

Applications

- High DC voltage filtering
- High Voltage Power Supplies
- Voltage multipliers & dividers
- HF signal coupling
- Pulse operation
-

Main characteristics

- Compact size
- 10 – 30 kVDC. Custom solutions to 60 kVDC.
- $U_T \geq 2 \times U_N$
- Dry plastic film technology
- Lightweight
- Climatic category 40/085/21
- Low dielectric losses
- Tolerance $\pm 10\%$. Lower tolerances on request
- Compliant with SF6 environmental conditions



PPHT series

Design

- Cylindrical film-foil winding
- Insulated protective sleeve
- Axial connections with tinned copper wires
- Optional connections: threaded screws or terminals (dv).
- Epoxy-resin sealant
- Optional marking to indicate position of film foil

Mounting

- Indifferent positioning
- Recommended fastening with mechanical collar/insulated wraps

1.0 Rated values and operational data

Nominal voltage U_N	40°C	[kVDC]	10	15	20	30
	70°C		8.7	13	17.3	26
	85°C		7.5	11	15	22
Test voltage U_T	1min, 23°C	[kV]	20	30	40	60
Nominal voltage U_N	60°C, 50 Hz	[VAC]	830	1250	1660	2500

2.0 Capacitance range

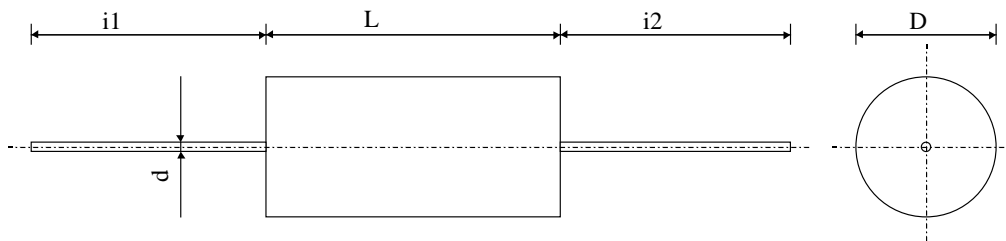
$C_n \Rightarrow$	10 pF	100 pF	500 pF	1.0 nF	4.7 nF	10 nF	22 nF	33 nF	68 nF	100 nF
10 kVDC										
15 kVDC										
20 kVDC										
30 kVDC										

Other capacitances or voltages available on request.

3.0 Characteristics

		Min	Typ	Max
Dissipation factor 23 °C, 1 VAC,	tg δ	1 kHz	10 kVDC	11×10^{-4}
			15 kVDC	6.2×10^{-4}
			20 kVDC	5.2×10^{-4}
			30 kVDC	2.4×10^{-4}
		10 kHz	10 kVDC	91×10^{-4}
			15 kVDC	49×10^{-4}
			20 kVDC	40×10^{-4}
			30 kVDC	11×10^{-4}
Insulation resistance	R_i	1 min, 23°C, 500 VDC	[M Ω]	1×10^5
Temperature coefficient	α_c	-40 ... +70°C	[ppm / °C]	-210 $^{\pm 90}$
Climatic category	IEC Standard	40/85/21		

4.0 Dimensions, shape:



	d	i1, i2
Tinned copper wires	1.0 mm	> 50 mm

Option : Wires with $\varnothing 1.5$ mm or M3 screws on request

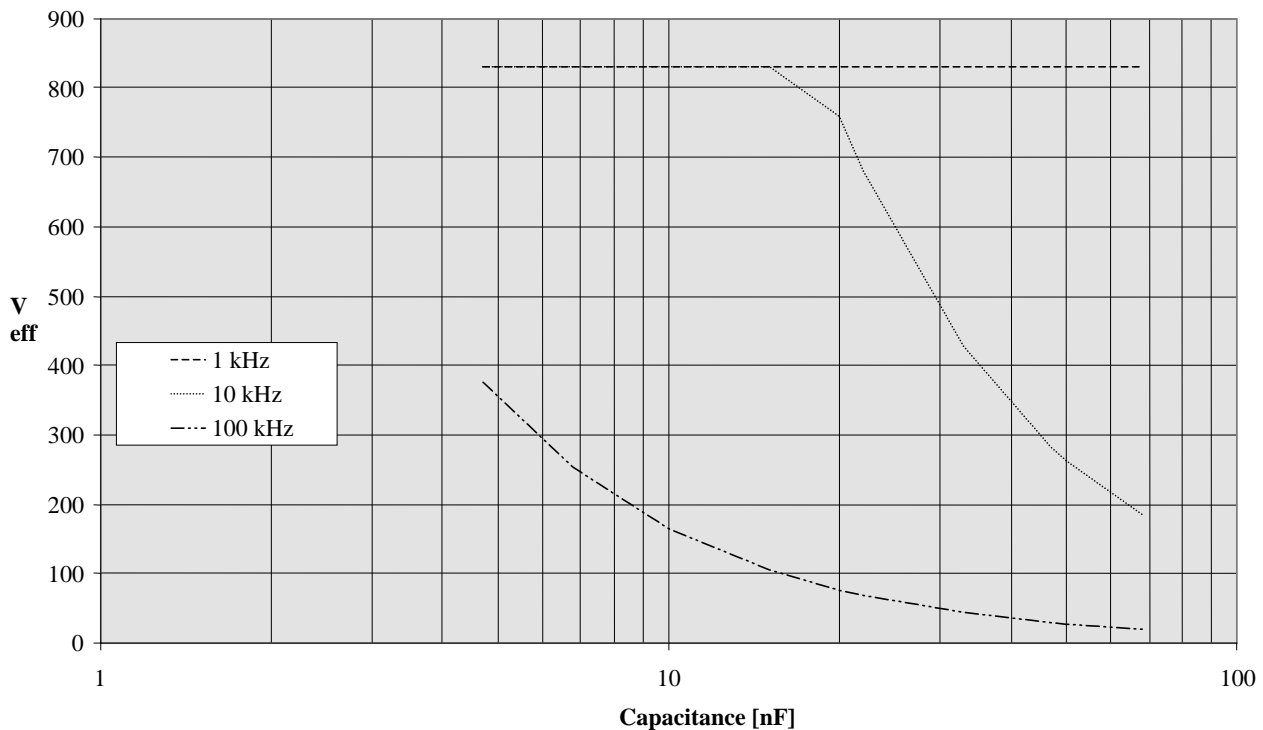
Option : Special external marking to indicate position of film foil on request

Capacitors delivered in bulk.

PPHT 10 kVDC

B7F8 Pos.	Type	Cn [nF]	Dimension		Un	Un	Un	Un	I _{eff} [A]	ESR [ohm]	ESL [µH]	f _o [kHz]
			∅ [mm]	L [mm]	50 Hz [VAC]	1 kHz [VAC]	10 kHz [VAC]	100 kHz [VAC]				
1	PPHT 1000-247 K	4.7	19.5	65.0	830	830	830	375	1.11	0.36	25	467
2	PPHT 1000-268 K	6.8	21.0	65.0	830	830	830	252	1.08	0.41	32	343
3	PPHT 1000-110 K	10.0	22.5	65.0	830	830	830	165	1.04	0.50	42	245
4	PPHT 1000-115 K	15.0	25.5	65.0	830	830	830	105	0.99	0.64	59	169
5	PPHT 1000-120 K	20	29.0	65.0	830	830	759	76	0.95	0.77	75	130
6	PPHT 1000-122 K	22	29.5	65.0	830	830	681	68	0.94	0.83	82	118
7	PPHT 1000-133 K	33	34.5	65.0	830	830	427	43	0.89	1.13	118	81
8	PPHT 1000-147 K	47	40.5	65.0	830	830	284	28	0.84	1.51	165	57
9	PPHT 1000-150 K	50	41.5	65.0	830	830	264	26	0.83	1.59	175	54
10	PPHT 1000-168 K	68	47.0	65.0	830	830	184	18	0.79	2.08	234	40

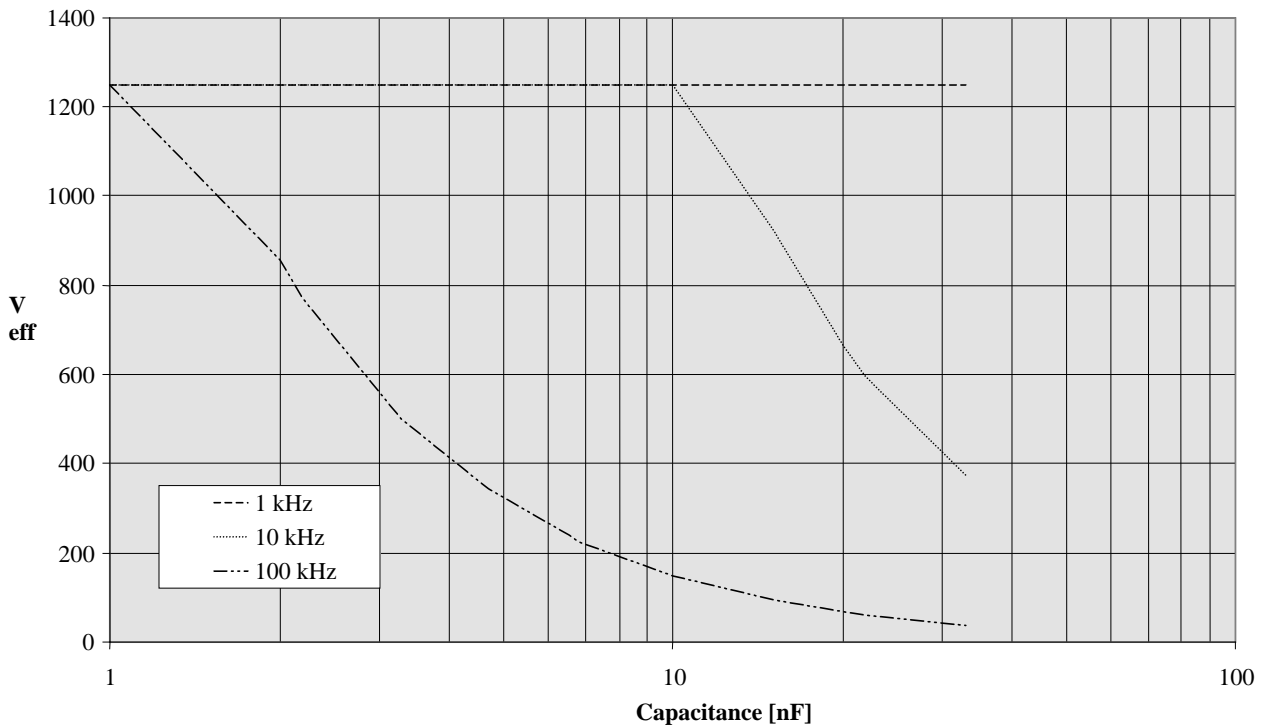
PPHT 10 kVDC – permissible voltage vs. capacitance



PPHT 15 kVDC

B7F8 Pos.	Type	Cn [nF]	Dimension		Un	Un	Un	Un	I _{eff} [A]	ESR [ohm]	ESL [μH]	fo [kHz]
			∅ [mm]	L [mm]	50 Hz [VAC]	1 kHz [VAC]	10 kHz [VAC]	100 kHz [VAC]				
1	PPHT 1500-210 K	1.0	19.0	65.0	1'250	1'250	1'250	1'250	1.11	0.32	18	1'191
2	PPHT 1500-220 K	2.0	19.0	65.0	1'250	1'250	1'250	856	1.08	0.38	25	708
3	PPHT 1500-222 K	2.2	19.0	65.0	1'250	1'250	1'250	774	1.07	0.39	27	656
4	PPHT 1500-233 K	3.3	21.0	65.0	1'250	1'250	1'250	502	1.04	0.46	35	468
5	PPHT 1500-247 K	4.7	23.0	65.0	1'250	1'250	1'250	342	1.01	0.55	45	345
6	PPHT 1500-265 K	6.5	25.5	65.0	1'250	1'250	1'250	239	0.98	0.66	59	257
7	PPHT 1500-268 K	6.8	25.9	65.0	1'250	1'250	1'250	227	0.97	0.67	61	247
8	PPHT 1500-110 K	10	30.0	65.0	1'250	1'250	1'250	147	0.92	0.87	85	173
9	PPHT 1500-115 K	15	35.0	65.0	1'250	1'250	927	93	0.87	1.18	122	118
10	PPHT 1500-120 K	20	39.5	65.0	1'250	1'250	666	67	0.84	1.48	159	89
11	PPHT 1500-122 K	22	41.0	65.0	1'250	1'250	596	60	0.82	1.61	174	81
12	PPHT 1500-133 K	33	49.0	65.0	1'250	1'250	373	37	0.77	2.28	256	55

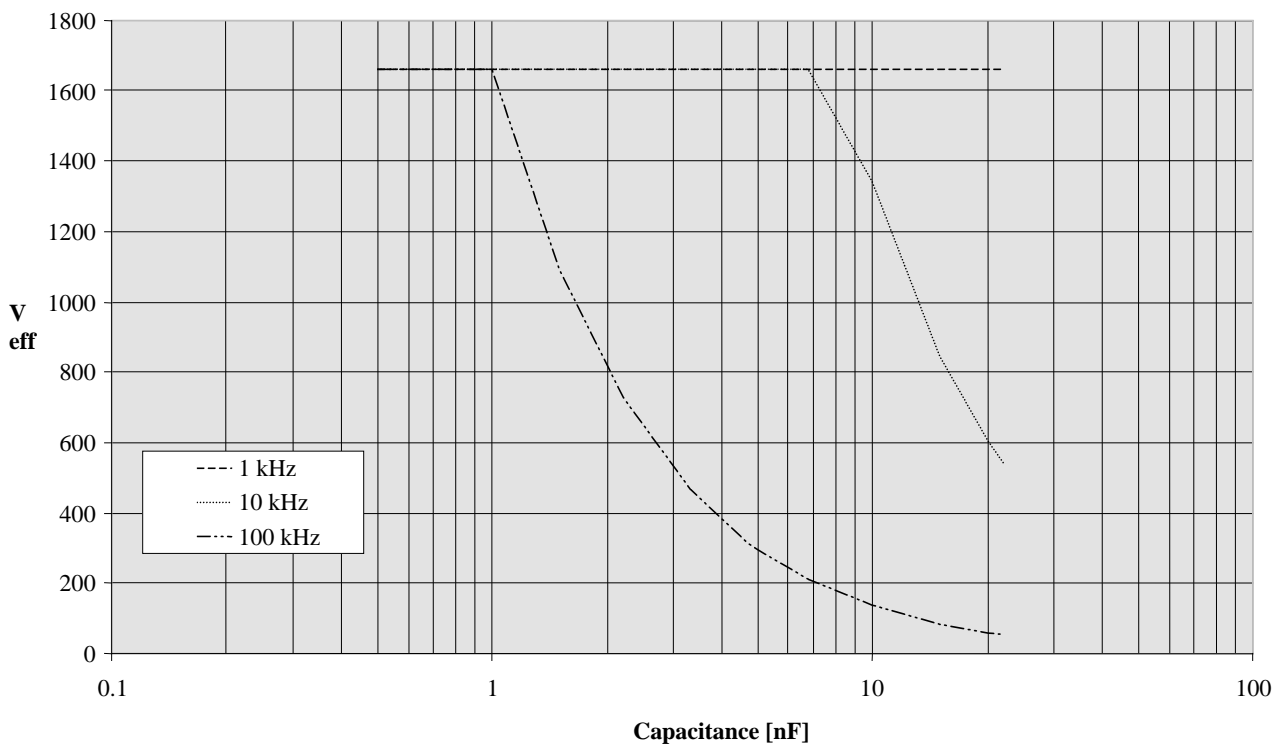
PPHT 15 kVDC – permissible voltage vs. capacitance



PPHT 20 kVDC

B7F8 Pos.	Type	Cn [nF]	Dimension		Un 50 Hz [VAC]	Un 1 kHz [VAC]	Un 10 kHz [VAC]	Un 100 kHz [VAC]	leff [A]	ESR [ohm]	ESL [μH]	fo [kHz]
			∅ [mm]	L [mm]								
1	PPHT 2000-350 K	0.50	18.0	65.0	1'660	1'660	1'660	1'660	1.07	0.34	18	1'667
2	PPHT 2000-368 K	0.68	18.5	65.0	1'660	1'660	1'660	1'660	1.06	0.36	21	1'345
3	PPHT 2000-210 K	1.0	19.0	65.0	1'660	1'660	1'660	1'660	1.05	0.40	25	1'010
4	PPHT 2000-215 K	1.5	20.2	65.0	1'660	1'660	1'660	1'092	1.03	0.45	31	733
5	PPHT 2000-222 K	2.2	22.2	65.0	1'660	1'660	1'660	726	1.00	0.53	41	532
6	PPHT 2000-233 K	3.3	24.9	65.0	1'660	1'660	1'660	467	0.97	0.65	55	373
7	PPHT 2000-247 K	4.7	28.0	65.0	1'660	1'660	1'660	316	0.93	0.80	74	270
8	PPHT 2000-250 K	5.0	29.0	65.0	1'660	1'660	1'660	295	0.93	0.83	78	255
9	PPHT 2000-268 K	6.8	32.1	65.0	1'660	1'660	1'660	209	0.89	1.03	102	191
10	PPHT 2000-110 K	10.0	37.4	65.0	1'660	1'660	1'344	134	0.84	1.38	144	133
11	PPHT 2000-115 K	15.0	44.3	65.0	1'660	1'660	843	84	0.79	1.92	210	90
12	PPHT 2000-120 K	20.0	50.3	65.0	1'660	1'660	605	60	0.76	2.47	276	68
13	PPHT 2000-122 K	22.0	52.5	65.0	1'660	1'660	542	54	0.75	2.69	303	62

PPHT 20 kVDC - permissible voltage vs. capacitance



PPHT 30 kVDC

B7F8 Pos.	Type	Cn [nF]	Dimension		Un	Un	Un	Un	I _{eff} [A]	ESR [ohm]	ESL [μH]	fo [kHz]
			∅ [mm]	L [mm]	50 Hz [VAC]	1 kHz [VAC]	10 kHz [VAC]	100 kHz [VAC]				
1	PPHT 3000-410 K	0.010	19.0	82.0	2'500	2'500	2'500	2'500	---	---	---	---
2	PPHT 3000-450 K	0.050	19.0	82.0	2'500	2'500	2'500	2'500	---	---	---	---
3	PPHT 3000-310 K	0.10	19.0	82.0	2'500	2'500	2'500	2'500	---	---	---	---
4	PPHT 3000-325 K	0.25	19.0	82.0	2'500	2'500	2'500	2'500	---	---	---	---
5	PPHT 3000-350 K	0.50	19.0	82.0	2'500	2'500	2'500	2'500	1.34	0.30	24	1'444
6	PPHT 3000-368 K	0.68	19.0	82.0	2'500	2'500	2'500	2'500	1.32	0.32	28	1'153
7	PPHT 3000-210 K	1.0	21.0	82.0	2'500	2'500	2'500	2'075	1.30	0.36	35	855
8	PPHT 3000-215 K	1.5	23.0	82.0	2'500	2'500	2'500	1'352	1.27	0.42	45	613
9	PPHT 3000-222 K	2.2	25.0	82.0	2'500	2'500	2'500	895	1.24	0.50	59	440
10	PPHT 3000-233 K	3.3	29.0	82.0	2'500	2'500	2'500	574	1.19	0.63	82	306
11	PPHT 3000-247 K	4.7	33.0	82.0	2'500	2'500	2'500	386	1.14	0.79	111	220
12	PPHT 3000-268 K	6.8	39.0	82.0	2'500	2'500	2'500	254	1.09	1.04	154	155
13	PPHT 3000-110 K	10.0	46.0	82.0	2'500	2'500	1'632	163	1.03	1.42	220	107

PPHT 30 kVDC - permissible voltage vs. capacitance

