	> 500 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	1600 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 1000 V DC versions

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 24...	preferred
		$\pm 3.5\%$	2222 375 25...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 20...	on request
		$\pm 3.5\%$	2222 375 21...	on request
Taped on reel	$H = 16.0$ mm; $P_0 = 12.7$ mm; note 2	$\pm 5\%$	2222 375 22...	on request
		$\pm 3.5\%$	2222 375 23...	on request
Taped on reel (bent back)	$H = 16.0$ mm; $P_0 = 15.0$ mm; note 2	$\pm 5\%$	2222 375 26...	preferred
		$\pm 3.5\%$	2222 375 27...	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information".
- H = in-tape height; P_0 = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

$U_{Rdc} = 1000\text{ V}$; $U_{Rac} = 400\text{ V}$ / $U_{p-p} = 1100\text{ V}$

C (pF)	DIMENSIONS ⁽¹⁾ $b_{max} \times h (h')_{max} \times l_{max}$ (mm)	MASS (g)	CATALOGUE NUMBER	
			LOOSE IN BOX	REEL DIAMETER = 500 mm; H = 16.0 mm; P ₀ = 15.0 mm ⁽²⁾
			$l_t = 5.0 \pm 1.0\text{ mm}$	pitch 7.5 mm (bent back)
			C-tol = $\pm 5\%$	C-tol = $\pm 5\%$
			catalogue number ⁽³⁾	last 5 digits ⁽³⁾
Pitch = 15.0 \pm 0.4 mm (Pitch = 7.5 \pm 0.4 mm for bent back leads); $d_t = 0.80 \pm 0.08\text{ mm}$; A = 2.5 +1.5/-0.5 mm				
1600	5.5 \times 14.5 (16.0) \times 18.5	1.1	2222 375 24162	.. 26162
1800			2222 375 24182	.. 26182
2000			2222 375 24202	.. 26202
2200			2222 375 24222	.. 26222
2400			2222 375 24242	.. 26242
2700	6.0 \times 15.0 (16.5) \times 18.5	1.2	2222 375 24272	.. 26272
3000			2222 375 24302	.. 26302
3300			2222 375 24332	.. 26332
3600			2222 375 24362	.. 26362
3900			2222 375 24392	.. 26392
4300			2222 375 24432	.. 26432
4700			2222 375 24472	.. 26472
5100			2222 375 24512	.. 26512
5600			2222 375 24562	.. 26562
6200			2222 375 24622	.. 26622
6800	2222 375 24682	.. 26682		
7500	7.0 \times 16.0 (17.5) \times 18.5	1.4	2222 375 24752	.. 26752
8200			2222 375 24822	.. 26822
9100			2222 375 24912	.. 26912
10000	7.5 \times 16.5 (18.0) \times 18.5	1.6	2222 375 24103	.. 26103
11000	8.0 \times 17.0 (18.5) \times 18.5	1.8	2222 375 24113	.. 26113
12000			2222 375 24123	.. 26123
13000	8.5 \times 17.5 (19.0) \times 18.5	1.9	2222 375 24133	.. 26133
15000	9.0 \times 18.0 (19.5) \times 18.5	2.1	2222 375 24153	.. 26153

Notes

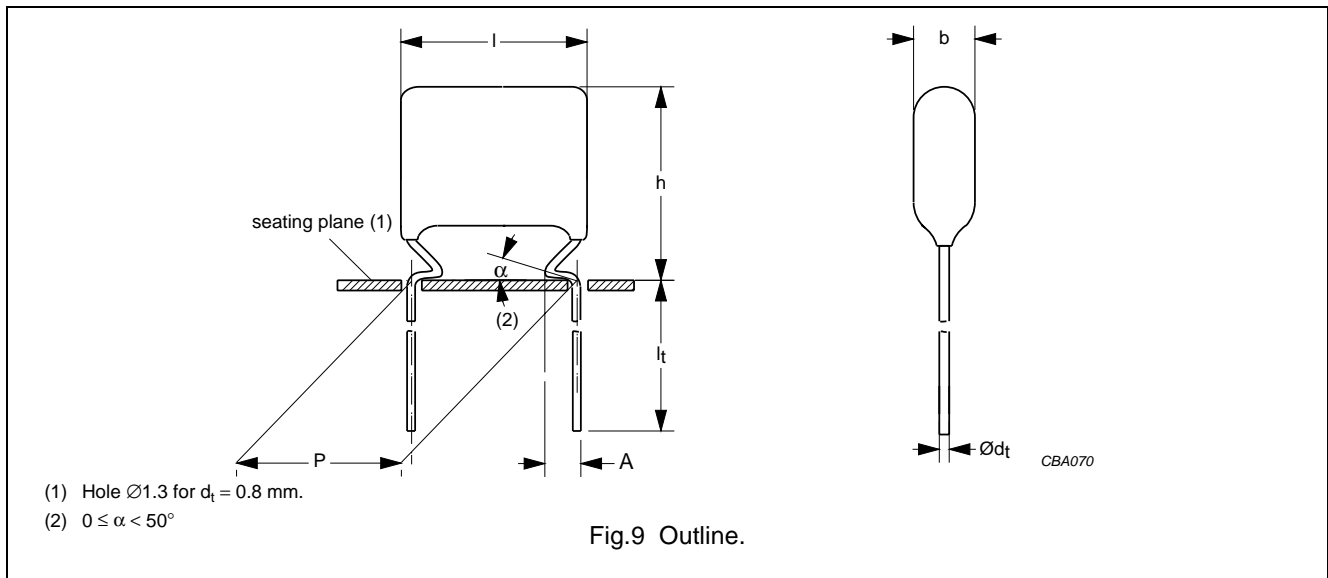
- Dimensions in brackets for bent back leads.
- H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".
 - For pitch = 15.0 mm: H = 16.0 mm and P₀ = 12.7 mm.
 - For pitch = 15/7.5 mm (bent back): H = 16.0 mm and P₀ = 15.0 mm.
Standard reel diameter = 500 mm. Small reel diameter = 356 mm is available on request.
- The shading indicates preferred types.

AC and Pulse
metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 22.5/27.5 mm



Specific reference data for the 1000 V DC capacitors

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle: P = 22.5 mm P = 27.5 mm	$\leq 6 \times 10^{-4}$ $\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$ $\leq 15 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 1000 V (DC): P = 22.5 mm P = 27.5 mm	5000 V/ μ s 3300 V/ μ s	
R between leads at 500 V; 1 minute	$> 100000 \text{ M}\Omega$	
R between interconnected leads and case; 500 V; 1 minute	$> 100000 \text{ M}\Omega$	
Ionization (AC) voltage (typical value) at 50 pC peak discharge	$> 500 \text{ V}$	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s for $C \leq 47 \text{ nF}$ for $C > 47 \text{ nF}$	1600 V; 1 minute $[1,6 - (0,0364 \cdot \sqrt{C - 47})] \times 1000 \text{ V}$; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 1000 V DC versions

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0 \text{ mm}$	$\pm 5\%$	2222 375 24...	preferred
		$\pm 3.5\%$	2222 375 25...	on request
	$l_t = 3.5 \pm 0.5 \text{ mm}$	$\pm 5\%$	2222 375 20...	on request
		$\pm 3.5\%$	2222 375 21...	on request
Taped on reel	$H = 16.0 \text{ mm}$; $P_0 = 12.7 \text{ mm}$; note 2	$\pm 5\%$	2222 375 22...	on request
		$\pm 3.5\%$	2222 375 23...	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information"; taped on reel pitch = 27.5 mm is not available.
- H = in-tape height; P_0 = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

$U_{Rdc} = 1000\text{ V}$; $U_{Rac} = 400\text{ V}$ / $U_{p-p} = 1100\text{ V}$

C (μF)	DIMENSIONS $b_{\max} \times h_{\max} \times l_{\max}$ (mm)	MASS (g)	CATALOGUE NUMBER ⁽¹⁾
			LOOSE IN BOX
			$l_t = 5.0 \pm 1.0\text{ mm}$
			C-tol = $\pm 5\%$
Pitch = $22.5 \pm 0.4\text{ mm}$; $d_t = 0.80 \pm 0.08\text{ mm}$; $A = 2.5 +1.4/-0.5\text{ mm}$			
0.016	6.0 × 19.0 × 26.0	2.2	2222 375 24163
0.018			2222 375 24183
0.02	6.5 × 19.5 × 26.0	2.5	2222 375 24203
0.022			2222 375 24223
0.024	7.0 × 20.0 × 26.0	2.7	2222 375 24243
0.027	7.5 × 20.5 × 26.0	3.1	2222 375 24273
0.03			2222 375 24303
0.033	8.0 × 21.0 × 26.0	3.4	2222 375 24333
0.036	8.5 × 21.5 × 26.0	3.7	2222 375 24363
0.039			2222 375 24393
0.043	9.0 × 22.0 × 26.0	4.1	2222 375 24433
Pitch = $27.5 \pm 0.5\text{ mm}$; $d_t = 0.80 \pm 0.08\text{ mm}$; $A = 2.5 +1.4/-0.5\text{ mm}$			
0.047	7.0 × 20.0 × 30.0	3.1	2222 375 24473
0.051	7.5 × 20.5 × 30.0	3.4	2222 375 24513
0.056			2222 375 24563
0.062	8.0 × 21.0 × 30.0	3.8	2222 375 24623
0.068	8.5 × 21.5 × 30.0	4.0	2222 375 24683
0.075	9.0 × 22.0 × 30.0	4.4	2222 375 24753
0.082	9.5 × 22.5 × 30.0	4.7	2222 375 24823
0.091	10.0 × 23.0 × 30.0	5.1	2222 375 24913
0.1	10.5 × 23.5 × 30.0	5.5	2222 375 24104
0.11	11.0 × 24.0 × 30.0	5.9	2222 375 24114
0.12	11.5 × 24.5 × 30.0	6.3	2222 375 24124
0.13	12.0 × 25.0 × 30.0	6.8	2222 375 24134
0.15	12.5 × 25.5 × 30.0	7.6	2222 375 24154

Note

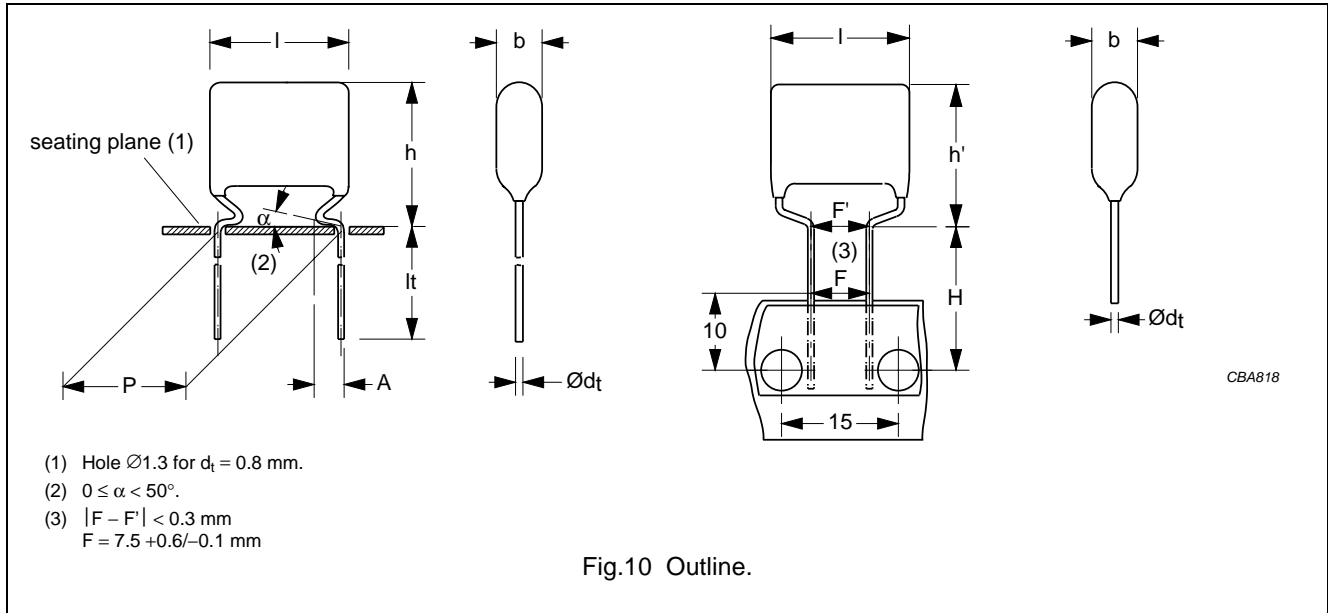
1. The shading indicates preferred types.

AC and Pulse
metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 15 mm
PITCH 7.5 mm (bent back leads)



Specific reference data for the 1600 V DC capacitors

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle	$\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 1600 V (DC)	21 000 V/ μ s	
R between leads at 500 V; 1 minute	>100 000 M Ω	
R between interconnected leads and case; 500 V; 1 minute	>100 000 M Ω	
Ionization (AC) voltage (typical value) at 20 pC peak discharge	>550 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	2560 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 1600 V DC versions

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 34...	preferred
		$\pm 3.5\%$	2222 375 35...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 30...	on request
		$\pm 3.5\%$	2222 375 31...	on request
Taped on reel	$H = 16.0$ mm; $P_0 = 12.7$ mm; note 2	$\pm 5\%$	2222 375 32...	on request
		$\pm 3.5\%$	2222 375 33...	on request
Taped on reel (bent back)	$H = 16.0$ mm; $P_0 = 15.0$ mm; note 2	$\pm 5\%$	2222 375 36...	preferred
		$\pm 3.5\%$	2222 375 37...	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information".
- H = in-tape height; P_0 = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

 $U_{Rdc} = 1600 \text{ V}; U_{Rac} = 500 \text{ V}/U_{p-p} = 1400 \text{ V}$

C (pF)	DIMENSIONS ⁽¹⁾ $b_{max} \times h (h')_{max} \times l_{max}$ (mm)	MASS (g)	CATALOGUE NUMBER	
			LOOSE IN BOX	REEL DIAMETER = 500 mm; H = 16.0 mm; P ₀ = 15.0 mm ⁽²⁾
			$l_t = 5.0 \pm 1.0 \text{ mm}$	pitch 7.5 mm (bent back)
			C-tol = $\pm 5\%$	C-tol = $\pm 5\%$
			catalogue number ⁽³⁾	last 5 digits ⁽³⁾
Pitch = 15.0 \pm 0.4 mm (Pitch = 7.5 \pm 0.4 mm for bent back leads); $d_t = 0.80 \pm 0.08 \text{ mm}$; A = 2.5 +1.5/-0.5 mm				
680	5.5 \times 14.5 (15.0) \times 18.5	0.75	2222 375 34681	.. 36681
750			2222 375 34751	.. 36751
820			2222 375 34821	.. 36821
910	6.0 \times 15.0 (15.5) \times 18.5	0.80	2222 375 34911	.. 36911
1000		0.85	2222 375 34102	.. 36102
1100		0.85	2222 375 34112	.. 36112
1200		0.90	2222 375 34122	.. 36122
1300		0.95	2222 375 34132	.. 36132
1500	5.5 \times 14.5 (16.0) \times 18.5	1.1	2222 375 34152	.. 36152
1600			2222 375 34162	.. 36162
1800	6.0 \times 15.0 (16.5) \times 18.5	1.2	2222 375 34182	.. 36182
2000	6.5 \times 15.5 (17.0) \times 18.5	1.3	2222 375 34202	.. 36202
2200			2222 375 34222	.. 36222
2400	7.0 \times 16.0 (17.5) \times 18.5	1.4	2222 375 34242	.. 36242
2700	7.5 \times 16.5 (18.0) \times 18.5	1.6	2222 375 34272	.. 36272
3000			2222 375 34302	.. 36302
3300	8.0 \times 17.0 (18.5) \times 18.5	1.7	2222 375 34332	.. 36332
3600	8.5 \times 17.5 (19.0) \times 18.5	1.8	2222 375 34362	.. 36362
3900	9.0 \times 18.0 (19.5) \times 18.5	2.0	2222 375 34392	.. 36392
4300			2222 375 34432	.. 36432

Notes

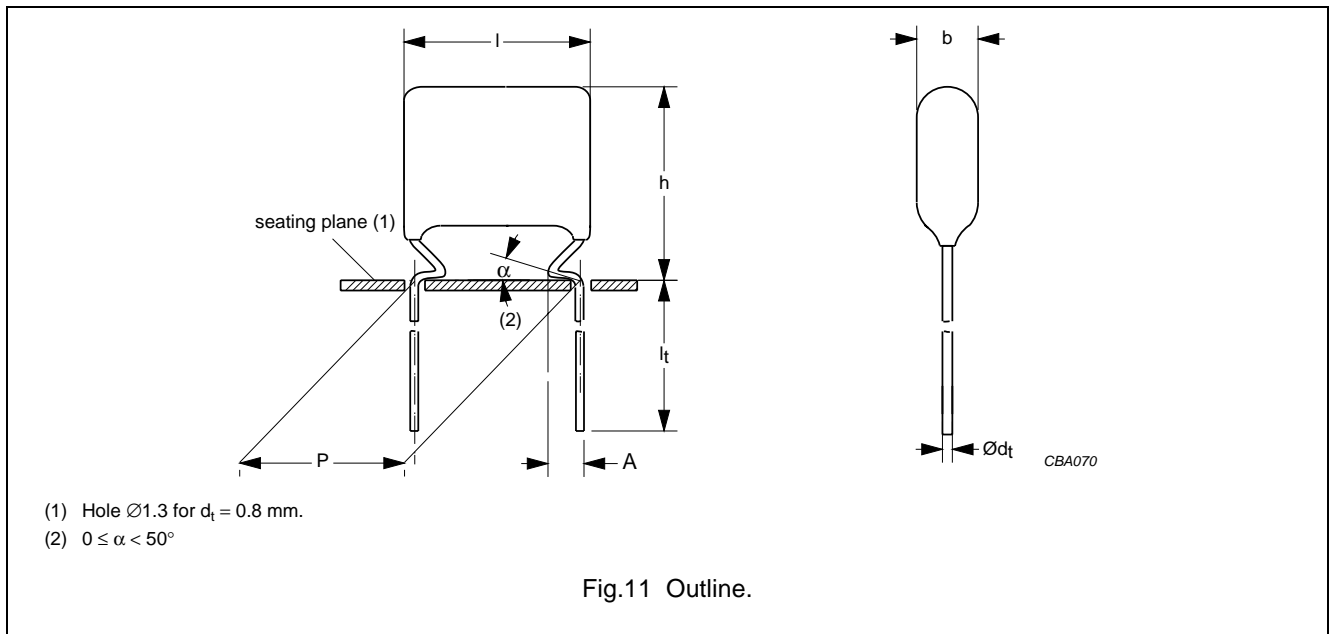
- Dimensions in brackets for bent back leads.
- H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".
 - For pitch = 15.0 mm: H = 16.0 mm and P₀ = 12.7 mm.
 - For pitch = 15/7.5 mm (bent back): H = 16.0 mm and P₀ = 15.0 mm.
Standard reel diameter = 500 mm. Small reel diameter = 356 mm is available on request.
- The shading indicates preferred types.

AC and Pulse
metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 22.5/27.5 mm



Specific reference data for the 1600 V DC capacitors

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle: P = 22.5 mm P = 27.5 mm	$\leq 6 \times 10^{-4}$ $\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$ $\leq 15 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 1600 V (DC): P = 22.5 mm P = 27.5 mm	7000 V/ μ s 4700 V/ μ s	
R between leads at 500 V; 1 minute	$>100\,000$ M Ω	
R between interconnected leads and case; 500 V; 1 minute	$>100\,000$ M Ω	
Ionization (AC) voltage (typical value) at 20 pC peak discharge	>550 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	2560 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 1600 V DC versions

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 34...	preferred
		$\pm 3.5\%$	2222 375 35...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 30...	on request
		$\pm 3.5\%$	2222 375 31...	on request
Taped on reel	H = 16.0 mm; $P_0 = 12.7$ mm; note 2	$\pm 5\%$	2222 375 32...	on request
		$\pm 3.5\%$	2222 375 33...	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information"; taped on reel pitch = 27.5 mm is not available.
- H = in-tape height; P_0 = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

$U_{Rdc} = 1600\text{ V}$; $U_{Rac} = 500\text{ V}$ / $U_{p-p} = 1400\text{ V}$

C (μF)	DIMENSIONS $b_{\text{max}} \times h_{\text{max}} \times l_{\text{max}}$ (mm)	MASS (g)	CATALOGUE NUMBER ⁽¹⁾
			LOOSE IN BOX
			$l_t = 5.0 \pm 1.0\text{ mm}$
			C-tol = $\pm 5\%$
Pitch = $22.5 \pm 0.4\text{ mm}$; $d_t = 0.80 \pm 0.08\text{ mm}$; $A = 2.5 +1.4/-0.5\text{ mm}$			
0.0047	6.0 × 19.0 × 26.0	2.0	2222 375 34472
0.0051			2222 375 34512
0.0056			2222 375 34562
0.0062	6.5 × 19.5 × 26.0	2.1	2222 375 34622
0.0068			2222 375 34682
0.0075	7.0 × 20.0 × 26.0	2.3	2222 375 34752
0.0082			2222 375 34822
0.0091	7.5 × 20.5 × 26.0	2.5	2222 375 34912
0.01	8.0 × 21.0 × 26.0	2.6	2222 375 34103
0.011	8.5 × 21.5 × 26.0	2.9	2222 375 34113
0.012			2222 375 34123
0.013	9.0 × 22.0 × 26.0	3.1	2222 375 34133
0.015	9.5 × 22.5 × 26.0	3.5	2222 375 34153
0.016	10.0 × 23.0 × 26.0	3.6	2222 375 34163
0.018	10.5 × 23.5 × 26.0	4.0	2222 375 34183
Pitch = $27.5 \pm 0.5\text{ mm}$; $d_t = 0.80 \pm 0.08\text{ mm}$; $A = 2.5 +1.4/-0.5\text{ mm}$			
0.02	9.0 × 22.0 × 30.0	4.2	2222 375 34203
0.022	9.5 × 22.5 × 30.0	4.4	2222 375 34223
0.024	10.0 × 23.0 × 30.0	4.7	2222 375 34243
0.027	10.5 × 23.5 × 30.0	5.2	2222 375 34273
0.03	11.0 × 24.0 × 30.0	5.6	2222 375 34303
0.033	11.5 × 24.5 × 30.0	6.0	2222 375 34333
0.036	12.0 × 25.0 × 30.0	6.5	2222 375 34363
0.039	12.5 × 25.5 × 30.0	6.9	2222 375 34393

Note

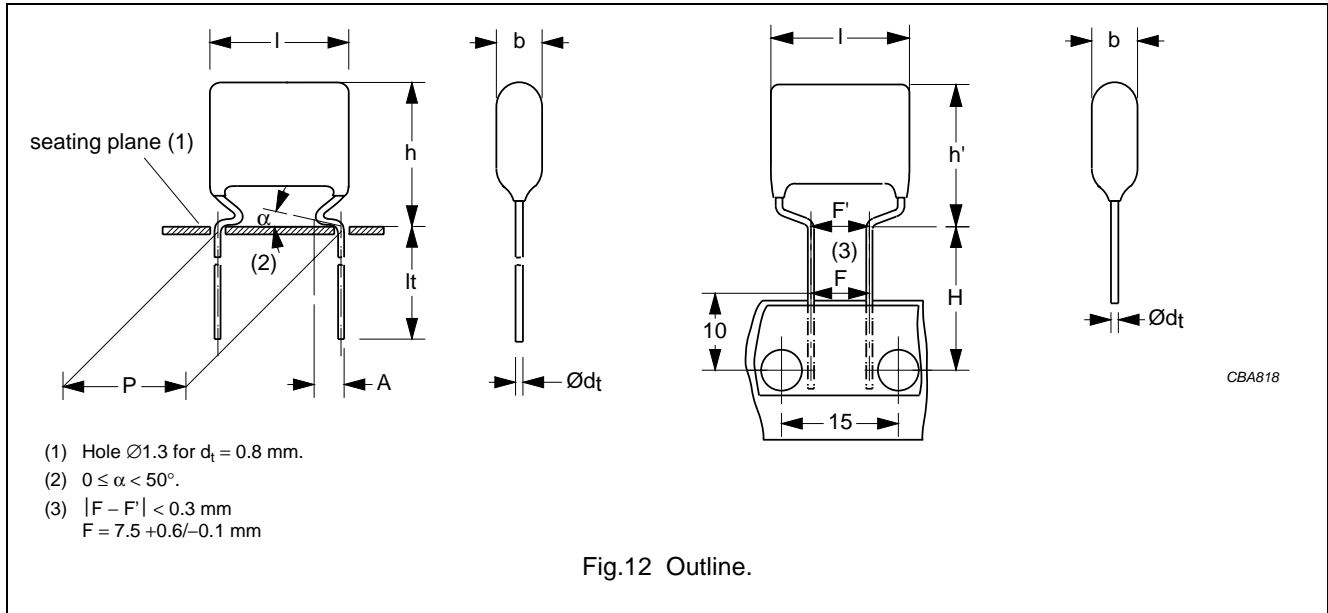
1. The shading indicates preferred types.

AC and Pulse
metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 15 mm
PITCH 7.5 mm (bent back leads)



Specific reference data for the 1600 V DC capacitors (monitor type)

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle	$\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 1600 V (DC)	21 000 V/ μ s	
R between leads at 500 V; 1 minute	$> 100\,000$ M Ω	
R between interconnected leads and case; 500 V; 1 minute	$> 100\,000$ M Ω	
Ionization (AC) voltage (typical value) at 20 pC peak discharge	> 550 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	2560 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 1600 V DC versions (monitor type)

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 64...	preferred
		$\pm 3.5\%$	2222 375 65...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 60...	on request
		$\pm 3.5\%$	2222 375 61...	on request
Taped on reel	$H = 16.0$ mm; $P_0 = 12.7$ mm; note 2	$\pm 5\%$	2222 375 62...	on request
		$\pm 3.5\%$	2222 375 63...	on request
Taped on reel (bent back)	$H = 16.0$ mm; $P_0 = 15.0$ mm; note 2	$\pm 5\%$	2222 375 66...	preferred
		$\pm 3.5\%$	2222 375 67...	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information".
- H = in-tape height; P_0 = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

$U_{Rdc} = 1600\text{ V}$; $U_{Rac} = 500\text{ V}$ / $U_{p-p} = 1400\text{ V}$ (monitor type)

C (pF)	DIMENSIONS ⁽¹⁾ $b_{max} \times h (h')_{max} \times l_{max}$ (mm)	MASS (g)	CATALOGUE NUMBER	
			LOOSE IN BOX	REEL DIAMETER = 500 mm; H = 16.0 mm; P ₀ = 15.0 mm ⁽²⁾
			$l_t = 5.0 \pm 1.0\text{ mm}$	pitch 7.5 mm (bent back)
			C-tol = $\pm 5\%$	C-tol = $\pm 5\%$
			catalogue number ⁽³⁾	last 5 digits ⁽³⁾
Pitch = 15.0 \pm 0.4 mm (Pitch = 7.5 \pm 0.4 mm for bent back leads); $d_t = 0.80 \pm 0.08\text{ mm}$; A = 2.5 +1.5/-0.5 mm				
1000	7.5 \times 16.5 (18.0) \times 18.5	1.6	2222 375 64102	.. 66102
1100	8.0 \times 17.0 (18.5) \times 18.5	1.7	2222 375 64112	.. 66112
1200			2222 375 64122	.. 66122
1300	8.5 \times 17.5 (19.0) \times 18.5	1.8	2222 375 64132	.. 66132
1500	9.0 \times 18.0 (19.5) \times 18.5	2.0	2222 375 64152	.. 66152
1600	9.5 \times 18.5 (20.0) \times 18.5	2.3	2222 375 64162	.. 66162

Notes

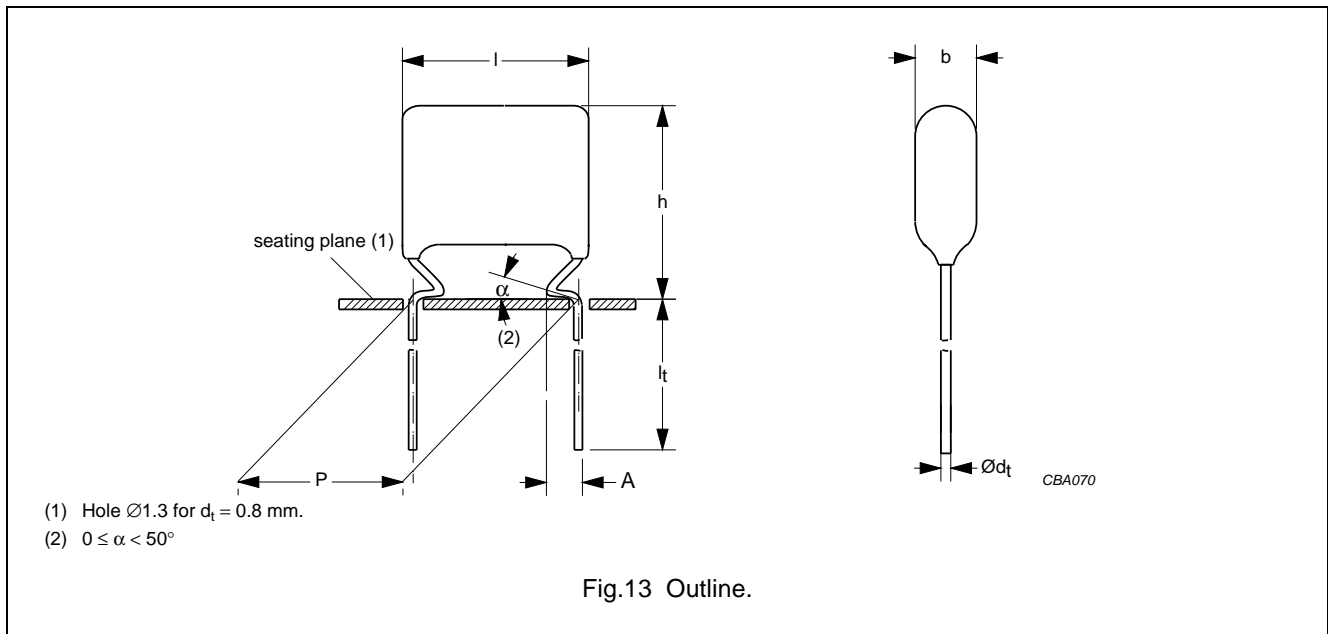
- Dimensions in brackets for bent back leads.
- H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".
 - For pitch = 15.0 mm: H = 16.0 mm and P₀ = 12.7 mm.
 - For pitch = 15/7.5 mm (bent back): H = 16.0 mm and P₀ = 15.0 mm.
Standard reel diameter = 500 mm. Small reel diameter = 356 mm is available on request.
- The shading indicates preferred types.

AC and Pulse
metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 22.5/27.5 mm



Specific reference data for the 1600 V DC capacitors (monitor type)

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle: P = 22.5 mm P = 27.5 mm	$\leq 6 \times 10^{-4}$ $\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$ $\leq 15 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 1600 V (DC): P = 22.5 mm P = 27.5 mm	7000 V/ μ s 4700 V/ μ s	
R between leads at 500 V; 1 minute	$> 100\,000 \text{ M}\Omega$	
R between interconnected leads and case; 500 V; 1 minute	$> 100\,000 \text{ M}\Omega$	
Ionization (AC) voltage (typical value) at 20 pC peak discharge	$> 550 \text{ V}$	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	2560 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 1600 V DC versions (monitor type)

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0 \text{ mm}$	$\pm 5\%$	2222 375 64...	preferred
		$\pm 3.5\%$	2222 375 65...	on request
	$l_t = 3.5 \pm 0.5 \text{ mm}$	$\pm 5\%$	2222 375 60...	on request
		$\pm 3.5\%$	2222 375 61...	on request
Taped on reel	$H = 16.0 \text{ mm}; P_0 = 12.7 \text{ mm}; \text{note 2}$	$\pm 5\%$	2222 375 62...	on request
		$\pm 3.5\%$	2222 375 63...	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information"; taped on reel pitch = 27.5 mm is not available.
- H = in-tape height; P_0 = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

$U_{Rdc} = 1600 \text{ V}$; $U_{Rac} = 500 \text{ V}$ / $U_{p-p} = 1400 \text{ V}$ (monitor type)

C (μF)	DIMENSIONS $b_{\max} \times h_{\max} \times l_{\max}$ (mm)	MASS (g)	CATALOGUE NUMBER ⁽¹⁾
			LOOSE IN BOX
			$l_t = 5.0 \pm 1.0 \text{ mm}$
			C-tol = $\pm 5\%$
Pitch = $22.5 \pm 0.4 \text{ mm}$; $d_t = 0.80 \pm 0.08 \text{ mm}$; $A = 2.5 +1.4/-0.5 \text{ mm}$			
0.0018	6.0 × 19.0 × 26.0	2.0	2222 375 64182
0.002			2222 375 64202
0.0022	6.5 × 19.5 × 26.0	2.1	2222 375 64222
0.0024	7.0 × 20.0 × 26.0	2.3	2222 375 64242
0.0027			2222 375 64272
0.003	7.5 × 20.5 × 26.0	2.5	2222 375 64302
0.0033	8.0 × 21.0 × 26.0	2.6	2222 375 64332
0.0036			2222 375 64362
0.0039			2222 375 64392
0.0043	8.5 × 21.5 × 26.0	2.9	2222 375 64432
0.0047			2222 375 64472
0.0051			2222 375 64512
0.0056			2222 375 64562
0.0062	9.0 × 22.0 × 26.0	3.1	2222 375 64622
0.0068	9.5 × 22.5 × 26.0	3.5	2222 375 64682
0.0075	10.0 × 23.0 × 26.0	3.6	2222 375 64752
0.0082	10.5 × 23.5 × 26.0	4.0	2222 375 64822
Pitch = $27.5 \pm 0.5 \text{ mm}$; $d_t = 0.80 \pm 0.08 \text{ mm}$; $A = 2.5 +1.4/-0.5 \text{ mm}$			
0.0091	10.0 × 23.0 × 30.0	4.7	2222 375 64912
0.01	10.5 × 23.5 × 30.0	5.2	2222 375 64103
0.011	11.0 × 24.0 × 30.0	5.6	2222 375 64113
0.012	11.5 × 24.5 × 30.0	6.0	2222 375 64123
0.013	12.0 × 25.0 × 30.0	6.5	2222 375 64133
0.015	13.0 × 26.0 × 30.0	6.9	2222 375 64153
0.016	13.5 × 26.5 × 30.0	7.3	2222 375 64163
0.018	14.5 × 27.5 × 30.0	7.8	2222 375 64183
0.02	15.0 × 29.0 × 30.0	8.2	2222 375 64203
0.022			2222 375 64223
0.024			2222 375 64243
0.027			2222 375 64273
0.03			2222 375 64303
0.033			2222 375 64333
0.036			2222 375 64363
0.039			2222 375 64393

Note

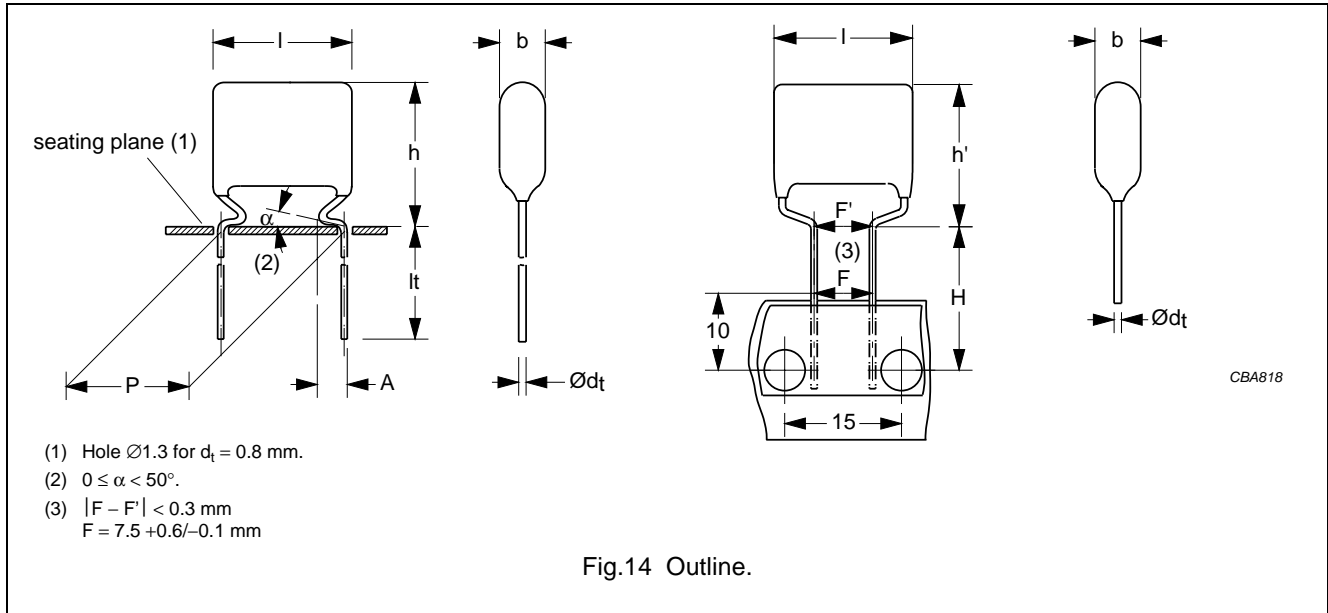
1. The shading indicates preferred types.

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 15 mm
PITCH 7.5 mm (bent back leads)



Specific reference data for the 2000 V DC capacitors

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle	$\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 2000 V (DC)	30000 V/ μ s	
R between leads at 500 V; 1 minute	> 100000 M Ω	
R between interconnected leads and case; 500 V; 1 minute	> 100000 M Ω	
Ionization (AC) voltage (typical value) at 20 pC peak discharge	> 600 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	3200 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 2000 V DC versions

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 44...	preferred
		$\pm 3.5\%$	2222 375 45...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 40...	on request
		$\pm 3.5\%$	2222 375 41...	on request
Taped on reel	$H = 16.0$ mm; $P_0 = 12.7$ mm; note 2	$\pm 5\%$	2222 375 42...	on request
		$\pm 3.5\%$	2222 375 43...	on request
Taped on reel (bent back)	$H = 16.0$ mm; $P_0 = 15.0$ mm; note 2	$\pm 5\%$	2222 375 46...	preferred
		$\pm 3.5\%$	2222 375 47...	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information".
- H = in-tape height; P_0 = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

 $U_{Rdc} = 2000 \text{ V}; U_{Rac} = 600 \text{ V}/U_{p-p} = 1700 \text{ V}$

C (pF)	DIMENSIONS ⁽¹⁾ $b_{max} \times h (h')_{max} \times l_{max}$ (mm)	MASS (g)	CATALOGUE NUMBER	
			LOOSE IN BOX	REEL DIAMETER = 500 mm; H = 16.0 mm; P ₀ = 15.0 mm ⁽²⁾
			$l_t = 5.0 \pm 1.0 \text{ mm}$	pitch 7.5 mm (bent back)
			C-tol = $\pm 5\%$	C-tol = $\pm 5\%$
			catalogue number ⁽³⁾	last 5 digits ⁽³⁾
Pitch = 15.0 \pm 0.4 mm (Pitch = 7.5 \pm 0.4 mm for bent back leads); $d_t = 0.80 \pm 0.08 \text{ mm}$; A = 2.5 +1.4/-0.5 mm				
100	5.5 \times 14.5 (15.0) \times 18.5	0.75	2222 375 44101	.. 46101
110		0.75	2222 375 44111	.. 46111
120		0.75	2222 375 44121	.. 46121
130		0.75	2222 375 44131	.. 46131
150		0.75	2222 375 44151	.. 46151
160		0.75	2222 375 44161	.. 46161
180		0.75	2222 375 44181	.. 46181
200		0.75	2222 375 44201	.. 46201
220		0.75	2222 375 44221	.. 46221
240		0.75	2222 375 44241	.. 46241
270		0.75	2222 375 44271	.. 46271
300		0.75	2222 375 44301	.. 46301
330		0.75	2222 375 44331	.. 46331
360		0.75	2222 375 44361	.. 46361
390		0.75	2222 375 44391	.. 46391
430		0.75	2222 375 44431	.. 46431
470		0.80	2222 375 44471	.. 46471
510	0.80	2222 375 44511	.. 46511	
560	0.80	2222 375 44561	.. 46561	
620	6.0 \times 15.0 (15.5) \times 18.5	0.85	2222 375 44621	.. 46621
680		0.85	2222 375 44681	.. 46681
750		0.90	2222 375 44751	.. 46751
820	6.5 \times 15.5 (16.0) \times 18.5	0.95	2222 375 44821	.. 46821
910	5.5 \times 14.5 (16.0) \times 18.5	1.1	2222 375 44911	.. 46911
1000	6.0 \times 15.0 (16.5) \times 18.5		2222 375 44102	.. 46102
1100		1.2	2222 375 44112	.. 46112
1200			2222 375 44122	.. 46122
1300	6.5 \times 15.5 (17.0) \times 18.5	1.3	2222 375 44132	.. 46132
1500	7.0 \times 16.0 (17.5) \times 18.5	1.4	2222 375 44152	.. 46152
1600	7.5 \times 16.5 (18.0) \times 18.5		2222 375 44162	.. 46162
1800		1.5	2222 375 44182	.. 46182
2000	8.0 \times 17.0 (18.5) \times 18.5	1.6	2222 375 44202	.. 46202
2200	8.5 \times 17.5 (19.0) \times 18.5	1.7	2222 375 44222	.. 46222
2400	9.0 \times 18.0 (19.5) \times 18.5	1.8	2222 375 44242	.. 46242
2700	9.5 \times 18.5 (20.0) \times 18.5	2.0	2222 375 44272	.. 46272

Notes

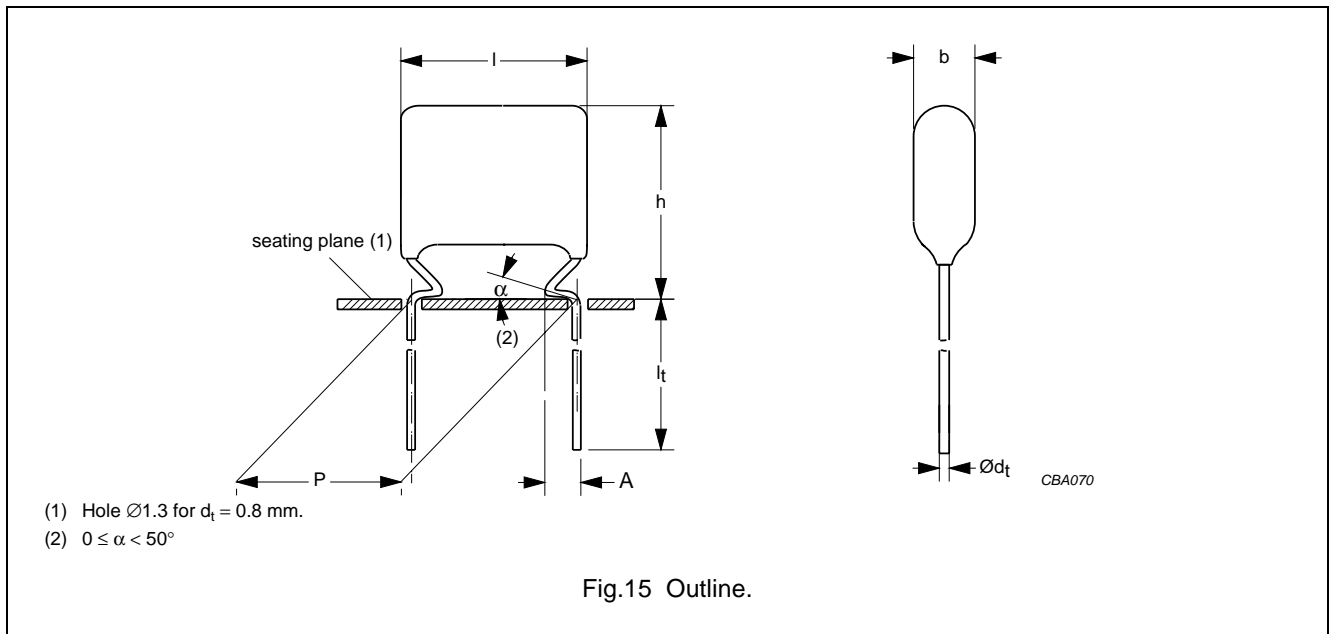
- Dimensions in brackets for bent back leads.
- H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".
 - For pitch = 15.0 mm: H = 16.0 mm and P₀ = 12.7 mm.
 - For pitch = 15/7.5 mm (bent back): H = 16.0 mm and P₀ = 15.0 mm.
Standard reel diameter = 500 mm. Small reel diameter = 356 mm is available on request.
- The shading indicates preferred types.

AC and Pulse
metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 22.5/27.5 mm



Specific reference data for the 2000 V DC capacitors

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle: P = 22.5 mm P = 27.5 mm	$\leq 6 \times 10^{-4}$ $\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$ $\leq 15 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 2000 V (DC): P = 22.5 mm P = 27.5 mm	10000 V/ μ s 6700 V/ μ s	
R between leads at 500 V; 1 minute	$> 100\,000$ M Ω	
R between interconnected leads and case; 500 V; 1 minute	$> 100\,000$ M Ω	
Ionization (AC) voltage (typical value) at 20 pC peak discharge	> 600 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	3200 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 2000 V DC versions

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 44...	preferred
		$\pm 3.5\%$	2222 375 45...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 40...	on request
		$\pm 3.5\%$	2222 375 41...	on request
Taped on reel	H = 16.0 mm; P ₀ = 12.7 mm; note 2	$\pm 5\%$	2222 375 42...	on request
		$\pm 3.5\%$	2222 375 43...	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information"; taped on reel pitch = 27.5 mm is not available.
- H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

$U_{Rdc} = 2000 \text{ V}$; $U_{Rac} = 600 \text{ V}$ / $U_{p-p} = 1700 \text{ V}$

C (μF)	DIMENSIONS $b_{\max} \times h_{\max} \times l_{\max}$ (mm)	MASS (g)	CATALOGUE NUMBER ⁽¹⁾
			LOOSE IN BOX
			$l_t = 5.0 \pm 1.0 \text{ mm}$
			C-tol = $\pm 5\%$
Pitch = $22.5 \pm 0.4 \text{ mm}$; $d_t = 0.80 \pm 0.08 \text{ mm}$; $A = 2.5 +1.4/-0.5 \text{ mm}$			
0.003	6.0 × 19.0 × 26.0	2.1	2222 375 44302
0.0033			2222 375 44332
0.0036			2222 375 44362
0.0039			2222 375 44392
0.0043	6.5 × 19.5 × 26.0	2.3	2222 375 44432
0.0047			2222 375 44472
0.0051	7.0 × 20.0 × 26.0	2.6	2222 375 44512
0.0056			2222 375 44562
0.0062	7.5 × 20.5 × 26.0	2.8	2222 375 44622
0.0068	8.0 × 21.0 × 26.0	3.0	2222 375 44682
0.0075			2222 375 44752
0.0082	8.5 × 21.5 × 26.0	3.3	2222 375 44822
0.0091	9.0 × 22.0 × 26.0	3.6	2222 375 44912
0.01	9.5 × 22.5 × 26.0	3.8	2222 375 44103
Pitch = $27.5 \pm 0.5 \text{ mm}$; $d_t = 0.80 \pm 0.08 \text{ mm}$; $A = 2.5 +1.4/-0.5 \text{ mm}$			
0.011	9.0 × 22.0 × 30.0	3.8	2222 375 44113
0.012	9.5 × 22.5 × 30.0	4.1	2222 375 44123
0.013	10.0 × 23.0 × 30.0	4.4	2222 375 44133
0.015	10.5 × 23.5 × 30.0	4.9	2222 375 44153
0.016	11.0 × 24.0 × 30.0	5.1	2222 375 44163
0.018	11.5 × 24.5 × 30.0	5.6	2222 375 44183
0.02	12.5 × 25.5 × 30.0	6.1	2222 375 44203
0.022	13.0 × 26.0 × 30.0	6.5	2222 375 44223

Note

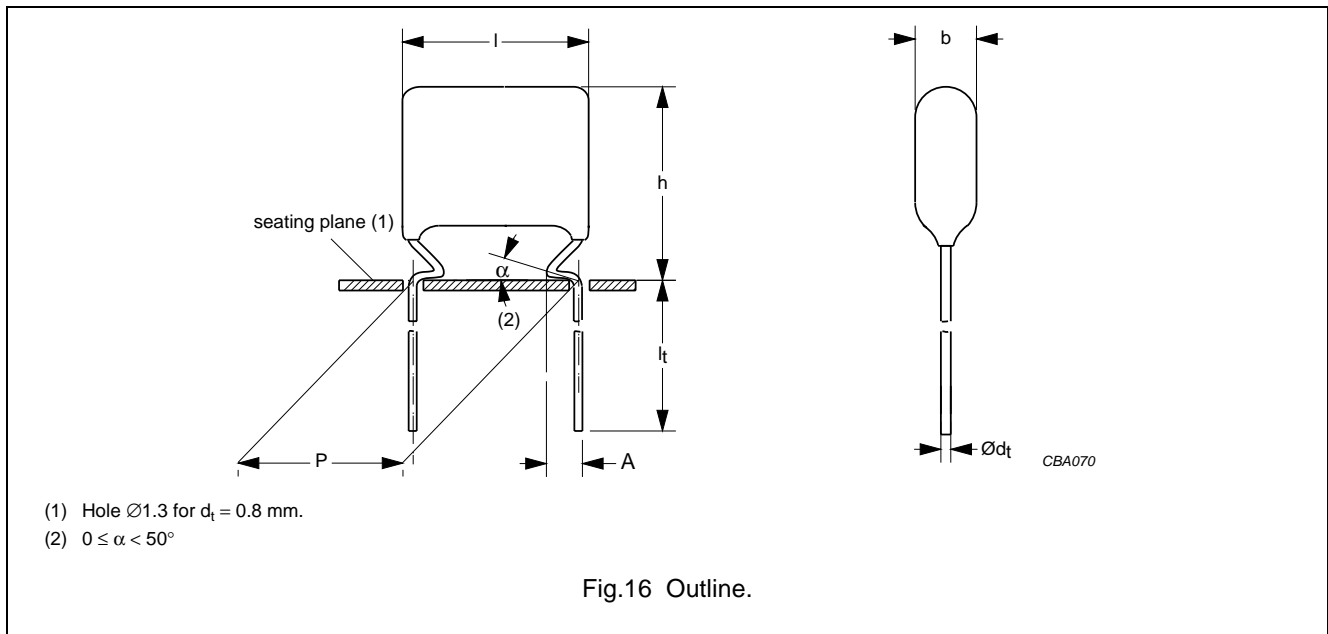
1. The shading indicates preferred types.

AC and Pulse
metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 22.5/27.5 mm



Specific reference data for the 2000 V DC capacitors (monitor type)

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle: P = 22.5 mm P = 27.5 mm	$\leq 6 \times 10^{-4}$ $\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$ $\leq 15 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 2000 V (DC): P = 22.5 mm P = 27.5 mm	10000 V/ μ s 6700 V/ μ s	
R between leads at 500 V; 1 minute	$> 100\,000$ M Ω	
R between interconnected leads and case; 500 V; 1 minute	$> 100\,000$ M Ω	
Ionization (AC) voltage (typical value) at 20 pC peak discharge	> 600 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	3200 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 2000 V DC versions (monitor type)

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 74...	preferred
		$\pm 3.5\%$	2222 375 75...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 70...	on request
		$\pm 3.5\%$	2222 375 71...	on request
Taped on reel	H = 16.0 mm; P ₀ = 12.7 mm; note 2	$\pm 5\%$	2222 375 72...	on request
		$\pm 3.5\%$	2222 375 73...	on request

Notes

1. For SPQ refer to this handbook, chapter "Packaging information"; taped on reel pitch = 27.5 mm is not available.
2. H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

$U_{Rdc} = 2000 \text{ V}$; $U_{Rac} = 600 \text{ V}$ / $U_{p-p} = 1700 \text{ V}$ (monitor type)

C (μF)	DIMENSIONS $b_{\max} \times h_{\max} \times l_{\max}$ (mm)	MASS (g)	CATALOGUE NUMBER ⁽¹⁾
			LOOSE IN BOX
			$l_t = 5.0 \pm 1.0 \text{ mm}$
			C-tol = $\pm 5\%$
Pitch = $22.5 \pm 0.4 \text{ mm}$; $d_t = 0.80 \pm 0.08 \text{ mm}$; $A = 2.5 +1.4/-0.5 \text{ mm}$			
0.001	6.0 × 19.0 × 26.0	2.1	2222 375 74102
0.0011			2222 375 74112
0.0012	6.5 × 19.5 × 26.0	2.3	2222 375 74122
0.0013			2222 375 74132
0.0015	7.0 × 20.0 × 26.0	2.6	2222 375 74152
0.0016			2222 375 74162
0.0018	7.5 × 20.5 × 26.0	2.8	2222 375 74182
0.002	8.0 × 21.0 × 26.0	3.0	2222 375 74202
0.0022	8.5 × 21.5 × 26.0	3.3	2222 375 74222
0.0024	9.0 × 22.0 × 26.0	3.6	2222 375 74242
0.0027	9.5 × 22.5 × 26.0	3.8	2222 375 74272
0.003	10.0 × 23.0 × 26.0	4.2	2222 375 74302
0.0033	10.5 × 23.5 × 26.0	4.5	2222 375 74332
0.0036	11.0 × 24.0 × 26.0	4.9	2222 375 74362
0.0039			2222 375 74392
0.0043			2222 375 74432
0.0047	11.5 × 24.5 × 26.0	5.3	2222 375 74472
0.0051			2222 375 74512
Pitch = $27.5 \pm 0.5 \text{ mm}$; $d_t = 0.80 \pm 0.08 \text{ mm}$; $A = 2.5 +1.4/-0.5 \text{ mm}$			
0.0056	11.0 × 24.0 × 30.0	5.1	2222 375 74562
0.0062	11.5 × 24.5 × 30.0	5.6	2222 375 74622
0.0068	12.0 × 25.0 × 30.0	5.8	2222 375 74682
0.0075	12.5 × 25.5 × 30.0	6.1	2222 375 74752
0.0082	13.0 × 26.0 × 30.0	6.5	2222 375 74822
0.0091	14.0 × 27.0 × 30.0	7.0	2222 375 74912
0.01	14.5 × 27.5 × 30.0	7.5	2222 375 74103
0.011	15.5 × 29.5 × 30.0	8.1	2222 375 74113
0.012			2222 375 74123
0.013			2222 375 74133
0.015			2222 375 74153

Note

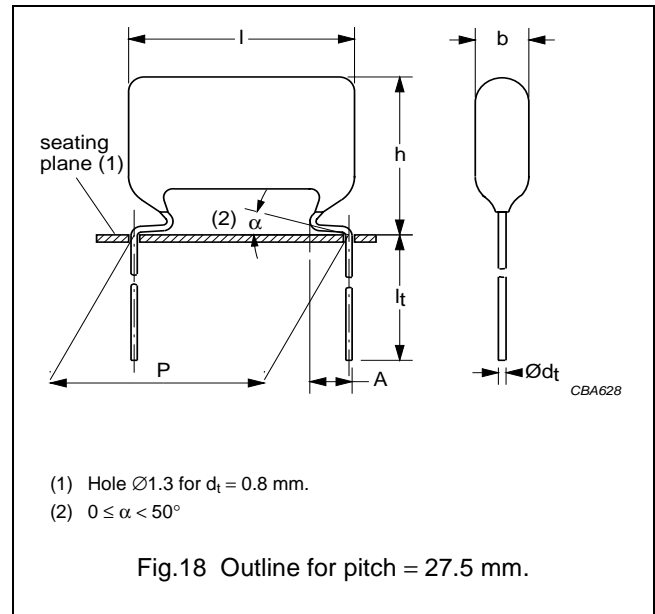
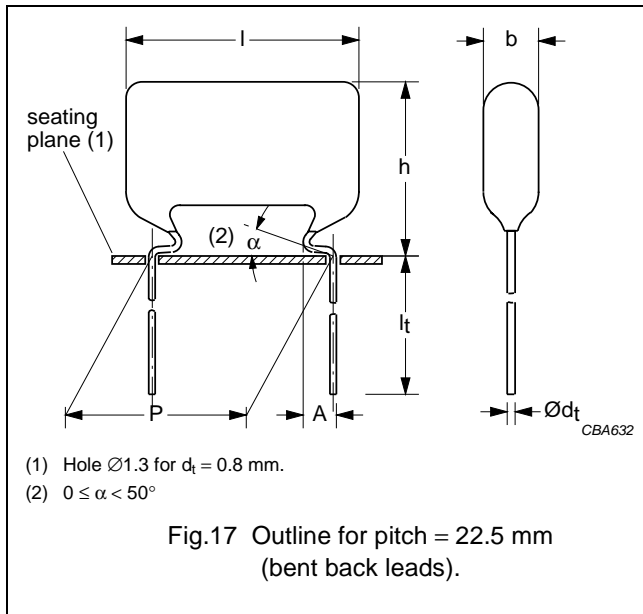
1. The shading indicates preferred types.

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 22.5 (bent back leads) /27.5 mm



Specific reference data for the 2500 V DC capacitors

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle: P = 22.5 mm P = 27.5 mm	$\leq 6 \times 10^{-4}$ $\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$ $\leq 10 \times 10^{-4}$
Rated voltage pulse slope (dU/dt) _R at 2500 V (DC)	18000 V/ μ s	
R between leads at 500 V; 1 minute	>100000 M Ω	
R between interconnected leads and case; 500 V; 1 minute	>100000 M Ω	
Ionization (AC) voltage (typical value) at 20 pC peak discharge	>900 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	3500 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 2500 V DC versions

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 91...	on request
		$\pm 3.5\%$	2222 375 91...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 91...	on request
		$\pm 3.5\%$	2222 375 91...	on request
Taped on reel	$H = 16.0$ mm; $P_0 = 12.7$ mm; note 2	$\pm 5\%$	2222 375	on request
		$\pm 3.5\%$	2222 375	on request

Notes

- For SPQ refer to this handbook, chapter "Packaging information"; taped on reel pitch = 27.5 mm is not available.
- H = in-tape height; P₀ = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

$U_{Rdc} = 2500 \text{ V}$; $U_{Rac} = 880 \text{ V}$ / $U_{p-p} = 2500 \text{ V}$

C (μF)	DIMENSIONS $b_{\max} \times h_{\max} \times l_{\max}$ (mm)	MASS (g)	CATALOGUE NUMBER	
			LOOSE IN BOX; $l_t = 3.5 \pm 0.5 \text{ mm}$	
			$P = 22.5 \pm 0.4 \text{ mm}^{(1)}$	$P = 27.5 \pm 0.4 \text{ mm}$
			C-tol = $\pm 5\%$	
			catalogue number	last 5 digits
$d_t = 0.80 \pm 0.08 \text{ mm}$; $A = 2.5 +1.4/-0.5 \text{ mm}$				
0.001	7.0 × 20.0 × 30.0	2.9	2222 375 91001	.. 91003
0.0011			2222 375 91005	.. 91007
0.0012			2222 375 91011	.. 91013
0.0013			2222 375 91015	.. 91017
0.0015			2222 375 91021	.. 91023
0.0016			2222 375 91025	.. 91027
0.0018			2222 375 91031	.. 91033
0.0020			7.5 × 20.5 × 30.0	2.9
0.0022	8.0 × 21.0 × 30.0	3.2	2222 375 91041	.. 91043
0.0024			2222 375 91045	.. 91047
0.0025			2222 375 91051	.. 91053
0.0027	8.5 × 21.5 × 30.0	3.5	2222 375 91055	.. 91057
0.0030	9.0 × 22.0 × 30.0	3.8	2222 375 91061	.. 91063
0.0033	9.5 × 22.5 × 30.0	4.0	2222 375 91065	.. 91067
0.0036	10.0 × 23.0 × 30.0	4.3	2222 375 91071	.. 91073
0.0039	10.5 × 23.5 × 30.0	4.6	2222 375 91075	.. 91077
0.0043	11.0 × 24.0 × 30.0	5.0	2222 375 91081	.. 91083
0.0047	11.5 × 24.5 × 30.0	5.3	2222 375 91085	.. 91087
0.0051	12.0 × 25.0 × 30.0	5.7	2222 375 91091	.. 91093
0.0056	12.5 × 25.5 × 30.0	6.1	2222 375 91095	.. 91097
0.0062	13.5 × 26.5 × 30.0	6.6	2222 375 91101	.. 91103
0.0068	14.0 × 27.5 × 30.0	7.2	2222 375 91105	.. 91107

Note

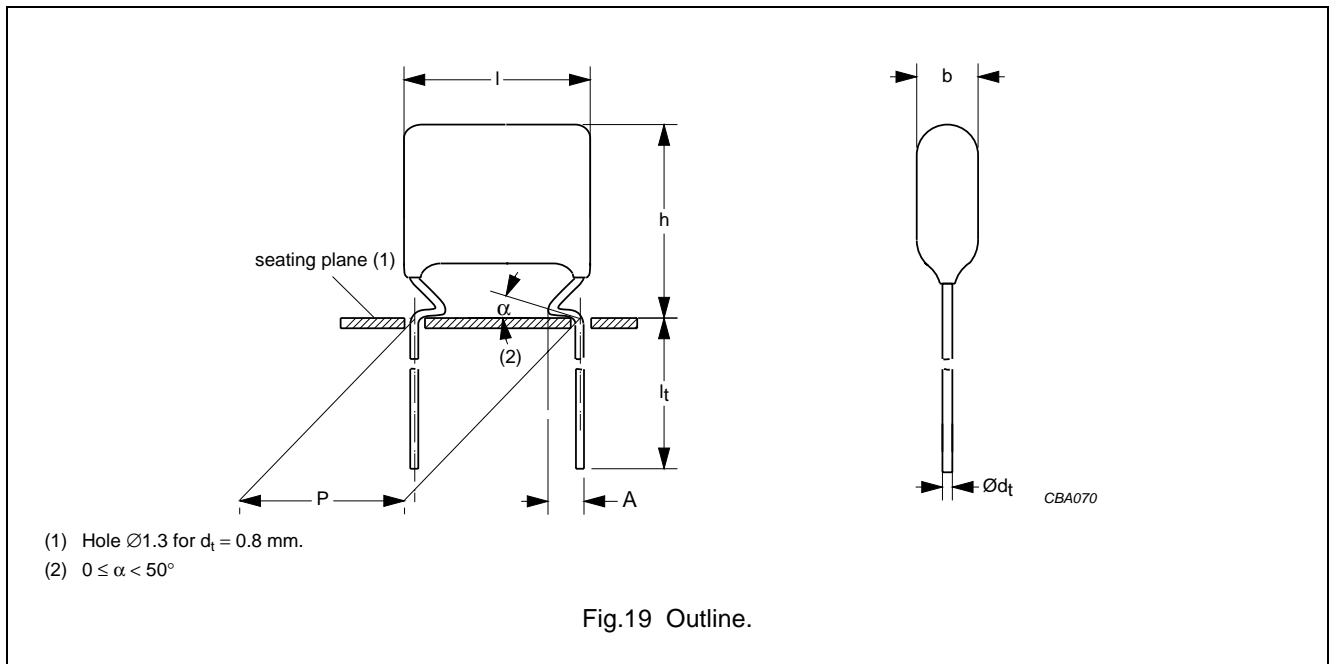
1. Only for bent back leads.

AC and Pulse
metallized polypropylene film capacitors

KP/MKP 375

KP/MKP 375 GENERAL DATA

PITCH 22.5/27.5 mm



Specific reference data for the 2500 V DC capacitors (monitor type)

DESCRIPTION	VALUE	
	at 10 kHz	at 100 kHz
Tangent of loss angle: P = 22.5 mm P = 27.5 mm	$\leq 6 \times 10^{-4}$ $\leq 6 \times 10^{-4}$	$\leq 10 \times 10^{-4}$ $\leq 15 \times 10^{-4}$
Rated voltage pulse slope $(dU/dt)_R$ at 2500 V (DC)	18000 V/ μ s	
R between leads at 500 V; 1 minute	>100000 M Ω	
R between interconnected leads and case; 500 V; 1 minute	>100000 M Ω	
Ionization (AC) voltage (typical value) at 20 pC peak discharge	>900 V	
Withstanding (DC) voltage (cut off current 10 mA); rise time 100 V/s	3500 V; 1 minute	
Withstanding (DC) voltage between leads and case	2840 V; 1 minute	

Available 2500 V DC versions (monitor type)

PACKAGING ⁽¹⁾	DIMENSIONS	C-tol	FIRST 9 DIGITS OF CATALOGUE NUMBER	ORDERING
Loose in box	$l_t = 5.0 \pm 1.0$ mm	$\pm 5\%$	2222 375 84...	preferred
		$\pm 3.5\%$	2222 375 85...	on request
	$l_t = 3.5 \pm 0.5$ mm	$\pm 5\%$	2222 375 80...	on request
		$\pm 3.5\%$	2222 375 81...	on request
Taped on reel	H = 16.0 mm; $P_0 = 12.7$ mm; note 2	$\pm 5\%$	2222 375 82...	on request
		$\pm 3.5\%$	2222 375 83...	on request

Notes

1. For SPQ refer to this handbook, chapter "Packaging information"; taped on reel pitch = 27.5 mm is not available.
2. H = in-tape height; P_0 = sprocket hole distance; for detailed specifications refer to this handbook, chapter "Packaging information".

AC and Pulse metallized polypropylene film capacitors

KP/MKP 375

$U_{Rdc} = 2500 \text{ V}$; $U_{Rac} = 600 \text{ V}$ / $U_{p-p} = 1700 \text{ V}$ (monitor type)

C (μF)	DIMENSIONS $b_{\max} \times h_{\max} \times l_{\max}$ (mm)	MASS (g)	CATALOGUE NUMBER ⁽¹⁾
			LOOSE IN BOX
			$l_t = 5.0 \pm 1.0 \text{ mm}$
			C-tol = $\pm 5\%$
Pitch = $22.5 \pm 0.4 \text{ mm}$; $d_t = 0.80 \pm 0.08 \text{ mm}$; $A = 2.5 +1.4/-0.5 \text{ mm}$			
0.001	7.0 × 20.0 × 26.0	2.6	2222 375 84102
0.0011			2222 375 84112
0.0012	7.5 × 20.5 × 26.0	2.8	2222 375 84122
0.0013			2222 375 84132
0.0015	8.5 × 21.5 × 26.0	3.3	2222 375 84152
0.0016			2222 375 84162
0.0018	9.0 × 22.0 × 26.0	3.6	2222 375 84182
0.002	9.5 × 22.5 × 26.0	3.8	2222 375 84202
0.0022	10.0 × 23.0 × 26.0	4.1	2222 375 84222
0.0024	10.5 × 23.5 × 26.0	4.5	2222 375 84242
0.0027	11.0 × 24.0 × 26.0	4.9	2222 375 84272
Pitch = $27.5 \pm 0.5 \text{ mm}$; $d_t = 0.80 \pm 0.08 \text{ mm}$; $A = 2.5 +1.4/-0.5 \text{ mm}$			
0.003	11.0 × 24.0 × 30.0	5.1	2222 375 84302
0.0033	11.5 × 24.5 × 30.0	5.4	2222 375 84332
0.0036	12.0 × 25.0 × 30.0	5.8	2222 375 84362
0.0039	12.5 × 25.5 × 30.0	6.1	2222 375 84392
0.0043	13.0 × 26.0 × 30.0	6.5	2222 375 84432
0.0047	13.5 × 26.5 × 30.0	6.9	2222 375 84472
0.0051	14.0 × 27.0 × 30.0	7.3	2222 375 84512
0.0056	15.0 × 29.0 × 30.0	7.8	2222 375 84562
0.0062	15.5 × 29.5 × 30.0	8.2	2222 375 84622
0.0068			2222 375 84682
0.0075			2222 375 84752
0.0082			2222 375 84822
0.0091			2222 375 84912

Note

1. The shading indicates preferred types.

AC and Pulse metallized polypropylene film capacitors

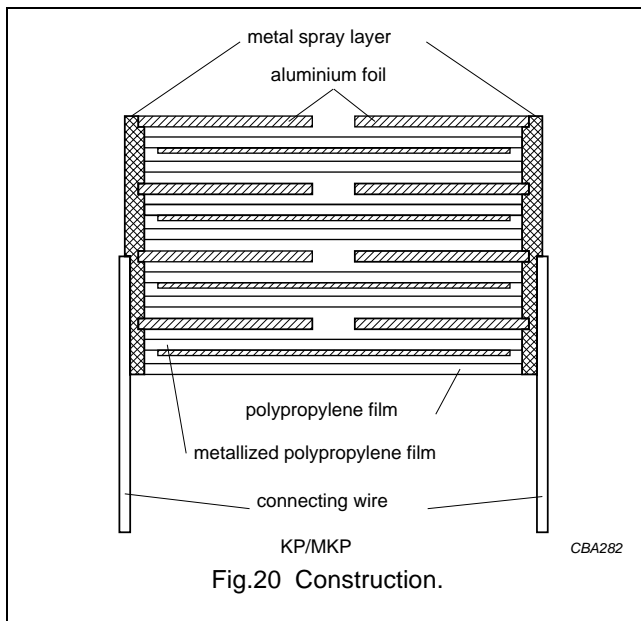
KP/MKP 375

CONSTRUCTION

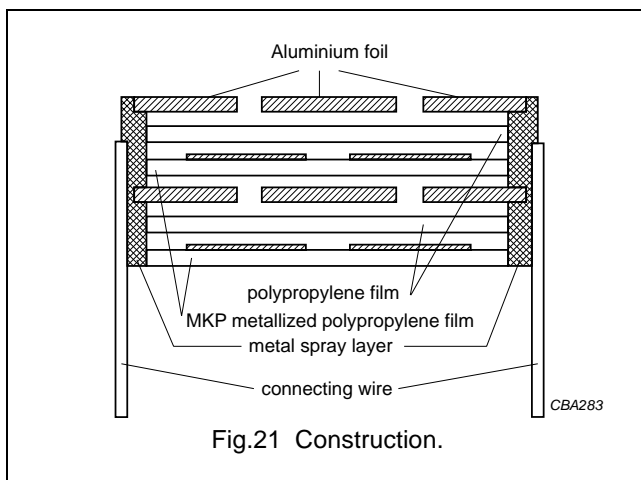
Description

- Series-constructed, impregnated polypropylene film, aluminium foil and metallized internal electrode
- Protected by a hard, water-repellent, solvent-resistant epoxy lacquer
- Radial leads, solder-coated:
 - Copper clad steel wire for original pitch = 10 mm
 - Copper wire for original pitch = 15, 22.5 and 27.5 mm.

FOR KP/MKP 630 V - 2000 V AND 2500 V (MONITOR TYPE)



FOR KP/MKP 2500 V (2222 375 91...)



Mounting

NORMAL USE

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

For detailed tape specifications refer to this handbook, chapter "Packaging information".

SPECIFIC METHOD OF MOUNTING TO WITHSTAND VIBRATION AND SHOCK

- For pitches of ≤ 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: $T_{stg} = -25$ to $+40$ °C with RH maximum 80% without condensation.

RATINGS AND CHARACTERISTICS REFERENCE CONDITIONS

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

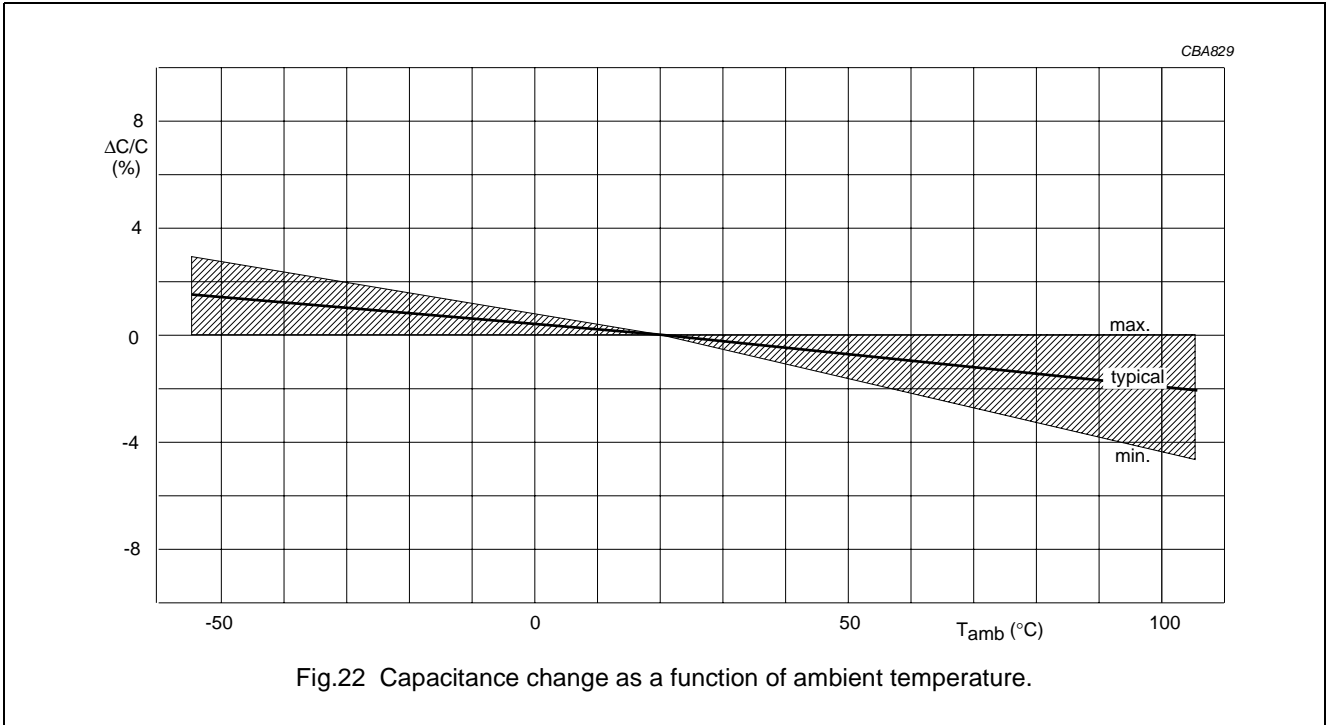
For reference testing, a conditioning period shall be applied over 96 ± 4 hours by heating the products in a circulating air oven at the rated temperature and a relative humidity not exceeding 20%.

AC and Pulse metallized polypropylene film capacitors

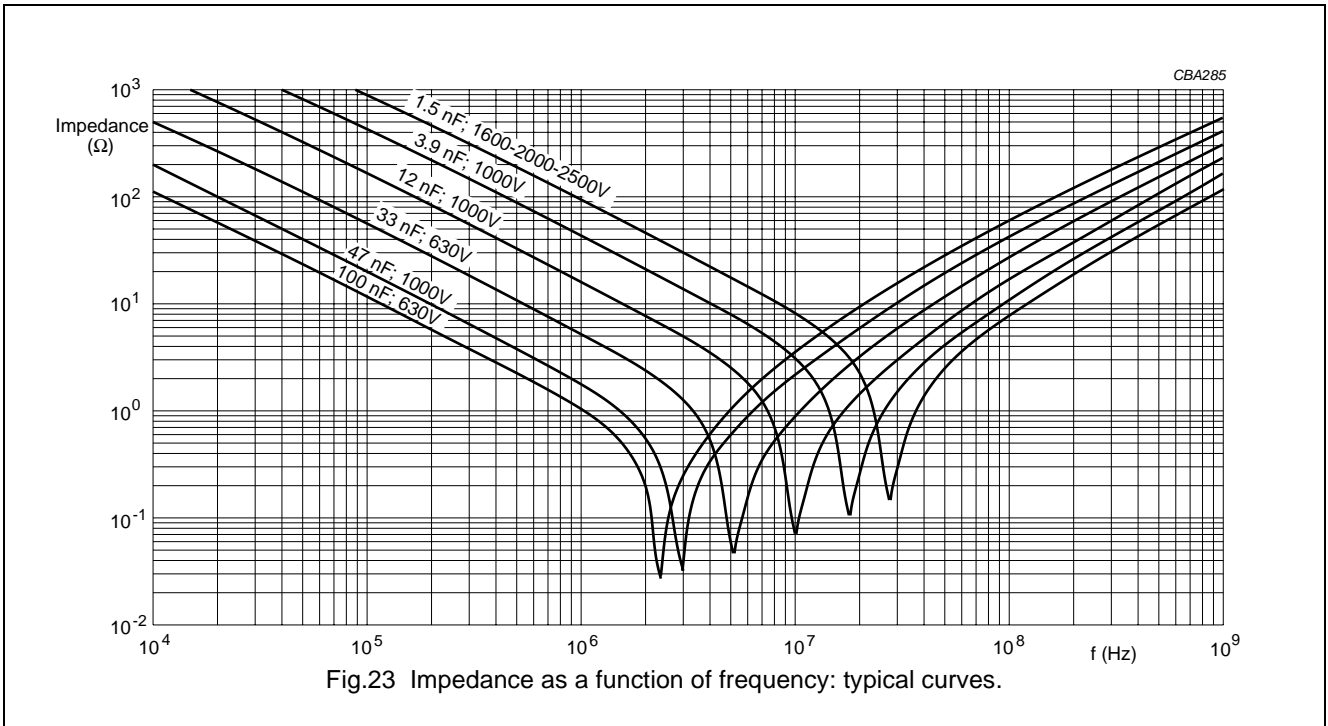
KP/MKP 375

CHARACTERISTICS

Capacitance



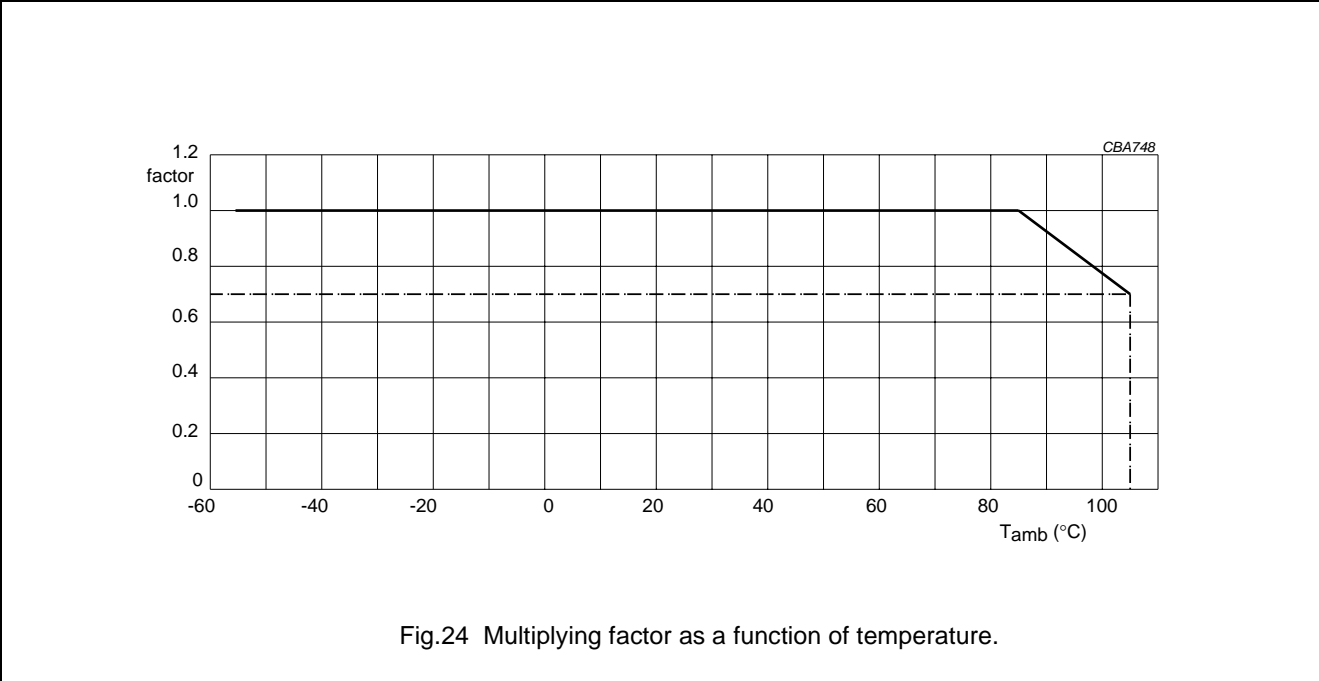
Impedance



AC and Pulse
metallized polypropylene film capacitors

KP/MKP 375

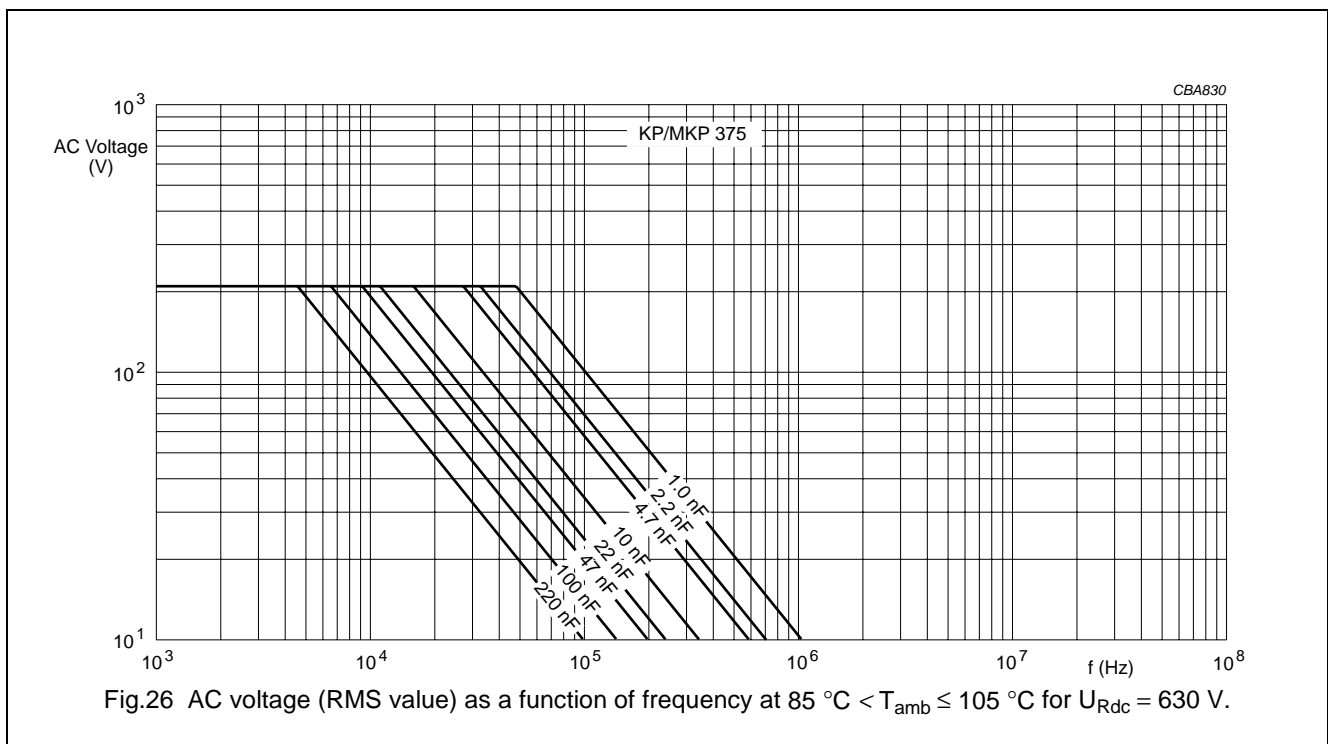
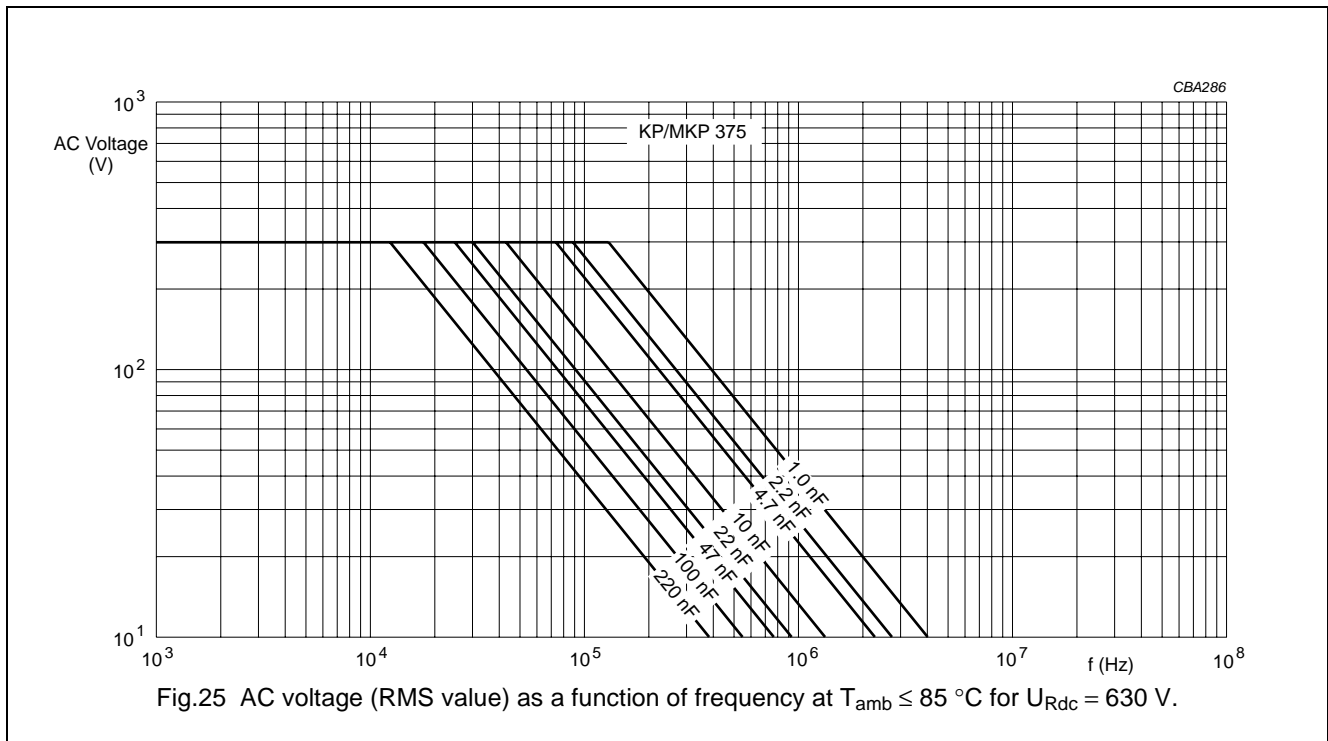
Maximum DC voltage as a function of temperature



AC and Pulse metallized polypropylene film capacitors

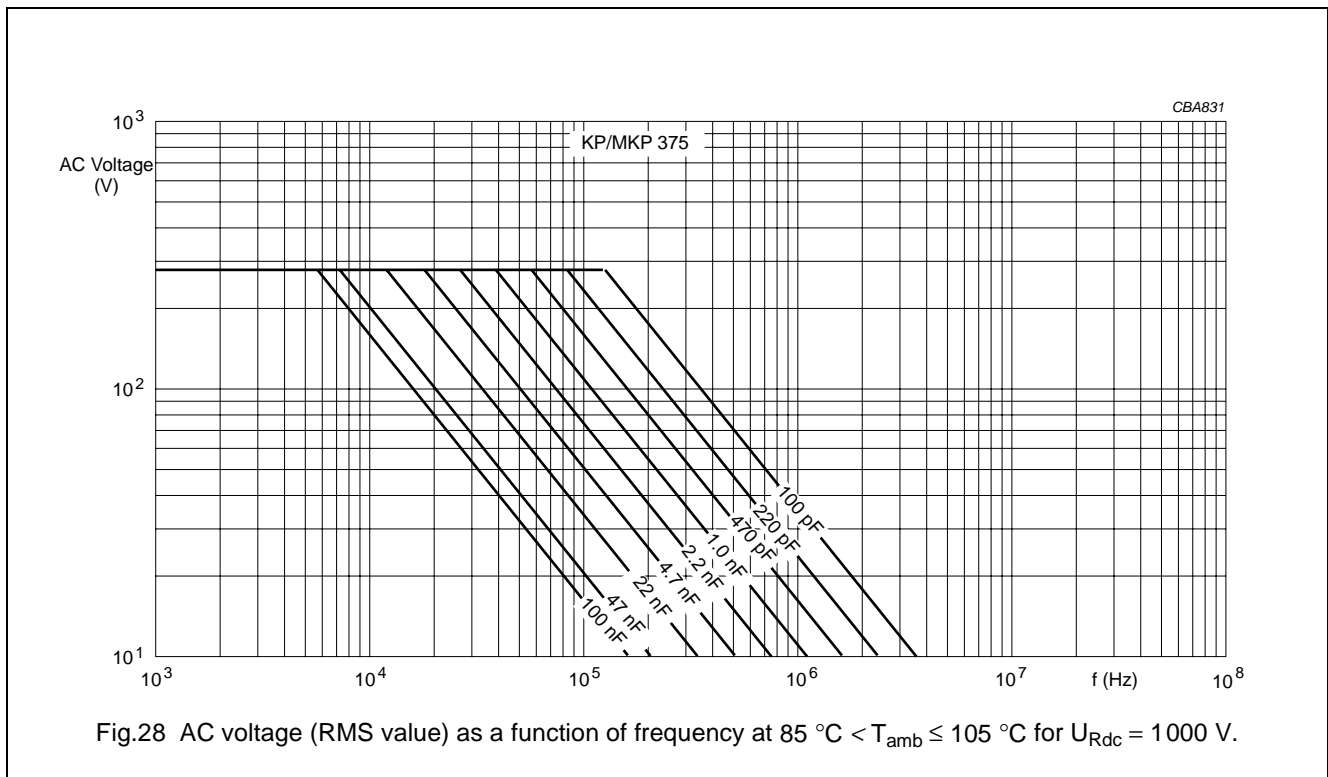
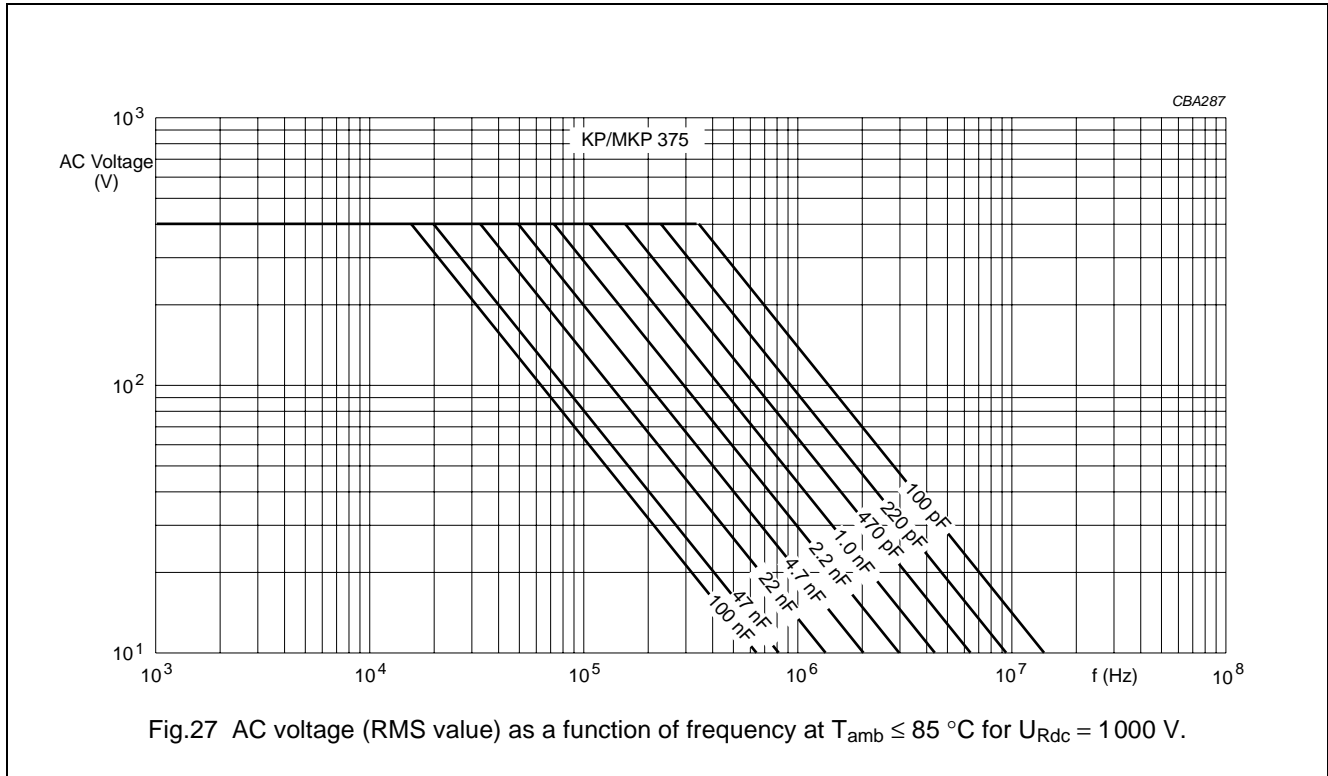
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Maximum RMS voltage (sinewave) as a function of frequency



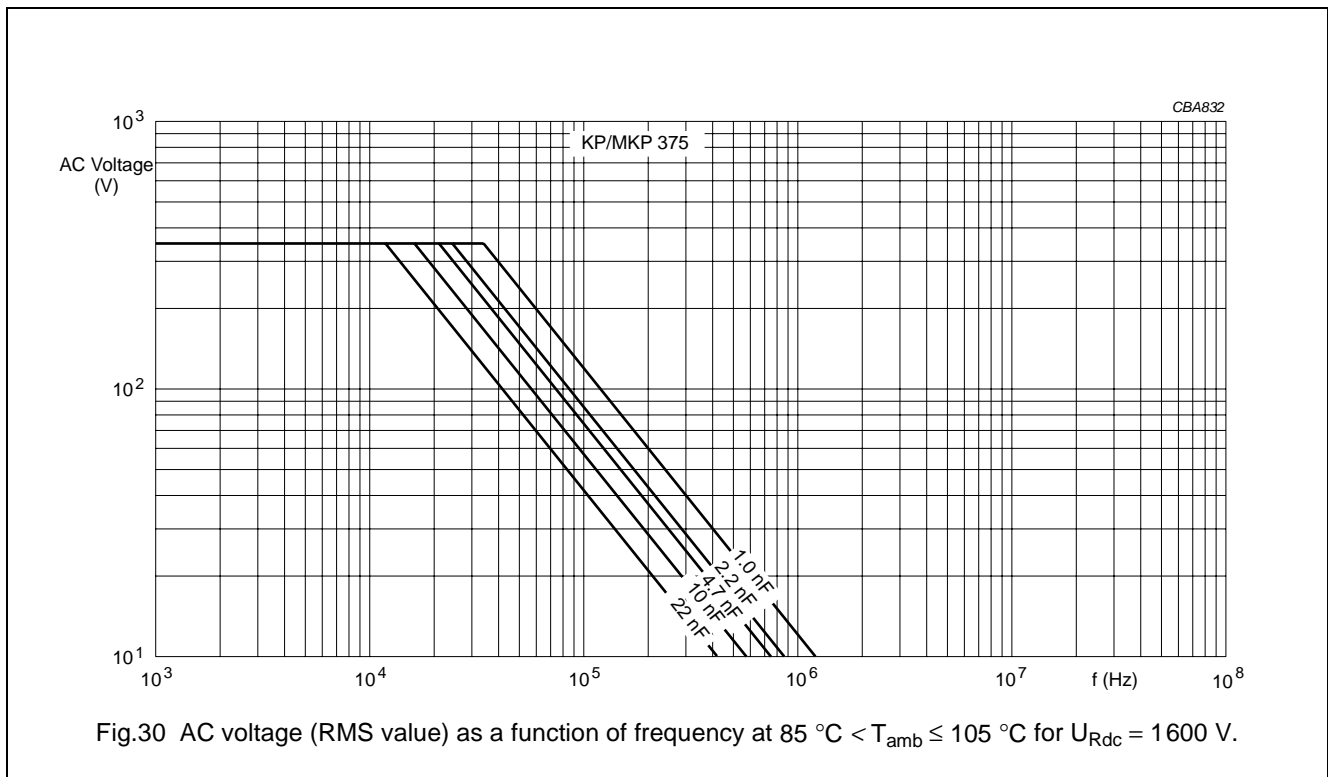
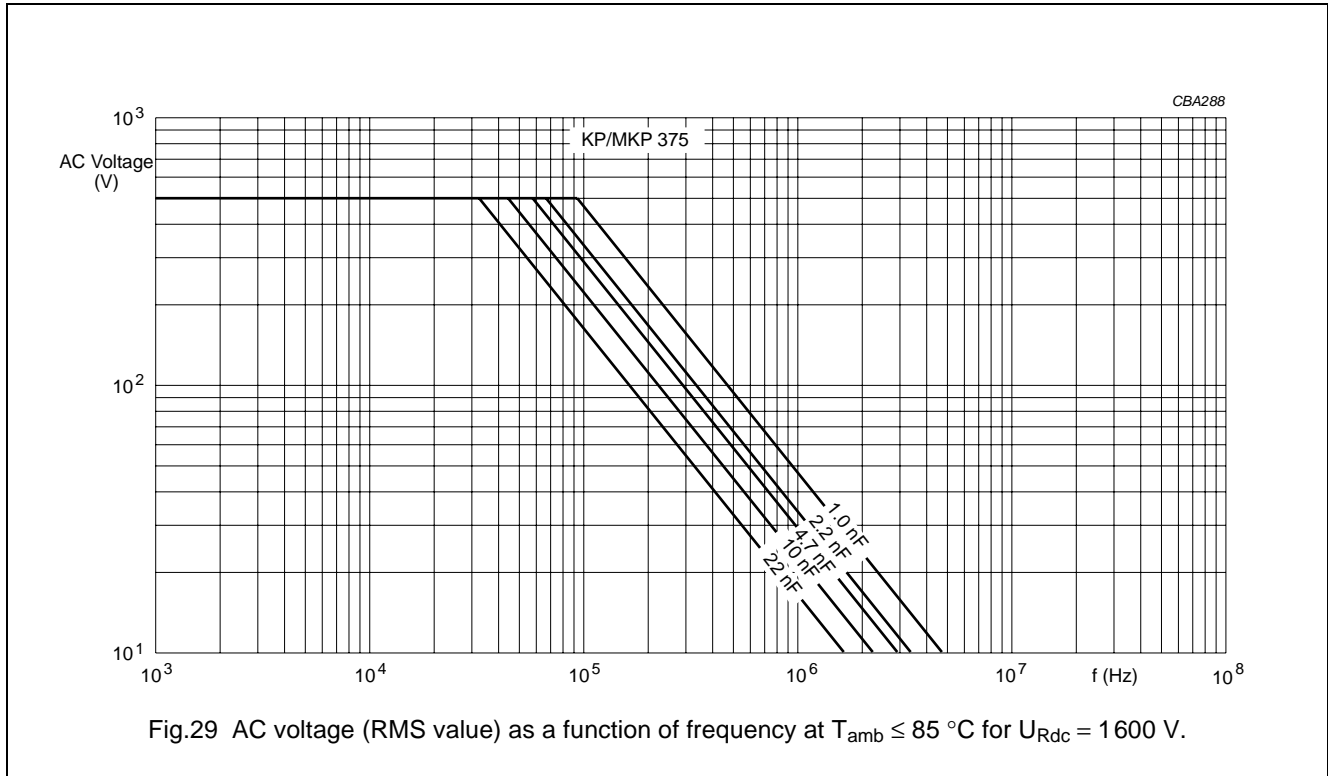
AC and Pulse
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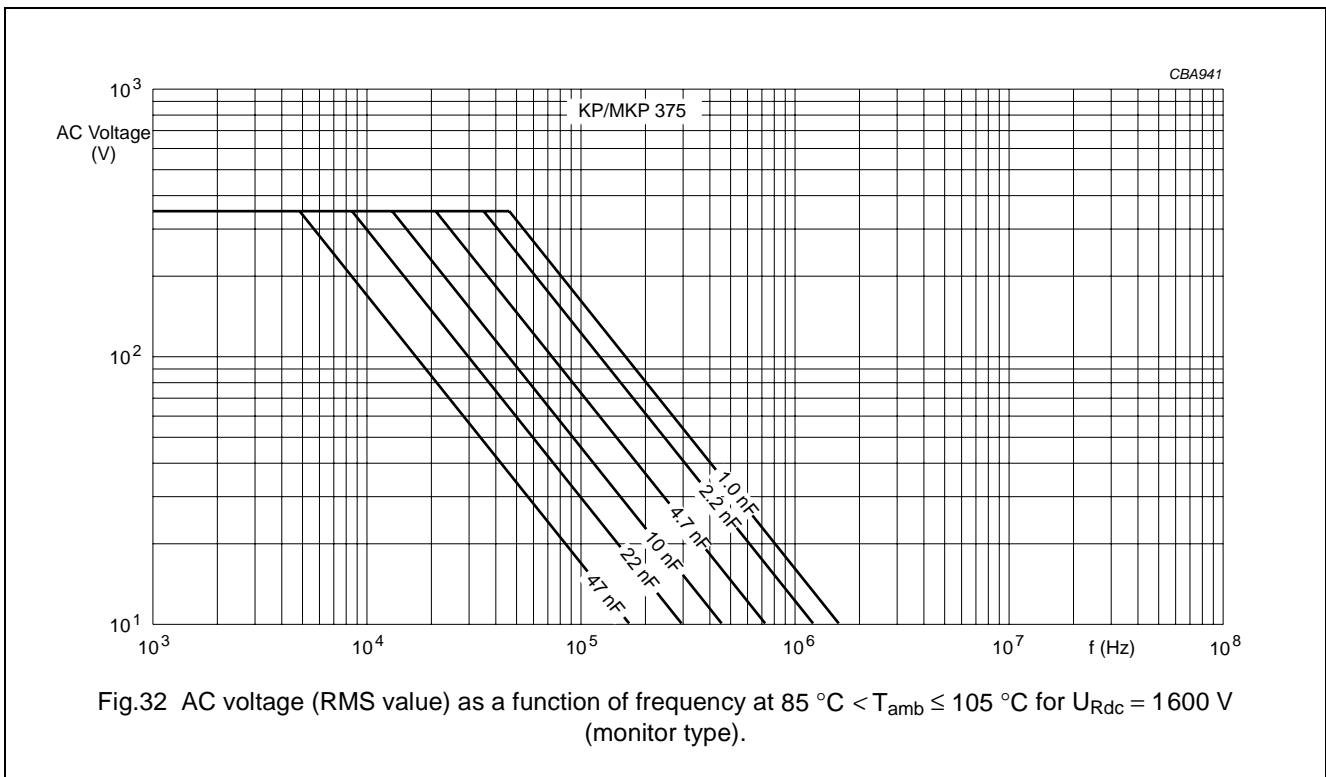
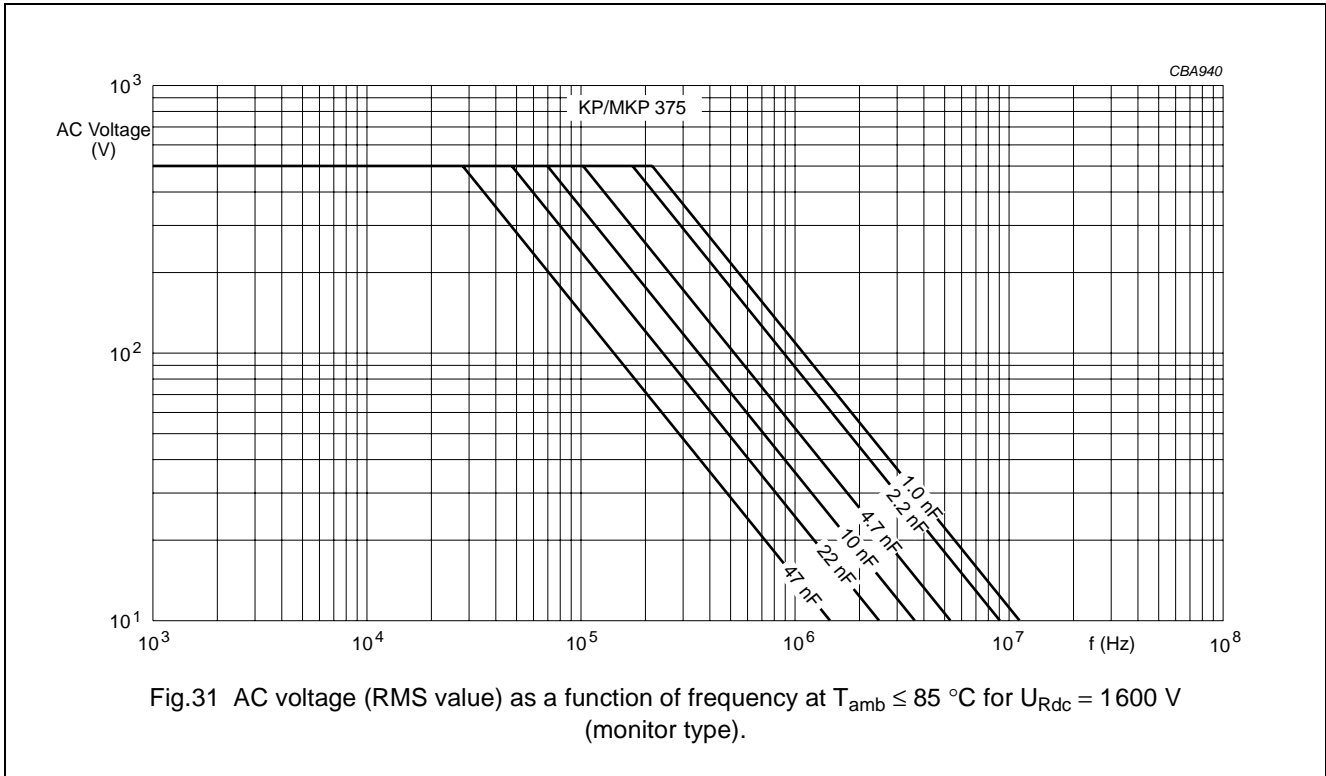
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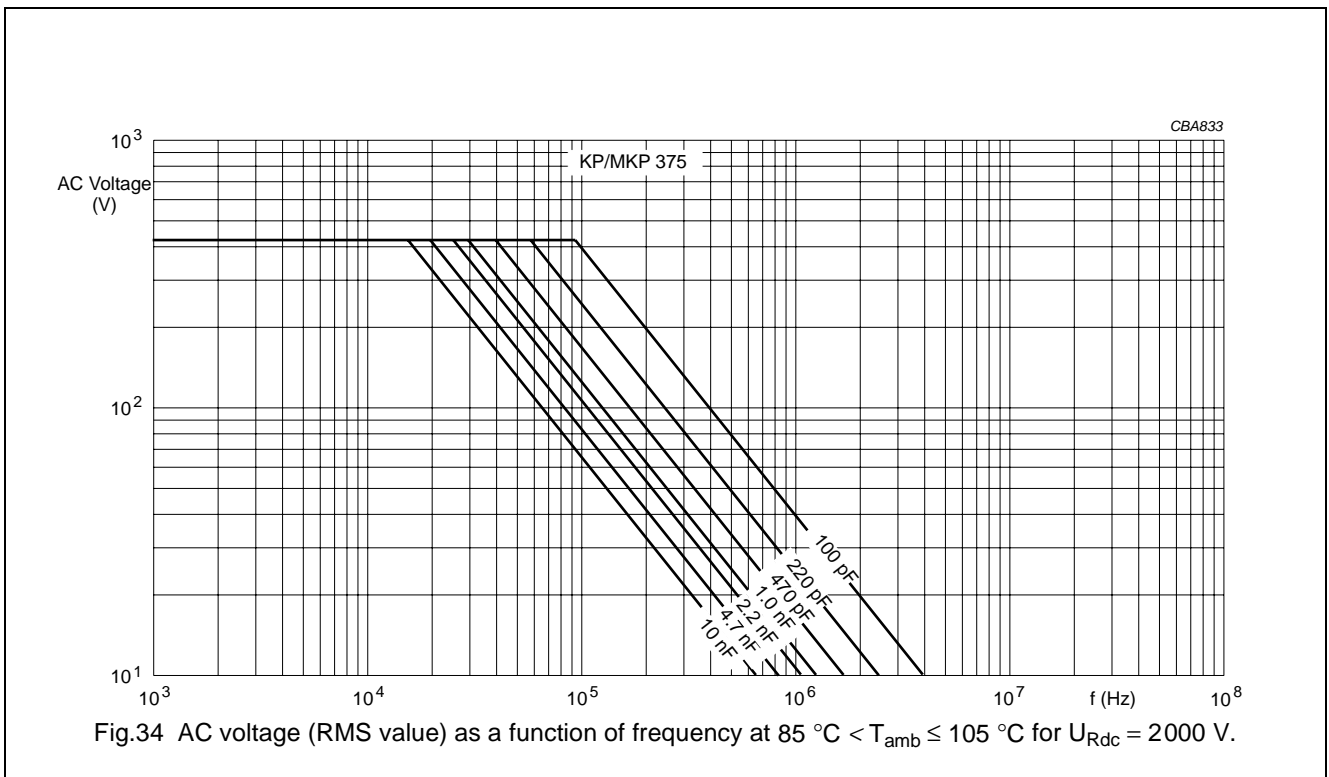
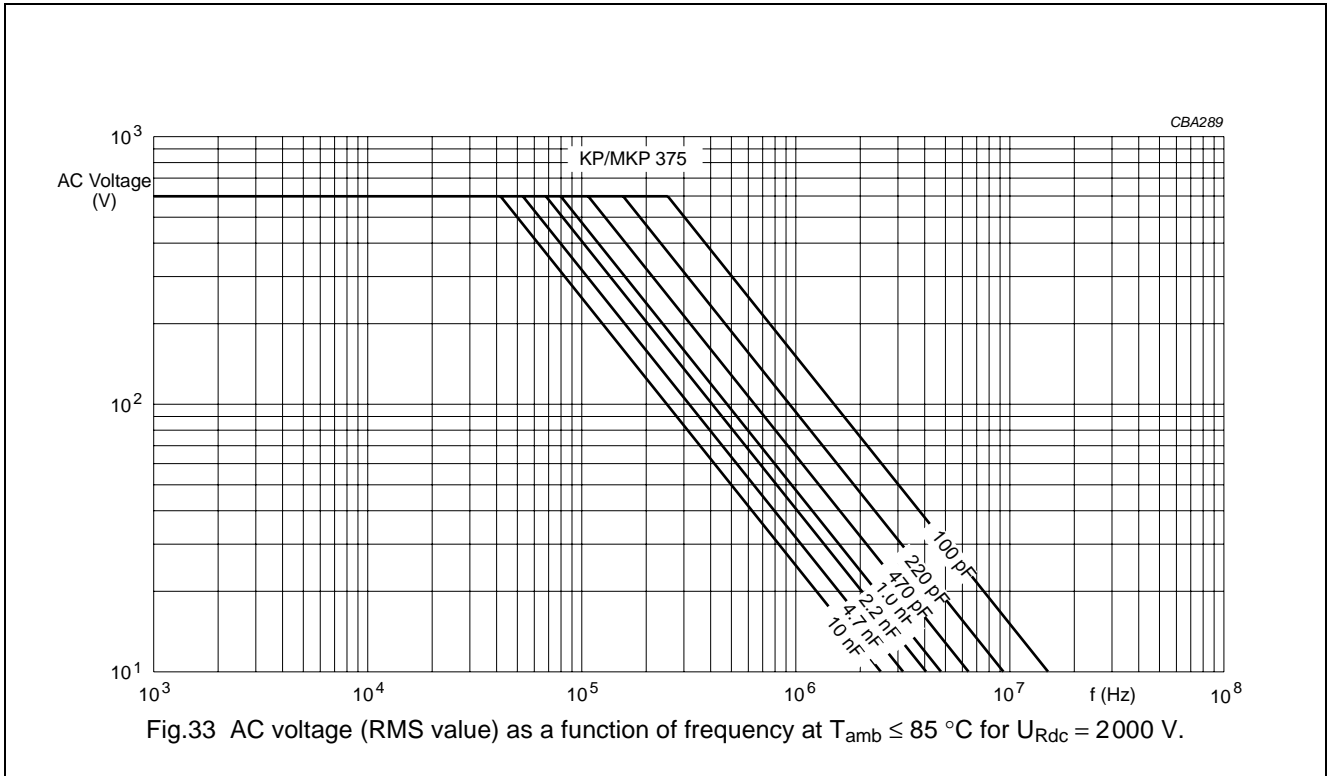
AC and Pulse
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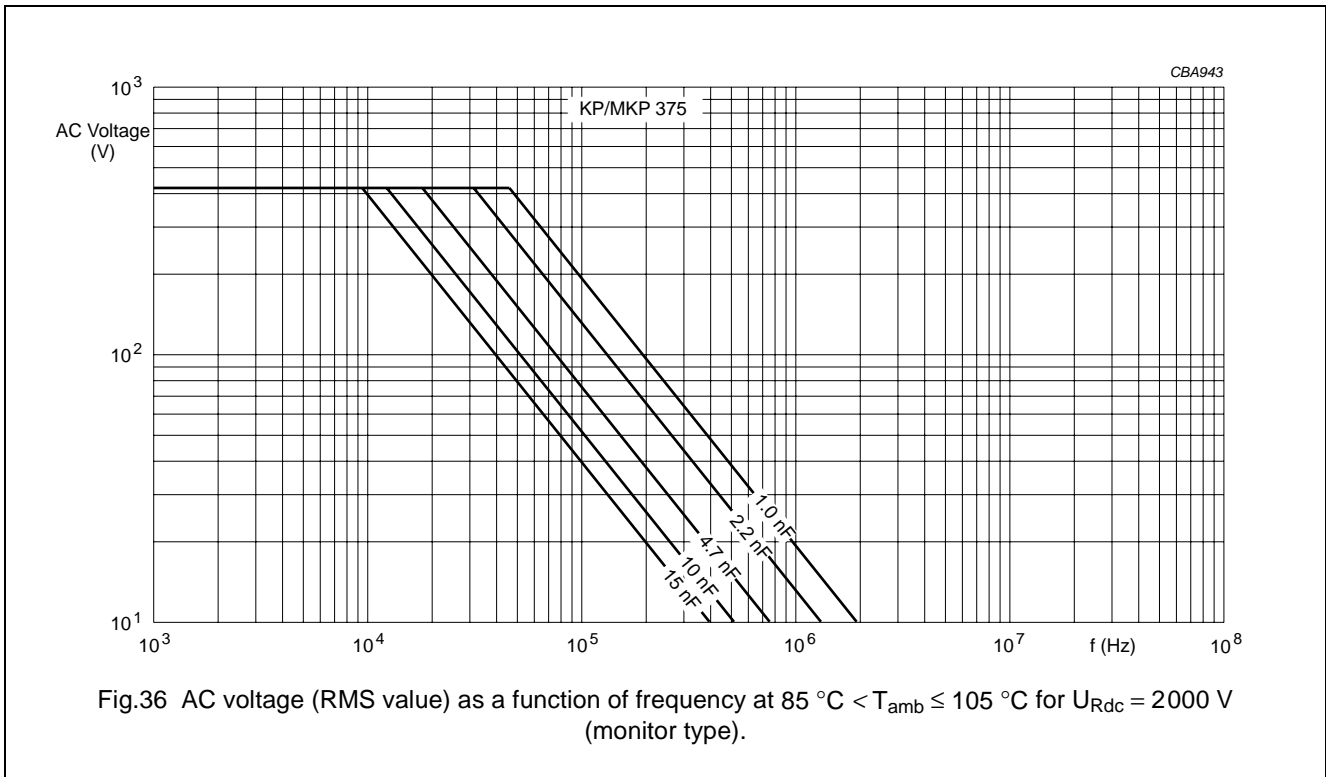
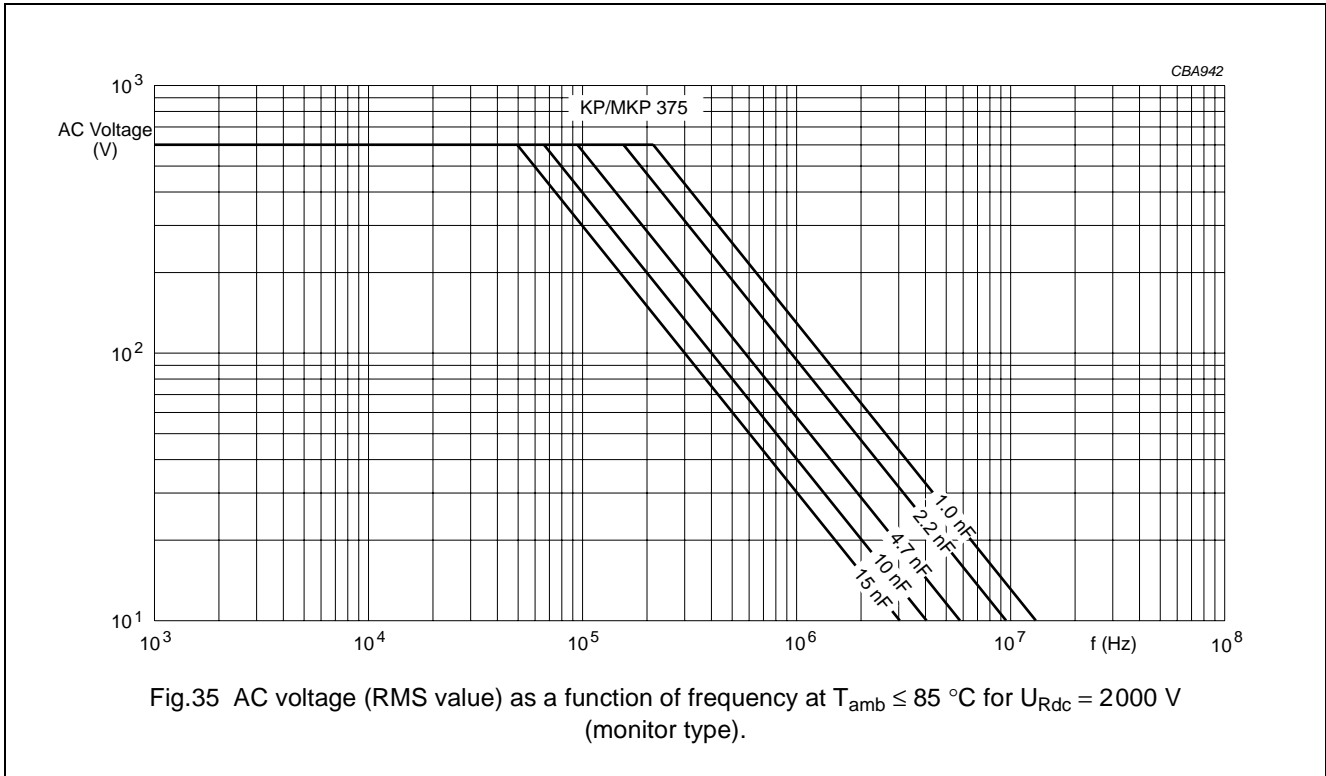
AC and Pulse
metallized polypropylene film capacitors

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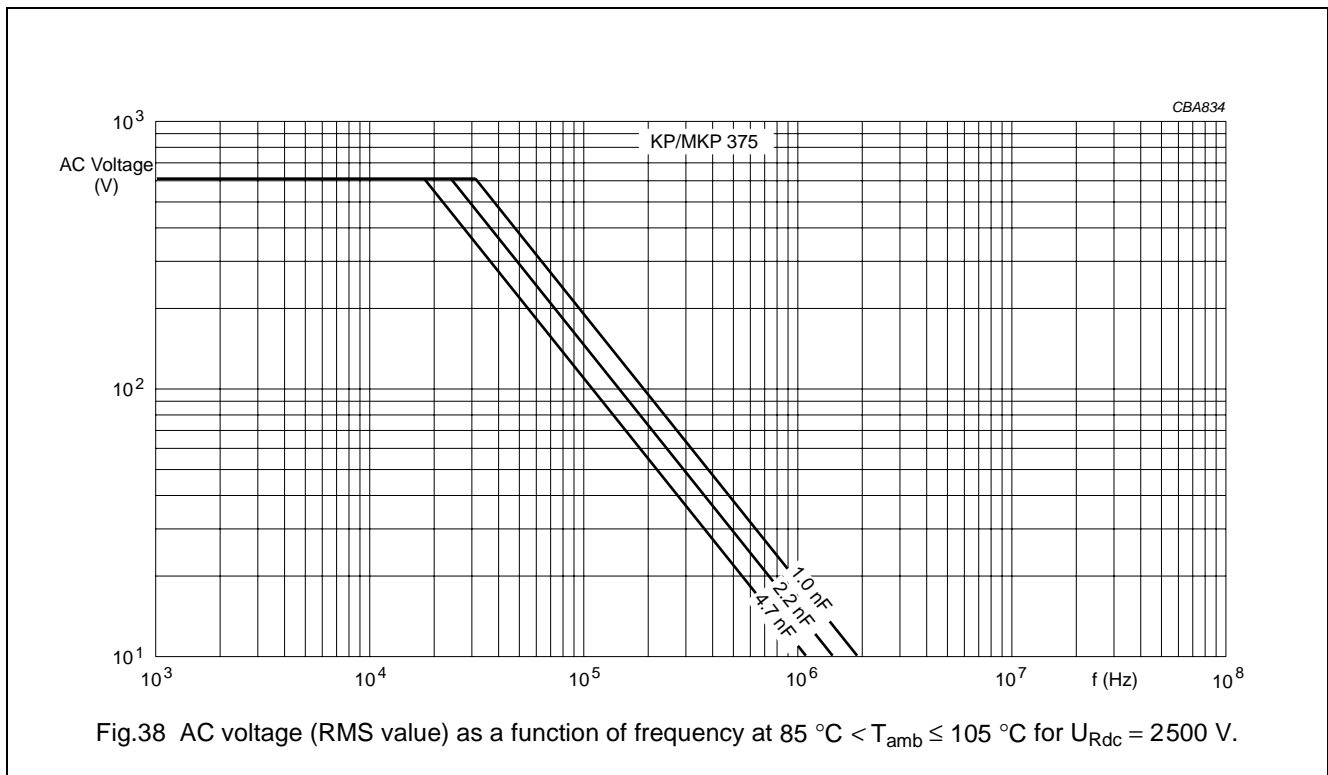
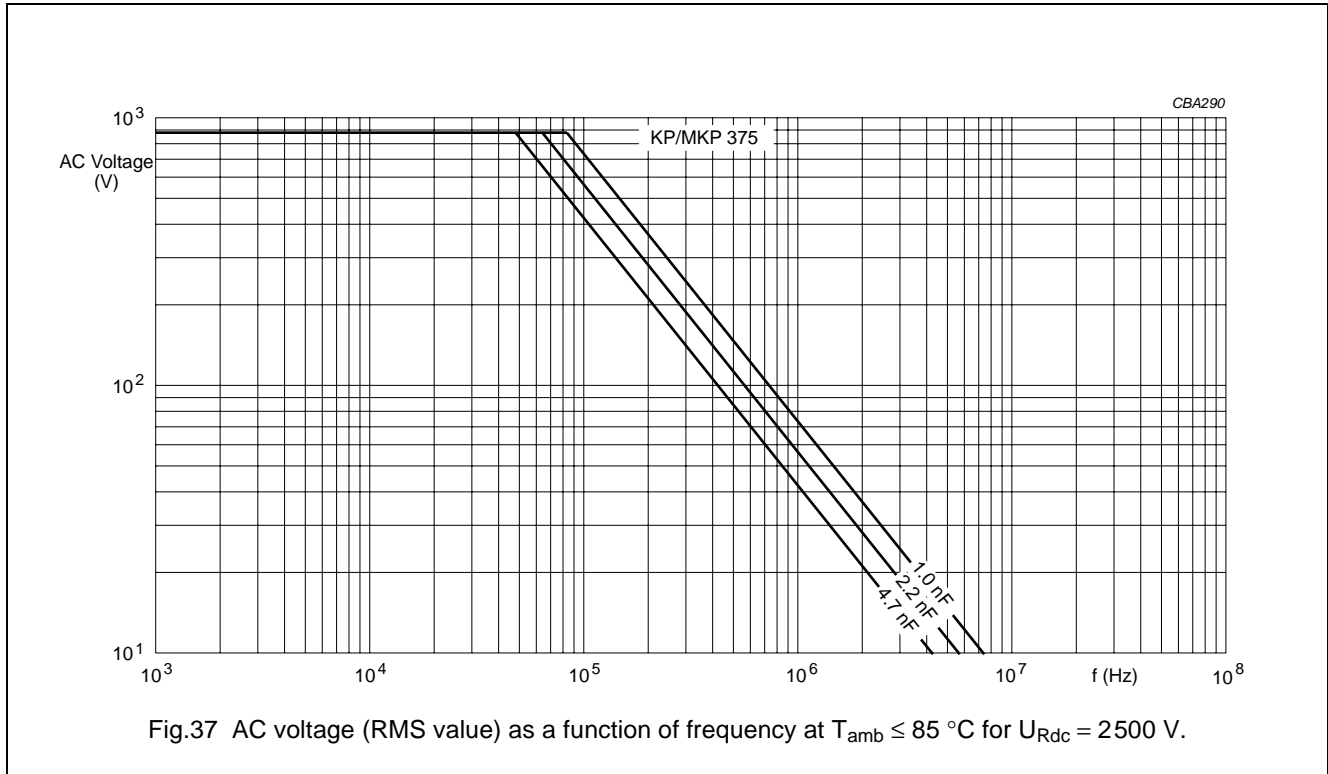
AC and Pulse
metallized polypropylene film capacitors

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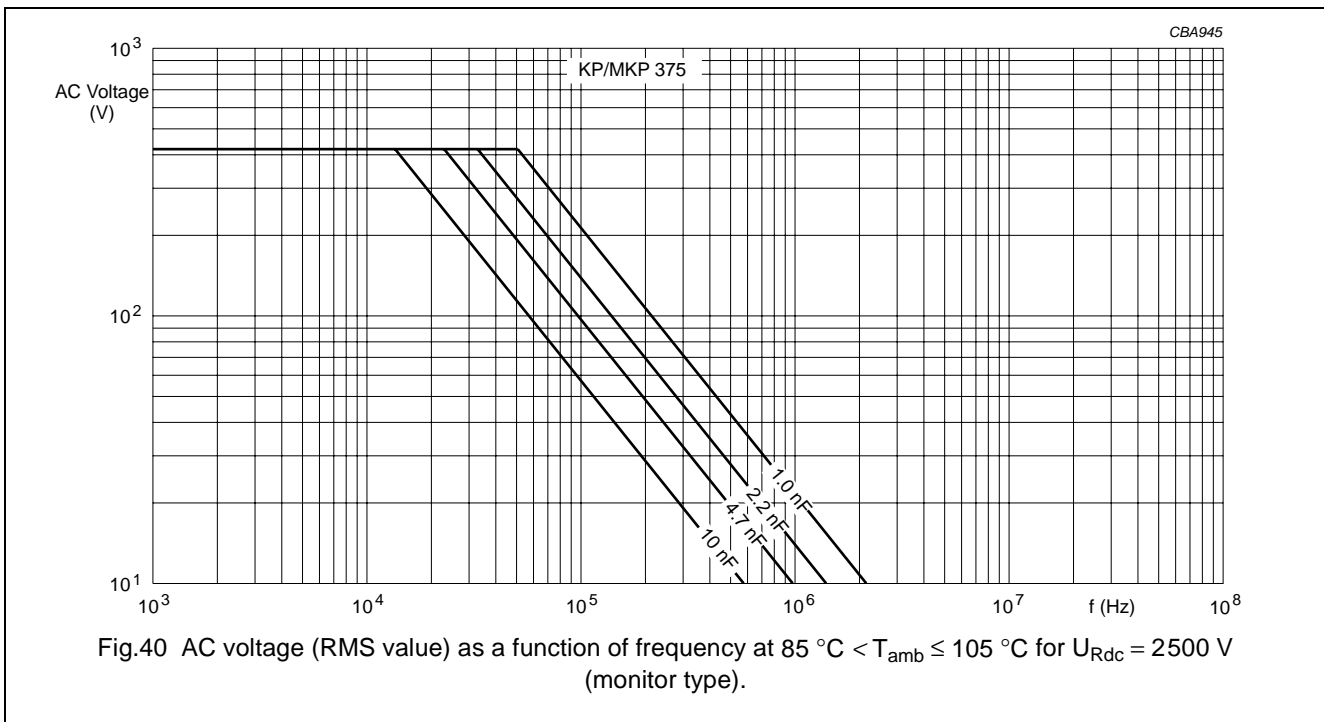
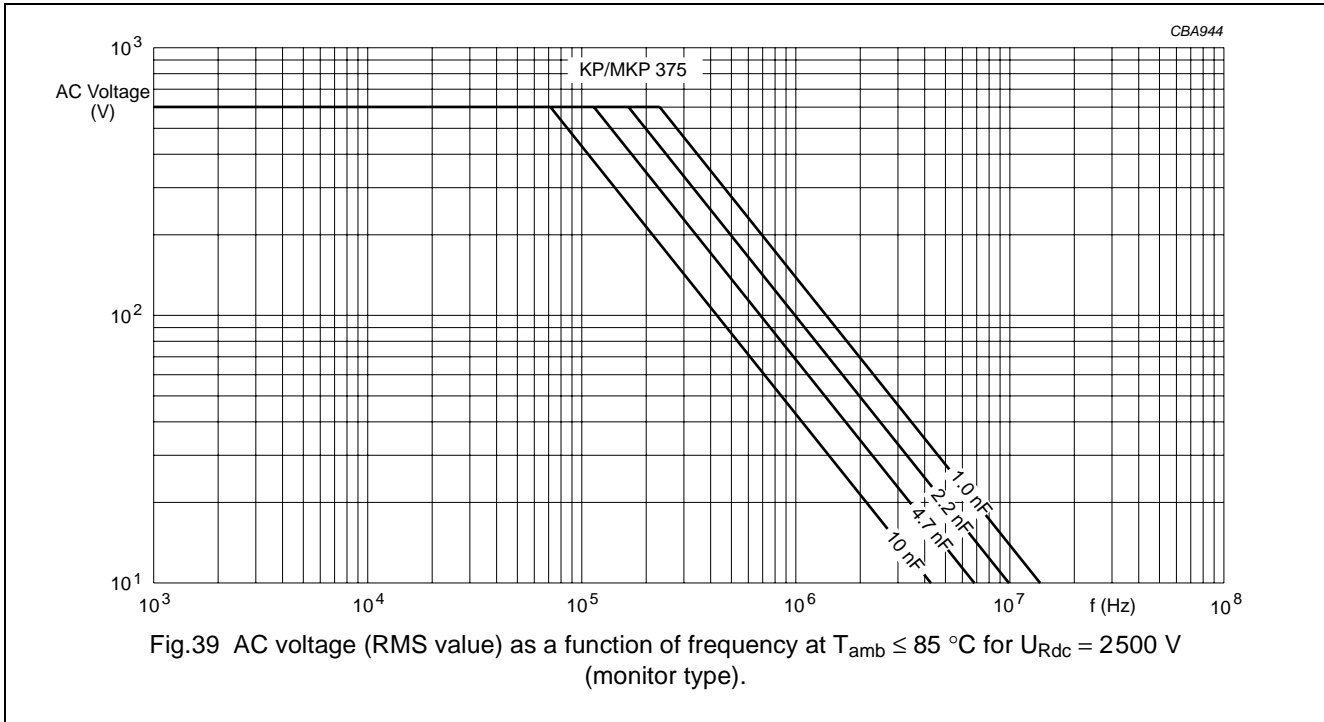
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Maximum RMS current (sinewave) as a function of frequency

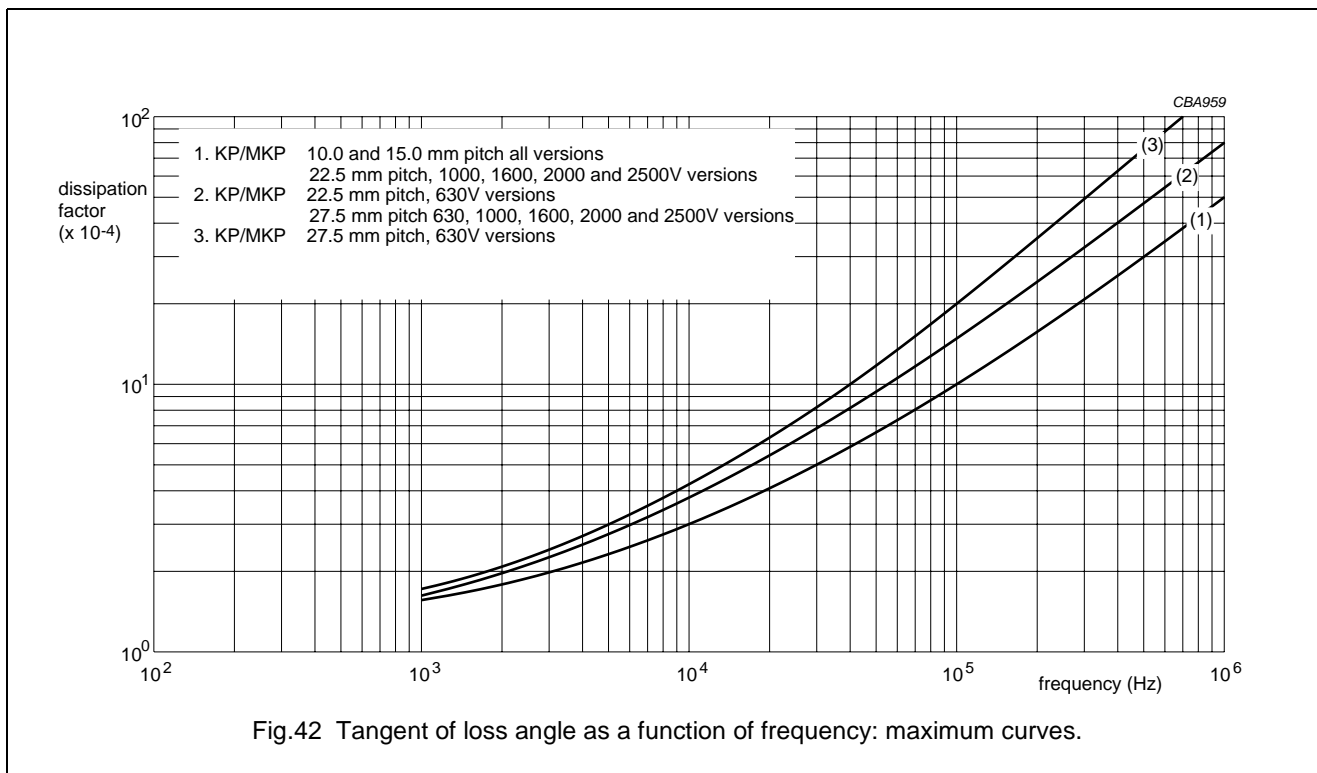
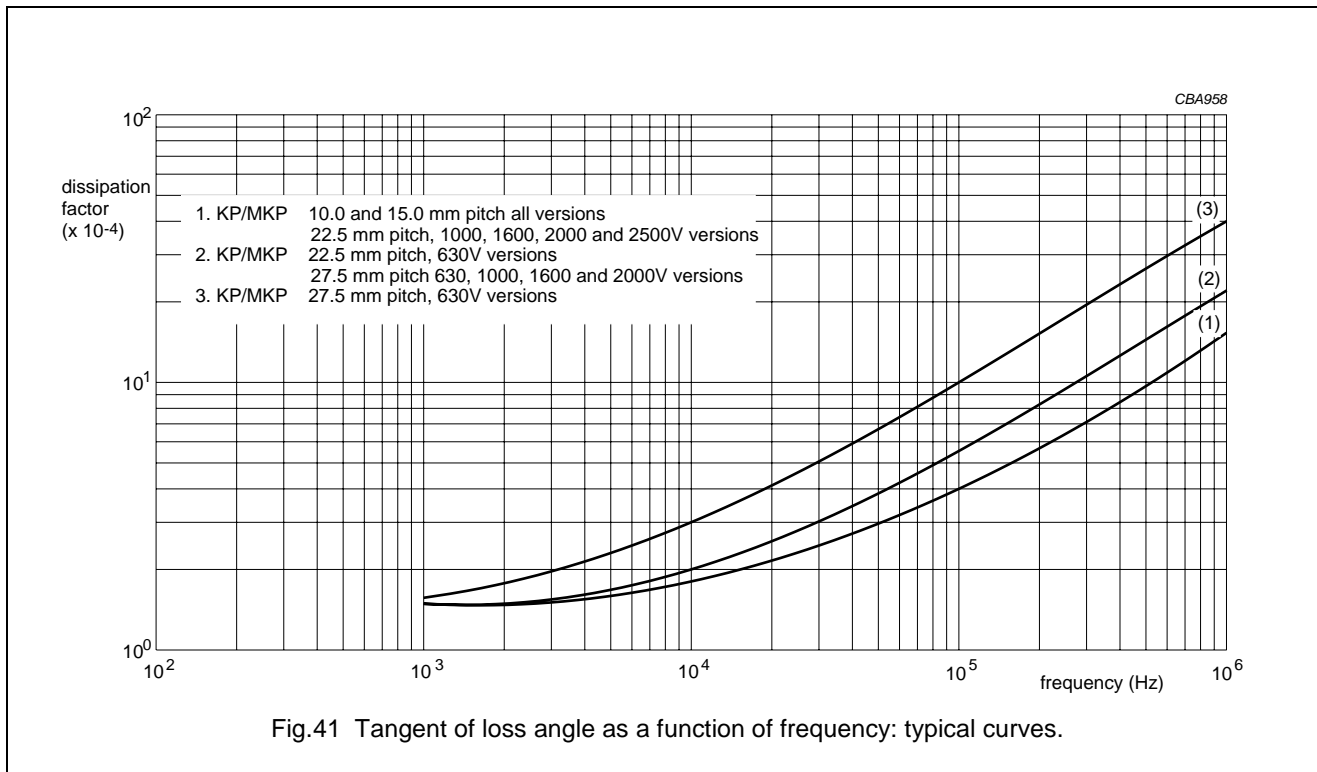
The maximum RMS current is defined by $I_{ac} = \omega \times C \times U_{ac}$.

U_{ac} is the maximum AC voltage depending on the ambient temperature in Figs 25 to 40.

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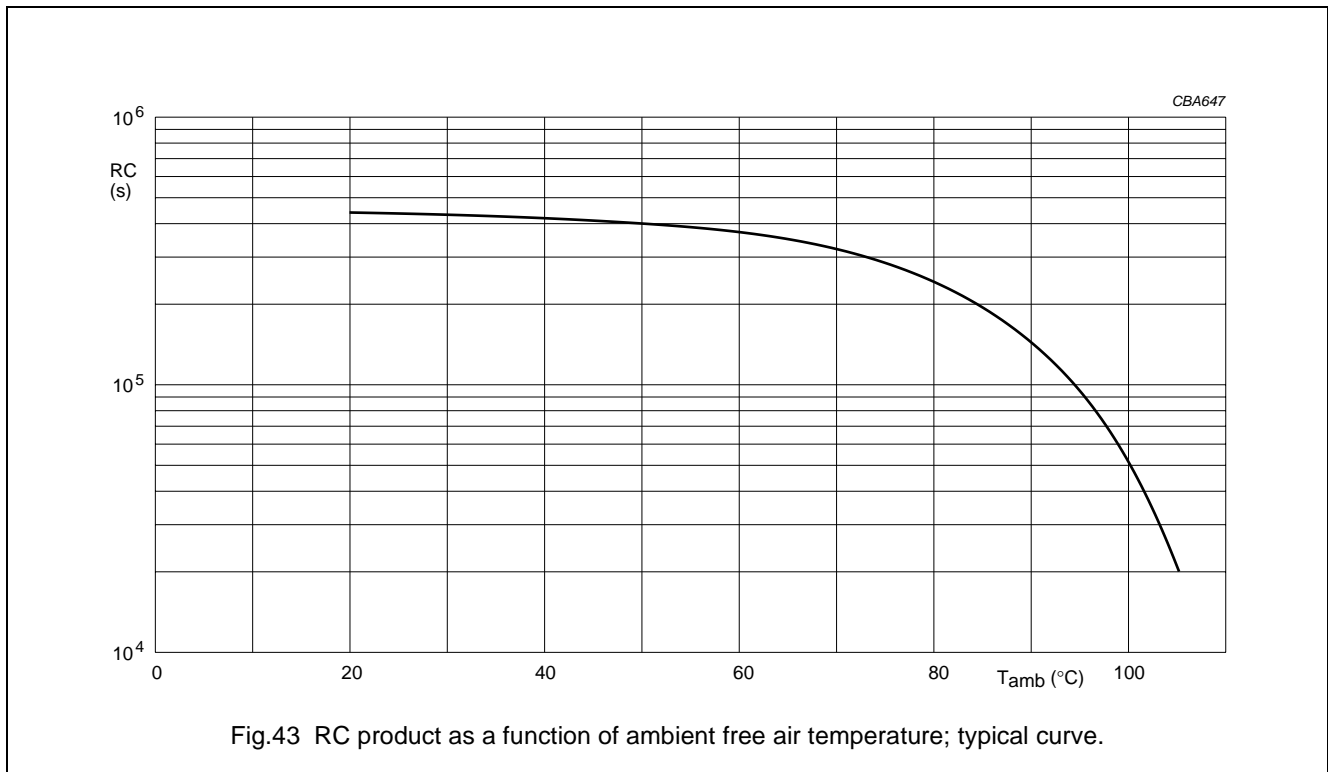
Tangent of loss angle



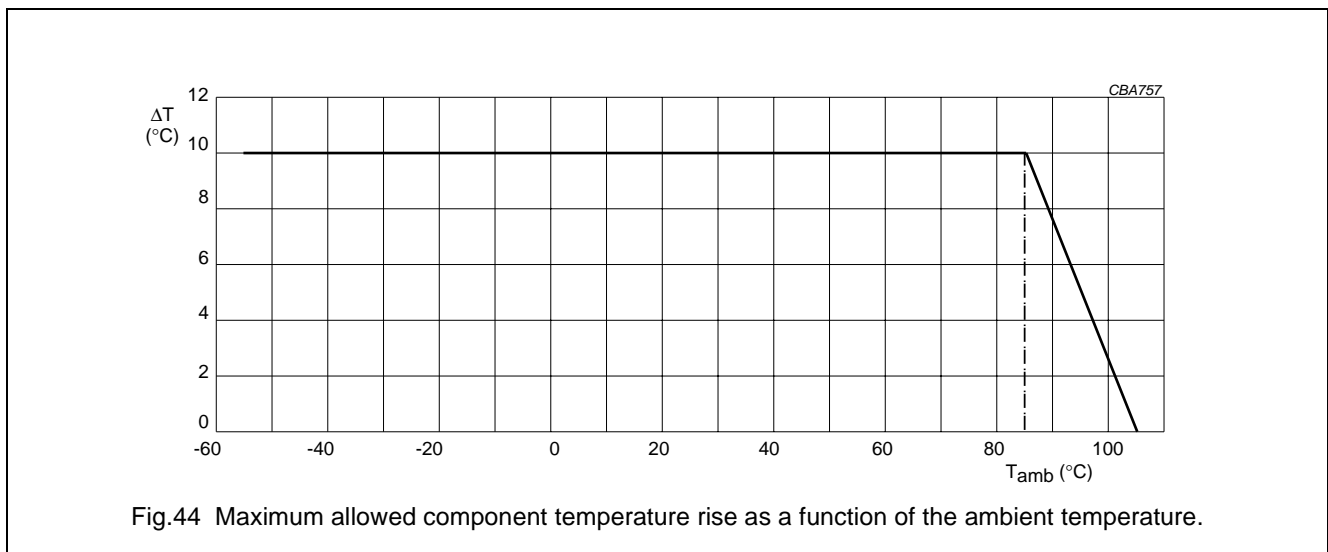
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Insulation resistance



Maximum allowed component temperature rise (ΔT) as a function of the ambient temperature (T_{amb})



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Heat conductivity (G) as a function of pitch and capacitor body thickness in mW/°C

Table 1 Heat conductivity

b _{max} (mm)	ORIGINAL PITCH (mm)			
	10	15	22.5	27.5
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	–	–	–	25.0
11.5	–	–	–	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 air ambient temperature.

The power dissipation can be calculated according chapter “Introduction”, section “Maximum power dissipation”.

The component temperature rise (ΔT) can be measured (see section “Measuring the component temperature” for more details) or calculated by $\Delta T = P/G$:

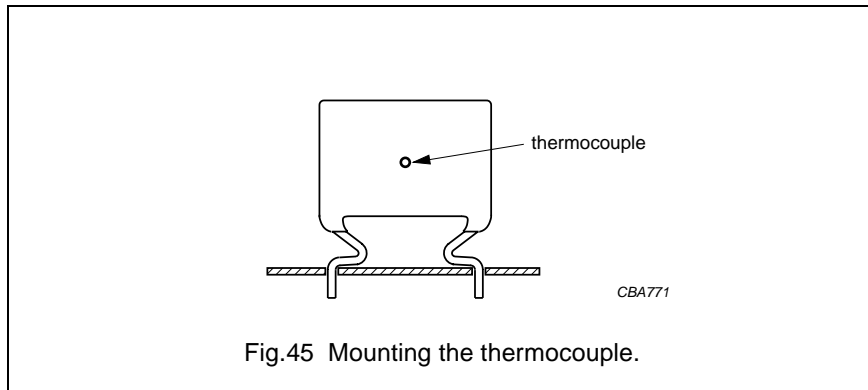
- ΔT = component temperature rise (°C).
- P = power dissipation of the component (mW).
- G = heat conductivity of the component (mW/°C).

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Measuring the component temperature

A thermocouple must be attached to the capacitor body; see Fig.45.



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.

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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 in Fig.44.

Example

C = 10 nF - 1600 V, KP/MKP.

This is a signal as in Fig.46 with:

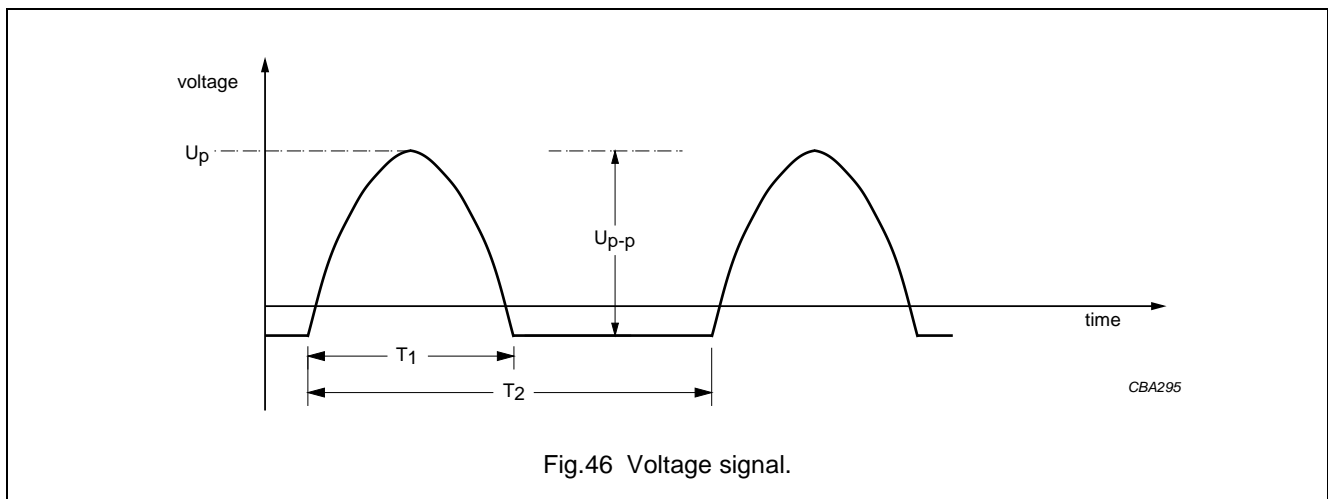
$$U_{p-p} = 1200 \text{ V}; U_p = 1100 \text{ V}; T_1 = 12 \text{ } \mu\text{s}; T_2 = 64 \text{ } \mu\text{s}.$$

The ambient temperature is 50 °C

Checking the conditions:

1. The peak voltage $U_p = 1100 \text{ V}$ is lower than 1600 V (DC).
2. The peak-to-peak voltage 1200 V is lower than $2 \times \sqrt{2} \times 500 \text{ V(AC)} = 1414 U_{p-p}$.
3. The voltage pulse slope: 320 V/ μs 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 $\frac{170\text{mW}}{17\text{mW}/^\circ\text{C}} = 10^\circ\text{C}$ which is allowed according Fig.44 for an ambient temperature of 50 °C.



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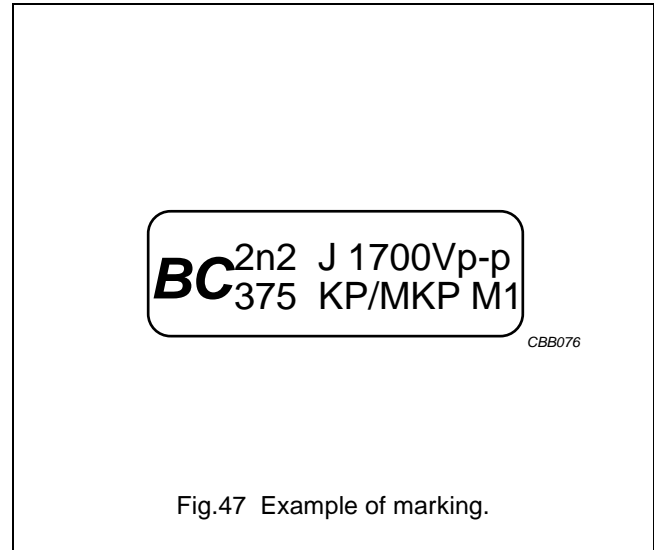
MARKING

Product marking

COUNTRY OF ORIGIN: BELGIUM

The capacitors are marked on the top (see Fig.47) with the following information:

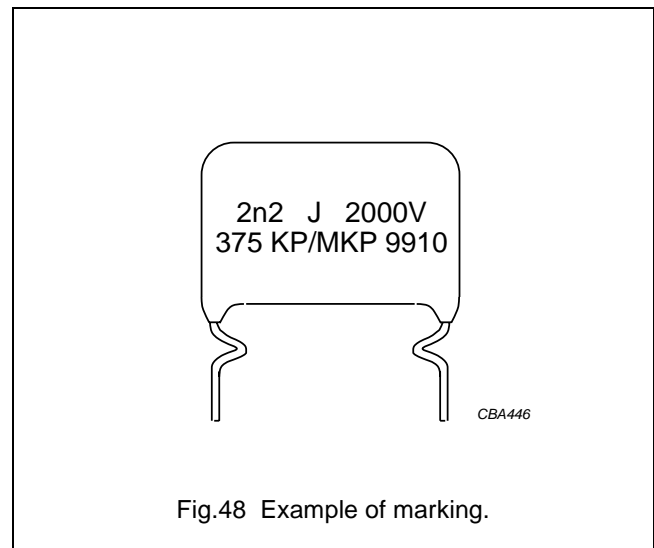
1. Capacitance code in accordance with "IEC 60062"
2. Capacitance tolerance: J = $\pm 5\%$; A = 3.5%
3. Rated peak-to-peak voltage (e.g. 1700 V_{p-p})
4. Manufacturer's type designation (375)
5. Code for dielectric material (KP/MKP)
6. Manufacturer's emblem (only for original pitch ≥ 15 mm)
7. Year and month of manufacturing code (only for original pitch ≥ 22.5 mm).



COUNTRY OF ORIGIN: PRC (PEOPLE'S REPUBLIC OF CHINA)

The capacitors are marked in ink on the front (see Fig.48) with the following information:

1. Capacitance code in accordance with "IEC 60062"
2. Capacitance tolerance: J = $\pm 5\%$; A = 3.5%
3. Rated d.c. voltage (e.g. 2000 V)
4. Manufacturer's type designation (375)
5. Code for dielectric material (KP/MKP)
6. Year and week of manufacturing code.



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Package marking

The package containing the capacitors is marked as shown in Fig.49.

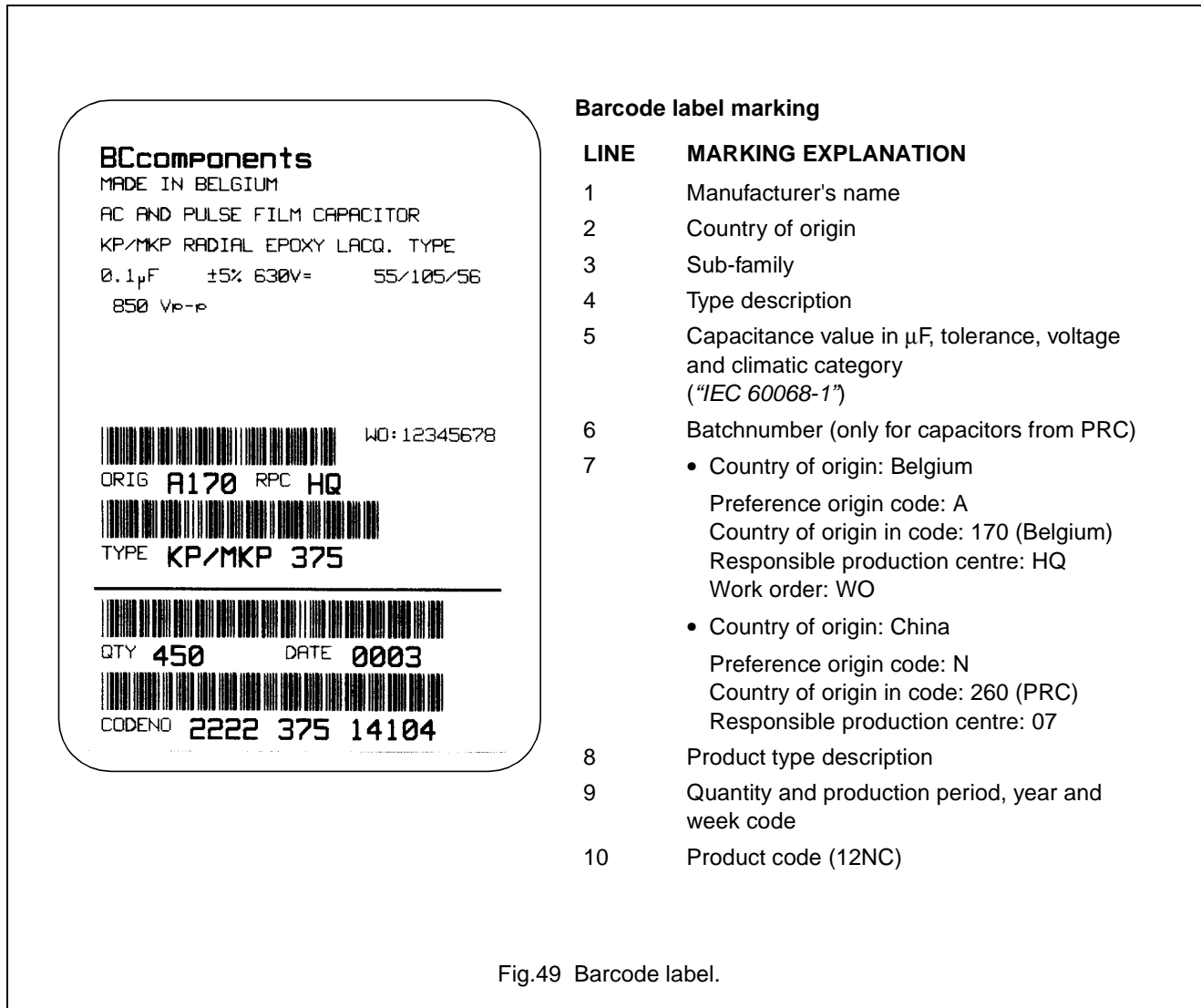


Fig.49 Barcode label.

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QUICK REFERENCE TEST REQUIREMENTS (see note 1)

TEST	PROCEDURE (quick reference)	REQUIREMENTS
Robustness of leads		
Tensile strength: "IEC 60068-2-21"	load 10 N; 10 s	no visible damage legible marking $ \Delta C/C \leq 1\% + 5 \text{ pF}$ $\Delta \tan \delta \leq 5 \times 10^{-4}$
Bending: "IEC 60068-2-21"	load 5 N; $4 \times 90^\circ$	
Resistance to soldering heat: "IEC 60068-2-20"	solder bath: 260 °C; 10 s	
Component solvent resistance	isopropyl alcohol; 23 °C; 5 minutes	
Robustness of component		
Vibration: "IEC 60068-2-6"	10 to 55 Hz; amplitude 0.75 mm or acceleration 98 m/s ² ; 6 hours	$ \Delta C/C \leq 2\%$ (C > 0.0056 μF)
Shock: "IEC 60068-2-27"	half sinewave; 490 m/s ² ; 11 ms	$ \Delta C/C \leq 3\% + 5 \text{ pF}$ (C ≤ 0.0056 μF) $\Delta \tan \delta \leq 5 \times 10^{-4}$
Climatic sequence		
Dry heat: "IEC 60068-2-2"	16 hours; 105 °C	$ \Delta C/C \leq 3\% + 5 \text{ pF}$ $\Delta \tan \delta \leq 10 \times 10^{-4}$ $R_{\text{ins}} \geq 50\%$ of specified value
Damp heat, cyclic, test Db, first cycle: "IEC 60068-2-30"		
Cold: "IEC 60068-2-1"	2 hours; -55 °C	
Damp heat, cyclic, test Db, remaining cycles: "IEC 60068-2-30"		
Other applicable tests		
Damp heat, steady state: "IEC 60068-2-3"	56 days; 40 °C; 90 to 95% RH	$ \Delta C/C \leq 1\% + 5 \text{ pF}$ $\Delta \tan \delta \leq 5 \times 10^{-4}$ $R_{\text{ins}} \geq 50\%$ of specified value
Endurance (AC): "IEC 60384-17"	2000 hours; $1.25 \times U_{\text{Rac}}$ (RMS); 50 Hz; 85°C	$ \Delta C/C \leq 2\%$ (C > 0.0056 μF) $ \Delta C/C \leq 3\% + 5 \text{ pF}$ (C ≤ 0.0056 μF) $\Delta \tan \delta \leq 10 \times 10^{-4}$ $R_{\text{ins}} \geq 50\%$ of specified value
	2000 hours; $0.875 \times U_{\text{Rac}}$ (RMS); 50 Hz; 105°C	$ \Delta C/C \leq 5\% + 5 \text{ pF}$ $\Delta \tan \delta \leq 10 \times 10^{-4}$ $R_{\text{ins}} \geq 50\%$ of specified value
Heat storage: "IEC 60384-17"	2000 hours; 105 °C	$ \Delta C/C \leq 3\%$ (C > 0.0056 μF) $ \Delta C/C \leq 5\% + 5 \text{ pF}$ (C ≤ 0.0056 μF) $\Delta \tan \delta \leq 10 \times 10^{-4}$

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TEST	PROCEDURE (quick reference)	REQUIREMENTS
Resistance to soldering heat with preheating: "IEC 60384-17"	body temperature: 105 °C; bath temperature: 260 °C; dwell time: 10 s	$ \Delta C/C \leq 2\% + 5 \text{ pF}$ $\Delta \tan \delta \leq 5 \times 10^{-4}$
Passive flammability: "IEC 60384-1"	class C	no burning
Endurance (DC): "IEC 60384-17"	2000 hours: $1.25 \times U_{Rdc}$; 85 °C $0.875 \times U_{Rdc}$; 105 °C	$ \Delta C/C \leq 3\% + 5 \text{ pF}$ $\Delta \tan \delta \leq 10 \times 10^{-4}$ $R_{ins} \geq 50\%$ of specified value

Note

1. For detailed information: see "Type detail specification HQN-384-17/104".