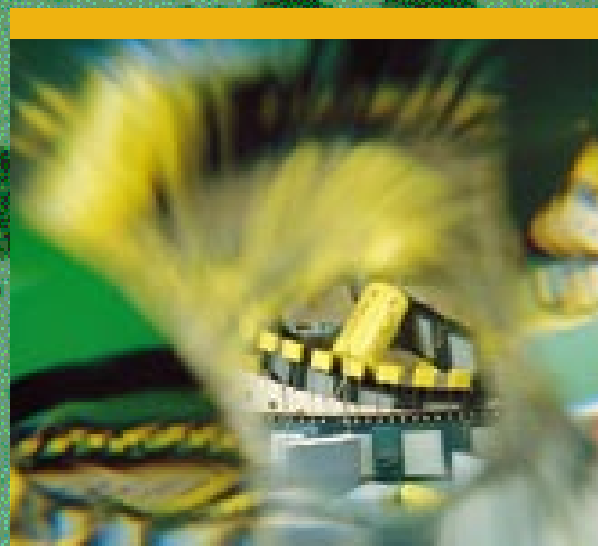
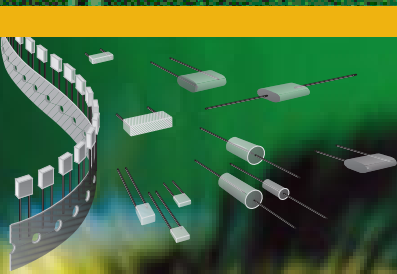


Metallized polyester film dielectric capacitors



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Comparative table of the plastic film dielectric characteristics

Characteristics	Polypropylene	Polycarbonate	Polystyrene	Polyester
Dielectric constant (25 °C / 50 Hz)	2.2	2.8	2.5	3.2
Minimum thickness (in micron)	4	2	6	1
Maximum working temperature (°C)	100	125	85	125
Can be metallized	yes	yes	no	yes
Tangent of loss angle (25 °C / 1000 Hz)	2	8	2	50
Insulation resistance (GΩ x μF)	100	50	100	50
Water absorption % in weight	< 0.01	0.3	0.1	0.2
Temperature coefficient (ppm / °C)	- 300	± 100	- 120	+ 1200
Dielectric strength (kV / mm)	350	180	150	250

Characteristics of the metallized polyester film dielectric capacitors

Introduction

The intrinsic characteristics of polyester as a dielectric are in particular :

- an important dielectric permittivity amongst the plastic dielectrics,
- a dielectric strength linked with an easy use, enabling the use of thin film,
- a range of working temperatures covering most kinds of application (- 55°C to + 100°C) and even 125°C for high temperature version.

They are particularly intended for use in bonding, chopping and other applications where the AC component is weak in comparison with the continuous nominal voltage.

Technology employed

The outstanding characteristic of the metallized film technology is the self healing by evaporation of the metallized area round a dielectric fault, thus allowing the electrical insulation of the faults present in the film.

Characteristics of the metallized polyester film dielectric capacitors

General electric characteristics

Applicable specifications :

- General specifications : CEI 384-1/CECC 30.000/NFC 83.100.
- Sectionnal specifications : CEI 384-2/CECC 30.400/NFC83.151.

I - Nominal capacitance (C_R) and capacitance tolerances

Nominal capacitance values are based on the E6 and E12 series (see tables of standard values) and their multiples and decimals with the associated tolerances are shown in the table below.

Tolerances	
Values	Code
5 %	J
10 %	K
20%	M

● Capacitance measurement between terminals :

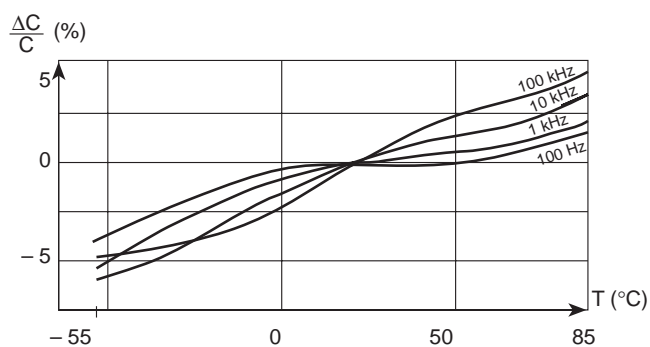
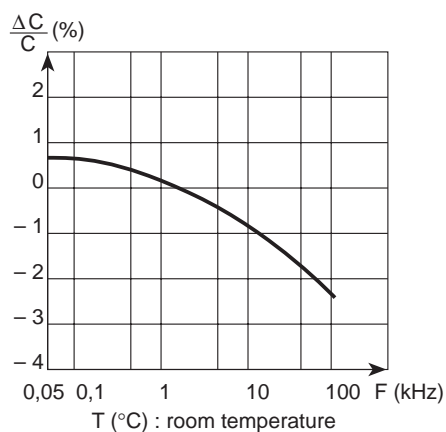
Measurement frequency : 1 kHz (± 0.1 kHz) $\odot C_R \leq 1 \mu F$

100 Hz (± 5 H) $\odot C_R > 1 \mu F$

● Measurement voltage

Peak value of applied voltage should not exceed, at 1 kHz, 3 % of the nominal voltage U_R and at 100 Hz, 20 % of the nominal value with a maximum of 100 V (70 V_{RMS}).

Sanction : the measured value must be at the nominal capacitance considering the tolerance.



Characteristics of the metallized polyester film dielectric capacitors

II - DC nominal voltage (U_{R-})

The nominal voltage is the maximum DC voltage that may be applied to the capacitor terminals at a temperature of 85 °C.

Standard values : the standard values of the nominal voltage comply with the R5 basic series standard numbers in the ISO R3 recommendation (25 - 40 - 63 - 100 - 160) and their multiples and decimals.

III - AC nominal voltage (U_{R-})

The frequency is 50 Hz unless a higher frequency is specified.

IV - Category voltage (U_c)

The voltage category is the voltage that can be applied to a capacitor used at the maximum temperature of its category. This voltage is specified in the data sheet or detailed specification for each product.

V - Test voltage (U_t)

The test voltage applied between output terminals is a DC voltage equal to :

- 1.4 U_{R-} for 1 minute for Class 2 capacitors (general use),
- 1.6 U_{R-} for 1 minute for Class 1 capacitors (long life).

VI - Tangent of loss angle ($Tg \delta$)

Measurement conditions :

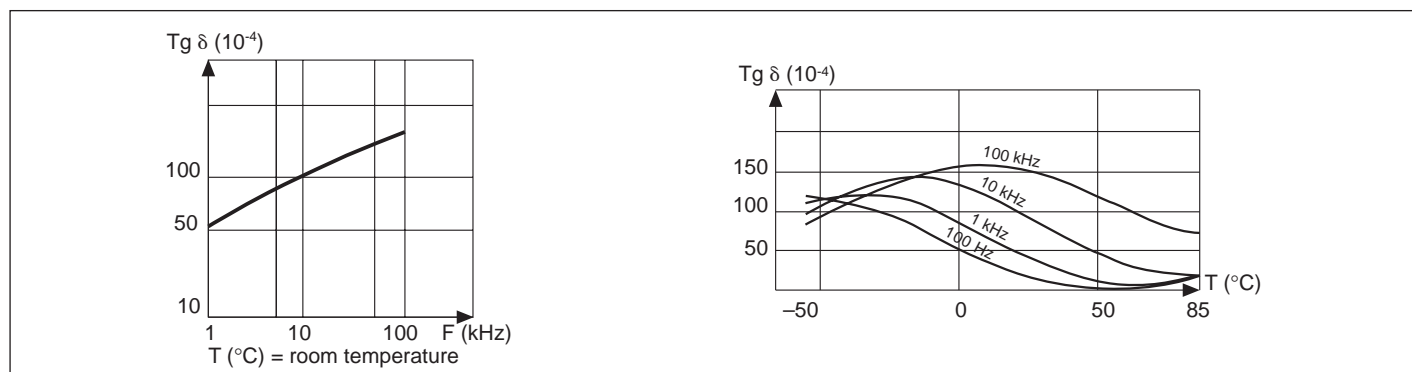
- identical to those for the measurement of capacitance between terminals.

Requirements :

- the tangent of loss angle should not exceed the values shown in the table below.

Measurement frequency	Capacitance	$tg \delta (10^{-4})$	
		Performance category 1	Performance category 2
1 kHz	$C_R \leq 1 \mu F$	≤ 80	≤ 100
100 Hz	$C_R > 1 \mu F$	≤ 1000	≤ 100

Typical curves



Characteristics of the metallized polyester film dielectric capacitors

VII - Insulation resistance (Ri)

Measurement conditions :

- The table below gives the measurement voltages in relation to the nominal voltage of the capacitor, unless otherwise specified.

Nominal voltage	Measurement voltage
$U_{R-} < 10 \text{ V}$	$U_R \pm 10 \%$
$10 \text{ V} \leq U_{R-} < 100 \text{ V}$	$10 \text{ V} \pm 1 \text{ V}$
$100 \text{ V} \leq U_{R-} < 500 \text{ V}$	$100 \text{ V} \pm 15 \text{ V}$
$500 \text{ V} \leq U_{R-}$	$500 \text{ V} \pm 50 \text{ V}$

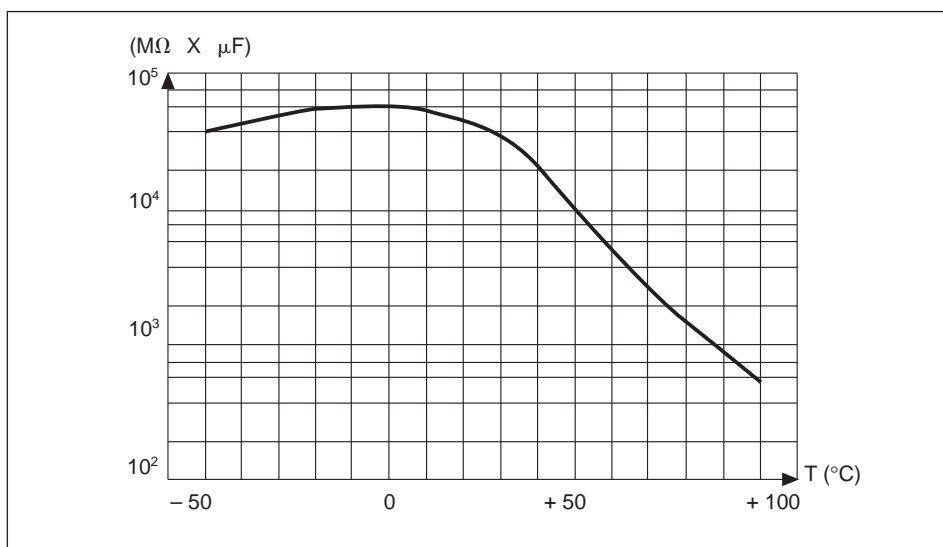
Requirements :

- The insulation resistance should meet the values shown in the table below at 20 °C.

Measuring points	$C_R \leq 0.33 \mu\text{F}$				$C_R > 0.33 \mu\text{F}$			
	Ri min (GΩ)				Ri x C _R min (MΩ x μF)			
	Performance class 1		Performance class 2		Performance class 1		Performance class 2	
between terminals	$U_{R-} \leq 100 \text{ V}$	$U_{R-} > 100 \text{ V}$	$U_{R-} \leq 100 \text{ V}$	$U_{R-} > 100 \text{ V}$	$U_{R-} \leq 100 \text{ V}$	$U_{R-} > 100 \text{ V}$	$U_{R-} \leq 100 \text{ V}$	$U_{R-} > 100 \text{ V}$
	15	30	3.75	7.5	5,000	10,000	1,250	2,500
between terminals and ground	$\geq 30,000 \text{ M}\Omega$							

Typical curve :

Insulation resistance versus temperature $R_i = f(T) \text{ } ^\circ\text{C}$.

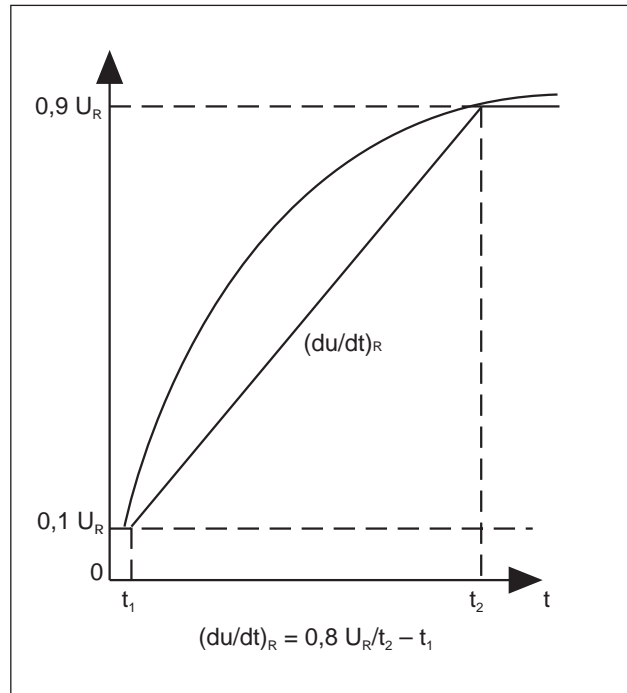


Characteristics of the metallized polyester film dielectric capacitors

VIII - Voltage gradient $(du/dt)_R$

- Pulses under U_R

example :



- Pulses under U_A

maximum voltage gradients of the capacitor under U_A :

$$(du/dt)_{Amax} = \frac{U_R}{U_A} \times (du/dt)_{Rmax}$$

Type selection guide

Presentation	Type		Nominal voltage		Capacitance range (C_R)	Tolerance on C_R (series)	Lead spacing (in mm)
	TPC	UTE	$U_{R-}(V)$	$U_{R-}(V)$			
Radial leads	BF	CPM-83 C83151	63 ... 400	40 ... 200	1 nF ... 2.2 μ F	$\pm 5\%$ (E6 - E12) $\pm 10\%$ (E6 - E12)	5.08
	BH	CPM-N C83151	63 ... 400	40 ... 200	1 nF ... 2.2 μ F	$\pm 5\%$ (E6 - E12) $\pm 10\%$ (E6 - E12)	5.08
	BT	CPM85 C83151	63 ... 630	40 ... 220	1 nF ... 22 μ F	$\pm 5\%$ (E6 - E12) $\pm 10\%$ (E6 - E12) $\pm 20\%$ (E6 - E12)	7.5 10 15 22.5 27.5
	BC / BD		250	–	0,47 μ F ... 2,2 μ F	$\pm 5\%$ $\pm 10\%$	15
	BO	CPM50 C83151	40 ... 400	25 ... 200	1 nF ... 22 μ F	$\pm 5\%$ (E6 - E12) $\pm 10\%$ (E6 - E12) $\pm 20\%$ (E6 - E12)	7.5 10 15 27.5
	S4	CPM13 C83151	63 ... 400	40 ... 200	1 nF ... 10 μ F	$\pm 5\%$ (E6 - E12) $\pm 10\%$ (E6 - E12) $\pm 20\%$ (E6 - E12)	7.62 10.16 15.24 27.94

Axial leads	S8	CPM8 C83151	63 ... 400	40 ... 200	1 nF ... 10 μ F	$\pm 5\%$ (E6 - E12) $\pm 10\%$ (E6 - E12) $\pm 20\%$ (E6 - E12)	
	S9	CPM72 C83151	100 ... 630	40 ... 220	1 nF ... 10 μ F	$\pm 5\%$ (E6 - E12) $\pm 10\%$ (E6 - E12) $\pm 20\%$ (E6 - E12)	
	ST		630 ... 10,000		100 pF ... 1.5 μ F	$\pm 5\%$ (E6 - E12) $\pm 10\%$ (E6 - E12) $\pm 20\%$ (E6 - E12)	

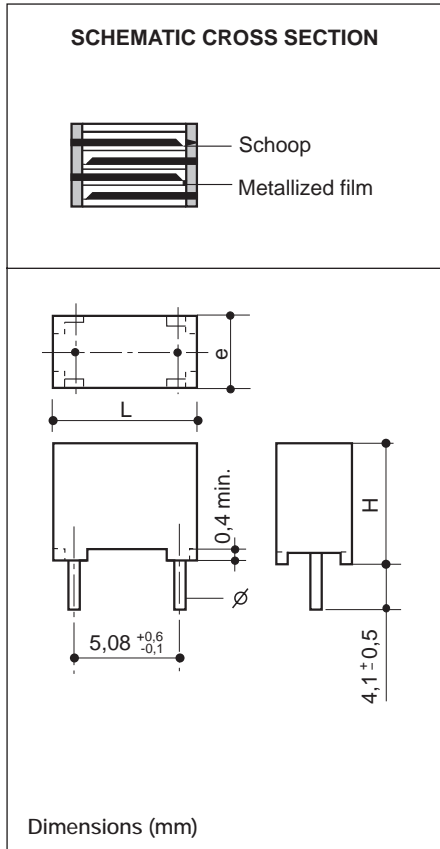
How to order

Example of an order : how to order a CPM85 100 nF \pm 10% 100 V.

Codification

1 ... 3	4	5	6	7	8	9	10	11	12	13	14	15	16
Internal code	B	T	0	7	4	E	0	1	0	4	K	-	-

	Codification	Dielectric class	Voltage	Capacitance (EIA code)		Tolerance		Suffix
				Capacitance expressed by 2 significant figures	Capacitance expressed by 3 significant figures	Code		
Radial leads	CPM83	BF 01	4	25/40 V : C	<p>Capacitance expressed by 2 significant figures</p> <p>10th digit : 0 (zero)</p> <p>11th and 12th digit : the 2 significant figures of the capacitance value</p> <p>13th digit : - for values 10 pF and 990 μF : the number of ZEROS to be added to the capacitance values - for values 1 pF and 9.9 pF : the figure 9 signifying that the capacitance value is to be multiplied by 0.1 - for values < 1 pF : the figure 8 signifying that the capacitance value is to be multiplied by 0.01</p> <p>Examples : 1000 pF : 0102 8.2 pF : 0829 0.47 pF : 0478</p> <p>Capacitance expressed by 3 significant figures</p> <p>10th, 11th and 12th digit : the 3 significant figures of the capacitance value</p> <p>13th digit : - for values > 100 pF and 999 μF : the number of ZEROS to be added to the capacitance values - for values > 10 pF and < 100 pF : the figure 9 signifying that the capacitance value is to be multiplied by 0.1 - for values > 1 pF and < 10 pF : the figure 8 signifying that the capacitance value is to be multiplied by 0.1</p> <p>Example : 196 pF : 1960 47.2 pF : 4729 8.28 pF : 8288</p>	Code	DA DB DC DD EN GA HT	
	CPM83	BF 02		50/63 V : D				\pm 5%
	CPM83	BF 05		100 V : E		\pm 10%	K	
	CPM83	BF 07		160/200 V : F		\pm 20%	M	
	CPM-N	BH 01		250 V : G				
	CPM-N	BH 02		275/300 V : H				
	CPM-N	BH 05		400 V : I				
	CPM-N	BH 06	500 V : J					
	CPM-N	BH 07	600/630 V : K					
	CPM85	BT 07	1000 V : L					
	CPM85	BT 10	1600 V : M					
	CPM85	BT 15	2000 V : N					
	CPM85	BT 22	2500 V : P					
	CPM85	BT 27	3000 V : Q					
	-	BC15	4000 V : R					
	-	BD15	5000 V : S					
	CPM50	B0 07	6000/6300 V : T					
	CPM50	B0 10	8000 V : U					
	CPM50	B0 15	10 kV : V					
	CPM50	B0 27						
CPM13	S4 07							
CPM13	S4 10							
CPM13	S4 15							
CPM13	S4 27							
Axial leads	CPM8	S8 10						
	CPM8	S8 14						
	CPM8	S8 18						
	CPM8	S8 31						
	CPM72	S9 10						
	CPM72	S9 13						
	CPM72	S9 18						
	CPM72	S9 27						
	CPM72	S9 31						
	-	ST 22						
-	ST 36							



Applications

Non inductive, self healing, metallized polyester film capacitor. Insulated* thermoplastic casing, epoxy resin sealed with stand-offs*. Radial connections with a lead spacing of 5.08 mm.

* Flame retardant resin and case according to UL 94 V₀.

Some examples of use :

Supply decoupling, filter, integrators, treatment of analog signals, rejection of line perturbations, etc...

Standardization

Generic specifications : CEI 384-1/CECC 30000/UTE 83100.

Sectional specifications : CEI 384-2/CECC 30400/UTE 83151.

Complies with special specification : CECC 30401-063.

On the LNz list : complies with type CPM-N.

RAQ2 production, equivalent AQAP-4 of NATO.

Dimensions (mm)

Case	max. L	max. H	max. e	Ø ± 0.02	Observations
01	7.5	6.5	2.5	0.5	1 nF C _R 220 nF
02	7.5	8	3.2	0.5	5.6 nF C _R 330 nF
07	7.5	8	5	0.5	18 nF C _R 1 µF
05 *	7.5	12	6	0.5	27 nF C _R 2.2 µF

* BF05 model upon request

Marking



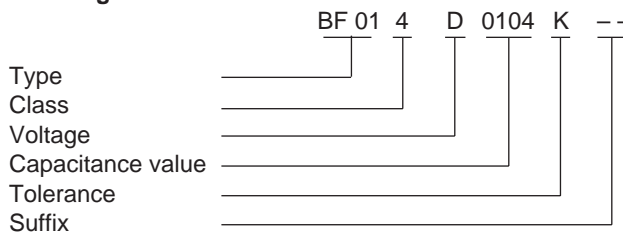
DC nominal voltage
 Nominal capacitance
 Tolerance (EIA code)
 THOMSON logo
 Lot number
 Example above : 63 V_{DC}, 100 nF, ± 10%

General characteristics

- Climatic category : 55/100/56 - Performance class 2
- Capacitance range : C_R 1 nF to 2,2 µF (E12)
- Tolerances on C_R : ± 5% ± 10%
other values on request
- Nominal voltages : U_R- 63/100/250/400 V
U_R- 40/63/160/200 V
- Category voltage : U_C = 0.8 U_R at 100°C
- Test voltage : U_e = 1.6 U_R/2 s at 25°C
- Tangent of loss angle : tg δ (see page 7)
- Insulation resistance : Ri (see page 8)
- Max. voltage gradient : (du/dt)_R (see page 9)

U _R (V)	63	100	250	400
(du/dt) _R max	38	40	110	270

Ordering code



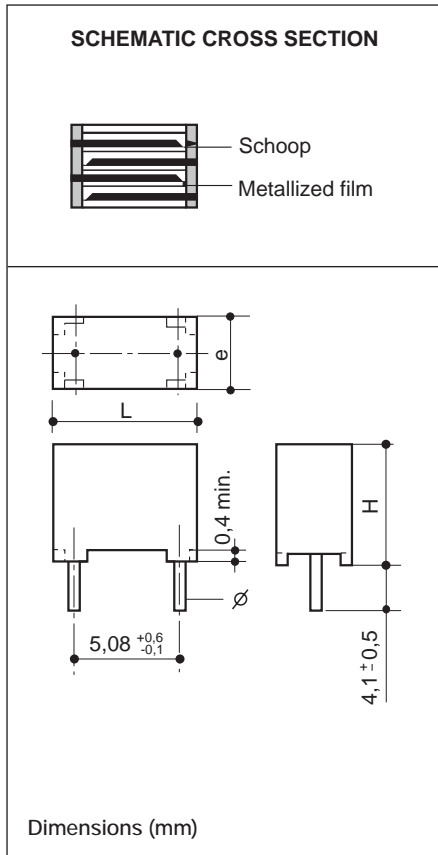
Capacitance values (C_R) and nominal voltages (U_R) depending on the cases.

Capacitance range (C_R)	Reference			
	BF			
	U_R/U_{R-} (V)			
	63/40	100/63	250/160	400/200
1.000 pF	BF01	BF01	BF01	BF01
1.200	BF01	BF01	BF01	BF01
1.500	BF01	BF01	BF01	BF01
1.800	BF01	BF01	BF01	BF01
2.200 pF	BF01	BF01	BF01	BF01
2.700	BF01	BF01	BF01	BF01
3.300	BF01	BF01	BF01	BF01
3.900	BF01	BF01	BF01	BF01
4.700 pF	BF01	BF01	BF01	BF01
5.600	BF01	BF01	BF01	BF01/BF02
6.800	BF01	BF01	BF01	BF01/BF02
8.200	BF01	BF01	BF01	BF01/BF02
10.000 pF	BF01	BF01	BF01	BF01/BF02
12.000	BF01	BF01	BF01	BF02
15.000	BF01	BF01	BF01	BF02
18.000	BF01	BF01	BF01	BF02/BF07
22.000	BF01	BF01	BF01	BF02/BF07
27.000	BF01	BF01	BF01	BF05*/BF07
33.000	BF01	BF01	BF01	BF05*/BF07
39.000	BF01	BF01	BF02	BF07
47.000 pF	BF01	BF01	BF02	BF07
56.000	BF01	BF01	BF07	
68.000	BF01	BF01	BF07	
82.000	BF01	BF01	BF05*/BF07	
100 nF	BF01	BF01	BF05*/BF07	
120	BF01	BF01		
150	BF01	BF01		
180	BF01	BF07		
220 nF	BF01	BF07		
270	BF02	BF07		
330	BF02	BF07		
390	BF07/BF02***	BF05*/BF07		
470 nF	BF07/BF02***	BF05*/BF07		
560	BF07	BF05*		
680	BF07	BF05*		
820	BF07	BF05*		
1 μ F	BF07	BF05*		
1.5 μ F	BF05*			
2.2 μ F	BF05**			

* Upon request

** Upon request & only available 50 V (U_R)

*** Special Part Number upon request



Applications

Non inductive, self healing, metallized polyester film capacitor. Insulated* thermoplastic casing, epoxy resin sealed with stand-offs*. Radial connections with a lead spacing of 5.08 mm.

* Flame retardant case according to UL 94 V₀.

Some examples of use :

Supply decoupling, filter, integrators, treatment of analog signals, rejection of line perturbations, etc... Specifically designed for working in severe environmental conditions such as automotive applications : engine control, multiplexing system, etc.

Standardization

Generic specifications : CEI 384-1/CECC 30000/UTE 83100.

Sectional specifications : CEI 384-2/CECC 30400/UTE 83151.

On the LNZ list : complies with type CPM-N.

RAQ2 production, equivalent AQAP-4 of NATO.

Dimensions (mm)

Case	max. L	max. H	max. e	∅ ± 0.02	Observations
01	7.5	6.5	2.5	0.5	1 nF C _R 220 nF
02	7.5	8	3.2	0.5	5.6 nF C _R 330 nF
05	7.5	12	6	0.5	18 nF C _R 2.2 μF
06	7.5	9.6	6	0.5	18 nF C _R 1 μF
07	7.5	8	5	0.5	8.2 nF C _R 1 μF

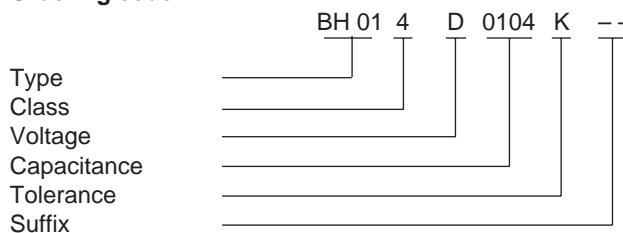
General characteristics

- Climatic category : 55/125/56 - Performance class 2
- Capacitance range : C_R 1 nF to 2,2 μF (E12)
- Tolerances on C_R : ± 5% ± 10%
other values on request
- Nominal voltages : U_{R-} 63/100/250/400 V
U_{R-} 40/63/160/200 V
- Category voltage : U_C = 0.8 U_{R-} at 100°C/0.5 U_{R-} at 125°C
- Test voltage : U_e = 1.6 U_{R-}/2 s at 25°C
- Tangent of loss angle : tg δ (see page 7)
- Insulation resistance : Ri (see page 8)
- Max. voltage gradient : (du/dt)_R (see page 9)

U _{R-} (V)	63	100	250	400
(du/dt) _R max	38	40	110	270

- Life test : 3C/C 5% after 125°C/1000 h/0.5 U_{R-}
- Thermal shock : -55/+125°C/time cycle 1h/500 cycles
3C/C 10%, tg δ 1 kHz 100.10⁻⁴
- Humidity test : 85°C/85% R.H./1000 h 3C/C 10%

Ordering code



Marking

D 104 K E 49

DC nominal voltage
Nominal capacitance (EIA code)
Tolerance (EIA code)
THOMSON logo
Lot number
Example above : 63 V_{DC}, 100 nF, ± 10%

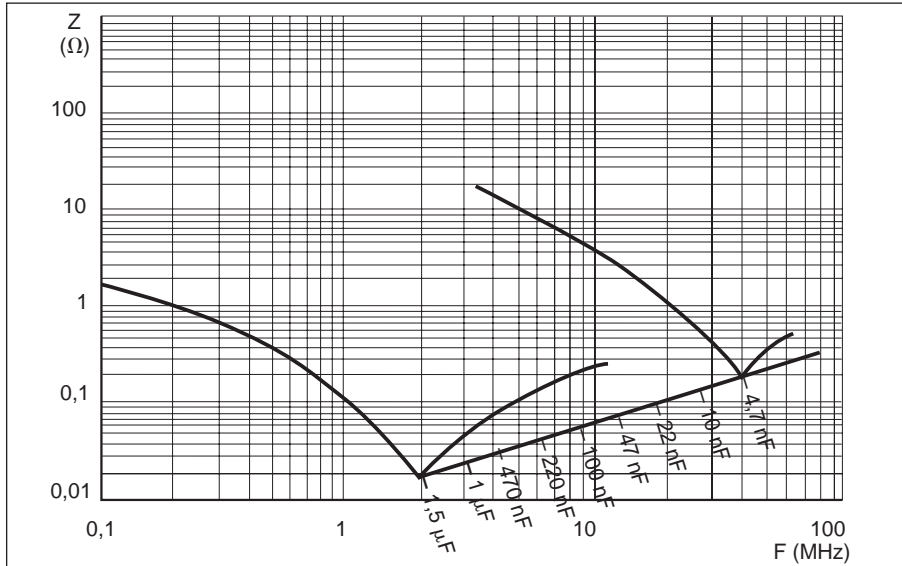
Capacitance values (C_R) and nominal voltages (U_R) depending on the cases.

Capacitance range (C_R)	Reference			
	BH			
	U_R/U_{R-} (V)			
	63/40	100/63	250/160	400/200
1,000 pF	BH01	BH01	BH01	BH01
1,200	BH01	BH01	BH01	BH01
1,500	BH01	BH01	BH01	BH01
1,800	BH01	BH01	BH01	BH01
2,200 pF	BH01	BH01	BH01	BH01
2,700	BH01	BH01	BH01	BH01
3,300	BH01	BH01	BH01	BH01
3,900	BH01	BH01	BH01	BH01
4,700 pF	BH01	BH01	BH01	BH01
5,600	BH01	BH01	BH01	BH02
6,800	BH01	BH01	BH01	BH02
8,200	BH01	BH01	BH01	BH07
10,000 pF	BH01	BH01	BH01	BH07
12,000	BH01	BH01	BH01	BH07
15,000	BH01	BH01	BH01	BH07
18,000	BH01	BH01	BH01/BH02	BH06/BH05
22,000	BH01	BH01	BH02	BH06/BH05
27,000	BH01	BH01	BH02	BH06/BH05
33,000	BH01	BH01	BH02	BH06/BH05
39,000	BH01	BH01	BH07	BH05
47,000 pF	BH01	BH01	BH07	BH05
56,000	BH01	BH01	BH07	
68,000	BH01	BH01	BH07	
82,000	BH01	BH01	BH06/BH05	
100 nF	BH01	BH01	BH06/BH05	
120	BH01	BH01/BH07	BH05	
150	BH01	BH01/BH07	BH05	
180	BH01	BH02/BH07		
220 nF	BH01/BH02	BH02/BH07		
270	BH02	BH07		
330	BH02	BH07		
390	BH07	BH07/BH05		
470 nF	BH07	BH05		
560	BH07	BH05		
680	BH07/BH06	BH05		
820	BH07/BH06	BH05		
1 μ F	BH07/BH06	BH05		
1.5 μ F	BH05			
2.2 μ F	BH05*			

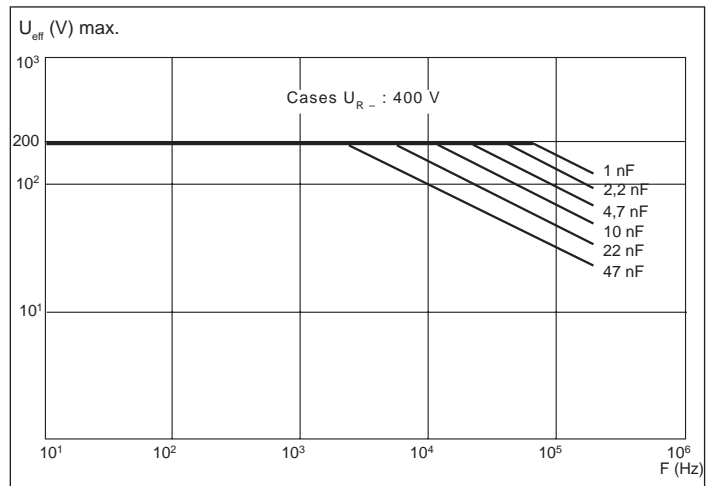
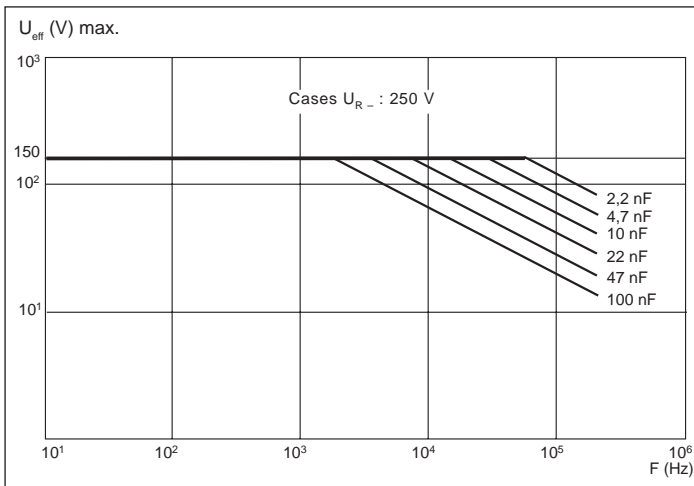
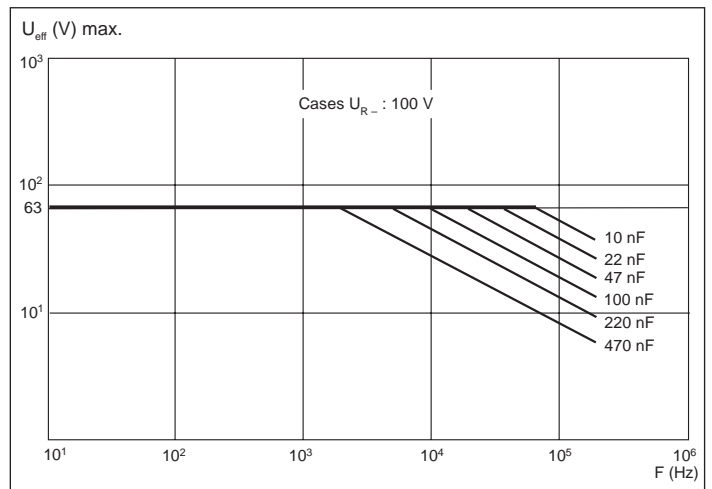
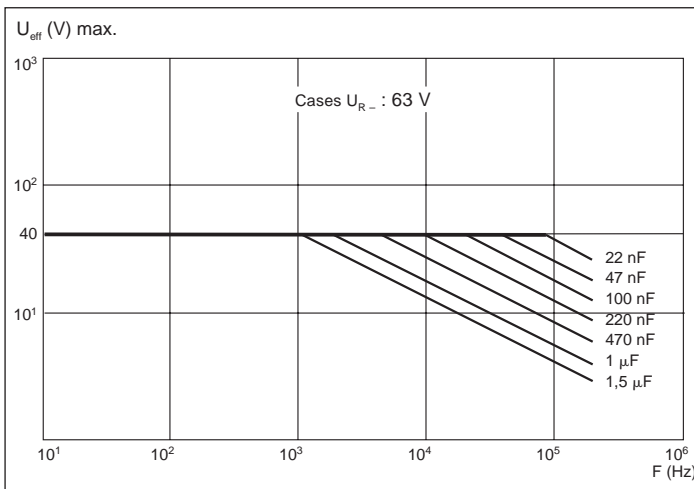
* ($U_R = 50$ V)

Characteristics curves

Influence of the frequency on the impedance (room temperature).

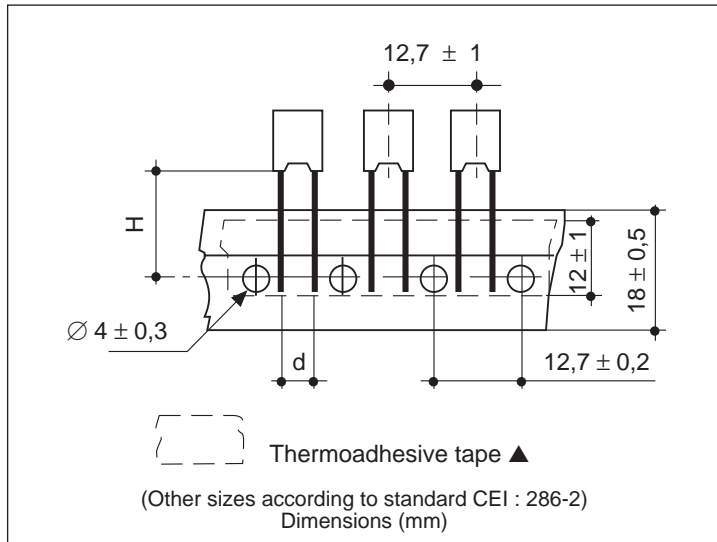


Nominal RMS voltage versus frequency (room temperature) allowing a 10 °C increase of the external temperature of the box.



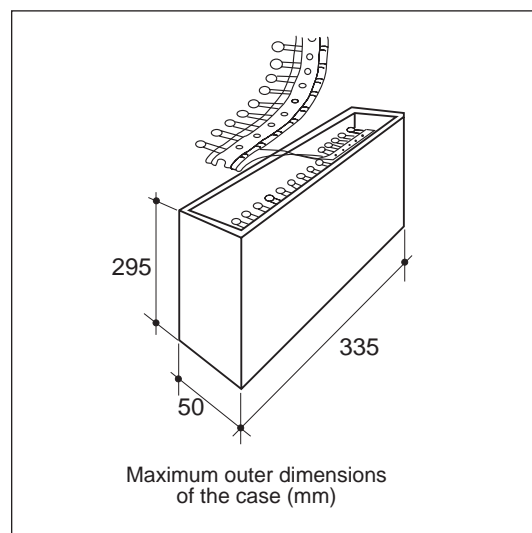
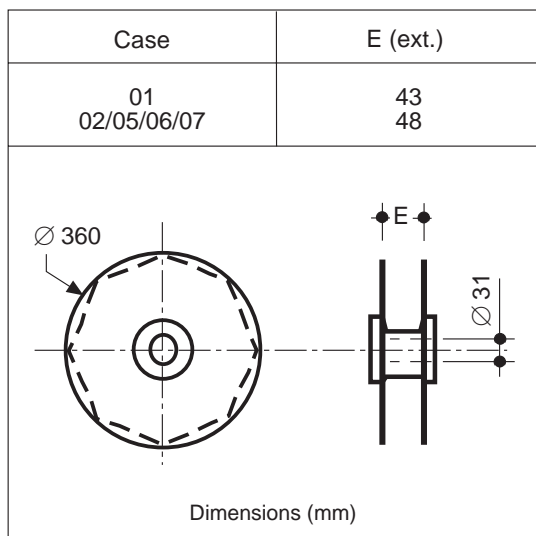
Characteristics of the reel - Suffixes to be used (see page 11).

	Taping suffixes			
	DA	DB	DC	DD
H	Dimensions (mm)			
	16.5 ± 0.3		19.5 ± 0.5	
REEL	-	PANASERT	-	AVISERT
AMMOPACK	PANASERT	-	AVISERT	-

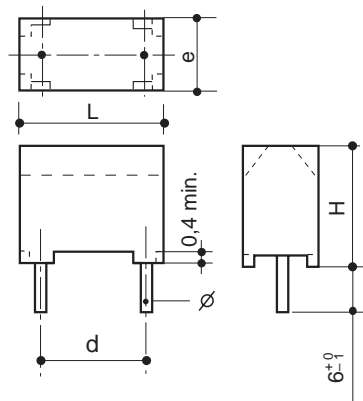
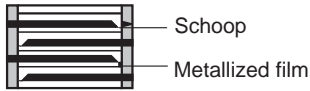


Packaging

Case	Quantity		
	REEL	AMMOPACK	BULK
01	2500	2500	5000
02	1800	2000	3800
05	900	1100	1500
06	900	1100	1500
07	1200	1250	2500



SCHEMATIC CROSS SECTION



---- for case* in table page 19

Applications

Non inductive, self healing, metallized polyester film capacitor. Insulated* thermoplastic casing, epoxy resin sealed with stand-offs*. Radial connections.

* Flame retardant resin and case according to UL 94 V₀.

Some examples of use :

Supply decoupling, filter, integrators, treatment of analog signals, rejection of line perturbations, etc...

Standardization

Generic specifications : CEI 384-1/CECC 30000/UTE 83100.

Sectional specifications : CEI 384-2/CECC 30400/UTE 83151.

On the LNZ list : complies with type CPM85 - CPM-R.

Dimensions (mm)

Size	max. L	max. H	max. e	d ± 0.4	ø ^{+10%} _{-0.05}	Observations
07	9.25 ... 10.1	8 ... 12	3.25 ... 6	7.5	0.6	1 nF C _R 1 µF
10	12.5	9 ... 13.5	4 / 5	10	0.6	4.7 nF C _R 470 nF
15	17.5	10.5 ... 14.5	5 ... 8.5	15	0.8	33 nF C _R 2.2 µF
22	26.25	15 ... 19.5	7.5 / 10	22.5	0.8	100 nF C _R 6.8 µF
27	31.25	19.5 ... 30	10 ... 17,5	27.5	0.8	330 nF C _R 22 µF

General characteristics

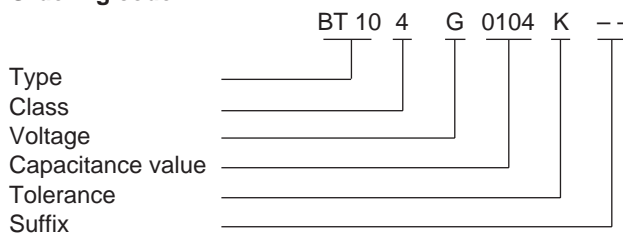
- Climatic category : 55/100/56 - Performance class 1
- Capacitance range : C_R 1 nF to 2,2 µF (E6)
- Tolerances on C_R : ± 5% ± 10% ± 20%
other values on request
- Nominal voltages : U_{R-} 63/100/160/250/400/630 V
U_{R-} 40/63/80/160/200/220 V
- Category voltage : U_C = 0.8 U_{R-} at 100°C
- Test voltage : U_b = 1.6 U_{R-}/2 s at 25°C
- Tangent of loss angle : tg δ (see page 7)
- Insulation resistance : Ri (see page 8)
- Max. voltage gradient : (du/dt)_R (see page 9)

Marking

THOMSON logo
Nominal capacitance
Tolerance (EIA code)
DC nominal voltage

Size \ U _{R-} (V)	du/dt V/µs					
	63	100	160	250	400	630
07	35	50	-	72	150	-
10	18	28	30	45	90	180
15	12	15	20	30	55	100
22	4	5	-	9	12	20
27	3	4	-	7	10	15

Ordering code

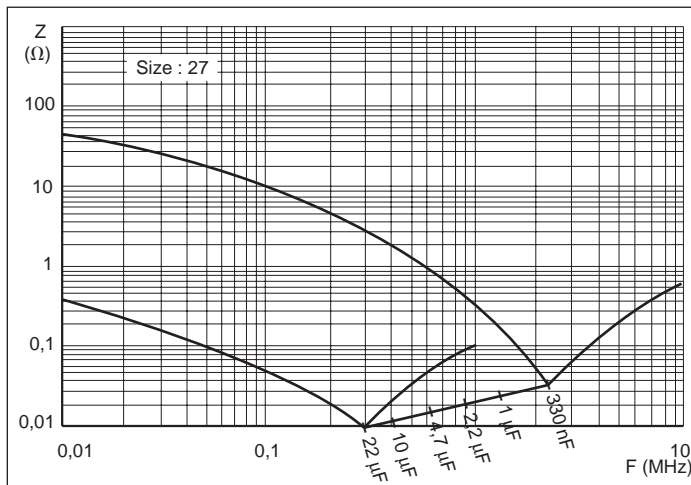
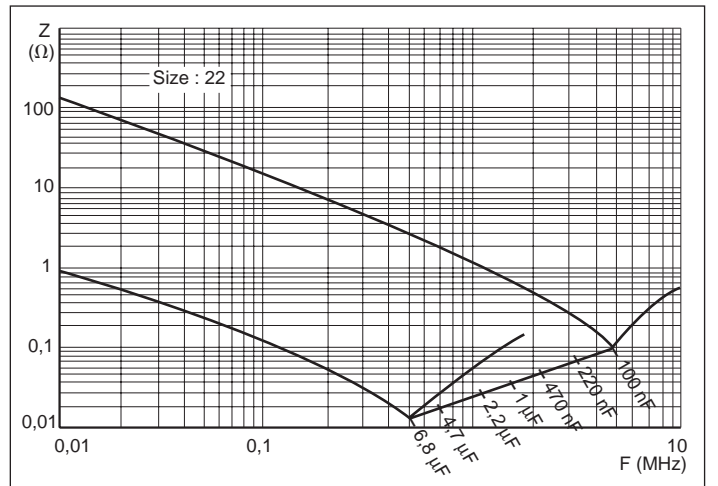
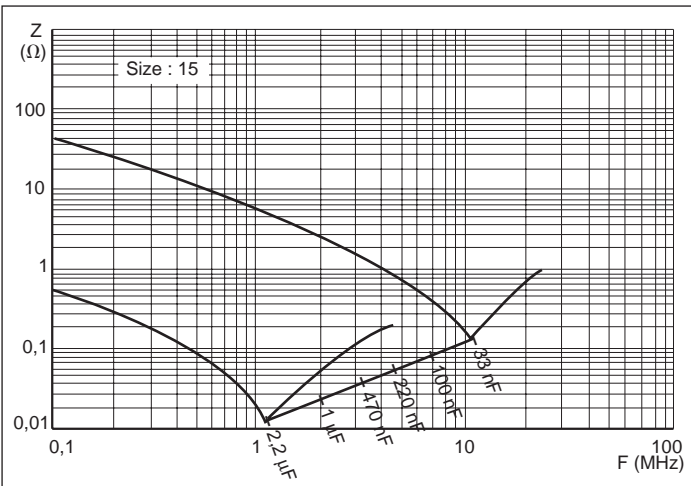
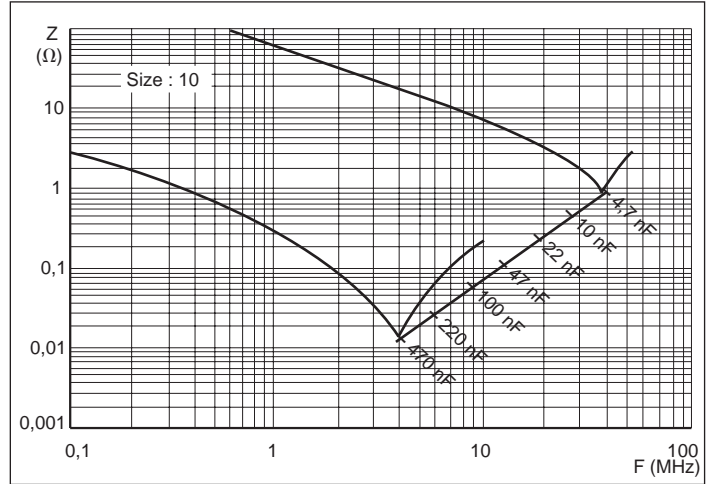
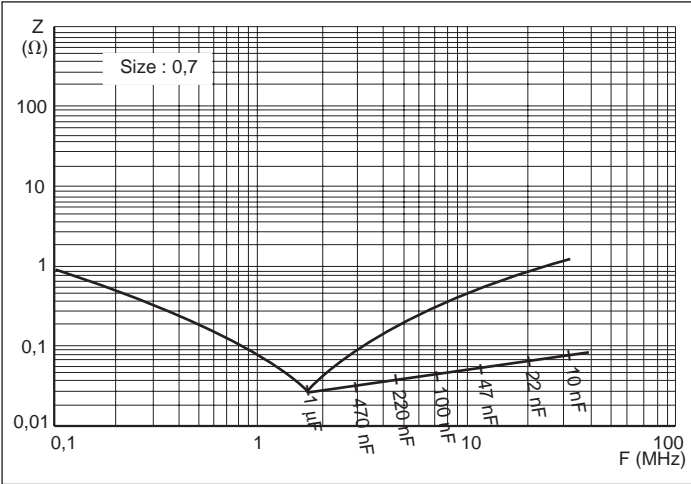


Nominal voltage (U_R) and capacitance values (C_R) depending on the dimensions.

Size	Case	Dimensions (in mm)				Reference					
						BT					
		Max L	Max H	Max e	\varnothing <small>+ 10 % - 0.05</small>	$U_{R-} / U_{R\sim}$ (V)					
						63/40	100/63	160/80	250/160	400/200	630/220
		Range of capacitances (C_R min. ... max.)									
07	1	9.25	8	3.25	0.6	68 nF ... 220 nF	22 nF ... 150 nF	–	6.8 nF ... 47 nF	1 nF ... 15 nF	1 nF ... 3.3 nF
	2	10.1	10	5	0.6	330 nF/470 nF	220 nF/330 nF	–	68 nF ... 100 nF	22 nF	4.7 nF/6.8 nF
	C	10.1	11	5	0.6	680 nF	–	–	–	–	10 nF
	D	10.1	12	6	0.6	1 μ F	–	–	150 nF	33 nF ... 47 nF	15 nF
10	EO	12.5	9	4	0.6	220 nF ... 470 nF	100 nF ... 220 nF	100 nF ... 220 nF	33 nF ... 100 nF	6.8 nF ... 33 nF	–
	4	12.5	10	5	0.6	–	–	–	–	47 nF	4.7 nF/15 nF
	5	12.5	13.5	5	0.6	–	–	–	–	–	22 nF
15	6	17.5	10.5	5	0.8	680 nF ... 1 μ F	150 nF ... 1 μ F	330 nF/470 nF	68 nF ... 220 nF	47 nF/68 nF	33 nF
	7	17.5	13.5	5	0.8	–	–	–	–	100 nF	–
	IO	17.5	12	6	0.8	2.2 μ F	–	680 nF	330 nF	–	–
	8	17.5	13.5	6.25	0.8	–	–	1 μ F	390 nF	150 nF	47 nF
	9	17.5	14.5	8.5	0.8	–	–	2.2 μ F	–	–	68 nF
22	11	26.25	15	7.5	0.8	–	1.5 μ F	–	470 nF/680 nF	220 nF	100 nF
	12	26.25	17.5	7.5	0.8	3.3 μ F	2.2 μ F	–	–	330 nF	150 nF
	13	26.25	19.5	10	0.8	4.7 μ F/6.8 μ F	3.3 μ F	–	1 μ F/1.5 μ F	470 nF	220 nF
27	16	31.25	19.5	10	0.8	6.8 μ F	4.7 μ F	3.3 μ F	1.5 μ F	470 nF 680 nF	330 nF
	17*	31.25	22.5	12.5	0.8	10 μ F	6.8 μ F	–	2.2 μ F	1 μ F	470 nF
	18*	31.25	26	15	0.8	15 μ F	10 μ F	–	3.3 μ F	1.5 μ F	680 nF
	19*	31.25	30	17.5	0.8	22 μ F	–	–	4.7 μ F	2.2 μ F	1 μ F

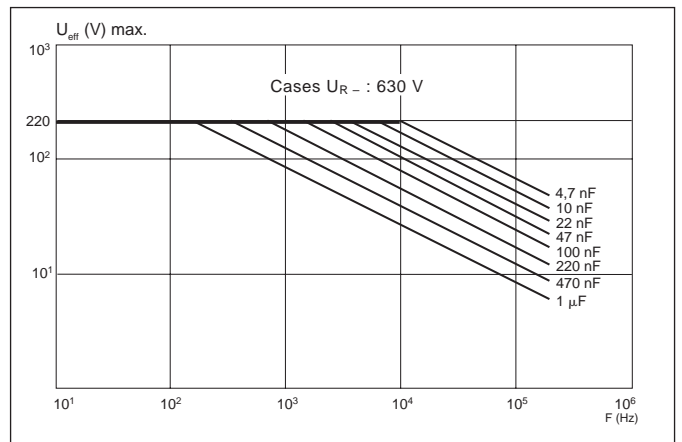
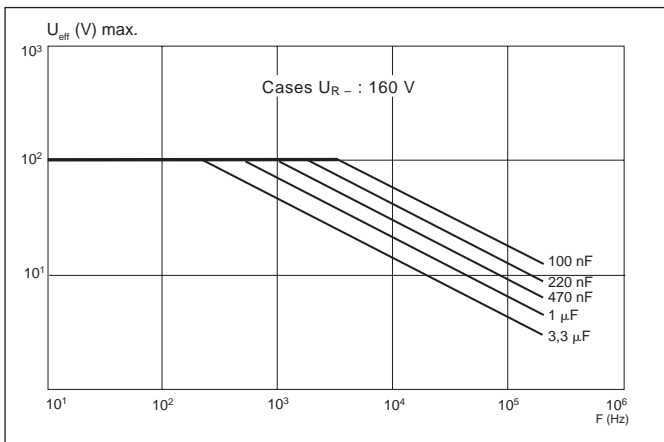
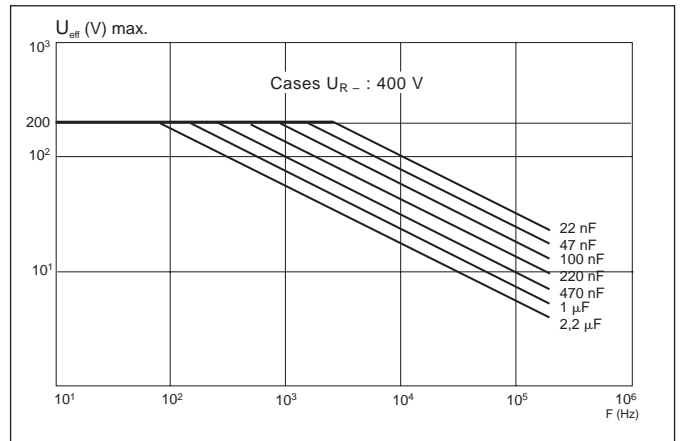
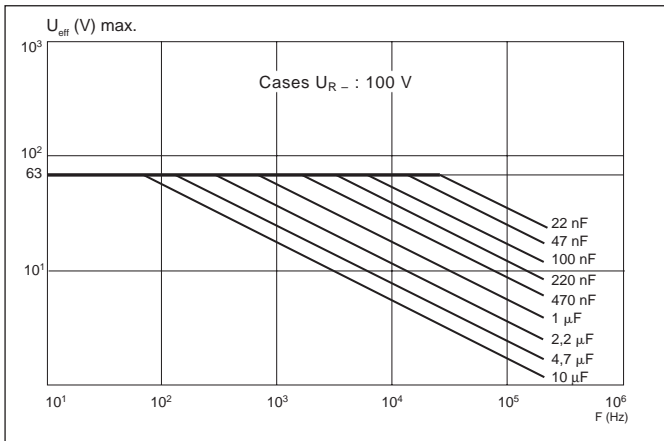
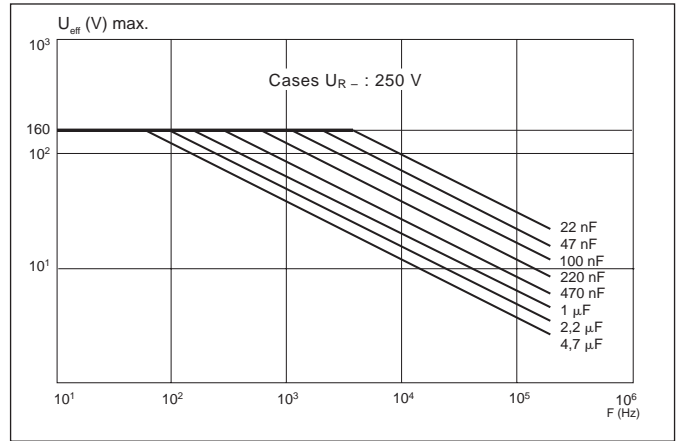
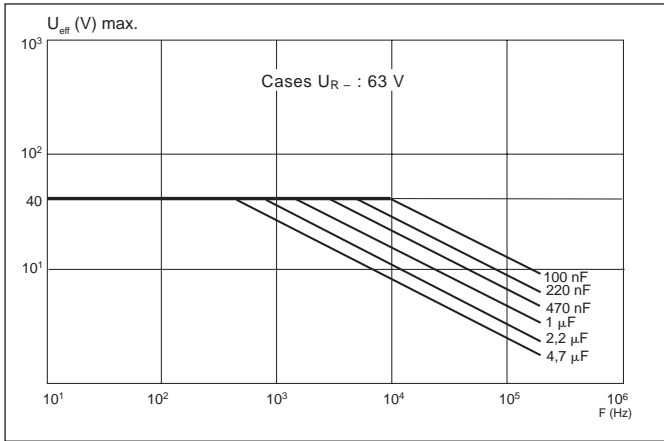
Characteristic curves

Influence of the frequency on the impedance (room temperature).

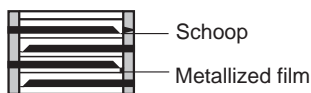


Characteristic curves

Nominal RMS voltage versus frequency (room temperature) allowing a 10 °C increase of the external temperature of the box.



SCHEMATIC CROSS SECTION



Applications

Non inductive, self healing, metallized polyester film capacitor. Insulated* thermoplastic casing, epoxy resin sealed with stand-offs*. Radial connections.

* Flame retardant resin and case according to UL 94 Vo.

Example of use :

Telecom appliances, linking function in the ringing circuit.

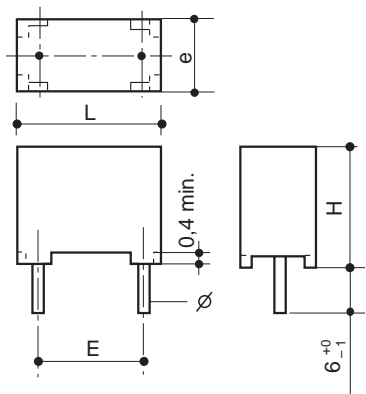
Standardization

Generic specifications : CEI 384-1/CECC 30000/UTE 83100

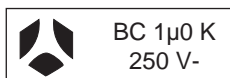
Sectional specifications : CEI 384-2/CECC 30400/UTE 83151

Dimensions (mm)

Type	Case	C _R (μF)	L max	h max	e max	E ± 0,4	∅ + 10 % - 0,05
BC 15	i0	0,47	17,5	12	6	15	0,8
	8	0,68	17,5	13,5	6,25	15	0,8
	9	0,80	17,5	14,5	8,5	15	0,8
	9	0,82	17,5	14,5	8,5	15	0,8
	9	1	17,5	14,5	8,5	15	0,8
	9	1,5	17,5	14,5	8,5	15	0,8
	9	2,2	17,5	14,5	8,5	15	0,8
BD 15	8	0,80	17,5	13,5	6,25	15	0,8
	8	0,82	17,5	13,5	6,25	15	0,8
	8	1	17,5	13,5	6,25	15	0,8



Marking example



THOMSON logo
Nominal capacitance
Tolerance (EIA code)
DC nominal voltage

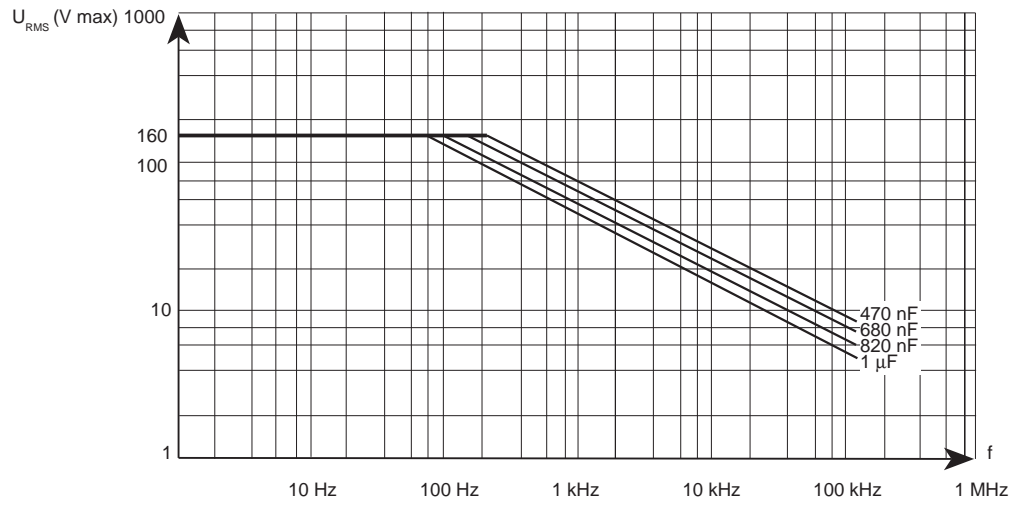
General characteristics

- Climatic category : 55/100/56
- Capacitance (C_R) : see table
- Tolerance : ± 5 % ± 10 %
- Nominal voltage (U_R) : 250 V₋
- Test voltage (1,4 U_R) : 350 V₋
- Category voltage (U_C at 100 °C) : 0,75 U_R
- Tangent of loss angle at 1 kHz (Tgδ) : ≤ 80.10⁻⁴
- Insulation resistance between terminals (R_i under 100 V-) : R_i · C_R 10 G μF
- Insulation resistance between terminals and case : ≥ 30 G
- Voltage gradient (max. du/dt peak) : 30 V/μs

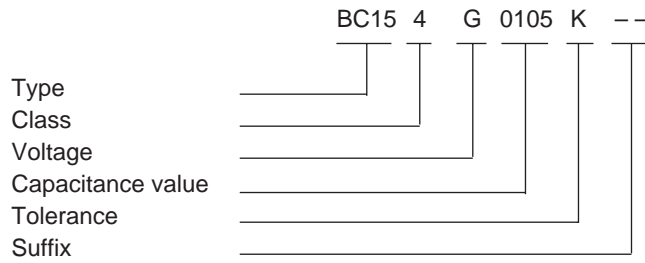
BC/BD 15

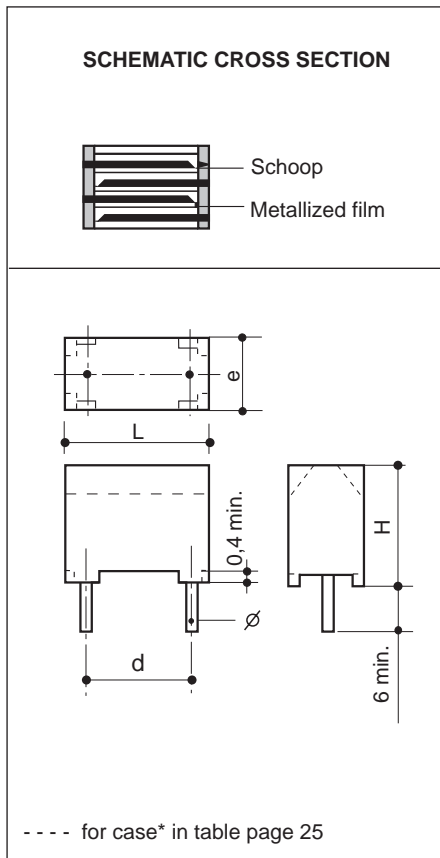
Characteristic curves

Nominal RMS voltage versus frequency (room temperature) allowing a 10 °C increase of the external temperature of the box.



Ordering code





Applications

Non inductive, capacitor for professional use with radial leads. Insulated thermoplastic casing, epoxy resin sealed with stand-offs.

Some examples of use :

Oscillating circuit, LF filter, coupling and decoupling, frequency discriminator.

Standardization

Generic specifications : CEI 384-1/CECC 30000/UTE 83100

Sectional specifications : CEI 384-2/CECC 30400/UTE 83151

On the LNZ 44-04 list : complies with type CPM50.

On the GAM-T1 list : ARIANE qualified.

Dimensions (mm)

Size	max. L	max. H	max. e	d ± 0.4	∅ ^{+10%} _{-0.05}	Observations
07	10.1	10	5	7.5	0.6	1 nF C _R 8.2 nF
10	12.5	10	5	10	0.6	4.7 nF C _R 220 nF
15	17.5	10.5 ... 16.5	5 ... 10	15	0.8	15 nF C _R 2.2 μF
27	31.25	15 ... 30	7.5 ... 17.5	27.5	0.8	150 nF C _R 22 μF

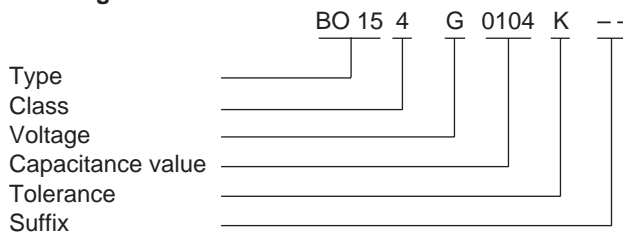
General characteristics

- Climatic category : 55/125/56 - Performance class 1
- Capacitance range : C_R 1 nF to 2,2 μF
- Tolerances on C_R (assoc. series) : ± 5% ± 10% ± 20% (E6)
other values on request
- Nominal voltages : U_{R-} 40/63/160/250/400 V
U_{R-} 25/40/100/180/200 V
- Category voltage : U_C = 0.5 U_{R-} at 125°C
- Test voltage : U_e = 1.6 U_{R-}
- Tangent of loss angle : tg δ (see page 7)
- Insulation resistance : Ri (see page 8)

Marking

TPC - CPM50B
Capacitance and tolerance (CEI 62 code).
Nominal voltage.
Date of manufacture
2 letter code
(year - month) according to CEI 62.

Ordering code

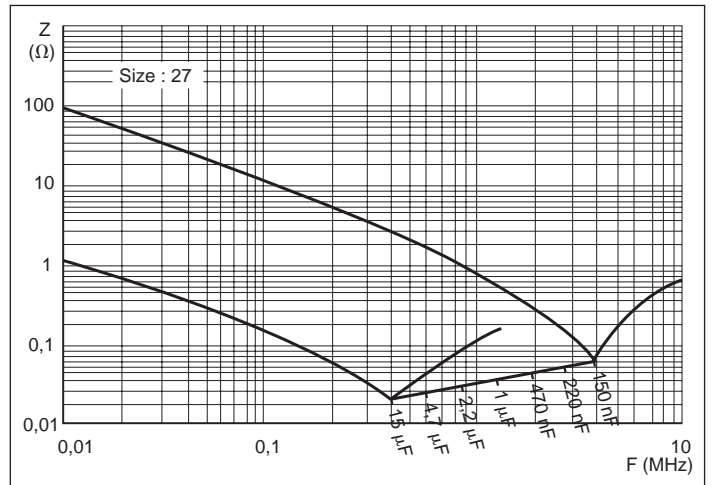
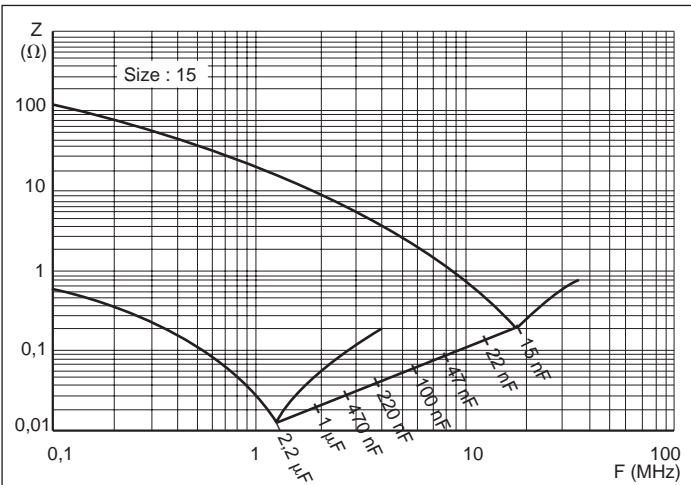
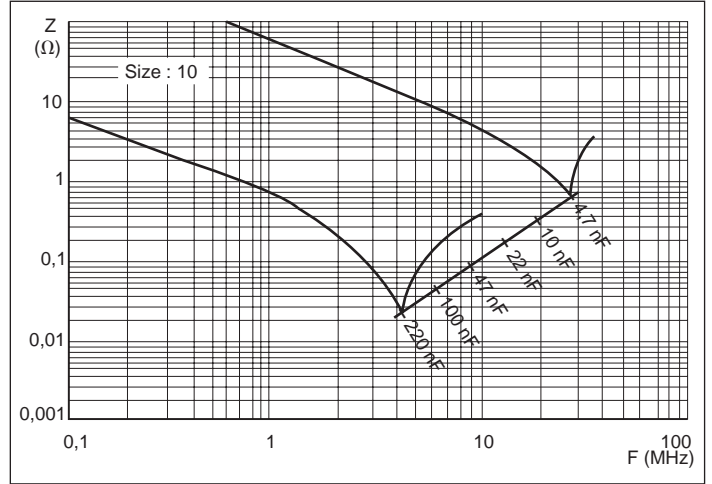
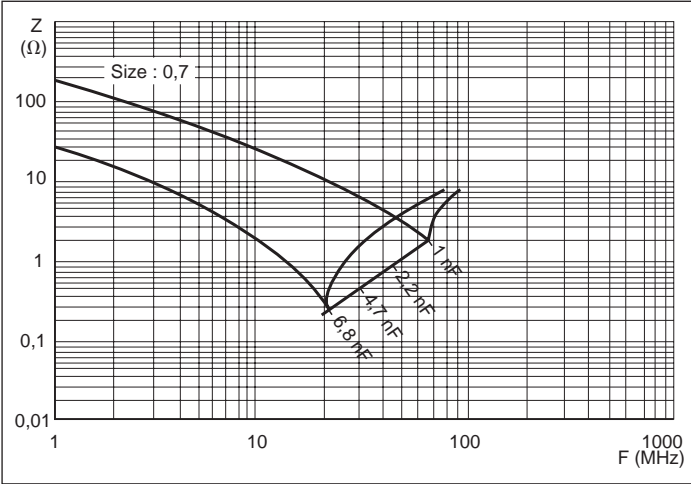


Nominal voltage (U_R) and capacitance values (C_R) depending on the dimensions.

Size	Case	Dimensions (in mm)				Reference				
						BO				
		Max L	Max H	Max e	\varnothing <small>+ 10 % - 0.05</small>	U_{R-}/U_{R-} (V)				
						40/25	63/40	160/100	250/180	400/200
		Range of capacitances (C_R min. ... max.)								
07	2	10.1	10	5	0.6	–	–	–	4.7 nF/8.2 nF	1 nF ... 3.3 nF
10	4	12.5	10	5	0.6	68 nF ... 220 nF	33 nF ... 100 nF	10 nF ... 47 nF	10 nF ... 22 nF	4.7 nF ... 10 nF
15	6	17.5	10.5	5	0.8	330 nF/470 nF	150 nF/220 nF	68 nF ... 150 nF	33 nF/47 nF	15 nF/22 nF
	7	17.5	13.5	5	0.8	680 nF	330 nF	220 nF	68 nF	33 nF
	8	17.5	13.5	6.25	0.8	1 μ F	470 nF	–	100 nF	47 nF
	9	17.5	14.5	8.50	0.8	1.5 μ F	680 nF	330 nF	150 nF	68 nF
	10	17.5	16.5	10	0.8	2.2 μ F	1 μ F	470 nF	220 nF	100 nF
27	14	31.25	15	7.5	0.8	3.3 μ F	1.5 μ F	680 nF/1 μ F	330 nF	150 nF
	15	31.25	17.5	8.75	0.8	4.7 μ F	2.2 μ F	1.5 μ F/2.2 μ F	470 nF	220 nF
	16	31.25	19.5	10	0.8	6.8 μ F	3.3 μ F	–	680 nF	330 nF
	17*	31.25	22.5	12.5	0.8	10 μ F	4.7 μ F	–	1 μ F	470 nF
	18*	31.25	26	15	0.8	15 μ F	6.8 μ F	3.3 μ F	1.5 μ F	680 nF
	19*	31.25	30	17.5	0.8	22 μ F	10 μ F	4.7 μ F/6.8 μ F	2.2 μ F	1 μ F

Characteristic curves

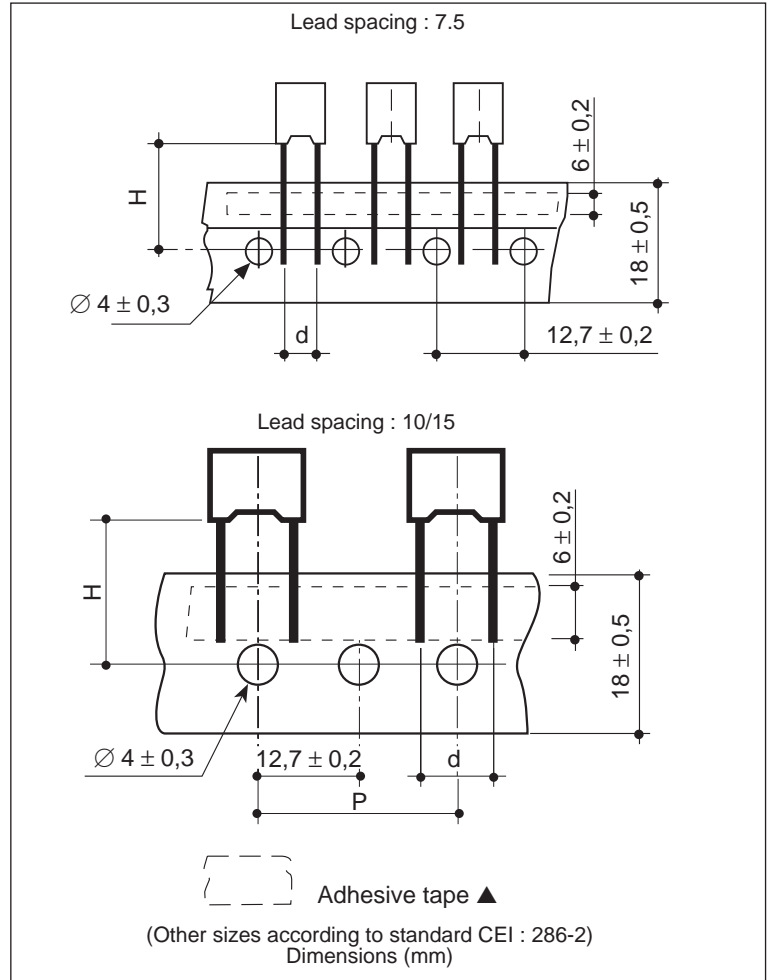
Influence of the frequency on the impedance (room temperature).



Taping on reel for automatic insertion

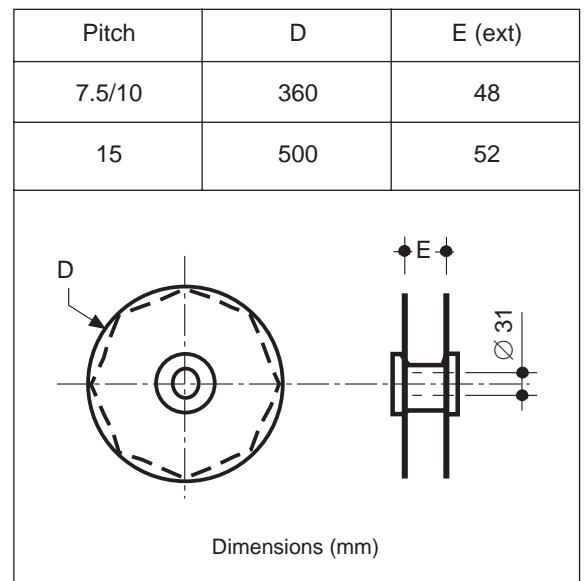
Characteristics of the reel - Suffixes to be used (see page 11).

	Taping suffix EN		
	Dimensions (mm) d : lead spacing (tol ± 0.4)		
	7.5	10	15
P	12.7 ± 1	25.4 ± 1	
H	16.5 ± 0.3		16 ^{+1.5} _{-0.5}

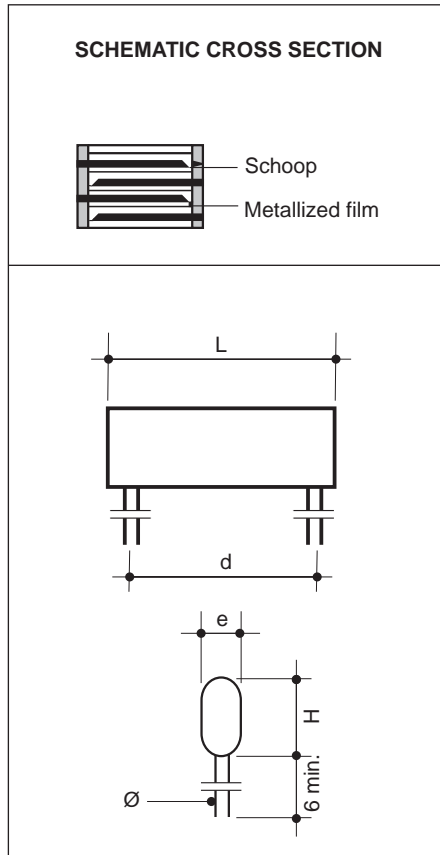


Packaging

Pitch	Case Code	Minimum Quantity*	
		Reel	Bulk
7.5	1	2000	3000
	2	1250	1750
	C	1250	1500
	D	1000	1000
10	E0	850	1750
	4	700	1250
	5	700	1000
15	6	1000	750
	7	1000	3000
	10	1000	750
	8	833	3000
	9	625	2000
	10	-	-
22	11	-	200
	12	-	200
	13	-	150
27	14	-	160
	15	-	140
	16	-	120
	17	-	100
	18	-	80
	19	-	65



* Ordering quantities must be a multiple of the above figures



Applications

Non inductive, capacitor for professional use with radial leads. Flat, insulated (polyester tape wrapping) epoxy resin sealed.

Some examples of use :
Oscillating circuit, LF filter, coupling and decoupling, frequency discriminator.

Standardization

Generic specifications : CEI 384-1/CECC 30000/UTE 83100
Sectional specifications : CEI 384-2/CECC 30400/UTE 83151
On the LNZ 44-04 list : complies with type CPM13.
On the GAM-T1 list.

Dimensions (mm)

Size	max. L	max. H	max. e	d ± 0.5	∅ ^{+10%} _{-0.05}	Observations
07	12	7.5	4.5	7.62	0.6	1 nF C _R 6.8 nF
10	14.5	7.5/8	4.5/5	10.16	0.6	4.7 nF C _R 100 nF
15	20	8 ... 15.5	4.5 ... 10.5	15.24	0.8	15 nF C _R 1 μF
27	33	11 ... 27.5	8 ... 18	27.94	1	150 nF C _R 10 μF

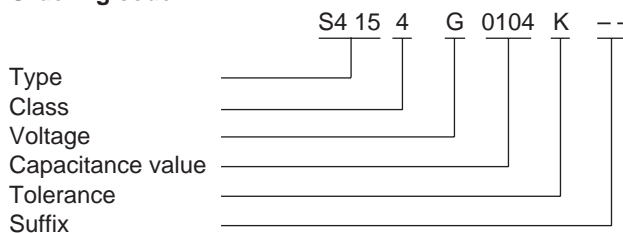
General characteristics

- Climatic category : 55/125/21 - Performance class 1
- Capacitance range : C_R 1 nF to 10 μF
- Tolerances on C_R (assoc. series) : ± 5% ± 10% ± 20% (E6)
other values on request
- Nominal voltages : U_{R-} 63/160/250/400 V
U_{R-} 40/100/160/200 V
- Category voltage : U_C = 0.5 U_{R-} at 125°C
- Test voltage : U_e = 1.6 U_{R-}
- Tangent of loss angle : tg δ (see page 7)
- Insulation resistance : Ri (see page 8)

Marking

TPC - CPM13B
Capacitance and tolerance (CEI 62 code).
Nominal voltage.
Date of manufacture
2 letter code
(year - month) according to CEI 62
except for L = 12 and 14.5 mm.

Ordering code

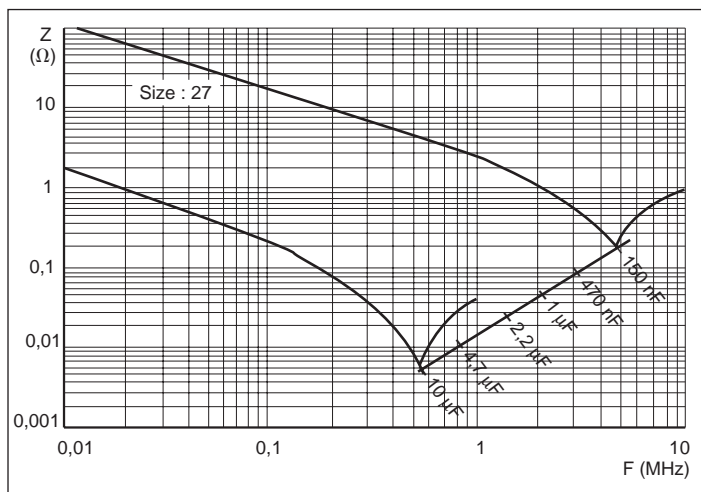
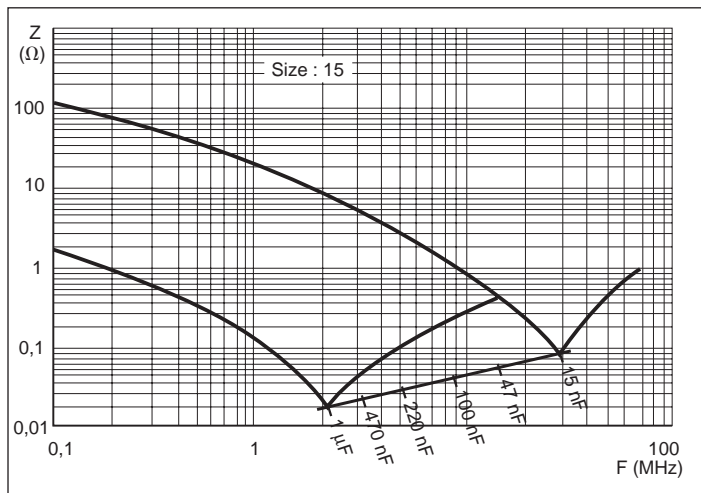
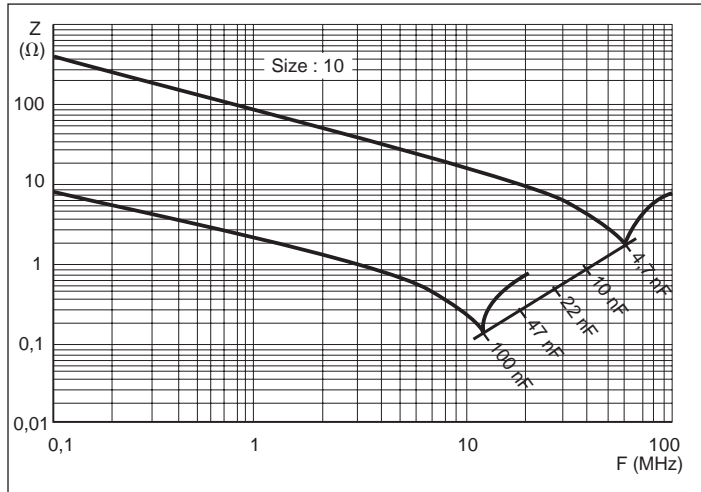


Nominal voltage (U_R) and capacitance values (C_R) depending on the dimensions.

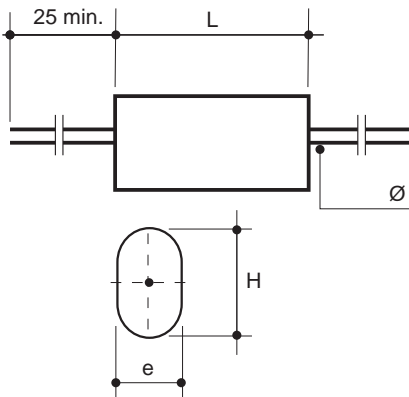
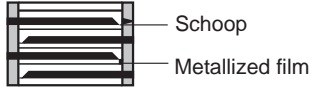
Size	Dimensions (in mm)				Reference			
					S4			
					U_{R-}/U_{R-} (V)			
					63/40	160/100	250/160	400/200
	Max L	Max H	Max e	\varnothing + 10 % - 0.05	Range of capacitances (C_R min. ... max.)			
07	12	7.5	4.5	0.6	–	–	4.7 nF/6.8 nF	1 nF ... 3.3 nF
10	14.5	7.5	4.5	0.6	33 nF ... 100 nF	10 nF ... 33 nF	10 nF ... 22 nF	4.7 nF ... 10 nF
	14.5	8	5	0.6	–	47 nF	–	–
15	20	8	4.5	0.8	–	68 nF	33 nF	15 nF
	20	8	5.5	0.8	–	100 nF	–	–
	20	8.5	4.5	0.8	150 nF	–	–	–
	20	8.5	5	0.8	220 nF	–	–	22 nF
	20	9	5	0.8	–	–	47 nF	–
	20	9	6	0.8	330 nF	–	68 nF	–
	20	9.5	6	0.8	–	–	–	33 nF
	20	9.5	6.5	0.8	–	150 nF	–	–
	20	10	7	0.8	470 nF	–	100 nF	–
	20	10.5	6.5	0.8	–	–	–	47 nF
	20	10.5	7.5	0.8	–	220 nF	–	–
	20	11.5	8.5	0.8	680 nF	–	–	–
	20	13.5	6.5	0.8	–	–	–	68 nF
	20	13.5	8	0.8	–	–	150 nF	–
	20	13.5	10.5	0.8	1 μ F	–	–	–
	20	14	7.5	0.8	–	330 nF	–	–
20	15	8.5	0.8	–	–	220 nF	100 nF	
20	15.5	9	0.8	–	470 nF	–	–	
27	33	11	8	1	1.5 μ F	–	–	–
	33	13	7	1	–	–	–	150 nF
	33	13	10	1	2.2 μ F	–	–	–
	33	13.5	7.5	1	–	680 nF	330 nF	–
	33	14.5	8.5	1	–	–	470 nF	220 nF
	33	14.5	11.5	1	3.3 μ F	–	–	–
	33	15	9	1	–	1 μ F	–	–
	33	15	10.5	1	–	–	–	330 nF
	33	15.5	11	1	–	–	680 nF	–
	33	16	11.5	1	–	1.5 μ F	–	–
	33	18.5	14	1	4.7 μ F	–	–	–
	33	20	12	1	–	2.2 μ F	–	–
	33	20.5	11	1	–	–	1 μ F	470 nF
	33	21	16.5	1	6.8 μ F	–	–	–
	33	23.5	14	1	–	–	–	680 nF
	33	24	14.5	1	–	–	1.5 μ F	–
	33	24.5	15	1	–	3.3 μ F	–	–
	33	26.5	17	1	–	–	–	1 μ F
33	27.5	18	1	10 μ F	4.7 μ F	2.2 μ F	–	

Characteristic curves

Influence of the frequency on the impedance (room temperature).



SCHEMATIC CROSS SECTION



Applications

Non inductive, capacitor for professional use. Flat axial leads, polyester wrapped, epoxy resin sealed.

Some examples of use :

Oscillating circuit, LF filter, coupling and decoupling, frequency discriminator.

Standardization

Generic specifications : CEI 384-1/CECC 30000/UTE 83100
 Sectional specifications : CEI 384-2/CECC 30400/UTE 83151
 On the LNZ 44-04 list : complies with type CPM8.

Dimensions (mm)

Size	max. L	max. H	max. e	\varnothing ^{+10%} / _{-0.05}	Observations
10	12	6.5	4	0.6	1 nF C _R 6.8 nF
14	14.5	6 ... 8	3.5 ... 5	0.6	4.7 nF C _R 100 nF
18	20	8 ... 15.5	4.5 ... 10.5	0.8	15 nF C _R 1 μ F
31	33	11 ... 27.5	7 ... 18	1	150 nF C _R 10 μ F

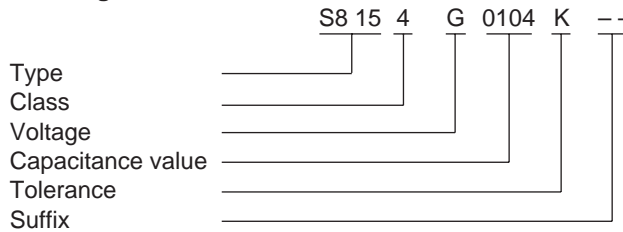
General characteristics

- Climatic category : 55/125/21 - Performance class 1
- Capacitance range : C_R 1 nF to 10 μ F
- Tolerances on C_R (assoc. series) : $\pm 5\%$ $\pm 10\%$ $\pm 20\%$ (E6)
other values on request
- Nominal voltages : U_{R-} 63/160/250/400 V
U_{R-} 40/100/160/200 V
- Category voltage : U_C = 0.5 U_{R-} at 125°C
- Test voltage : U_e = 1.6 U_{R-}
- Tangent of loss angle : tg δ (see page 7)
- Insulation resistance : Ri (see page 8)

Marking

TPC - CPM8B
 Capacitance and tolerance (CEI 62 code).
 Nominal voltage.
 Date of manufacture
 2 letter code
 (year - month) according
 to CEI 62
 except for L = 12 and 14.5 mm.

Ordering code



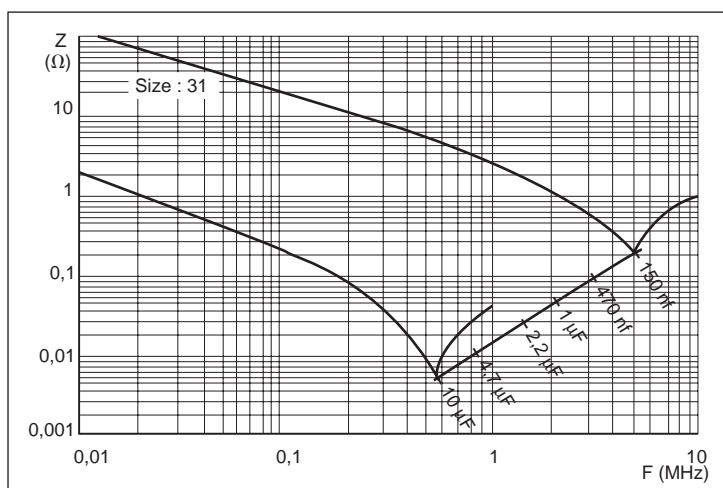
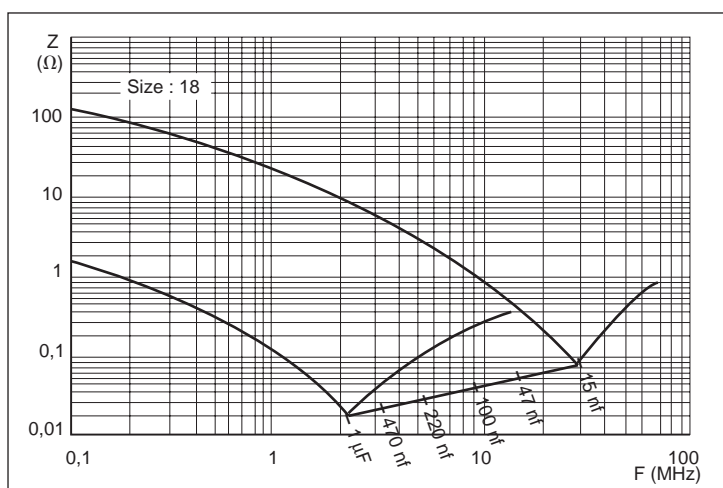
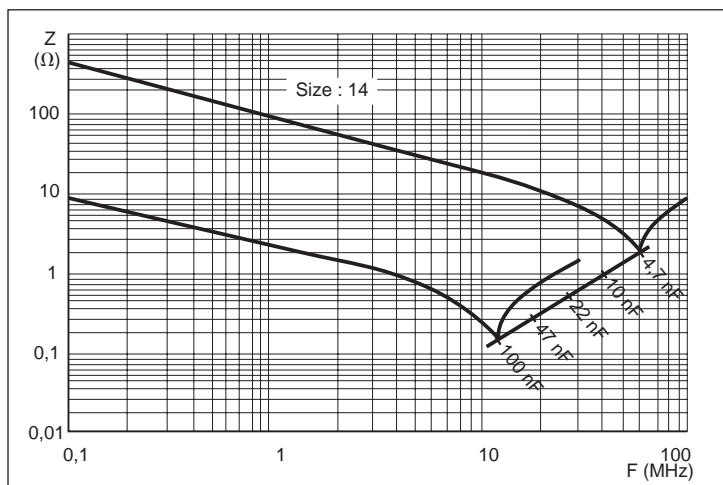
S8 10/14/18/31

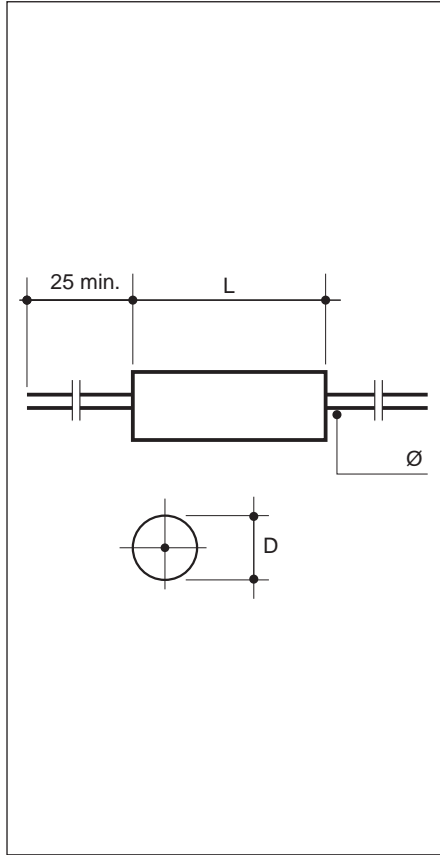
Nominal voltage (U_R) and capacitance values (C_R) depending on the dimensions.

Size	Dimensions (in mm)				Reference			
					S8			
	\varnothing <small>+ 10 % - 0.05</small>				U_{R-}/U_{R-} (V)			
					63/40	160/100	250/160	400/200
	Max L	Max H	Max e		Range of capacitances (C_R min. ... max.)			
10	12	6.5	4	0.6	–	–	4.7 nF/6.8 nF	1 nF ... 3.3 nF
14	14.5	6	3.5	0.6	33 nF	–	–	–
	14.5	6.5	3.5	0.6	47 nF	–	–	–
	14.5	6.5	4	0.6	–	10 nF/22 nF	10 nF	4.7 nF
	14.5	7	4	0.6	68 nF	–	15 nF	–
	14.5	7	4.5	0.6	–	–	–	6.8 nF/10 nF
	14.5	7.5	4.5	0.6	100 nF	33 nF	22 nF	–
	14.5	8	5	0.6	–	47 nF	–	–
18	20	8	4.5	0.8	–	68 nF	33 nF	15 nF
	20	8	5.5	0.8	–	100 nF	–	–
	20	8.5	4.5	0.8	150 nF	–	–	–
	20	8.5	5	0.8	220 nF	–	–	22 nF
	20	9	5	0.8	–	–	47 nF	–
	20	9	6	0.8	330 nF	–	68 nF	–
	20	9.5	6	0.8	–	–	–	33 nF
	20	9.5	6.5	0.8	–	150 nF	–	–
	20	10	7	0.8	470 nF	–	100 nF	–
	20	10.5	6.5	0.8	–	–	–	47 nF
	20	10.5	7.5	0.8	–	220 nF	–	–
	20	11.5	8.5	0.8	680 nF	–	–	–
	20	13.5	6.5	0.8	–	–	–	68 nF
	20	13.5	8	0.8	–	–	150 nF	–
	20	13.5	10.5	0.8	1 μ F	–	–	–
	20	14	7.5	0.8	–	330 nF	–	–
20	15	8.5	0.8	–	–	220 nF	100 nF	
20	15.5	9	0.8	–	470 nF	–	–	
31	33	11	8	1	1.5 μ F	–	–	–
	33	13	7	1	–	–	–	150 nF
	33	13	10	1	2.2 μ F	–	–	–
	33	13.5	7.5	1	–	680 nF	330 nF	–
	33	14.5	8.5	1	–	–	470 nF	220 nF
	33	14.5	11.5	1	3.3 μ F	–	–	–
	33	15	9	1	–	1 μ F	–	–
	33	15	10.5	1	–	–	–	330 nF
	33	15.5	11	1	–	–	680 nF	–
	33	16	11.5	1	–	1.5 μ F	–	–
	33	18.5	14	1	4.7 μ F	–	–	–
	33	20	12	1	–	2.2 μ F	–	–
	33	20.5	11	1	–	–	1 μ F	470 nF
	33	21	16.5	1	6.8 μ F	–	–	–
	33	23.5	14	1	–	–	–	680 nF
	33	24	14.5	1	–	–	1.5 μ F	–
	33	24.5	15	1	–	3.3 μ F	–	–
	33	26.5	17	1	–	–	–	1 μ F
33	27.5	18	1	10 μ F	4.7 μ F	2.2 μ F	–	

Characteristic curves

Influence of the frequency on the impedance (room temperature).





Applications

Non inductive, insulated capacitor for professional use. Cylindrical axial leads, polyester wrapped, epoxy resin sealed.

Some examples of use :

Oscillating circuit, LF filter, coupling and decoupling, frequency discriminator.

Standardization

Generic specifications : CEI 384-1/CECC 30000/UTE 83100

Sectional specifications : CEI 384-2/CECC 30400/UTE 83151

On the LNZ list : complies with type CPM72.

Dimensions (mm)

Size	max. L	max. D	$\varnothing^{+10\%}_{-0.05}$	Observations
10	12	5	0.6	1 nF C _R 100 nF
13	14.5	5 ... 7.5	0.6	4.7 nF C _R 330 nF
18	20	7.5 ... 10	0.8	33 nF C _R 1 μF
27	27.5	8.75 ... 12.5	0.8	100 nF C _R 3.3 μF
31	33	12.5 ... 21.5	0.8	330 nF C _R 10 μF

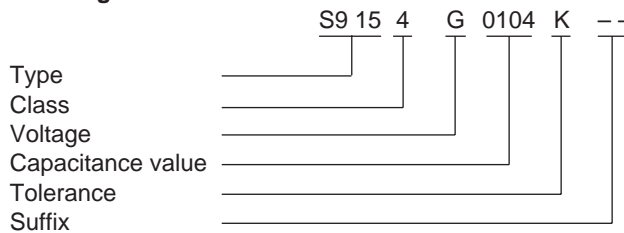
General characteristics

- Climatic category : 55/100/21 - Performance class 1
- Capacitance range : C_R 1 nF to 10 μF
- Tolerances on C_R (assoc. series) : ± 5% ± 10% ± 20% (E6)
other values on request
- Nominal voltages : U_{R-} 100/250/400/630 V
U_{R-} 40/100/160/200 V
- Category voltage : U_C = 0.75 U_{R-} at 100°C
- Test voltage : U_e = 1.6 U_{R-}
- Tangent of loss angle : tg δ (see page 7)
- Insulation resistance : Ri (see page 8)

Marking

TPC - CPM72B
Capacitance and tolerance (CEI 62 code).
Nominal voltage.
Date of manufacture
2 letter code
(year - month) according to CEI 62
and available space.

Ordering code



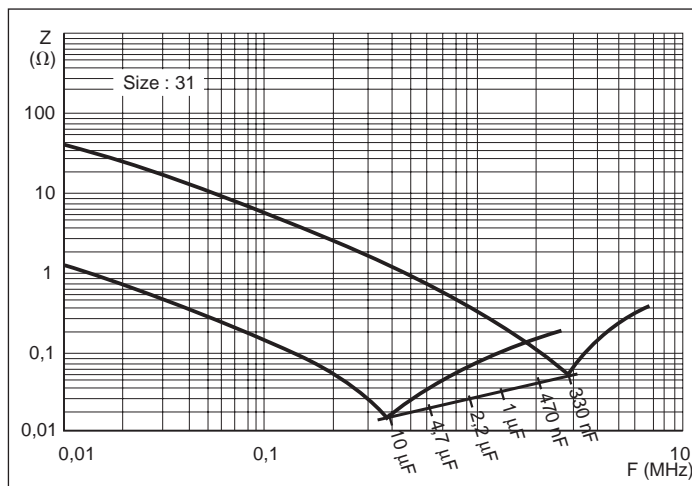
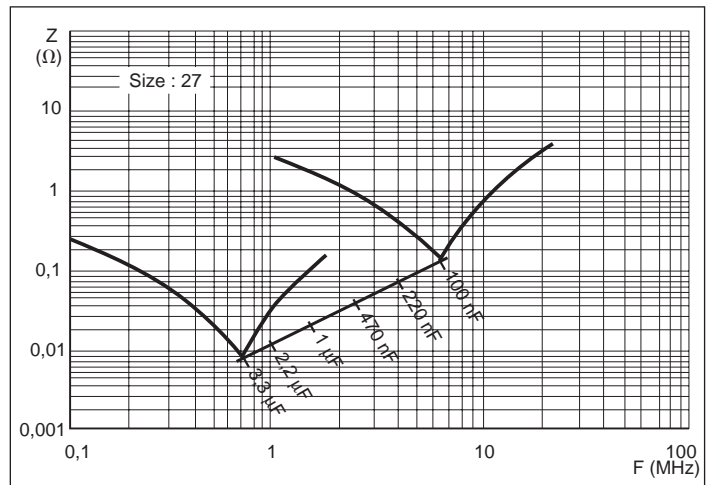
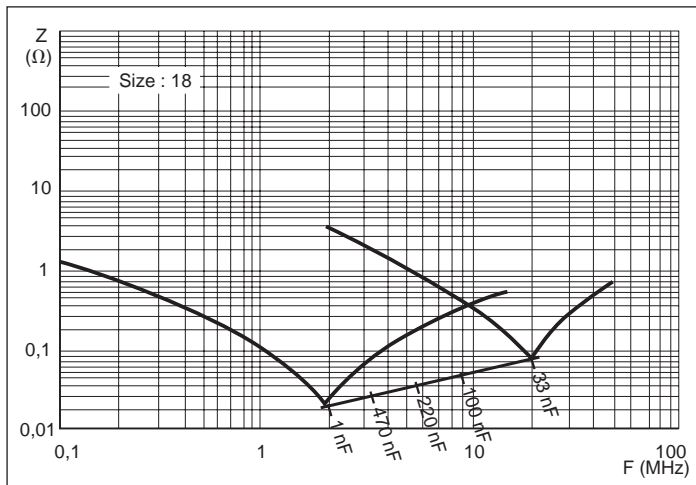
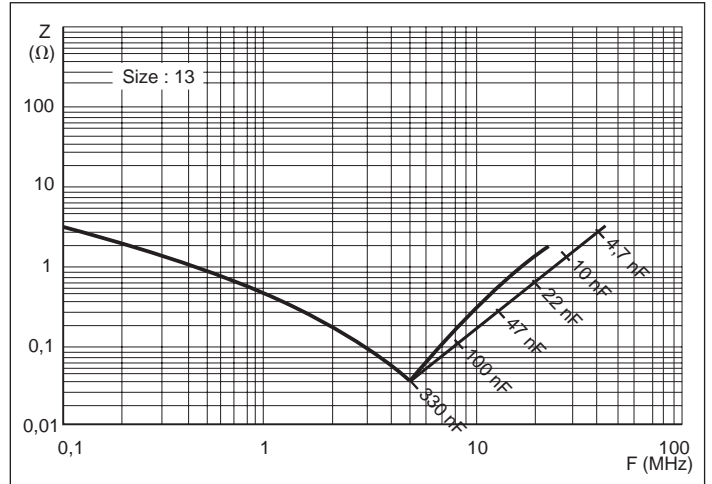
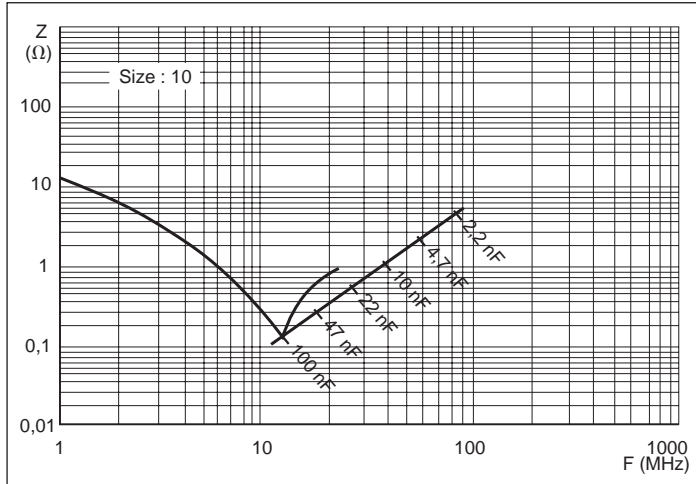
S9 10/13/18/27/31

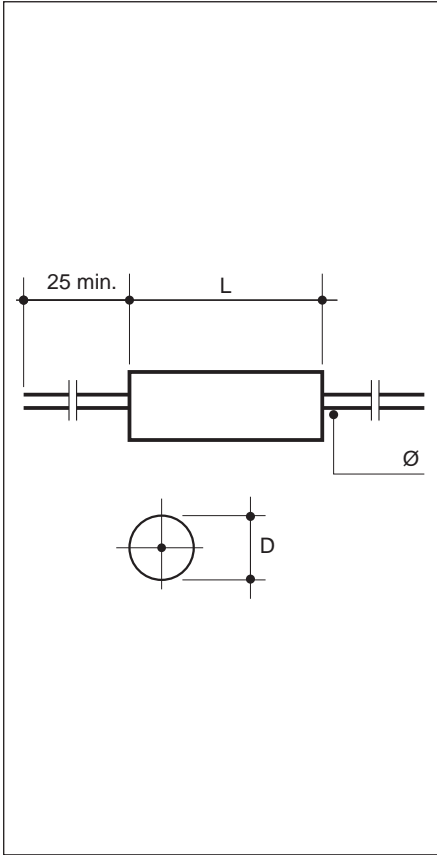
Nominal voltage (U_R) and capacitance values (C_R) depending on the dimensions.

Size	Dimensions (in mm)			Reference			
				S9			
	Max L	Max D	\varnothing + 10 % - 0.05	U_{R-}/U_{R-} (V)			
				100/40	250/100	400/160	630/200
	Range of capacitances (C_R min. ... max.)						
10	12	5	0.6	33 nF ... 100 nF	10 nF ... 22 nF	4.7 nF/6.8 nF	1 nF ... 3.3 nF
13	14.5	5	0.6	–	33 nF	10 nF/15 nF	4.7 nF/6.8 nF
	14.5	6.25	0.6	150 nF	47 nF/68 nF	22 nF/33 nF	10 nF
	14.5	7.5	0.6	220 nF/330 nF	100 nF	47 nF	15 nF/22 nF
18	20	7.5	0.8	470 nF	150 nF/220 nF	68 nF	33 nF
	20	8.75	0.8	680 nF	330 nF	100 nF	47 nF
	20	10	0.8	1 μ F	470 nF	150 nF	68 nF
27	27.5	8.75	0.8	–	–	220 nF	100 nF
	27.5	10	0.8	1.5 μ F	680 nF	330 nF	150 nF
	27.5	11.25	0.8	2.2 μ F	1 μ F	–	–
	27.5	12.5	0.8	3.3 μ F	–	470 nF	220 nF
31	33	12.5	0.8	–	1.5 μ F	680 nF	330 nF
	33	13.5	0.8	4.7 μ F	2.2 μ F	–	–
	33	15	0.8	–	–	1 μ F	470 nF
	33	16.5	0.8	6.8 μ F	3.3 μ F	–	–
	33	17.5	0.8	–	–	1.5 μ F	–
	33	18.75	0.8	–	–	–	680 nF
	33	20	0.8	10 μ F	4.7 μ F	–	–
	33	21.25	0.8	–	–	2.2 μ F	1 μ F

Characteristic curves

Influence of the frequency on the impedance (room temperature).





Applications

Non inductive, insulated capacitor. Cylindrical, axial leads, polyester wrapped, epoxy resin sealed.

Some examples of use :
High voltage filtering, TV line recuperation.

SPACELAB qualified.

Important : in frequency the voltages can be limited by the nominal RMS current.

Dimensions (mm)

Size	max. L	max. D	∅ ^{+10%} _{-0.05}	Observations
22	22	10 ... 17.5	0.8	150 pF C _R 100 nF
36	36	10 ... 27.5	1	100 pF C _R 1.5 μF

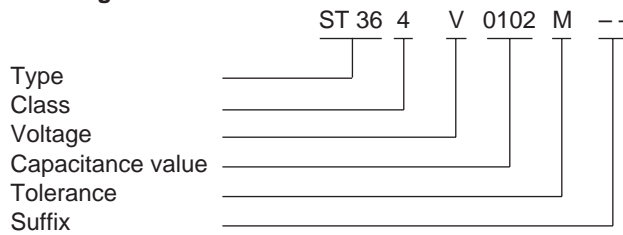
General characteristics

- Climatic category : 40/085/21 - Performance class 1
- Capacitance range : C_R 100 pF to 1.5 μF
- Tolerances on C_R (assoc. series) : ± 5% ± 10% ± 20% (E6)
other values on request
- Nominal voltages : U_{R-} 630 V to 10,000 V
- Test voltage : U_e = 1.25 U_{R-}/1 mn
- Tangent of loss angle : tg δ (see page 7)
- Insulation resistance : Ri (see page 8)

Marking

TPC - IEO--
Capacitance and tolerance (CEI 62 code).
Nominal voltage.
Date of manufacture
2 letter code
(year - month) according to CEI 62
and available space.

Ordering code

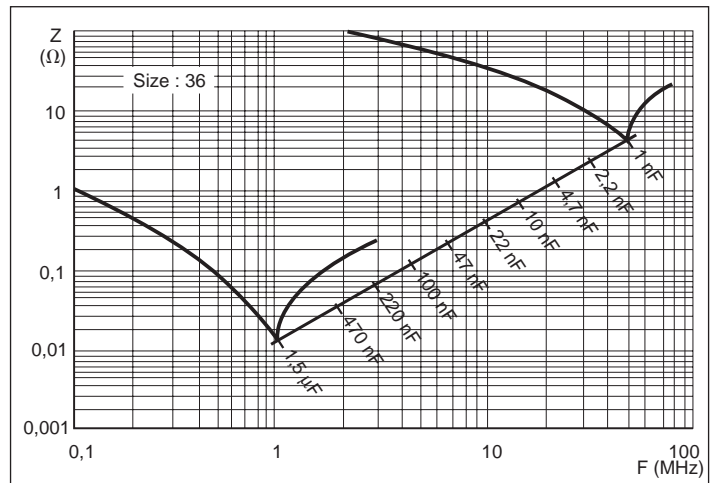
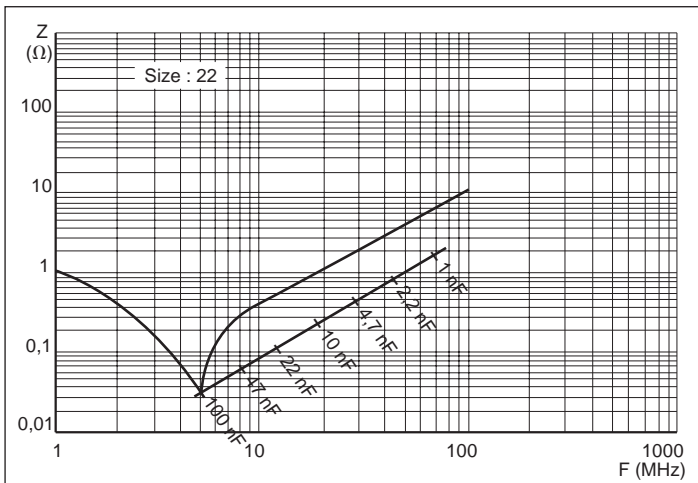


Nominal voltage (U_R) and capacitance values (C_R) depending on the dimensions.

Size	Dimensions (in mm)			Reference						
				ST						
	Max L	Max D	\varnothing + 10 % - 0.05	U_R (V)						
				630	1 000	1 600	2 500	5 000	6 300	10 000
				Range of capacitances (C_R min. ... max.)						
22	22	10	0.8	–	15 nF/22 nF	6.8 nF ... 15 nF	2.2 nF ... 4.7 nF	150 pF/220 pF	–	–
	22	12.5	0.8	–	33 nF/47 nF	22 nF	6.8 nF	330 pF/470 pF	–	–
	22	15	0.8	–	68 nF	33 nF	10 nF/15 nF	680 pF	–	–
	22	17.5	0.8	–	100 nF	47 nF/68 nF	22 nF	1 nF	–	–
36	36	10	1	–	47 nF	15 nF ... 33 nF	6.8 nF ... 10 nF	1.5 nF/2.2 nF	1 nF	100 pF/220 pF
	36	12.5	1	–	68 nF/100 nF	47 nF	15 nF/22 nF	3.3 nF/4.7 nF	1.5 nF	330 pF
	36	15	1	–	150 nF	68 nF/100 nF	33 nF	6.8 nF	2.2 nF/3.3 nF	470 pF/680 pF
	36	17.5	1	–	220 nF	150 nF	47 nF	10 nF	4.7 nF	1 nF
	36	20	1	–	330 nF	–	68 nF	15 nF	–	–
	36	22.5	1	1 μ F	470 nF	220 nF	100 nF	–	6.8 nF	1.5 nF
	36	25	1	1.5 μ F	–	330 nF	–	22 nF	10 nF	2.2 nF
	36	27.5	1	–	680 nF	–	150 nF	33 nF	–	–

Characteristic curves

Influence of the frequency on the impedance (room temperature).



S4 07/10/15/27

S8 10/14/18/31

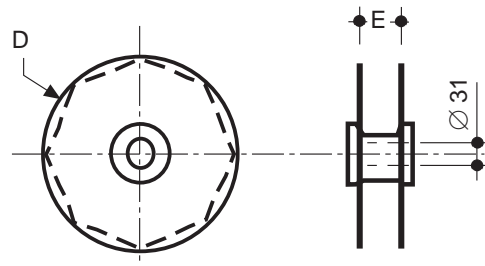
S9 10/13/18/27/31

ST 22/36

BULK	M.O.Q. = 200
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TAPE & REEL	∅ capacitor (mm)	Quantities	Pitch (mm)
SUFFIX : GA & GB	0 < 4 mm	1800	10
	4.1 < 0 > 6 mm	1400	10
	6.1 < 0 > 8 mm	1200	10
	8.1 < 0 > 9 mm	600	10
SUFFIX : GA	9.1 < 0 > 14.5 mm	400	20

SUFFIX	D	E (ext)
GA	360	90
GB	360	79



Dimensions (mm)

NORMALIZED SERIES AND ASSOCIATED VALUES

E 6 ± 20 %	E 12 ± 10 %	E 24 ± 5 %	E 48 ± 2 %	E 96 ± 1 %
100	100	100	100	100
			102	
			105	105
			107	
			110	110
			113	
		115	115	
		118		
		120	120	
		121	121	
		124		
		127	127	
		130	130	
		133	133	
		137		
		140	140	
		143		
		147	147	
150	150			
150	150	150	150	150
			154	154
			158	
			160	160
			162	162
			165	
		169	169	
		174		
		180	180	
		178	178	
		182		
		187	187	
		191		
		196	196	
		200	200	
		205	205	
		210		
		215	215	
220	220			
221				
226	226			
232				
240	237	237		
243				
249	249			
255				
261	261			
267				
270	270			
274	274			
280				
287	287			
294				
300	301	301		
309				

E 6 ± 20 %	E 12 ± 10 %	E 24 ± 5 %	E 48 ± 2 %	E 96 ± 1 %
330	330	330	316	316
			324	
			332	332
			340	
			348	348
			357	
		360	365	365
		374		
		383	383	
		392		
		390	390	
		402	402	
		412		
		422	422	
		430	432	
		442	442	
		453		
		470	470	
470	470			
470	470			
464	464			
475				
487	487			
499				
510	511	511		
523				
536	536			
549				
560	560			
562	562			
576				
590	590			
604				
619	619			
620	619	619		
634				
649	649			
665				
680	680			
680	680			
681	681			
698				
715	715			
732				
750	750			
750	750			
768				
787	787			
806				
820	820			
825	825			
845				
866	866			
887				
910	909	909		
931				
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976				

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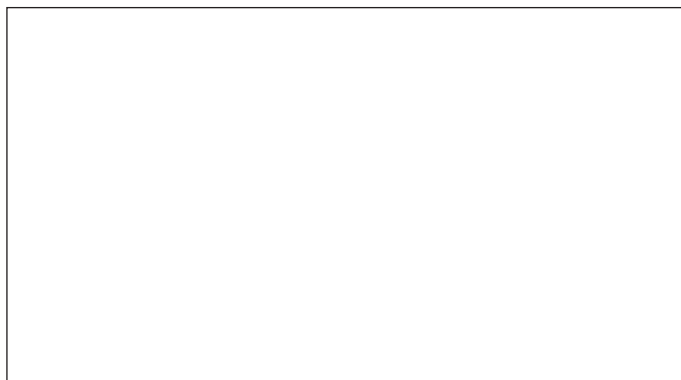
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