

PEG 225 Up to 150°C

RoHS
Compliant

- Up to 150°C
- High CV
- Extremely high ripple current
Up to 28 A ripple, RMS, Continuous load
- High vibration resistance

APPLICATION

PEG 225 is a new generation of high performance axial electrolytic capacitors, designed for automotive applications with extremely high demands.

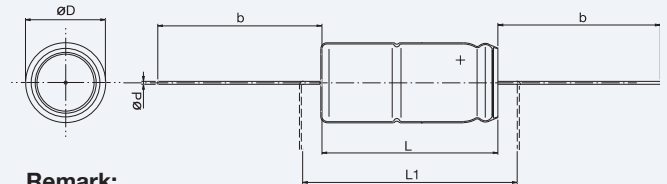
BASIC DESIGN

PEG 225 is an electrolytic capacitor with outstanding electrical performance. Polarized, all-welded design, tinned copper wire leads, negative pole connected to the case. The PEG 225 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 225 is suitable for use in mobile and in aircraft installations, operation up to 150°C.

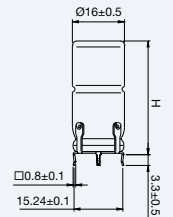
SPECIFICATION

| | |
|---------------------------------|---|
| Standards | IEC 60384-4 Long Life Grade 40/125/56 |
| Capacitance range | 470 - 6300 μ F |
| Capacitance tolerance | -10 to +30%, -20 to +20% |
| Rated voltage | 25 - 63 VDC |
| Temperature range | -40 to +125°C at U_R -40 to +150°C at reduced voltage |
| Shelf life at | 0V +105°C 5000 h, +40°C 10 years |
| Diameter range | 16 - 20 mm |
| Resistance to vibrations | 10 - 2000 Hz, 1.5 mm displacement amplitude or max 20 g 3x22 hours |
| Life test | The capacitors must be clamped by the body. 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 225 (mm)

| D x L | Case code | D ±0.5 | d ±0.03 | L ±1 | L ₁ min | b±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 225 (150°C)

| C_R | D x L | I_{RAC}^* | I_{RAC}^{**} | I_{RAC}^{**} | I_{RAC}^{***} | $I_{AC}(max)^{****}$ | ESR (max) 20°C | ESR (max) 20°C | ESR (max) 125-150°C | Article code |
|--|-------|------------------------|------------------------|------------------------|------------------------|------------------------|-------------------|-------------------|------------------------|---------------|
| | | $T_c=125°C$ ≥ 5 kHz | $T_c=140°C$ ≥ 5 kHz | $T_c=150°C$ ≥ 5 kHz | $T_a=125°C$ ≥ 5 kHz | $T_a=125°C$ ≥ 5 kHz | | | | |
| μ F | mm | A | A | A | A | A | m Ω | m Ω | m Ω | |
| 25 VDC (U_R) [150 °C at $U_{DC} \leq 18$ V] | | | | | | | | | | |
| 2200 | 16x27 | 17.3 | 11.0 | 4.9 | 6.1 | 7.7 | 60 | 34 | 11.9 | PEG225HF4220M |
| 3000 | 16x35 | 19.7 | 12.5 | 5.6 | 7.4 | 9.4 | 44 | 25 | 9.2 | PEG225HG4300M |
| 3600 | 20x27 | 23.5 | 14.9 | 6.7 | 7.6 | 9.6 | 38 | 22 | 9.4 | PEG225HH4360Q |
| 4800 | 20x35 | 26.7 | 16.9 | 7.6 | 9.2 | 11.7 | 28 | 16 | 7.3 | PEG225HJ4480Q |
| 6300 | 20x43 | 28.3 | 17.9 | 8.0 | 10.2 | 12.9 | 24 | 14 | 6.5 | PEG225HL4630Q |

- * Capacitor mounted with low thermal resistance path (heat-sink). Maximum ripple current continuous operation.
- ** Valid for capacitor supplied with reduced DC voltage, up to 18 VDC. Capacitor mounted with low thermal resistance path.
- *** Rated ripple current, continuous operation at natural convection (\varnothing 20 case 4000 h, \varnothing 16 case 3000 h).
- **** Max ripple current, at natural convection and reduced voltage (\varnothing 20 case 2000 h, \varnothing 16 case 1500 h)

ARTICLE TABLE PEG 225 (150°C)

| C_R | D x 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 | |

40 VDC (U_R) [150 °C at $U_{DC} \leq 32$ V]

| | | | | | | | | | | |
|------|-------|------|------|-----|------|------|----|----|------|---------------|
| 1200 | 16x27 | 16.6 | 10.5 | 4.7 | 5.8 | 7.4 | 80 | 36 | 13.0 | PEG225KF4120M |
| 1800 | 16x35 | 19.3 | 12.2 | 5.5 | 7.2 | 9.2 | 55 | 25 | 9.6 | PEG225KG4180M |
| 2000 | 20x27 | 22.8 | 14.4 | 6.5 | 7.3 | 9.3 | 50 | 23 | 10.0 | PEG225KH4200Q |
| 3000 | 20x35 | 25.8 | 16.3 | 7.3 | 8.9 | 11.3 | 35 | 17 | 7.8 | PEG225KJ4300Q |
| 3900 | 20x43 | 27.7 | 17.5 | 7.8 | 10.0 | 12.7 | 28 | 14 | 6.8 | PEG225KL4390Q |

63 VDC (U_R) [150 °C at $U_{DC} \leq 54$ V]

| | | | | | | | | | | |
|------|-------|------|------|-----|-----|------|-----|----|------|---------------|
| 470 | 16x27 | 12.1 | 7.7 | 3.4 | 4.2 | 5.3 | 156 | 52 | 24.3 | PEG225MF3470Q |
| 680 | 16x35 | 13.8 | 8.7 | 3.9 | 5.3 | 6.7 | 109 | 37 | 18.7 | PEG225MG3680Q |
| 900 | 20x27 | 18.0 | 11.4 | 5.1 | 5.8 | 7.3 | 86 | 31 | 16.1 | PEG225MH3900Q |
| 1400 | 20x35 | 20.9 | 13.2 | 5.9 | 7.3 | 9.2 | 57 | 22 | 11.9 | PEG225MJ4140Q |
| 1800 | 20x43 | 22.8 | 14.4 | 6.5 | 8.3 | 10.5 | 45 | 18 | 10.0 | PEG225ML4180Q |

- * Capacitor mounted with low thermal resistance path (heat-sink). Maximum ripple current continuous operation (see below).
- ** Valid for capacitor supplied with reduced DC voltage, capacitor mounted with low thermal resistance path.
- *** 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 |
| Correction factor (Corr) (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 | 5 | H | F | 4 | 2 | 2 | 0 | M | 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.