

# PEG 127 150°C

RoHS  
Compliant

- Temperature rating 150°C
- High ripple capability

## APPLICATION

PEG 127 is a high performance axial electrolytic capacitor. It is designed for automotive applications with high demand on resistance to vibrations and high ambient temperature.

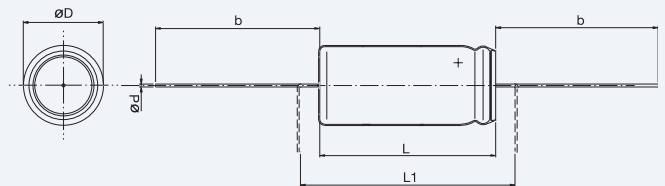
## BASIC DESIGN

PEG127 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 127 winding

is housed in a cylindrical aluminium can with a high purity aluminium lid and a high quality rubber gasket. High temperature capability also in small case sizes. 1600 h operational life at 150°C for all case sizes.

## SPECIFICATION

<b>Standards</b>	IEC 60384-4 Long Life Grade 40/125/56 AEC-Q200
<b>Capacitance range</b>	33-1300 $\mu$ F
<b>Capacitance tolerance</b>	-10 to +30%
<b>Rated voltage</b>	25 – 63 VDC
<b>Temperature range</b>	-40 to +150°C
<b>Shelf life at</b>	5000 h at 0V +105°C, or 10 years at 0V +40°C
<b>Diameter range</b>	10 – 13 mm
<b>Resistance to vibrations</b>	10 – 2000 Hz, 1.5 mm displacement amplitude or max. 20 g 3x22 hours The capacitors must be clamped by their body.
<b>Life test</b>	1600 h, 150°C



Dimensions table PEG 127 (mm)

D x L	Case code	D ±0.5	d ± 0.03	L ±1	L <sub>1</sub> min	b +3/-2 Box	Taped	Weight approx (g)
10 x 20	A	10	0.8	20.0	26.0	42	31	3
10 x 29	B	10	0.8	29.0	35.0	42	27	4
13 x 20	C	13	0.8	20.0	26.0	42	31	4
13 x 29	D	13	0.8	29.0	35.0	42	27	6
13 x 37	E	13	0.8	37.0	43.0	42	24	7

ARTICLE TABLE PEG 127 (150°C)

C <sub>R</sub>	D x L	I <sub>RAC</sub> * 100°C ≥5 kHz	I <sub>RAC</sub> * 125°C ≥5 kHz	I <sub>RAC</sub> * 140°C ≥5kHz	I <sub>RAC</sub> * 150°C ≥5kHz	ESR* 20°C 100 Hz	ESR* 20°C 100 kHz	ESR* 125-150 °C 5-100 kHz	Article code
$\mu$ F	mm	A	A	A	A	m $\Omega$	m $\Omega$	m $\Omega$	
<b>25 VDC (U<sub>R</sub>)</b>									
180	10 X 20	2.4	1.7	1.1	0.49	560	255	80	PEG127HA3180Q
360	10 X 29	3.5	2.5	1.6	0.71	281	130	43	PEG127HB3360Q
470	13 X 20	3.8	2.8	1.8	0.79	226	110	40	PEG127HC3470Q
900	13 X 29	5.6	4.0	2.6	1.15	118	58	23	PEG127HD3900Q
1300	13 X 37	6.6	4.8	3.0	1.35	85	42	18	PEG127HE4130Q
<b>40 VDC (U<sub>R</sub>)</b>									
110	10 x 20	2.3	1.7	1.1	0.48	710	240	82	PEG127KA3110Q
220	10 x 29	3.4	2.5	1.6	0.70	360	125	45	PEG127KB3220Q
270	13 x 20	3.7	2.7	1.7	0.77	301	110	42	PEG127KC3270Q
520	13 x 29	5.4	3.9	2.5	1.11	157	58	24	PEG127KD3520Q
750	13 x 37	6.5	4.7	3.0	1.32	110	42	19	PEG127KE3750Q
<b>63 VDC (U<sub>R</sub>)</b>									
33	10 x 20	1.6	1.1	0.7	0.32	1700	370	181	PEG127MA2330Q
68	10 x 29	2.4	1.7	1.1	0.49	825	185	92	PEG127MB2680Q
80	13 x 20	2.7	1.9	1.2	0.55	704	160	82	PEG127MC2800Q
160	13 x 29	4.0	2.9	1.8	0.83	354	82	44	PEG127MD3160Q
230	13 x 37	4.9	3.5	2.2	1.00	250	59	32	PEG127ME3230Q

\* Maximum specified values

**RIPPLE CURRENT SPECIFICATION AND OPERATIONAL LIFE**

The ripple current specification (see article table) is given at ambient temperature ( $T_a$ ). Frequency correction factor, for ripple current (Corr), see table to the right.

Max allowed hot-spot temperature ( $T_h$ ), continuous operation:

$$T_{h\max} = 0.5 \times T_a + 75 \text{ (}^\circ\text{C)}$$

$$T_h - T_a = \max 40 \text{ }^\circ\text{C}$$

**Expected Operational Life (Lop):**

$$Lop = 68 \times 2^{\frac{85 - T_h}{12}} \text{ (kh)}$$

$$T_h = T_a + R_{th} \times P_{LOSS}$$

$$P_{LOSS} = I_{RMS}^2 \times ESR$$

$R_{th}$ , see table

Capacitor Size (Case code)	Thermal resistance, $R_{th}$ , at natural conv. ( $^\circ\text{C/W}$ )
A	55
B	47
C	42
D	34
E	31

**Ripple current correction factor**

	FREQUENCY				
	100 Hz	300 Hz	1 kHz	5 kHz	100 kHz
<b>Correction factor (Corr)</b> (Typical value)	0.35	0.57	0.80	1.00	1.04

**ESR correction factor vs. frequency [ESR / ESR (5 kHz, 125  $^\circ\text{C}$ )]**

	FREQUENCY			
	300 Hz	1 kHz	5 kHz	100 kHz
<b>Correction factor (Corr)</b>	8.0	3.0	1.5	1.0

**ESR correction factor vs. temperature [ESR / ESR (5 kHz, 125  $^\circ\text{C}$ )]**

	TEMPERATURE			
	-10 $^\circ\text{C}$	60 $^\circ\text{C}$	105 $^\circ\text{C}$	125 $^\circ\text{C}$
<b>Correction factor (Corr)</b>	5.0	1.5	1.1	1.0

**RELIABILITY**

Estimated field failure rate:  $\leq 0.15$  ppm (failures per year / produced number of capacitors per year)

The expected failure rate, for this capacitor range, is based on field experience for capacitors with structural similarity.

**LEAKAGE CURRENT**

Rated leakage current,  $I_{RL}$  ( $\mu\text{A}$ )

Rated voltage,  $U_R$  (V)

Rated capacitance,  $C_R$  ( $\mu\text{F}$ )

$$I_{RL} = 0.003 \times C_R \times U_R + 4$$

**CUSTOMER DESIGN**

On request PEG127 can be designed in other capacitance values and case sizes.

**ORDERING INFORMATION**

For further ordering information please see page 8.

P	E	G	1	2	7	K	A	3	1	1	0	Q	T	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%

**T1: Tape deliveries on reels**  
**L1: Packed in boxes**

**Quantities and weights**

CASE CODE	A	B	C	D	E
Weight approx (g)	3	4	4	6	7
Standard content per reel	500	500	400	400	400 <sup>1</sup>
Standard box quantity	250 <sup>1</sup>	200 <sup>1</sup>	250 <sup>1</sup>	200 <sup>1</sup>	150

<sup>1</sup> On request