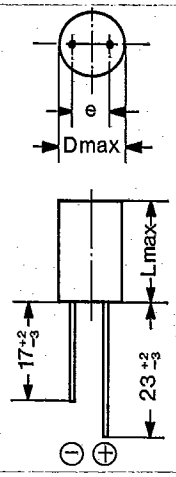
Roederstein

Radial Aluminium Electrolytic Capacitors for High Requirements, with a Temperature range of –55 ... 125°C, Polarized, Etched Electrodes, Pulse-Proof

EKL

Electrolytic capacitors with increased service life and operational reliability as well as an increased temperature range as compared to electrolytic capacitors in acc. with DIN 41259. The style complies with the standards specified in DIN 41259 for vertical mounting.



$D_{max.}$	Lead ø	e ± 0.5
8.7	0.6	5
10	0.6	5
12.5	0.8	5
16.5	0.8	7.5

For further lead styles, see EKM type on page 44.
The capacitors are also available on tape, see specifications on pages 9/10.

Electric values:
DIN 41240, type I A

Generic specifications:
DIN 45910 (≙ CECC 30.000)

Sectional specifications:
The electric values and test criteria comply with DIN 45910 part 12 and CECC 30.300, however, without quality certificate IEC 384-4 („long life grade")

Climatic category:
55 / 125 / 56

(IEC category:
55 / 125 / 56, type 1)

Operating temperature range:
–40 ... 125°C

Application class:
DIN 40040, FKD

Capacitance tolerance:
–10 ... +50 % of the rated value

Overview of dimensions: (max. dimensions with insulation – $D_{max.} \cdot L_{max.}$)

Cap. value (µF)	Rated voltage VDC 16	25	40	63
22				10 x 12.7
47			10 x 12.7	10 x 21
100	1) 8.7 x 12.7	10 x 12.7	10 x 21	12.5 x 21
220	10 x 16.5	10 x 21	12.5 x 21	2) 12.5 x 36.5
470	12.5 x 21	12.5 x 25	2) 12.5 x 36.5	16.5 x 36.5
1000	12.5 x 25	2) 12.5 x 36.5	16.5 x 36.5	
1500	2) 12.5 x 36.5	16.5 x 36.5		
2200	16.5 x 36.5			

1) Dim. 8.7 x 12.7 on request 2) Also available in 16.5 x 30, RM 7.5 lead spacing
Special values / dimensions / U_R 6.3VDC / 10VDC / 50VDC on request

Service life:	Ambient temperature	Case diamater (8.7) 10 mm	≧ 12.5 mm
	≦ 40°C	min. 240,000 h	min. 320,000 h
	85°C	min. 10,000 h	min. 15,000 h
	105°C	min. 2,500 h	min. 4,000 h
	125°C	min. 1,000 h	min. 1,000 h

Peak voltage:
1.15 x U_R

Dielectric strength of insulation:
≧ 1.000 V–

Leakage current:
$I_{ra} \leqq 0.002\ C_R \cdot U_R + 4\ \mu A$
(C in µF, U in V)
measured at U_R and 20°C after 5 min.

Leakage current on delivery
(standard value after 1 min.):
$I_{ra} \leqq 0.01 \cdot C_R \cdot U_R + 3\ \mu A$

Total failure rate ≦ 0.5 %, standard value for the ratio of full failure to modification failure 10/90.

For reference reliability and service life, see also "General Information".

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Impedance (Z) in Ω · µF (limit values) $Z = \frac{\text{Table value}}{C_R}$ measured at 10 kHz, referred to 1 µF.

T_U	Rated voltage U_R (VDC) 16	25	40	63
20°C	250	150	90	55
–25°C	1500	800	450	200
–40°C	4000	2500	1400	600
–55°C	12000	8000	4000	2000

The practically achievable impedance is limited downwards by the ohmic share of the connections and the foil resistance. For this reason, calculated values below 0.03 Ω cannot be achieved in any case.

Technical specifications: (individual values)

Rated capacitance (µF)	Rated voltage (VDC)	Dimensions D x L (mm) (nominal dimensions)	tan δ (100 Hz; 20°C) (limit values) 1)	ESR (Ω) (100 Hz; 20°C) (limit values) 1)	Z (Ω) (10 kHz; 20°C) (limit values) 1)	Admissible ripple current (mA/100 Hz) 125°C 2)	Weight (g)	Order no.	
100	16	x 8.7 x 12.7	0.19	3.02	2.5	110	1.0	EKL 00 CC 310	D
220	16	10 x 16	0.19	1.38	1.14	180	2.0	EKL 00 DD 322	D
470	16	12.5 x 20	0.19	0.64	0.53	330	3.8	EKL 00 FE 347	D
1000	16	12.5 x 25	0.19	0.30	0.25	520	4.5	EKL 00 FG 410	D
1500	16	* 12.5 x 35	0.20	0.21	0.17	710	6.0	EKL 00 FL 415	D
2200	16	16.5 x 35	0.21	0.15	0.11	970	12	EKL 00 JL 422	D
100	25	10 x 12.7	0.15	2.39	1.5	130	1.5	EKL 00 DC 310	E
220	25	10 x 20	0.15	1.09	0.68	220	2.5	EKL 00 DE 322	E
470	25	12.5 x 25	0.15	0.51	0.32	400	4.5	EKL 00 FG 347	E
1000	25	* 12.5 x 35	0.15	0.24	0.15	670	6.0	EKL 00 FL 410	E
1500	25	16.5 x 35	0.15	0.17	0.10	950	12	EKL 00 JL 415	E
47	40	10 x 12.7	0.09	3.05	1.9	110	1.5	EKL 00 DC 247	G
100	40	10 x 20	0.09	1.43	0.9	190	2.5	EKL 00 DE 310	G
220	40	12.5 x 20	0.09	0.65	0.41	330	3.8	EKL 00 FE 322	G
470	40	* 12.5 x 35	0.09	0.31	0.19	600	6.0	EKL 00 FL 347	G
1000	40	16.5 x 35	0.09	0.14	0.09	1000	12	EKL 00 JL 410	G
22	63	10 x 12.7	0.06	4.34	2.5	100	1.5	EKL 00 DC 222	J
47	63	10 x 20	0.06	2.03	1.17	160	2.5	EKL 00 DE 247	J
100	63	12.5 x 20	0.06	0.96	0.55	270	3.8	EKL 00 FE 310	J
220	63	* 12.5 x 35	0.06	0.43	0.25	500	6.0	EKL 00 FL 322	J
470	63	16.5 x 35	0.06	0.20	0.12	840	12	EKL 00 JL 347	J

x On request.
* Also available in 16.5 x 30, RM 7.5 lead spacing

1) Due to the admissible C-tolerance, the specified limit values may be exceeded by max. 10%.

2) The ripple current values are calculated on the bases of 3 K temperature increase at T_U 125°C, referred to the max. admissible tan δ values.

For ripple current loading in dependence on ambient temperature, see also "General Information".

Ordering example:
EKL 100 / 63 dim. 12.5 x 20
EKL 00 FE 310 J

EKLG (5_{-1} lead length)
EKL 05 FE 310 J