

PEH 124 125°C

- Snap-in terminals
- High performance, 125°C
- Long Life > 30 years at 50°C
- Low ESR and ESL

APPLICATION

The PEH 124 is a radial capacitor for PCB mounting with a 3-pin snap-in termination. It is mainly intended for SMPS or other applications with high ripple currents and high temperatures. Due to its very high load capability, specially at high frequencies, a single PEH 124 will in many cases replace parallel connections of two or several capacitors, with a very costeffective solution as a result.

With its mechanical robustness the PEH 124 is also very suitable for use in mobile and aviation applications.

BASIC DESIGN

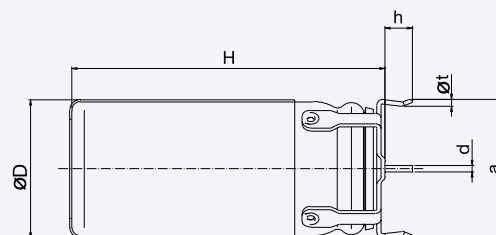
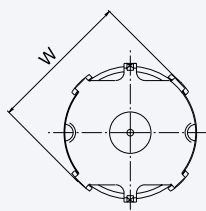
The PEH 124 electrolytic capacitor range is built on the well known PEG 124 concept with its extremely Long Life and high reliability.

The winding is housed in a cylindrical aluminium can with an aluminium lid and a high quality rubber gasket. The sealing system is designed for electrolyte leakage free operation and a very low gas-diffusion rate of electrolyte.

The all-welded internal connections contribute to the low ESR-value. The negative pole is connected to the case which is covered with a plastic insulation.

SPECIFICATION

Standards	IEC 384-4 Long Life Grade 40/125/56
Capacitance range	220–2200 μ F
Capacitance tolerance	–10 to +30%
Rated voltage	16–63 VDC
Temperature range	–40 to +125°C
Operational life time	5000 h at +125°C
Shelf life	5000 h at 0V +105°C or 10 years at 0V +40°C
Diameter range	18 mm



Dimensions table PEH 124 (mm)

D x L	Case code	D ± 0.5	H ± 1	W ± 0.5	d ± 0.03	t ± 0.1	h +0/-0.2	a ± 0.1	Weight approx (g)
18 x 31	F	16.5	31	17.5	0.8	0.8	3.3	15.24	8
18 x 39	G	16.5	39	17.5	0.8	0.8	3.3	15.24	11

ARTICLE TABLE PEH 124 (125°C)

C_R	D x L	Case code	I_{RAC}^* 125°C 100 Hz	I_{RAC}^* 60°C ≥5 kHz	I_{RAC}^* 125°C ≥5 kHz	ESR* 20°C 100 Hz	ESR* 20°C 100 kHz	L_{ESL} Approx.	Article code
μF	mm		A	A	A	mΩ	mΩ	nH	
16 VDC (U_R)									
680	18 x 31	F	1.10	8.2	2.8	130	46	10	PEH124GF368BQ
1000	18 x 31	F	1.30	8.3	2.9	100	46	10	PEH124GF410BQ
1500	18 x 39	G	1.50	10.0	3.4	72	33	12	PEH124GG415BQ
2200	18 x 39	G	1.80	10.0	3.5	60	33	12	PEH124GG422BQ
25 VDC (U_R)									
470	18 x 31	F	0.84	6.2	2.3	190	78	10	PEH124HF347BQ
680	18 x 31	F	0.98	6.2	2.3	160	78	10	PEH124HF368BQ
1000	18 x 39	G	1.20	7.5	2.7	110	55	12	PEH124HG410BQ
1500	18 x 39	G	1.40	7.6	2.8	94	55	12	PEH124HG415BQ
40 VDC (U_R)									
330	18 x 31	F	0.71	6.1	2.2	250	78	10	PEH124KF333BQ
470	18 x 31	F	0.87	6.2	2.3	190	78	10	PEH124KF347DQ
680	18 x 39	G	1.00	7.5	2.8	130	55	12	PEH124KG368BQ
1000	18 x 39	G	1.20	7.6	2.8	110	55	12	PEH124KG410BQ
63 VDC (U_R)									
220	18 x 31	F	0.64	5.9	2.0	320	90	10	PEH124MF322BQ
330	18 x 31	F	0.77	6.0	2.0	250	90	10	PEH124MF333BQ
470	18 x 39	G	0.96	7.5	2.5	170	62	12	PEH124MG347BQ
680	18 x 39	G	1.10	7.5	2.6	140	62	12	PEH124MG368BQ

* Maximum specified values.

OPERATIONAL LIFE AND RIPPLE CURRENT

Operational life (L_{op}), at ambient temperature T_a and ripple current I_{AC} .

Example:

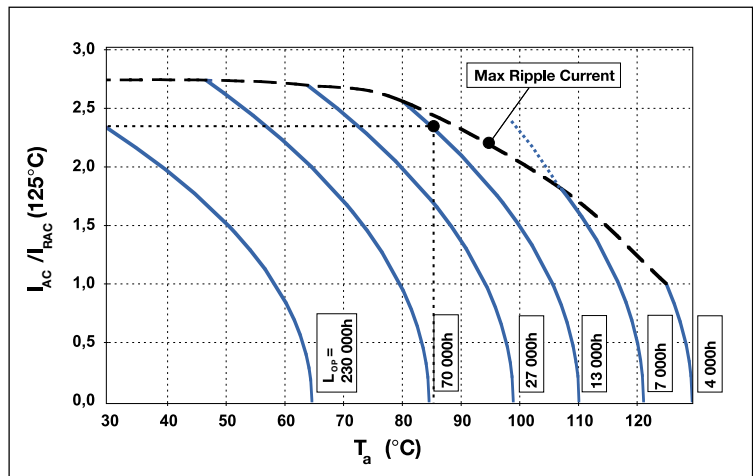
Article: PEH124MG368BQ
 Ambient temperature (T_a): 85°C
 Ripple current, at 10kHz (I_{AC}): 6.0 A

$I_{RAC}(125^\circ\text{C}, \geq 5\text{kHz}) = 2.6 \text{ A}$
 $\Rightarrow I_{AC} / I_{RAC}(125^\circ\text{C}) = 2.3$

Operational life: Interpolation between the L_{op} -curves $\Rightarrow L_{op} \approx 13\text{kh}$ (blue curves)

When the capacitor load is at 100Hz, use $I_{AC} / I_{RAC}(125^\circ\text{C}, 100\text{Hz})$ as input value to the diagram (see data table). At other frequencies use $I_{AC} / I_{RAC}(125^\circ\text{C}, \geq 5\text{kHz}) \times 1/\text{Corr} =$

Frequency correction factor, for ripple current (Corr):



	FREQUENCY			
	300 Hz	1 kHz	5 kHz	100 kHz
Correction factor (Corr) (Typical value)	0.57	0.80	1.00	1.04

CUSTOMER DESIGN

On request PEH124 can be designed in other capacitance values and case sizes.

RELIABILITY

Estimated field failure rate: <2 PPM/year.
 The expected failure rate, for this capacitor range, is based on field experience for capacitors with structural similarity. This failure rate is valued during first year of operation. Expected failure rate thereafter: <1PPM/y. (Until end of specified operational life)

LEAKAGE CURRENT

Rated leakage current, I_{RL} (μA)
 Rated voltage, U_R (V)
 Rated capacitance, C_R (μF)
 $I_{RL} = 0.003 \times C_R \times U_R + 4$

ORDERING INFORMATION

For further ordering information please see page 8.

Pos 1-20

P	E	H	1	2	4	K	D	3	1	5	0	Q	L	1						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

Capacitance tolerances:
 Pos. 13: Q: -10 to +30%
 M: -20 to +20%

L1: Packed in boxes

Quantities and weights

CASE CODE	F	G
Weight approx (g)	8	11
Standard box quantity	100	100