

S4 07/10/15/27

CPM-13 — 7.62/10.16/15.24/27.94 Radial Leads 63/160/250/400 V-



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:

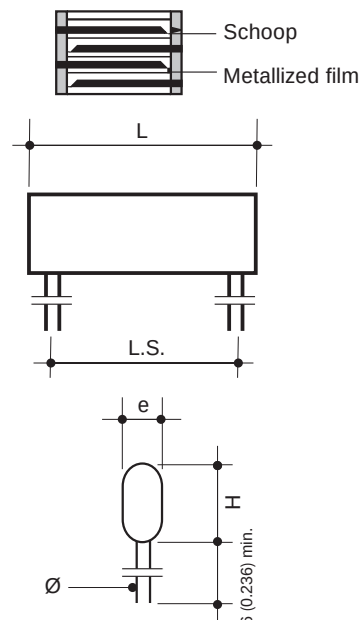
CEI 384-2/CECC 30400/UTE 83151

On the LN2 44-04 list:

Complies with type CPM13

On the GAM-T1 list.

Schematic Cross Section



DIMENSIONS:

millimeters (inches)

Size Code	L max.	H max.	e max.	LS ±0.5	Ø ^{+10%} _{-0.05}	Observations
07	12.0 (0.472)	7.5 (0.295)	4.5 (0.177)	7.62 (0.300)	0.6 (0.024)	1nF ≤ C _R ≤ 6.8nF
10	14.5 (0.571)	7.5 / 8.0 (0.295 / 0.315)	4.5 / 5.0 (0.177 / 0.197)	10.16 (0.400)	0.6 (0.024)	4.7nF ≤ C _R ≤ 100nF
15	20.0 (0.787)	8.0 ... 15.5 (0.315 ... 0.610)	4.5 ... 10.5 (0.177 ... 0.413)	15.24 (0.600)	0.8 (0.031)	15nF ≤ C _R ≤ 1μF
27	33.0 (1.299)	11.0 ... 27.5 (0.433 ... 1.083)	8.0 ... 18.0 (0.315 ... 0.709)	27.94 (1.100)	1.0 (0.039)	150nF ≤ C _R ≤ 10μF

HOW TO ORDER

S4 15



Type

4



Class

G



Voltage

0104



Capacitance Value

K



Tolerance

--



Suffix
Tape and Reel
See page 47

PERFORMANCE CHARACTERISTICS

Climatic category: 55/125/21 - Performance Class 1

Capacitance range: C_R 1 nF to 10 μF

Tolerances on C_R: ±5%, ±10%, ±20% (E6)
(assoc. series) (other values on request)

Nominal voltages: V_{R-} 63/160/250/400 V
V_{R-} 40/100/160/200 V

Category voltage: V_C = 0.5 V_{R-} at 125°C

Test voltage: V_e = 1.6 V_{R-}

Tangent of loss angle: D.F. (see page 4)

Insulation resistance: IR (see page 5)

MARKING

Logo - CPM13B

Capacitance and tolerance
(CEI 62 code)

Nominal voltage

Date of manufacture

2 letter code

(year - month) according
to CEI 62

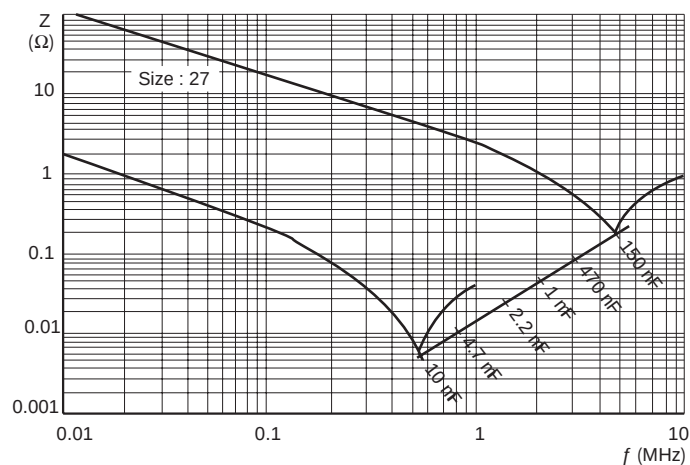
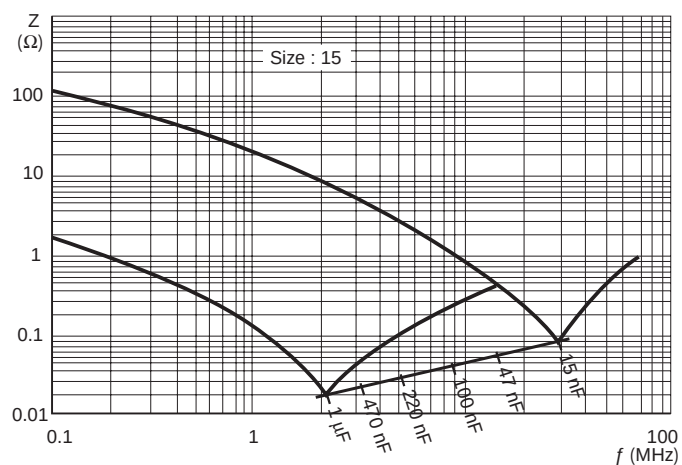
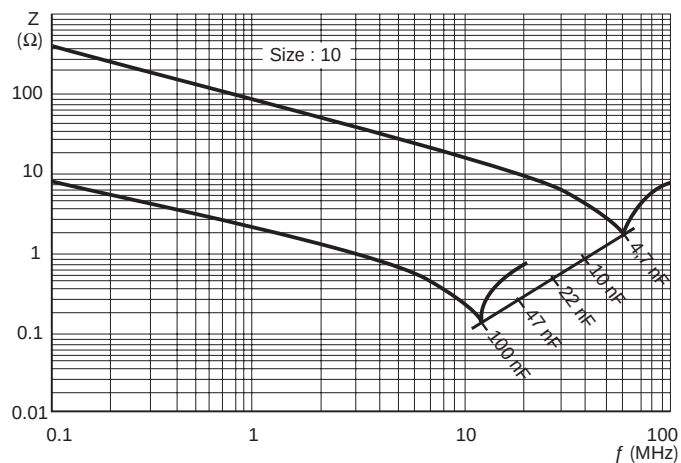
except for L = 12 and 14.5mm

NOMINAL VOLTAGE (V_R) AND CAPACITANCE VALUES (C_R) DEPENDING ON THE DIMENSIONS

Size Code	DIMENSIONS: millimeters (inches)					Reference			
						S4			
						V_R / V_{R-}			
						63/40	160/100	250/160	400/200
						Range of Capacitance (C_R min. ... max.)			
07	12.0 (0.472)	7.5 (0.295)	4.5 (0.177)	0.6 (0.024) +10% -0.05	7.62 (0.300)	–	–	4.7 nF/6.8 nF	1 nF ... 3.3 nF
10	14.5 (0.571) 14.5 (0.571)	7.5 (0.295) 8.0 (0.315)	4.5 (0.177) 5.0 (0.197)	0.6 (0.024) 0.6 (0.024)	10.16 (0.400)	33 nF ... 100 nF –	10 nF ... 33 nF 47 nF	10 nF ... 22 nF –	4.7 nF ... 10 nF –
15	20.0 (0.787)	8.0 (0.315)	4.5 (0.177)	0.8 (0.031)	15.24 (0.600)	–	68 nF	33 nF	15 nF
	20.0 (0.787)	8.0 (0.315)	5.5 (0.217)	0.8 (0.031)		–	100 nF	–	–
	20.0 (0.787)	8.5 (0.335)	4.5 (0.177)	0.8 (0.031)		150 nF	–	–	–
	20.0 (0.787)	8.5 (0.335)	5.0 (0.197)	0.8 (0.031)		220 nF	–	–	22 nF
	20.0 (0.787)	9.0 (0.354)	5.0 (0.197)	0.8 (0.031)		–	–	47 nF	–
	20.0 (0.787)	9.0 (0.354)	6.0 (0.236)	0.8 (0.031)		330 nF	–	68 nF	–
	20.0 (0.787)	9.5 (0.374)	6.0 (0.236)	0.8 (0.031)		–	–	–	33 nF
	20.0 (0.787)	9.5 (0.374)	6.5 (0.256)	0.8 (0.031)		–	150 nF	–	–
	20.0 (0.787)	10.0 (0.394)	7.0 (0.276)	0.8 (0.031)		470 nF	–	100 nF	–
	20.0 (0.787)	10.5 (0.413)	6.5 (0.256)	0.8 (0.031)		–	–	–	47 nF
	20.0 (0.787)	10.5 (0.413)	7.5 (0.295)	0.8 (0.031)		–	220 nF	–	–
	20.0 (0.787)	11.5 (0.453)	8.5 (0.335)	0.8 (0.031)		680 nF	–	–	–
	20.0 (0.787)	13.5 (0.531)	6.5 (0.256)	0.8 (0.031)		–	–	–	68 nF
	20.0 (0.787)	13.5 (0.531)	8.0 (0.315)	0.8 (0.031)		–	–	150 nF	–
	20.0 (0.787)	13.5 (0.531)	10.5 (0.413)	0.8 (0.031)		1 μ F	–	–	–
	20.0 (0.787)	14.0 (0.551)	7.5 (0.295)	0.8 (0.031)		–	330 nF	–	–
	20.0 (0.787)	15.0 (0.591)	8.5 (0.335)	0.8 (0.031)		–	–	220 nF	100 nF
	20.0 (0.787)	15.5 (0.610)	9.0 (0.354)	0.8 (0.031)		–	470 nF	–	–
27	33.0 (1.299)	11.0 (0.433)	8.0 (0.315)	1.0 (0.039)	27.94 (1.100)	1.5 μ F	–	–	–
	33.0 (1.299)	13.0 (0.512)	7.0 (0.276)	1.0 (0.039)		–	–	–	150 nF
	33.0 (1.299)	13.0 (0.512)	10.0 (0.394)	1.0 (0.039)		2.2 μ F	–	–	–
	33.0 (1.299)	13.5 (0.531)	7.5 (0.295)	1.0 (0.039)		–	680 nF	330 nF	–
	33.0 (1.299)	14.5 (0.571)	8.5 (0.335)	1.0 (0.039)		–	–	470 nF	220 nF
	33.0 (1.299)	14.5 (0.571)	11.5 (0.453)	1.0 (0.039)		3.3 μ F	–	–	–
	33.0 (1.299)	15.0 (0.591)	9.0 (0.354)	1.0 (0.039)		–	1 μ F	–	–
	33.0 (1.299)	15.0 (0.591)	10.5 (0.413)	1.0 (0.039)		–	–	–	330 nF
	33.0 (1.299)	15.5 (0.610)	11.0 (0.433)	1.0 (0.039)		–	–	680 nF	–
	33.0 (1.299)	16.0 (0.630)	11.5 (0.453)	1.0 (0.039)		–	1.5 μ F	–	–
	33.0 (1.299)	18.5 (0.728)	14.0 (0.551)	1.0 (0.039)		4.7 μ F	–	–	–
	33.0 (1.299)	20.0 (0.787)	12.0 (0.472)	1.0 (0.039)		–	2.2 μ F	–	–
	33.0 (1.299)	20.5 (0.807)	11.0 (0.433)	1.0 (0.039)		–	–	1 μ F	470 nF
	33.0 (1.299)	21.0 (0.827)	16.5 (0.650)	1.0 (0.039)		6.8 μ F	–	–	–
	33.0 (1.299)	23.5 (0.925)	14.0 (0.551)	1.0 (0.039)		–	–	–	680 nF
	33.0 (1.299)	24.0 (0.945)	14.5 (0.571)	1.0 (0.039)		–	–	1.5 μ F	–
	33.0 (1.299)	24.5 (0.965)	15.0 (0.591)	1.0 (0.039)		–	3.3 μ F	–	–
	33.0 (1.299)	26.5 (1.043)	17.0 (0.669)	1.0 (0.039)		–	–	–	1 μ F
	33.0 (1.299)	27.5 (1.083)	18.0 (0.709)	1.0 (0.039)		10 μ F	4.7 μ F	2.2 μ F	–

CHARACTERISTIC CURVES

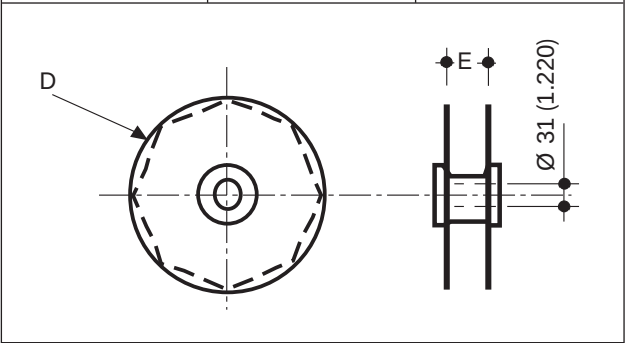
Influence of the frequency on the impedance (room temperature).



Bulk	M.O.Q. = 200
------	--------------

millimeters (inches)			
Tape & Reel	Ø capacitor	Quantities	Pitch
Suffix: GA & GB	< 4.0 (0.0 < 0.157)	1800	10.0 (0.394)
	4 < Ø ≤ 6 (0.161 < Ø ≤ 0.236)	1200	10.0 (0.394)
	6 < Ø ≤ 8 (0.240 < Ø ≤ 0.315)	1000	10.0 (0.394)
	8 < Ø ≤ 9 (0.319 < Ø ≤ 0.354)	800	10.0 (0.394)
Suffix: GA	9 < Ø ≤ 14.5 (0.358 < Ø ≤ 0.571)	300	20.0 (0.787)

Suffix	D	E (ext)
GA	360 (14.173)	90 (3.543)
GB	360 (14.173)	79 (3.110)



Metallized Polyester Film Dielectric Capacitors



Type Selection Guide

Presentation	Type		Nominal Voltage		Capacitance Range (C _R)	Tolerance on C _R (Series)	Lead Spacing mm (inches)
	TPC	UTE	V _R (V)	V _R (V)			
Radial Leads	BF	CPM-83 C83151	63 ... 400	40 ... 200	1 nF ... 2.2 µF	±5% (E6 - E12) ±10% (E6 - E12)	5.08 (0.200)
		CPM-N C83151	63 ... 400	40 ... 200	1 nF ... 2.2 µF	±5% (E6 - E12) ±10% (E6 - E12)	5.08 (0.200)
	BT	CPM85 C83151	63 ... 630	40 ... 220	1 nF ... 22 µF	±5% (E6 - E12) ±10% (E6 - E12) ±20% (E6 - E12)	7.5 (0.295) 10.0 (0.394) 15.0 (0.591) 22.5 (0.886) 27.5 (1.083)
		CPM85 C83151	63 ... 1,000	40 ... 250	1 nF ... 22 µF	±5% (E6 - E12) ±10% (E6 - E12) ±20% (E6 - E12)	7.5 (0.295) 10.0 (0.394) 15.0 (0.591) 22.5 (0.886) 27.5 (1.083)
	BC / BD		250	—	0.47 µF ... 2.2 µF	±5% ±10%	15.0 (0.591)
	BO	CPM50 C83151	40 ... 400	25 ... 200	1 nF ... 22 µF	±5% (E6 - E12) ±10% (E6 - E12) ±20% (E6 - E12)	7.5 (0.295) 10.0 (0.394) 15.0 (0.591) 27.5 (1.083)
		CPM13 C83151	63 ... 400	40 ... 200	1 nF ... 10 µF	±5% (E6 - E12) ±10% (E6 - E12) ±20% (E6 - E12)	7.62 (0.300) 10.16 (0.400) 15.24 (0.600) 27.94 (1.100)

Axial Leads	S8	CPM8 C83151	63 ... 400	40 ... 200	1 nF ... 10 µF	±5% (E6 - E12) ±10% (E6 - E12) ±20% (E6 - E12)	
	SH	CPM8 C83151	63 ... 1,000	40 ... 250	1 nF ... 22 µF	±5% (E6 - E12) ±10% (E6 - E12) ±20% (E6 - E12)	
	S9	CPM72 C83151	100 ... 630	40 ... 220	1 nF ... 10 µF	±5% (E6 - E12) ±10% (E6 - E12) ±20% (E6 - E12)	
	SG	CPM72 C83151	63 ... 1,000	40 ... 250	1 nF ... 22 µF	±5% (E6 - E12) ±10% (E6 - E12) ±20% (E6 - E12)	
	ST		630 ... 10,000		100 pF ... 1.5 µF	±5% (E6 - E12) ±10% (E6 - E12) ±20% (E6 - E12)	

Metallized Polyester Film Dielectric Capacitors



HOW TO ORDER

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

BT07	4	E	0104	K	--
Identification Code	Dielectric Class	Voltage Code	Capacitance (EIA code)	Tolerance Code	Suffix
	4		Capacitance expressed by 2 significant figures	J = $\pm 5\%$ K = $\pm 10\%$ M = $\pm 20\%$	DA - DB - DC - DD: lead spacing 5.08 mm taped on reel or ammpack EN Radial types: lead spacing 7.5/10/15 mm taped on reel H=16.5 mm Axial type: (SG series only) Ammpack EP: Taped on reel H=18.5 mm (only for BG type) GA or GB: standard axial taped (S8, S9, ST types) -- Bulk
Radial Leads		C = 25/40 V D = 50/63 V E = 100 V F = 160/200 V G = 250 V H = 275/300 V I = 400 V J = 500 V K = 600/630 V L = 1000 V M = 1600 V N = 2000 V P = 2500 V Q = 3000 V R = 4000 V S = 5000 V T = 6000/6300 V U = 8000 V V = 10 kV	1st digit: 0 (zero) 2nd and 3rd digit: the 2 significant figures of the capacitance value 4th digit: - for values ≥ 10 pF and ≤ 990 μ F: the number of zeros to be added to the capacitance values - for values ≥ 1 pF and ≤ 9.9 pF: the numerical 9 signifying that the capacitance value is to be multiplied by 0.1 - for values < 1 pF: the numerical 8 signifying that the capacitance value is to be multiplied by 0.01 Example: 1000 pF = 0102 8.2 pF = 0829 0.47 pF = 0478		
CPM83 BF 01 CPM83 BF 02 CPM83 BF 05 CPM83 BF 06 CPM83 BF 07 CPM-N BH 01 CPM-N BH 02 CPM-N BH 05 CPM-N BH 06 CPM-N BH 07 CPM85 BT 07 CPM85 BT 10 CPM85 BT 15 CPM85 BT 22 CPM85 BT 27 CPM85 BG 07 CPM85 BG 10 CPM85 BG 15 CPM85 BG 22 CPM85 BG 27 -- BC 15 -- BD 15 CPM50 BO 07 CPM50 BO 10 CPM50 BO 15 CPM50 BO 27 CPM13 S4 07 CPM13 S4 10 CPM13 S4 15 CPM13 S4 27			Capacitance expressed by 3 significant figures 1st, 2nd and 3rd digit: the 3 significant figures of the capacitance value 4th digit: - for values > 100 pF and ≤ 999 μ F: the number of zeros to be added to the capacitance values - for values > 10 pF and < 100 pF: the numerical 9 signifying that the capacitance value is to be multiplied by 0.1 - for values > 1 pF and < 10 pF: the numerical 8 signifying that the capacitance value is to be multiplied by 0.1 Example: 196 pF = 1960 47.2 pF = 4729 8.28 pF = 8288		
Axial Leads					
CPM8 S8 10 CPM8 S8 14 CPM8 S8 18 CPM8 S8 31 CPM8 SH 13 CPM8 SH 18 CPM8 SH 25 CPM8 SH 30 CPM8 SH 40 CPM72 S9 10 CPM72 S9 14 CPM72 S9 18 CPM72 S9 27 CPM72 S9 31 CPM72 SG 13 CPM72 SG 18 CPM72 SG 25 CPM72 SG 30 CPM72 SG 40 -- ST 22 -- ST 36					