

# PEG 220 150°C

RoHS  
Compliant

- 150°C
- Very high ripple current
- Up to 21A ripple, RMS, Continuous load
- High vibration resistance

## APPLICATION

PEG 220 is a new generation of high performance axial electrolytic capacitors, designed for automotive applications with extremely high demands.

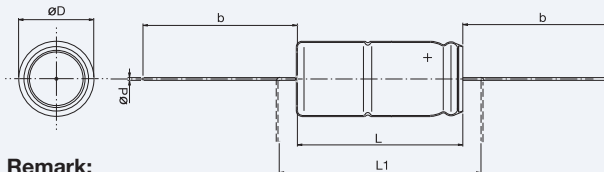
## BASIC DESIGN

PEG 220 is an electrolytic capacitor with outstanding electrical performance. Polarized, all-welded design, tinned copper wire leads, negative pole connected to the case. The PEG 220 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 220 is suitable for use in mobile and in aircraft installations, operation up to 150°C.

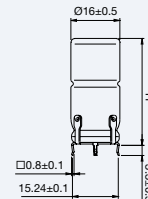
## SPECIFICATION

<b>Standards</b>	IEC 60384-4 Long Life Grade 40/125/56
<b>Capacitance range</b>	250 - 4700 $\mu$ F
<b>Capacitance tolerance</b>	-10 to +30%, -20 to +20%
<b>Rated voltage</b>	25 - 63 VDC
<b>Temperature range</b>	-40 to +150°C
<b>Shelf life at</b>	0V +105°C 5000 h, +40°C 10 years
<b>Diameter range</b>	16 - 20 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 the body.
<b>Life test</b>	2000 h, 150°C ( $\varnothing$ 20 case) 1500 h, 150°C ( $\varnothing$ 16 case)



**Remark:**  
Capacitor in standard version is without insulation. Polyester insulation on request

**Radial version**  
See page 39



Dimensions table PEG 220 (mm)

D x L	Case code	D $\pm$ 0.5	d $\pm$ 0.03	L $\pm$ 1	L <sub>1</sub> min	b $\pm$ 2 Box	Weight approx (g)
16 x 27	F	16	1.0	26.5	33	40	8
16 x 35	G	16	1.0	34.5	41	40	11
20 x 27	H	20	1.0	26.5	33	40	13
20 x 35	J	20	1.0	34.5	41	40	20
20 x 43	L	20	1.0	42.5	49	40	24

## ARTICLE TABLE PEG 220 (150°C)

C <sub>R</sub>	D x L	I <sub>RAC</sub> * T <sub>c</sub> =125°C $\geq$ 5 kHz	I <sub>RAC</sub> * T <sub>c</sub> =140°C $\geq$ 5 kHz	I <sub>RAC</sub> * T <sub>c</sub> =150°C $\geq$ 5 kHz	I <sub>RAC</sub> ** T <sub>a</sub> =125°C $\geq$ 5 kHz	I <sub>AC</sub> (max)*** T <sub>a</sub> =125°C $\geq$ 5 kHz	ESR (max) 20°C 100 Hz	ESR (max) 20°C 100 kHz	ESR (max) 125-150°C 5-100 kHz	Article code
$\mu$ F	mm	A	A	A	A	A	m $\Omega$	m $\Omega$	m $\Omega$	
<b>25 VDC (U<sub>R</sub>)</b>										
1500	16x27	13.9	8.8	3.9	4.8	6.1	78	42	18.4	PEG220HF4150M
2200	16x35	15.8	10.0	4.5	5.8	7.4	56	31	14.3	PEG220HG4220M
2200	20x27	16.6	10.5	4.7	5.2	6.6	61	36	19.0	PEG220HH4220Q
3300	20x35	19.1	12.1	5.4	6.4	8.1	43	26	14.3	PEG220HJ4330Q
4700	20x43	21.0	13.3	5.9	7.4	9.3	32	20	11.8	PEG220HL4470Q

\* Capacitor mounted with low thermal resistance path (heat-sink). Maximum ripple current continuous operation (see below).

\*\* Rated ripple current, continuous operation at natural convection ( $\varnothing$ 20 case 4000 h,  $\varnothing$ 16 case 3000 h).

\*\*\* Max ripple current, at natural convection ( $\varnothing$ 20 case 2000 h,  $\varnothing$ 16 case 1500 h)

ARTICLE TABLE PEG 220 (150°C)

$C_R$	D × L	$I_{RAC}^*$ $T_c=125^\circ C$ ≥ 5 kHz	$I_{RAC}^*$ $T_c=140^\circ C$ ≥ 5 kHz	$I_{RAC}^*$ $T_c=150^\circ C$ ≥ 5 kHz	$I_{RAC}^{**}$ $T_a=125^\circ C$ ≥ 5 kHz	$I_{AC}(max)^{***}$ $T_a=125^\circ C$ ≥ 5 kHz	ESR (max) 20°C 100 Hz	ESR (max) 20°C 100 kHz	ESR (max) 125-150°C 5-100 kHz	Article code
μF	mm	A	A	A	A	A	mΩ	mΩ	mΩ	
<b>40 VDC (U<sub>R</sub>)</b>										
800	16x27	13.6	8.6	3.9	4.7	5.9	108	43	19.2	PEG220KF3800Q
1200	16x35	15.5	9.8	4.4	5.7	7.2	74	31	14.8	PEG220KG4120Q
1500	20x27	17.1	10.8	4.8	5.4	6.8	68	33	17.8	PEG220KH4150Q
2200	20x35	19.4	12.2	5.5	6.5	8.2	49	25	13.9	PEG220KJ4220Q
2700	20x43	20.7	13.1	5.9	7.3	9.2	39	20	12.1	PEG220KL4270Q
<b>63 VDC (U<sub>R</sub>)</b>										
250	16x27	10.5	6.6	3.0	3.6	4.5	233	59	32.4	PEG220MF3250Q
370	16x35	12.2	7.7	3.5	4.5	5.7	160	42	23.9	PEG220MG3370Q
470	20x27	14.2	9.0	4.0	4.5	5.7	134	41	25.9	PEG220MH3470Q
680	20x35	16.3	10.3	4.6	5.6	7.0	94	30	19.7	PEG220MJ3680Q
900	20x43	17.7	11.2	5.0	6.3	7.9	74	25	16.6	PEG220ML3900Q

- \* Capacitor mounted with low thermal resistance path (heat-sink). Maximum ripple current continuous operation (see below).
- \*\* Rated ripple current, continuous operation at natural convection (∅20 case 4000 h, ∅16 case 3000 h).
- \*\*\* Max ripple current, at natural convection (∅20 case 2000 h, ∅16 case 1500 h)

RIPPLE CURRENT SPECIFICATION AND OPERATIONAL LIFE

The ripple current specification (see table above) is given at case temperature ( $T_c$ ) and at ambient temperature ( $T_a$ ). To be able to operate at specified ripple current at temperature  $T_c$ , the capacitor needs to be mounted with low thermal resistance path to application chassis.  
Frequency correction factor, for ripple current (Corr), see table to the right:  
For operational life time calculation, please see pages 148 to 149.

	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

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,  $I_{RL}$  (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.

P	E	G	2	2	0	K	F	3	8	0	0	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