

# PEG 126 150°C

**RoHS**  
Compliant

- 150°C
- Resistance to vibrations
- Low ESR
- High ripple capability

## APPLICATION

PEG 126 is a high performance axial electrolytic capacitor. It is designed for automotive applications with high demands on resistance to vibrations and high ambient temperature.

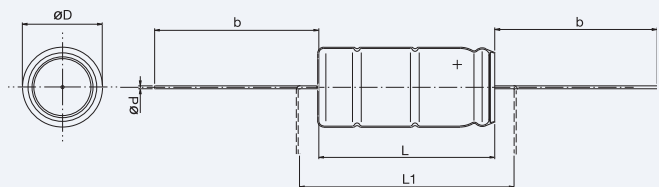
## BASIC DESIGN

PEG126 is an electrolytic capacitor with outstanding electrical performance. Polarized, all-welded design, tinned copper wire leads, negative pole connected to the case, plastic insulation. The PEG 126 winding is housed in a cylindrical aluminium can with a high purity aluminium lid and a high quality

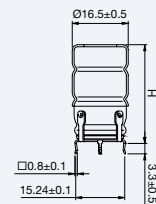
rubber gasket. Low ESR is a result of a low resistive electrolyte/paper system and an all-welded design. Thanks to its mechanical robustness the PEG 126 is suitable for use in mobile and aircraft installations, operation up to 150°C.

## SPECIFICATION

<b>Standards</b>	IEC 60384-4 Long Life Grade 40/125/56
<b>Capacitance range</b>	250-4000µF
<b>Capacitance tolerance</b>	-10 to +30%
<b>Rated voltage</b>	25-63 VDC
<b>Temperature range</b>	-40 to +150°C
<b>Operational life time</b>	8500 h at 125°C (Case Ø = 20 mm) 6500 h at 125°C (Case Ø = 16 mm)
<b>Shelf life at</b>	5000 h at 0V+105°C, or 10 years at 0V +40°C
<b>Diameter range</b>	16 – 20 mm
<b>Resistance to vibrations</b>	10-2000 Hz, 1.5 mm displacement amplitude or max 20 g 3x2 hours The capacitors shall be clamped by their body.
<b>Life test</b>	2000 h, 150°C (Case Ø = 20 mm) 1500 h, 150°C (Case Ø = 16 mm)



**Radial version**  
See page 39



Dimensions table PEG 126 (mm)

D x L	Case code	D ±0.5	d ± 0.03	L ±1	L <sub>1</sub> min	b+3/-2 Box	Weight approx (g)
16 x 29	F	16	1.0	29.0	35.0	42	8
16 x 37	G	16	1.0	37.0	43.0	42	11
20 x 29	H	20	1.0	29.0	35.0	42	13
20 x 37	J	20	1.0	37.0	43.0	42	20
20 x 46	L	20	1.0	46.0	52.0	42	24

## ARTICLE TABLE PEG 126 (150°C)

$C_R$	D x L	$I_{RAC}^*$ 125°C 100 Hz	$I_{RAC}^*$ 105°C ≥5 kHz	$I_{RAC}^*$ 125°C ≥5kHz	$I_{RAC}^*$ 150°C ≥5kHz	ESR* 20°C 100Hz	ESR* 20°C 100kHz	$L_{ESL}$ Approx	Article code
μF	mm	A	A	A	A	mΩ	mΩ	nH	
<b>25 VDC (<math>U_R</math>)</b>									
680	16 x 29	1.4	6.9	4.1	1.6	120	43	10	PEG126HF368EQ
1000	16 x 37	1.7	8.8	5.2	2.0	80	28	12	PEG126HG410EQ
1500	16 x 37	2.1	9.2	5.4	2.1	63	26	12	PEG126HG415EQ
2200	20 x 29	2.5	9.4	5.5	2.1	51	25	12	PEG126HH422EQ
3300	20 x 37	3.2	11.7	6.9	2.6	34	17	15	PEG126HJ433EQ
4000	20 x 46	3.7	13.1	7.7	2.9	29	14	17	PEG126HL440EM
<b>40 VDC (<math>U_R</math>)</b>									
470	16 x 29	1.1	5.9	3.5	1.3	150	45	10	PEG126KF347EQ
600	16 x 37	1.4	8.3	4.9	1.9	120	30	12	PEG126KG360EQ
1000	20 x 29	1.9	9.4	5.5	2.1	75	23	12	PEG126KH410EQ
1200	20 x 29	2.0	9.0	5.3	2.0	71	26	12	PEG126KH412EQ
1500	20 x 29	2.2	9.7	5.7	2.2	58	22	12	PEG126KH415EQ
2200	20 x 37	2.8	11.4	6.7	2.6	43	18	15	PEG126KJ422EQ
2700	20 x 46	3.1	12.1	7.1	2.7	37	17	17	PEG126KL427EQ
<b>63 VDC (<math>U_R</math>)</b>									
250	16 x 29	0.9	5.3	3.1	1.2	240	53	10	PEG126MF325EQ
370	16 x 37	1.2	6.7	3.9	1.5	160	37	12	PEG126MG337EQ
470	20 x 29	1.4	7.3	4.3	1.6	130	32	12	PEG126MH347EQ
680	20 x 37	1.7	9.0	5.3	2.0	90	23	15	PEG126MJ368EQ
900	20 x 46	2.1	10.5	6.1	2.3	69	18	17	PEG126ML390EQ

\* Maximum specified values

## CUSTOMER DESIGN

On request PEG126 can be designed in other capacitance values and case sizes.

## INTERMITTENT RIPPLE CURRENT

During intermittent operation, the PEG 126-capacitors allows a significant increase of ripple current compared with specified values ( $I_{RAC}$  at continuous operation). Increased ripple current, with up to x1.95, is allowed at max 25% intermittence.

**Example 1**

Article: PEG126KL427

23A, 5kHz during 30 s, period time 120 s  
(90 s without ripple)

Ambient temperature: 105°C

- Hot-spot temperature during operation:  
Max 135°C (see diagram)  
 $L_{OP} = 4700h$

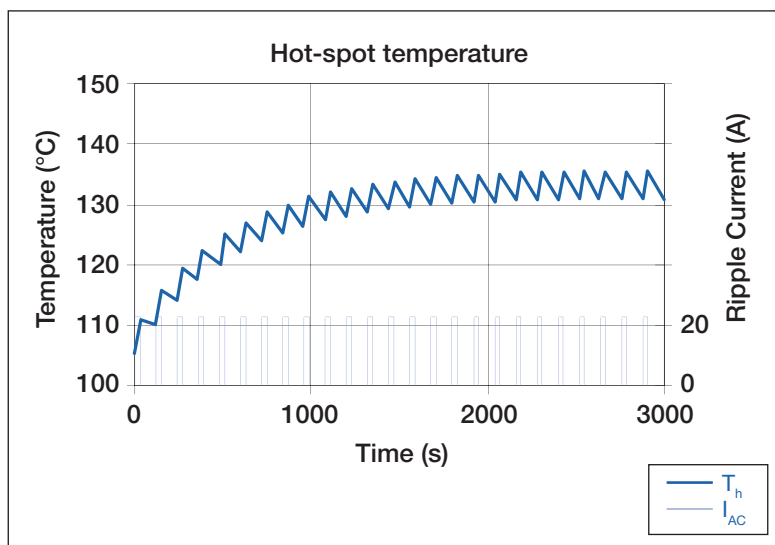
**Example 2**

Article: PEG126KL427

23A, 5kHz during 140 s, period time 17 minutes  
(14.7 minutes without ripple, per cycle)

Ambient temperature: 105°C

- Hot-spot temperature during operation:  
Max 135°C  
 $L_{OP} = 4700h$



Operational life can be calculated for arbitrary intermittence.  
Please contact Customer Support.

**OPERATIONAL LIFE AND RIPPLE CURRENT**

OPERATIONAL LIFE ( $L_{op}$ ), at ambient temperature  $T_a$  and ripple current  $I_{AC}$ .  
 Diagram valid for Ø20- case size.  
 Operational life, Ø16- case size: 0.75 x diagram value

**Example:**

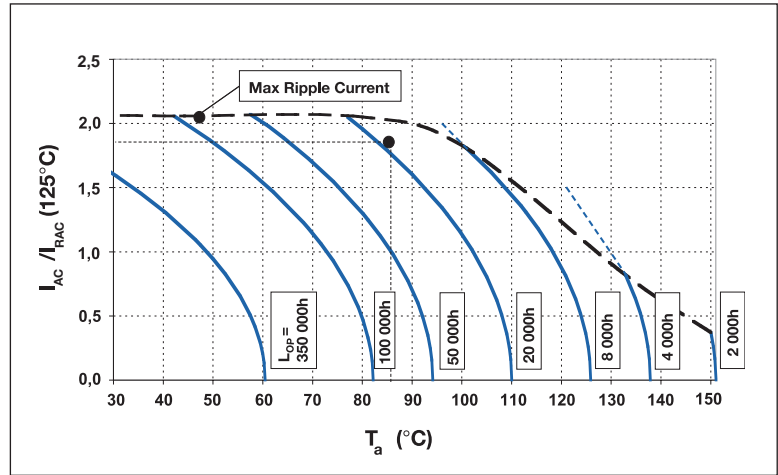
Article: PEG126KJ422EQ (Ø20 x 37 mm)  
 Ambient temperature ( $T_a$ ): 85°C  
 Ripple current, at 10kHz ( $I_{AC}$ ): 12 A

$I_{RAC}(125^\circ\text{C}, \geq 5\text{kHz}) = 6.7\text{A}$  (from data table)  
 $\rightarrow I_{AC} / I_{RAC}(125^\circ\text{C}) = 12 / 6.7 = 1.8$

Operational life: Interpolation between the  $L_{op}$ -curves  $\rightarrow L_{op} \sim 18\text{kh}$  (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
<b>Correction factor (Corr)</b> (Typical value)	0.57	0.80	1.00	1.04

**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: < 1 ppm/y. (Until end of specified operational life)

**LEAKAGE CURRENT**

Rated leakage current,  $I_{RL}$  ( $\mu\text{A}$ )  
 Rated voltage,  $U_R$  (V)  
 Rated capacitance,  $C_R$  ( $\mu\text{F}$ )  
 $I_{RL} = 0.003 \times C_R \times U_R + 4$

**ORDERING INFORMATION**

For further ordering information please see page 8.

P	E	G	1	2	6	K	F	3	4	7	E	Q	E	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%

**E1: Packed in boxes**

**Quantities and weights**

CASE CODE	F	G	H	J	L
Weight approx (g)	8	11	13	20	24
Standard box quantity	125	100	150	125	100

Statements of suitability for certain applications are based on our knowledge of typical operating conditions for such applications, but are not intended to constitute – and we specifically disclaim – any warranty concerning suitability for a specific customer application or use. This Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by us with reference to the use of our products is given gratis, and we assume no obligation or liability for the advice given or results obtained.