

PF SERIES • ULTRA LONG LIFE TYPE • 5 000 hours

KEY FEATURES



- **SOLID CONDUCTIVE POLYMER** • THT type
- Ultra-low ESR at high frequency range
- Endurance: 105°C • 5 000 hours
- Very large permissible ripple current
- No dry-out effect guarantees extremely long life

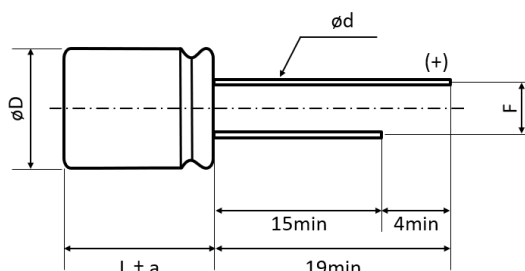


SPECIFICATIONS

Items		Performance Characteristics
Operating Temperature Range		-55 ~ +105°C
Rated Voltage Range	V_R	2.5 ~ 35V DC
Surge Voltage	V_S	($V_R \leq 20V$): $V_S = 1.15 \cdot V_R$ ($V_R \geq 25V$): $V_S = 1.10 \cdot V_R$
Capacitance Range	C_R	10 ~ 2700 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	5 000 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	$\phi d \pm 0.05$
4	5	4	1	1.5	0.45
5	8 and 9	5	1	2	0.5
6.3	5.2	6.3	1	2.5	0.45
6.3	8	6.3	1	2.5	0.5
6.3	11	6.3	1	2.5	0.6
8	7 and 8	8	1	3.5	0.6
8	11.5	8	1.5	3.5	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 (μF)	ø D (mm)	L (mm)	I _{LEAK} (μA, 2min)	tanδ +20°C • 120Hz (%)	Max. ESR +20°C • 100kHz (mΩ)	I _R • Max. Ripple Current +105°C • 100kHz (mA rms)	CapXon Part Number
2.5	100	5	8	300	8	9	4180	PF101M2R5C080PTB
	220	5	8	300	8	9	4180	PF221M2R5C080PTB
	300	5	9	300	8	9	4180	PF301M2R5C090PTB
	330	5	8	300	8	9	4180	PF331M2R5C080PTB
	330	6.3	8	300	8	9	5600	PF331M2R5E080PTC
	390	6.3	5.2	300	8	15	3100	PF391M2R5E052PTC
	470	5	8	300	8	9	4180	PF471M2R5C080PTB
	470	6.3	8	300	8	9	5600	PF471M2R5E080PTC
	560	5	8	300	8	9	4180	PF561M2R5C080PTB
	560	6.3	5.2	300	8	15	3100	PF561M2R5E052PTC
	560	6.3	8	300	8	9	5600	PF561M2R5E080PTC
	560	8	8	300	8	9	6100	PF561M2R5F080PTD
	820	6.3	8	410	8	9	5600	PF821M2R5E080PTC
	820	8	7	410	8	10	5000	PF821M2R5F070PTD
	820	8	8	410	8	9	6100	PF821M2R5F080PTD
	1000	8	8	500	8	9	6100	PF102M2R5F080PTD
	1500	8	11.5	750	8	9	6100	PF152M2R5F115PTD
	2000	10	12.5	1000	8	9	6640	PF202M2R5G125PTA
	2700	10	12.5	1350	8	9	6640	PF272M2R5G125PTA
4	270	6.3	8	300	8	9	5000	PF271M004E080PTC
	330	5	8	300	8	9	4050	PF331M004C080PTB
	390	6.3	8	312	8	9	5000	PF391M004E080PTC
	560	6.3	8	448	8	9	5600	PF561M004E080PTC
	560	8	7	448	8	15	3900	PF561M004F070PTD
	680	8	8	542	8	9	6100	PF681M004F080PTD
	820	8	8	656	8	9	6100	PF821M004F080PTD
	1000	8	11.5	800	8	9	6100	PF102M004F115PTD
	1200	10	12.5	960	8	9	6640	PF122M004G125PTA
	1500	10	12.5	1200	8	9	6640	PF152M004G125PTA
6.3	2000	10	12.5	1600	8	9	6640	PF202M004G125PTA
	220	6.3	5.2	300	8	18	2980	PF221M6R3E052PTC
	220	6.3	8	300	8	10	4500	PF221M6R3E080PTC
	270	5	8	340	8	10	3700	PF271M6R3C080PTB
	330	5	8	416	8	10	3700	PF331M6R3C080PTB
	330	6.3	8	416	8	9	5000	PF331M6R3E080PTC
	390	8	8	491	8	9	6100	PF391M6R3F080PTD
	390	8	7	491	8	15	3900	PF391M6R3F070PTD
	470	6.3	8	592	8	9	5100	PF471M6R3E080PTC
	470	8	8	592	8	9	6100	PF471M6R3F080PTD
	560	6.3	8	706	8	9	5100	PF561M6R3E080PTC
	560	8	8	706	8	9	6100	PF561M6R3F080PTD
	680	8	8	428	8	9	6100	PF681M6R3F080PTD
	820	8	8	517	10	9	6100	PF821M6R3F080PTD
	820	10	12.5	517	10	9	6640	PF821M6R3G125PTA

See "PACKAGING INFORMATION" for pin treatment options.

STANDARD RATINGS

Part number shows tape version with straight leads

V _R (V)	C _R (μF)	ø D (mm)	L (mm)	I _{LEAK} (μA, 2min)	tanδ +20°C • 120Hz (%)	Max. ESR +20°C • 100kHz (mΩ)	I _R • Max. Ripple Current +105°C • 100kHz (mA rms)	CapXon Part Number
6.3	1000	8	11.5	630	10	9	6100	PF102M6R3F115PTD
	1200	8	11.5	756	10	9	6100	PF122M6R3F115PTD
	1500	10	12.5	945	10	9	6640	PF152M6R3G125PTA
	2000	10	12.5	1260	10	9	6640	PF202M6R3G125PTA
10	10	4	5	300	8	100	700	PF100M010B050PTF
	68	6.3	8	300	8	10	4500	PF680M010E080PTC
	100	6.3	8	300	8	10	4500	PF101M010E080PTC
	150	6.3	8	300	8	10	4500	PF151M010E080PTC
	270	8	7	270	8	22	3300	PF271M010F070PTD
	270	8	11.5	270	8	9	5600	PF271M010F115PTD
	330	8	11.5	330	8	9	5600	PF331M010F115PTD
	390	8	8	390	8	9	6100	PF391M010F080PTD
	470	8	8	470	8	9	6100	PF471M010F080PTD
	470	10	12.5	470	8	9	6100	PF471M010G125PTA
	560	8	8	560	10	9	6100	PF561M010F080PTD
	560	10	12.5	560	10	9	6100	PF561M010G125PTA
	680	8	11.5	680	10	9	6100	PF681M010F115PTD
	820	10	12.5	820	10	9	6640	PF821M010G125PTA
	1000	10	12.5	1000	10	9	6640	PF102M010G125PTA
16	100	6.3	5.2	300	8	24	2490	PF101M016E052PTC
	100	6.3	8	300	8	15	3500	PF101M016E080PTC
	100	6.3	11	300	8	12	4800	PF101M016E110PTC
	150	6.3	5.2	300	8	24	3200	PF151M016E052PTC
	150	8	7	300	8	22	3300	PF151M016F070PTD
	180	6.3	11	288	8	12	5600	PF181M016E110PTC
	180	8	8	288	8	10	5100	PF181M016F080PTD
	180	10	12.5	288	8	10	5600	PF181M016G125PTA
	220	8	8	352	8	10	5100	PF221M016F080PTD
	220	8	7	352	8	22	3300	PF221M016F070PTD
	270	8	8	432	8	10	5100	PF271M016F080PTD
	270	8	7	432	8	22	3300	PF271M016F070PTD
	270	10	12.5	432	8	10	5600	PF271M016G125PTA
	330	8	8	528	10	10	4700	PF331M016F080PTD
	330	8	11.5	528	8	10	5600	PF331M016F115PTD
	390	10	12.5	624	8	10	6100	PF391M016G125PTA
	470	8	11.5	752	10	10	5400	PF471M016F115PTD
	470	10	12.5	752	10	10	6100	PF471M016G125PTA
	560	8	11.5	896	10	10	6100	PF561M016F115PTD
	560	10	12.5	896	10	10	6100	PF561M016G125PTA
	1000	10	12.5	1600	10	12	5400	PF102M016G125PTA

See "PACKAGING INFORMATION" for pin treatment options.

STANDARD RATINGS

Part number shows tape version with straight leads

V_R (V)	C_R (μF)	ϕD (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
20	120	6.3	5.2	480	12	25	3200	PF121M020E052PTC
	150	10	12.5	600	12	14	5000	PF151M020G125PTA
	180	8	7	720	12	25	3200	PF181M020F070PTD
	330	10	12.5	1320	12	14	5000	PF331M020G125PTA
	390	8	11.5	1560	12	14	4950	PF391M020F115PTD
	560	10	12.5	2240	12	12	5400	PF561M020G125PTA
	680	10	12.5	2720	12	12	5400	PF681M020G125PTA
25	56	6.3	5.2	280	12	30	2800	PF560M025E052PTC
	68	8	11.5	340	12	20	4100	PF680M025F115PTD
	82	6.3	8	410	12	28	2780	PF820M025E080PTC
	82	8	7	410	12	28	3000	PF820M025F070PTD
	100	8	11.5	500	12	20	4100	PF101M025F115PTD
	100	10	12.5	500	12	18	4650	PF101M025G125PTA
	180	8	8	900	12	18	3770	PF181M025F080PTD
	180	8	11.5	900	12	18	4200	PF181M025F115PTD
	220	8	11.5	1100	12	18	4200	PF221M025F115PTD
	270	10	12.5	1350	12	18	4650	PF271M025G125PTA
	330	10	12.5	1650	12	14	5000	PF331M025G125PTA
	390	10	12.5	1950	12	14	5000	PF391M025G125PTA
35	22	6.3	5.2	300	12	35	2600	PF220M035E052PTC
	33	10	12.5	231	12	25	3100	PF330M035G125PTA
	39	8	7	273	12	32	2800	PF390M035F070PTD
	68	8	11.5	476	12	20	3600	PF680M035F115PTD
	82	8	11.5	574	12	20	3600	PF820M035F115PTD
	120	10	12.5	840	12	18	4000	PF121M035G125PTA
	150	10	12.5	1050	12	18	4000	PF151M035G125PTA

See “PACKAGING INFORMATION” to formed products.

MULTIPLIER K_f for RIPPLE CURRENT vs. FREQUENCY

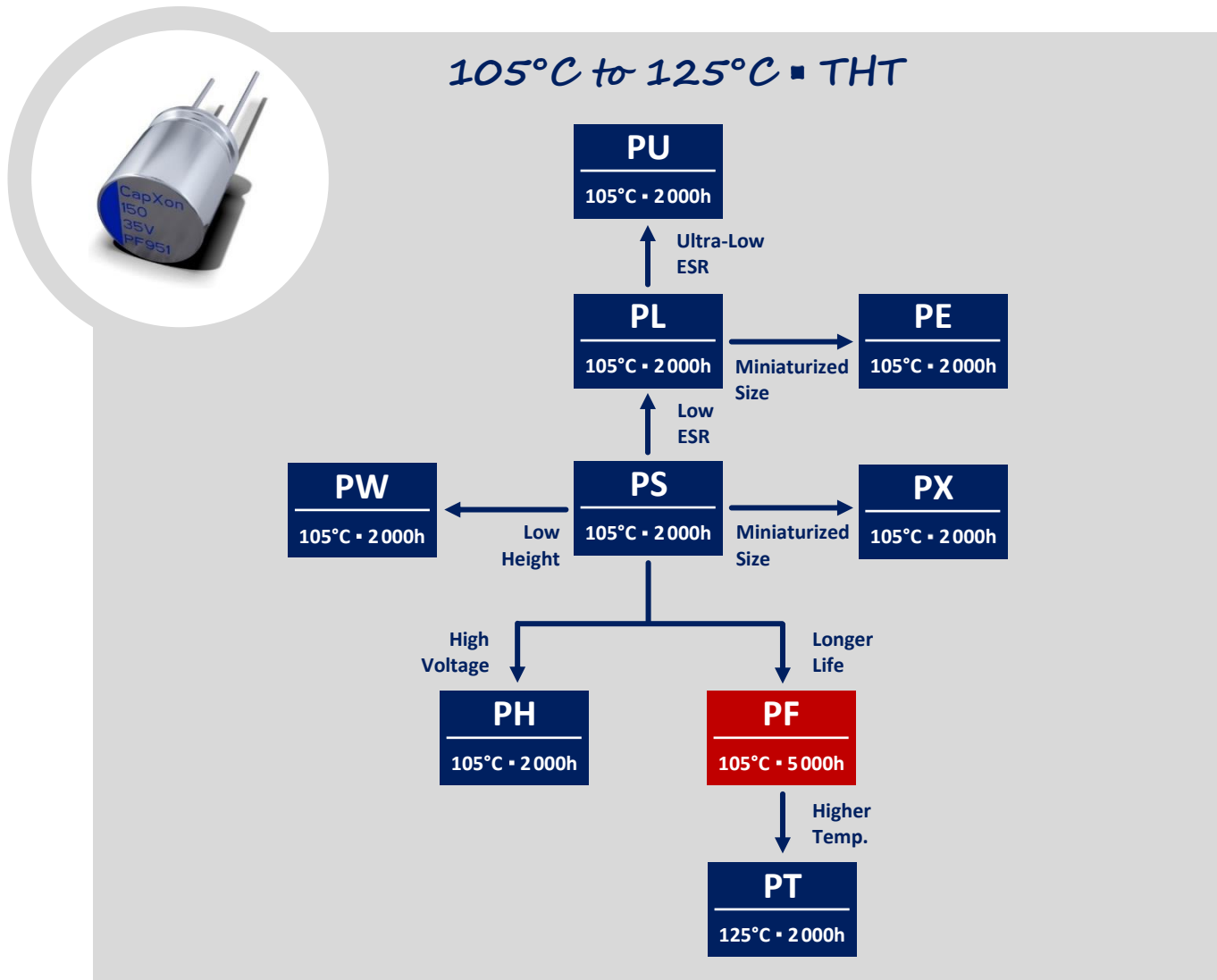
Frequency (Hz)	$120 \leq \text{Freq.} < 1k$	$1k \leq \text{Freq.} < 10k$	$10k \leq \text{Freq.} < 100k$	$100k \leq \text{Freq.} < 300k$
Coefficient K_f	0.05	0.3	0.7	1

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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