

PH SERIES ■ HIGH VOLTAGE & HIGH RELIABILITY

KEY FEATURES



- **SOLID CONDUCTIVE POLYMER** ■ THT type
- Very high ripple current in smallest dimension
- Endurance: 105°C ■ 2 000 hours
- Low ESR at high frequency range
- No dry-out effect guarantees extremely long life

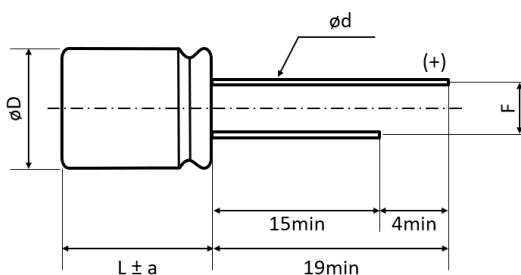


SPECIFICATIONS

Items		Performance Characteristics
Operating Temperature Range		-55 ~ +105°C
Rated Voltage Range	V_R	35 ~ 100V DC
Surge Voltage	V_S	$V_S = 1.10 \cdot V_R$
Capacitance Range	C_R	6.8 ~ 330 μ F
Cap. Tolerance	ΔC	$\pm 20\%$ (120Hz ■ 20°C)
Leakage Current (20°C ■ V_R applied)	I_{LEAK}	Not to exceed the values shown in standard ratings After 2 minutes
Dissipation Factor % (20°C ■ 120Hz)	$\tan\delta$	Not to exceed the values shown in standard ratings
Equivalent Series Resistance (20°C ■ 100kHz)	ESR	Not to exceed the values shown in standard ratings

Lifetime Test		
Endurance 105°C (V_R applied)	Test	2 000 hours
	$\Delta C/C_R$	Within $\pm 20\%$ of the initial value
	$\tan\delta$	Not to exceed 150% of the value specified
	ESR	Not to exceed 150% of the value specified
	I_{Leak}	Less than the specified value
Moisture Resistance stored at 60°C (RH 90 ~ 95%)	Test	1 000 hours
	$\Delta C/C_R$	Within $\pm 20\%$ of the initial value
	$\tan\delta$	Not to exceed 150% of the value specified
	ESR	Not to exceed 150% of the value specified
	I_{Leak}	Less than the specified value

DIMENSIONS ■ All dimensions in mm



ϕD	L	$\phi D+0.5\max$	a	F ± 0.5	$\phi d\pm 0.05$
6.3	8	6.3	1	2.5	0.5
8	8	8	1	3.5	0.6
8	9	8	1.5	3.5	0.6
8	11.5	8	1.5	3.5	0.6
10	10	10	1.5	5	0.6
10	12.5	10	1.5	5	0.6

STANDARD RATINGS

Part number shows tape version with straight leads

V_R (V)	C_R (μ F)	ϕ D (mm)	L (mm)	I_{LEAK} (μ A, 2min)	$\tan\delta$ +20°C • 120Hz (%)	Max. ESR +20°C • 100kHz (m Ω)	I_R - Max. Ripple Current +105°C • 100kHz (mA rms)	CapXon Part Number
35	10	6.3	8	175	12	40	2100	PH100M035E080PTC
	10	8	8	175	12	35	2300	PH100M035F080PTD
	22	6.3	8	154	12	40	2100	PH220M035E080PTC
	22	8	11.5	154	12	30	2890	PH220M035F115PTD
	33	8	8	231	12	30	2500	PH330M035F080PTD
	33	8	11.5	231	12	25	3100	PH330M035F115PTD
	39	8	11.5	273	12	25	3100	PH390M035F115PTD
	47	8	8	329	12	30	2700	PH470M035F080PTD
	47	8	11.5	329	12	20	3600	PH470M035F115PTD
	47	10	12.5	329	12	20	3800	PH470M035G125PTA
	56	8	8	392	12	30	2700	PH560M035F080PTD
	56	8	11.5	392	12	20	3600	PH560M035F115PTD
	68	8	8	476	12	30	2700	PH680M035F080PTD
	68	8	11.5	476	12	20	3600	PH680M035F115PTD
	68	10	12.5	476	12	20	4000	PH680M035G125PTA
	82	8	11.5	574	12	20	3600	PH820M035F115PTD
	100	8	8	700	12	25	2800	PH101M035F080PTD
	100	8	11.5	700	12	20	3600	PH101M035F115PTD
	100	10	10	700	12	25	3000	PH101M035G100PTA
	100	10	12.5	700	12	20	4000	PH101M035G125PTA
120	10	12.5	840	12	20	4400	PH121M035G125PTA	
150	10	12.5	1050	12	15	4400	PH151M035G125PTA	
180	10	12.5	1260	12	20	4000	PH181M035G125PTA	
220	10	12.5	1540	12	20	4000	PH221M035G125PTA	
270	10	12.5	1890	12	20	4000	PH271M035G125PTA	
330	10	12.5	2310	12	18	4400	PH331M035G125PTA	
50	10	8	8	100	12	45	2100	PH100M050F080PTD
	12	6.3	8	120	12	50	1800	PH120M050E080PTC
	22	8	8	220	12	45	2300	PH220M050F080PTD
	27	8	11.5	390	12	32	2700	PH270M050F115PTD
	33	8	8	330	12	45	2300	PH330M050F080PTD
	33	8	11.5	330	12	32	2700	PH330M050F115PTD
	33	10	12.5	330	12	30	3000	PH330M050G125PTA
	39	8	11.5	390	12	32	2700	PH390M050F115PTD
	39	10	12.5	390	12	30	3000	PH390M050G125PTA
	47	8	11.5	470	12	30	2800	PH470M050F115PTD
	47	10	12.5	470	12	25	3400	PH470M050G125PTA
	56	8	11.5	560	12	30	2800	PH560M050F115PTD
	56	10	10	560	12	30	2800	PH560M050G100PTA
	56	10	12.5	560	12	25	3400	PH560M050G125PTA
	68	8	9	680	12	40	2400	PH680M050F090PTD
	68	8	11.5	680	12	30	2800	PH680M050F115PTD
	68	10	12.5	680	12	25	3400	PH680M050G125PTA
	82	10	12.5	820	12	25	3400	PH820M050G125PTA

See "PACKAGING INFORMATION" for pin treatment options.

STANDARD RATINGS

Part number shows tape version with straight leads

V_R (V)	C_R (μF)	$\varnothing D$ (mm)	L (mm)	I_{LEAK} (μA , 2min)	$\tan\delta$ +20°C • 120Hz (%)	Max. ESR +20°C • 100kHz (m Ω)	I_R - Max. Ripple Current +105°C • 100kHz (mA rms)	CapXon Part Number
50	100	10	12.5	1000	12	25	3400	PH101M050G125PTA
	120	10	12.5	1200	12	25	3400	PH121M050G125PTA
63	10	8	8	126	12	45	1900	PH100M063F080PTD
	10	8	11.5	126	12	45	2100	PH100M063F115PTD
	22	8	8	277,2	12	45	2100	PH220M063F080PTD
	27	8	11.5	340	12	35	2300	PH270M063F115PTD
	33	8	11.5	415,8	12	35	2500	PH330M063F115PTD
	33	10	10	416	12	35	2700	PH330M063G100PTA
	39	8	11.5	491,4	12	35	2500	PH390M063F115PTD
	39	10	12.5	491,4	12	32	2900	PH390M063G125PTA
	47	8	11.5	592,2	12	35	2500	PH470M063F115PTD
	47	10	12.5	592,2	12	30	3000	PH470M063G125PTA
	56	10	12.5	705,6	12	30	3000	PH560M063G125PTA
	68	10	12.5	856,8	12	30	3000	PH680M063G125PTA
	82	10	12.5	1033,2	12	30	3000	PH820M063G125PTA
	150	10	12.5	1890	12	30	3000	PH151M063G125PTA
80	10	8	8	160	12	45	1900	PH100M080F080PTD
	12	8	11.5	192	12	38	2100	PH120M080F115PTD
	22	10	12.5	352	12	35	2800	PH220M080G125PTA
	27	10	12.5	432	12	35	2800	PH270M080G125PTA
	33	8	11.5	528	12	38	2100	PH330M080F115PTD
	33	10	12.5	528	12	35	2800	PH330M080G125PTA
100	6.8	8	8	136	12	45	1800	PH6R8M100F080PTD
	8.2	8	11.5	164	12	45	1800	PH8R2M100F115PTD
	10	8	11.5	200	12	42	2100	PH100M100F115PTD
	12	8	11.5	240	12	42	2100	PH120M100F115PTD
	12	10	12.5	240	12	40	2300	PH120M100G125PTA
	15	8	11.5	300	12	42	2100	PH150M100F115PTD
	18	10	12.5	360	12	35	2500	PH180M100G125PTA
	22	10	12.5	440	12	35	2800	PH220M100G125PTA
	27	10	12.5	540	12	35	2800	PH270M100G125PTA
	33	10	12.5	660	12	35	2800	PH330M100G125PTA





See "PACKAGING INFORMATION" for pin treatment options.

MULTIPLIER K_f for RIPPLE CURRENT vs. FREQUENCY

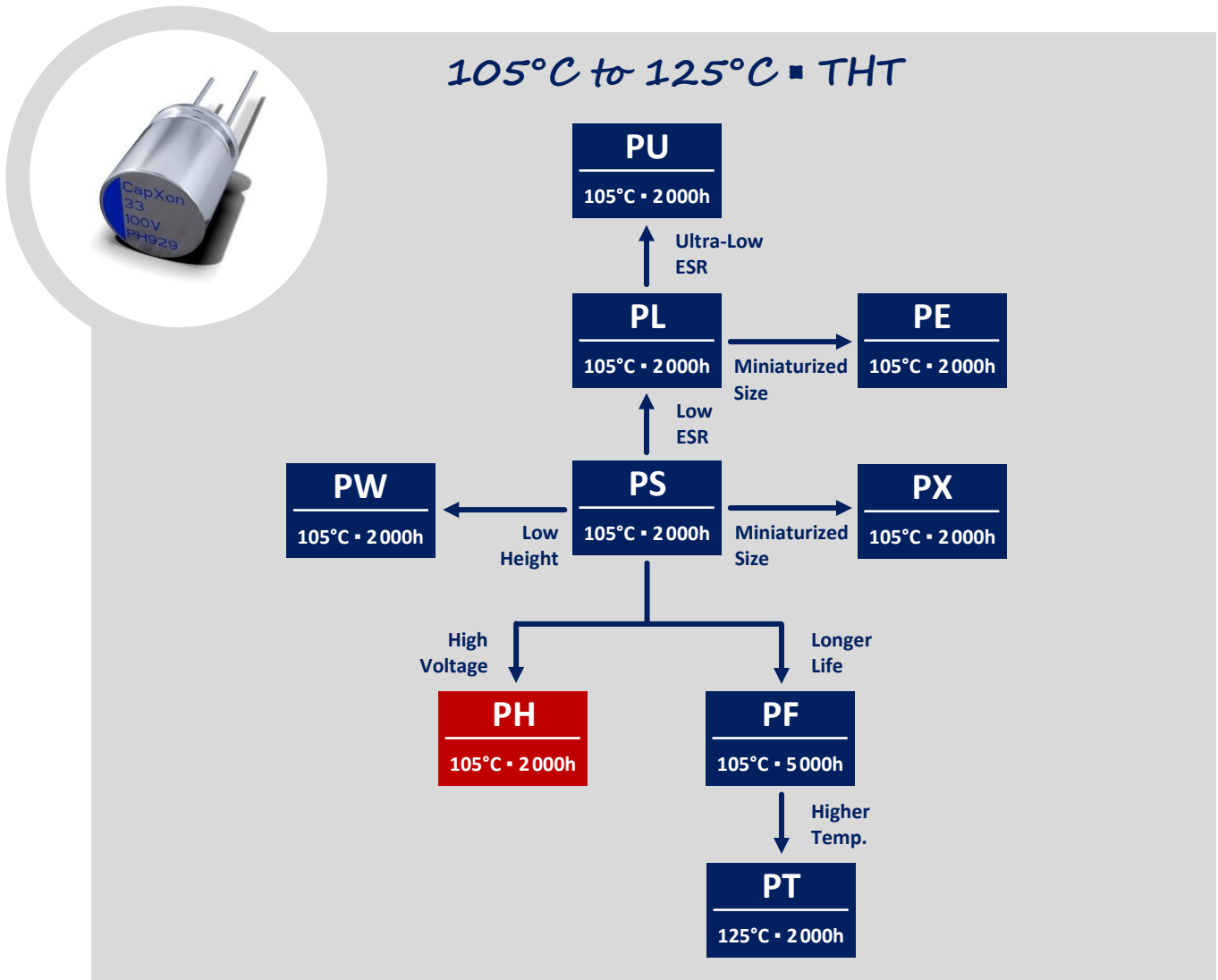
Frequency (Hz)	$120 \leq \text{Freq.} < 1k$	$1k \leq \text{Freq.} < 10k$	$10k \leq \text{Freq.} < 100k$	$100k \leq \text{Freq.} < 300k$
Coefficient K_f	0.05	0.3	0.7	1

PRECAUTIONS, GUIDELINES AND PACKAGING INFORMATION

Unless otherwise agreed in individual specifications, all products are subject to our “General Precautions and Guidelines” as well as our “Packaging Information”. Please refer to the following links in the table.

			
General Precautions & Guidelines	Packaging Information	3D Models	Reliability Tests

GROUP CHART



DISCLAIMER

All product related data (e.g. specification, statements and general information) are subject to change without any notice. It is necessary that the customer observes all product related technical / application information and handling instructions.

CapXon products are designed and manufactured according to severe quality and safety standards. Under no circumstance, CapXon warrants that any CapXon product is suitable for the purposes intended for your application, even CapXon knows the application. It is customer's duty and obligation to check and make sure that CapXon products are suitable for the purposes intended and select the correct and proper CapXon product. Customers are requested to perform a sufficient validation and reliability evaluation to assure needed safety level and reliability performance by suitable designs and to apply proper safeguards (e.g. redundancies, protective circuits).

Particular operating conditions (ambient temperature, ripple current, voltage, thermal resistance, etc.) as well as storage, production or assembly may affect the performance and the lifetime of the capacitor. Please consult CapXon for lifetime estimation, failure mode considerations or worst-case scenarios according to the product technology, product tolerances / deviations or change of the characteristics of the capacitor due to shipment, storage, handling, production and usage.

For aerospace or military application, life-saving, life-sustaining, safety critical applications or any application where failure may cause severe personal injury or death, please consult us before design-in the capacitor in your application.

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