PEG 124 125°C and 105°C

- 125°C and 105°C
- Long Life > 30 years at 50°C
- Low ESR
- Low ESL

APPLICATION

Smoothing, coupling/decoupling and energy storage in telecommunication, power supply system, data processing, process control and measuring where Long Life and high reliability are of paramount importance.

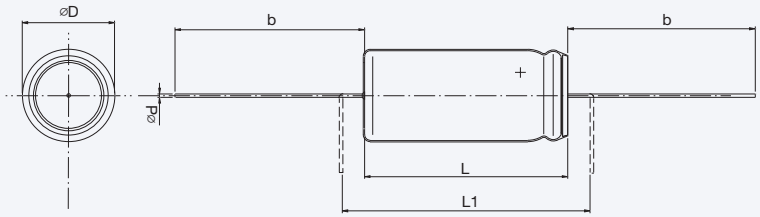
BASIC DESIGN

PEG 124 is an electrolytic capacitor with very Long Life and outstanding electrical performance. Polarized, all-welded design, tinned copper wire leads, negative pole connected to the case, plastic insulation. Long Life and very high reliability are achieved by the dimensioning of the capacitor, the careful selection of materials/ methods and discipline in quality control allowing operation up to +125°C/105°C.

The PEG 124 winding is housed in a cylindrical aluminium can with a high purity aluminium lid and a high quality rubber gasket. The sealing system is designed for electrolyte leakage free operation and a very low gasdiffusion rate of electrolyte. Low ESR is a result of a low resistive electrolyte/paper system and an all-welded design. Thanks to its mechanical robustness the PEG 124 is also suitable for use in mobile and in aircraft installations.

SPECIFICATION

Standards	IEC 384-4 Long Life Grade 40/125/56, DIN 41240, type 1A and 1B, DIN 40040 GKF, IEC 384-4 Long Life Grade 40/105/56, DIN 41240, type 1A and 1B, DIN 40040 GMF,
CECC	CECC 30301-053 (10–450 VDC)
Capacitance range	1–4700µF
Capacitance tolerance	–10 to +30%
Rated voltage	10–450 VDC
Temperature range	–40 to +125°C
Operational life time	27500 h at 105°C (case ⌀ = 20 mm)
Shelf life	5000 h at 0V +105°C or 10 years at 0V +40°C +40°C 10 years
Diameter range	10 – 20 mm



Dimensions table PEG 124 (mm)

D x L	Case code	D ±0.5	d ±0.03	L ±1	L_1 min	b + 3/–2 Box	b + 3/–2 Taped	Weight approx (g)
10 x 20	A	10	0.8	20.0	26.0	–	31	3
10 x 29	B	10	0.8	29.0	35.0	–	27	4
13 x 20	C	13	0.8	20.0	26.0	–	31	4
13 x 29	D	13	0.8	29.0	35.0	–	27	6
13 x 37	E	13	0.8	37.0	43.0	42	24	7
16 x 29	F	16	0.8	29.0	35.0	42	–	8
16 x 37	G	16	0.8	37.0	43.0	42	–	11
20 x 29	H	20	0.8	29.0	35.0	42	–	13
20 x 37	J	20	0.8	37.0	43.0	42	–	20
20 x 46	L	20	0.8	46.0	52.0	42	–	24

ARTICLE TABLE PEG 124 (125°C)

C_R µF	D x L mm	Case code	I_{RAC} * 125°C 100 Hz mA	I_{RAC} 40°C 20kHz A	ESR* 20°C 100 Hz Ω	ESR* 20°C 100 kHz Ω	L_{ESL} Approx. nH	Article code 1st block
				10 VDC (U_R)				
1000	16 x 29	F	1035	4.6	0.20	0.14	10	PEG124EF4100Q
1500	16 x 37	G	1276	5.6	0.14	0.10	12	PEG124EG4150Q
2200	20 x 37	J	1804	8.0	0.09	0.06	15	PEG124EJ4220Q
3300	20 x 46	L	2088	8.8	0.07	0.05	17	PEG124EL4330Q
				16 VDC (U_R)				
68	10 x 20	A	130	0.95	2.40	1.60	5	PEG124GA2680Q
100	10 x 20	A	191	1.2	1.70	1.10	5	PEG124GA3100Q
150	10 x 29	B	287	1.5	1.10	0.71	6	PEG124GB3150Q
220	10 x 29	B	315	1.5	0.80	0.54	6	PEG124GB3220Q
220	13 x 20	C	422	3.9	0.39	0.14	6	PEG124GC322AQ
330	13 x 29	D	515	2.6	0.50	0.33	8	PEG124GD3330Q
470	13 x 20	C	645	3.9	0.25	0.12	6	PEG124GC347AQ
470	13 x 29	D	632	3.1	0.37	0.25	8	PEG124GD3470Q
680	13 x 37	E	851	4.6	0.20	0.12	10	PEG124GE3680Q
680	16 x 29	F	850	4.0	0.26	0.18	10	PEG124GF3680Q
680	16 x 29	F	1005	7.6	0.13	0.05	10	PEG124GF368AQ
1000	16 x 29	F	1166	7.6	0.11	0.05	10	PEG124GF410AQ
1000	16 x 37	G	1031	4.8	0.19	0.13	12	PEG124GG4100Q
1500	16 x 37	G	1490	9.3	0.07	0.04	12	PEG124GG415AQ
1500	20 x 37	J	1372	6.0	0.14	0.10	´15	PEG124GJ4150Q
2200	16 x 37	G	1720	9.3	0.06	0.04	12	PEG124GG422AQ
2200	20 x 46	L	1782	8.0	0.09	0.06	17	PEG124GL4220Q
3300	20 x 37	J	2251	11.8	0.04	0.02	15	PEG124GJ433AQ
4700	20 x 37	J	2685	12.7	0.04	0.02	15	PEG124GJ447AQ
				25 VDC (U_R)				
47	**10 x 20**	**A**	**141**	**1.1**	**2.40**	**1.30**	**5**	**PEG124HA2470Q**
100	**10 x 29**	**B**	**255**	**1.5**	**1.20**	**0.67**	**6**	**PEG124HB3100Q**
220	13 x 20	C	452	3.1	0.46	0.20	6	PEG124HC322AQ
220	13 x 29	D	448	2.6	0.59	0.32	8	PEG124HD3220Q
330	13 x 20	C	525	3.1	0.37	0.20	6	PEG124HC333AQ
330	13 x 37	E	570	3.4	0.36	0.20	10	PEG124HE3330Q
470	**16 x 29**	**F**	**806**	**4.7**	**0.25**	**0.14**	**10**	**PEG124HF3470Q**
470	16 x 29	F	827	6.1	0.20	0.08	10	PEG124HF347AQ
680	16 x 29	F	946	6.0	0.17	0.08	10	PEG124HF368AQ
680	16 x 37	G	960	5.3	0.19	0.11	12	PEG124HG3680Q
1000	**16 x 37**	**G**	**1248**	**7.8**	**0.11**	**0.05**	**12**	**PEG124HG410AQ**
1000	20 x 37	J	1323	7.4	0.12	0.07	15	PEG124HJ4100Q
1500	16 x 37	G	1437	7.8	0.09	0.06	12	PEG124HG415AQ
1500	20 x 46	L	1659	8.9	0.09	0.05	17	PEG124HL4150Q
2200	**20 x 37**	**J**	**1803**	**9.5**	**0.06**	**0.04**	**15**	**PEG124HJ422BQ**
3300	**20 x 37**	**J**	**2067**	**9.5**	**0.06**	**0.04**	**15**	**PEG124HJ433BQ**
4000	20 x 46	L	2454	12.3	0.04	0.02	17	PEG124HL440BM
				40 VDC (U_R)				
33	10 x 20	A	153	1.1	2.90	1.30	5	PEG124KA2330Q
68	10 x 29	B	221	1.5	1.40	0.65	6	PEG124KB2680Q
150	13 x 20	C	381	3.1	0.58	0.20	6	PEG124KC315AQ
150	13 x 29	D	416	2.8	0.62	0.29	8	PEG124KD3150Q
220	13 x 20	C	452	3.1	0.44	0.20	6	PEG124KC322AQ
220	13 x 37	E	487	3.5	0.44	0.19	10	PEG124KE3220Q
220	16 x 29	F	575	3.9	0.41	0.19	10	PEG124KF3220Q
330	16 x 29	F	739	6.1	0.24	0.08	10	PEG124KF333AQ
330	16 x 37	G	692	4.8	0.29	0.13	12	PEG124KG3330Q
470	16 x 29	F	827	6.1	0.20	0.08	10	PEG124KF347CQ
470	20 x 37	J	898	6.0	0.22	0.10	15	PEG124KJ3470Q
680	16 x 37	G	1048	7.7	0.13	0.05	12	PEG124KG368AQ
680	20 x 37	J	1132	7.3	0.15	0.07	15	PEG124KJ3680Q

* Maximum values

Items marked in **bold**, are available on short lead-times

ARTICLE TABLE PEG 124 (125°C)

C_R µF	D x L mm	Case code	I_{RAC} * 125°C 100 Hz mA	I_{RAC} 40°C 20kHz A	ESR* 20°C 100 Hz Ω	ESR* 20°C 100 kHz Ω	L_{ESL} Approx. nH	Article code 1st block
			40 VDC (U_R)					
1000	16 x 37	G	1242	7.8	0.11	0.05	12	PEG124KG410AQ
1000	20 x 46	L	1414	8.8	0.10	0.05	17	PEG124KL4100Q
1500	20 x 37	J	1598	9.5	0.07	0.04	15	PEG124KJ415AQ
2200	20 x 37	J	1900	9.6	0.06	0.04	15	PEG124KJ422AQ
			63 VDC (U_R)					
10	10 x 20	A	76	0.9	5.90	1.60	5	PEG124MA2100Q
15	10 x 20	A	113	1.0	4.30	1.40	5	PEG124MA2150Q
22	**10 x 20**	**A**	**134**	**1.1**	**3.40**	**1.20**	**5**	**PEG124MA2220Q**
33	10 x 29	B	158	1.4	2.20	0.78	6	PEG124MB2330Q
47	**10 x 29**	**B**	**190**	**1.6**	**1.60**	**0.55**	**6**	**PEG124MB2470Q**
68	13 x 29	D	274	2.3	1.10	0.40	8	PEG124MD2680Q
100	**13 x 29**	**D**	**355**	**3.0**	**0.74**	**0.26**	**8**	**PEG124MD3100Q**
100	13 x 20	C	328	3.1	0.73	0.22	6	PEG124MC310AQ
150	16 x 29	F	491	4.0	0.50	0.18	10	PEG124MF3150Q
150	13 x 29	D	455	3.6	0.46	0.15	8	PEG124MD315AQ
220	16 x 29	F	647	6.1	0.29	0.08	10	PEG124MF322AQ
220	**16 x 37**	**G**	**610**	**5.0**	**0.34**	**0.12**	**12**	**PEG124MG3220Q**
330	16 x 29	F	737	6.1	0.24	0.08	10	PEG124MF333AQ
330	20 x 37	J	845	6.8	0.22	0.08	15	PEG124MJ3330Q
470	16 x 37	G	927	7.5	0.17	0.06	12	PEG124MG347AQ
470	20 x 46	L	1018	7.9	0.16	0.06	17	PEG124ML3470Q
680	**16 x 37**	**G**	**1090**	**7.5**	**0.14**	**0.06**	**12**	**PEG124MG368AQ**
1000	**20 x 37**	**J**	**1399**	**9.2**	**0.09**	**0.04**	**15**	**PEG124MJ410AQ**
1500	20 x 46	L	1715	10.2	0.07	0.04	17	PEG124ML415AQ
			100 VDC (U_R)					
4.7	10 x 20	A	54	0.8	16.00	2.80	5	PEG124PA1470Q
10	**10 x 29**	**B**	**79**	**1.1**	**7.70**	**1.40**	**6**	**PEG124PB2100Q**
22	**13 x 29**	**D**	**132**	**1.4**	**3.90**	**1.00**	**8**	**PEG124PD2220Q**
33	13 x 29	D	199	1.7	2.10	0.80	8	PEG124PD2330Q
47	**13 x 37**	**E**	**222**	**1.5**	**1.80**	**0.92**	**10**	**PEG124PE2470Q**
68	16 x 29	F	336	2.7	1.10	0.43	10	PEG124PF2680Q
100	**16 x 37**	**G**	**412**	**3.3**	**0.74**	**0.29**	**12**	**PEG124PG3100Q**
150	20 x 37	J	573	4.0	0.55	0.26	15	PEG124PJ3150Q
220	**16 x 37**	**G**	**582**	**3.3**	**0.51**	**0.30**	**12**	**PEG124PG322AQ**
220	20 x 46	L	710	4.9	0.40	0.19	17	PEG124PL3220Q

ARTICLE TABLE PEG 124 (105°C)

C_R µF	D x L mm	Case code	I_{RAC} * 105°C 100 Hz mA	I_{RAC} 40°C 20kHz A	ESR* 20°C 100 Hz Ω	ESR* 20°C 100 kHz Ω	L_{ESL} Approx. nH	Article code 1st block
			200 VDC (U_R)					
5.6	**10 x 20**	**A**	**49**	**0.38**	**20.00**	**10.0**	**5**	**PEG 124RA156BM**
10	**10 x 29**	**B**	**65**	**0.47**	**10.00**	**4.20**	**6**	**PEG 124RB2100Q**
15	13 x 29	D	96	0.74	6.30	2.40	8	PEG 124RD2150Q
22	**13 x 29**	**D**	**120**	**0.86**	**4.60**	**1.90**	**8**	**PEG 124RD2220Q**
33	16 x 29	F	167	1.20	3.10	1.30	10	PEG 124RF2330Q
47	**16 x 29**	**F**	**210**	**1.50**	**2.20**	**0.92**	**10**	**PEG 124RF2470Q**
68	20 x 29	H	294	2.00	1.50	0.66	12	PEG 124RH2680Q
100	**20 x 37**	**J**	**353**	**2.40**	**1.00**	**0.44**	**15**	**PEG 124RJ3100Q**
150	**20 x 46**	**L**	**446**	**3.10**	**0.69**	**0.30**	**17**	**PEG 124RL3150Q**

*Maximum values
Items marked in **bold**, are available on short lead-times

ARTICLE TABLE PEG 124 (105°C)

C_R µF	D x L mm	Case code	I_{RAC} * 105°C 100 Hz mA	I_{RAC} 40°C 20kHz A	ESR* 20°C 100 Hz Ω	ESR* 20°C 100 kHz Ω	L_{ESL} Approx. nH	Article code 1st block
				350 VDC (U_R)				
4.7	10 x 29	B	55	0.37	17.00	7.50	6	PEG124UB1470Q
6.8	13 x 29	D	92	0.59	9.00	4.20	8	PEG124UD1680Q
10	13 x 29	D	102	0.65	7.60	3.60	8	PEG124UD2100Q
22	16 x 29	F	184	1.20	3.30	1.50	10	PEG124UF2220Q
33	20 x 29	H	248	1.60	2.30	1.10	12	PEG124UH2330Q
47	20 x 37	J	328	2.10	1.50	0.66	15	PEG124UJ2470Q
68	20 x 46	L	389	2.50	1.10	0.50	17	PEG124UL2680Q
				400 VDC (U_R)				
2.2	10 x 29	B	42	0.27	25.00	12.00	6	PEG124VB1220Q
4.7	**13 x 29**	**D**	**78**	**0.52**	**11.00**	**5.10**	**8**	**PEG124VD1470Q**
10	**13 x 37**	**E**	**116**	**0.70**	**5.90**	**3.00**	**10**	**PEG124VE2100Q**
22	**16 x 37**	**G**	**209**	**1.40**	**2.70**	**1.20**	**12**	**PEG124VG2220Q**
33	20 x 37	J	304	1.90	1.60	0.76	15	PEG124VJ2330Q
47	**20 x 46**	**L**	**377**	**2.40**	**1.20**	**0.53**	**17**	**PEG124VL2470Q**
				450 VDC (U_R)				
1.0	10 x 20	A	30	0.21	49.00	20.00	5	PEG124YA1100Q
2.2	**10 x 29**	**B**	**43**	**0.29**	**24.00**	**11.00**	**6**	**PEG124YB1220Q**
3.3	10 x 29	B	55	0.38	17.00	7.30	6	PEG124YB1330Q
4.7	**13 x 29**	**D**	**79**	**0.54**	**11.00**	**4.80**	**8**	**PEG124YD1470Q**
6.8	**13 x 29**	**D**	**97**	**0.61**	**8.30**	**4.00**	**8**	**PEG124YD1680Q**
10	**16 x 29**	**F**	**133**	**0.82**	**5.70**	**2.80**	**10**	**PEG124YF2100Q**
10	16 x 37	F	141	1.40	4.60	1.70	10	PEG124YF210AT
15	**16 x 37**	**G**	**171**	**1.10**	**3.60**	**1.70**	**12**	**PEG124YG2150Q**
15	20 x 29	H	185	1.60	3.30	1.40	12	PEG124YH215AQ
22	**20 x 29**	**H**	**240**	**1.60**	**2.40**	**1.10**	**12**	**PEG124YH2220Q**
22	20 x 37	J	242	2.30	2.10	0.80	15	PEG124YJ222AT
33	**20 x 37**	**J**	**306**	**2.00**	**1.60**	**0.74**	**15**	**PEG124YJ2330Q**
47	20 x 46	L	377	2.40	1.20	0.53	17	PEG124YL2470Q

* Maximum values
Items marked in **bold**, are available on short lead-times

OPERATIONAL DATA

Please see operational lifetime section, page 57.

RELIABILITY

The failure rate is derived from our periodic test results. The failure rate (λ_R) is therefore only given at test temperature for life tests. An estimation is also given at 60°C.

The expected failure rate for this capacitor range is based on our periodic test results for capacitors with structural similarity.

For U_R = 10 - 125V

T_a	Failure rate per hour
125°C	5×10^{-7}
105°C	1×10^{-7}
60°C	5×10^{-9}

For U_R > 125V

T_a	Failure rate per hour
105°C	1×10^{-6}
60°C	5×10^{-8}

Failure rate per hour for catastrophic plus parametric failures.

TECHNICAL DATA

Leakage current
Rated leakage current, I_{RL} (µA)
Rated voltage, U_R (V)
Rated capacitance, C_R (µF)

For $U_R \leq 160$ V and $C_R \times U_R \leq 1000$
$I_{RL} = 0.01 \times C_R \times U_R$
For $U_R \leq 160$ V and $C_R \times U_R > 1000$
$I_{RL} = 0.003 \times C_R \times U_R + 4$
For $U_R > 160$ V
$I_{RL} = 0.006 \times C_R \times U_R + 4$

ORDERING INFORMATION

1st block (pos 1–13)

P	**E**	**G**	**1**	**2**	**4**	**K**	**D**	**3**	**1**	**5**	**0**	**Q**
1	2	3	4	5	6	7	8	9	10	11	12	13

Capacitance tolerances:
Pos. 13: Q: –10 to +30%

2nd block (pos 14–20)

T	**1**					
14	15	16	17	18	19	20

T1: Taped delivery on reels
L1: Packed in boxes

Quantities and weights

CASE CODE	A	B	C	D	E	F	G	H	J	L
Weight approx (g)	3	4	4	6	7	8	11	13	20	24
Standard content per reel	500	500	400	400	400[1]					
Standard box quantity	250[1]	200[1]	200[1]	200[1]	100	100	100	100	100	100

[1] On request.