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Aluminum electrolytic capacitors

Single-ended capacitors

Series/Type: **B41895**

Date: December 2016

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Long-life grade capacitors

Applications

- Automotive electronics

Features

- Very compact design
- High operating temperature capability
- Long useful life
- High ripple current capability
- Low ESR
- RoHS-compatible

Construction

- Radial leads
- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Minus pole marking on the insulating sleeve
- Case with safety vent

Delivery mode

Terminal configurations and packing:

- Bulk
- Taped, Ammo pack
- Cut
- Kinked
- PAPR (Protection Against Polarity Reversal):
crimped leads, J leads, bent leads

Refer to chapter "Single-ended capacitors – Taping, packing and lead configurations" for further details.





Specifications and characteristics in brief

Rated voltage V _R Surge voltage V _S	25 ... 100 V DC 1.15 · V _R for ≤ 50 V DC 1.1 · V _R for ≥ 63 V DC						
Rated capacitance C _R Capacitance tolerance	200 ... 6800 µF ±20% △ M						
Dissipation factor tan δ (20 °C, 120 Hz)	For capacitance higher than 1000 µF add 0.02 for every increase of 1000 µF.						
	V _R (V DC)	25	35	50	63	75	100
	tan δ (max.)	0.14	0.12	0.10	0.10	0.08	0.08
Leakage current I _{leak} (20 °C, 5 min)	I _{leak} = 0.01 µA · $\left(\frac{C_R}{\mu F} \cdot \frac{V_R}{V}\right)$ or 3 µA, whichever is greater						
Self-inductance ESL	Diameter (mm)	12.5		16		18	
	ESL (nH)	20		26		34	
Useful life ¹⁾ 125 °C; V _R ; I _{AC,R}	≤ 75 V DC: > 3000 h for l ≤ 25 mm > 5000 h for l > 25 mm 100 V DC: > 3000 h						
Requirements	ΔC/C ≤ 30% of initial value tan δ ≤ 3 times initial specified limit I _{leak} ≤ initial specified limit						
Voltage endurance test 125 °C, V _R	≤ 75 V DC: 3000 h for l ≤ 25 mm 5000 h for l > 25 mm 100 V DC: 3000 h						
Post test requirements	ΔC/C ≤ 25% of initial value tan δ ≤ 2 times initial specified limit I _{leak} ≤ initial specified limit						
Vibration resistance test	To IEC 60068-2-6, test Fc: Frequency range 10 Hz ... 2 kHz, displacement amplitude max. 1.5 mm, acceleration max. 20 g, duration 3 × 2 h. Capacitor rigidly clamped by the aluminum case.						
IEC climatic category	To IEC 60068-1: 40/125/56 (–40 °C/+125 °C/56 days damp heat test)						
Sectional specification	IEC 60384-4, AEC-Q200						

1) Refer to chapter "General technical information, 5 Useful life" on how to interpret useful life.



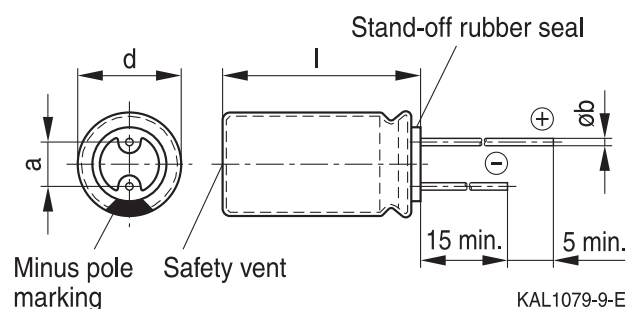
B41895

Low ESR, compact – 125 °C

Dimensional drawing

With stand-off rubber seal

Diameters (mm): 12.5, 16, 18



Dimensions and weights

Dimensions (mm)				Approx. weight
d +0.5	l	a ±0.5	b	g
12.5	20 +2.0	5.0	0.60 ±0.05	3.6
12.5	25 +2.0	5.0	0.60 ±0.05	4.5
12.5	30 +2.0	5.0	0.80 ±0.05	5.3
12.5	35 +2.0	5.0	0.80 ±0.05	6.4
12.5	40 +2.0	5.0	0.80 ±0.05	7.4
16	20 +2.0	7.5	0.80 ±0.05	5.5
16	25 +2.0	7.5	0.80 ±0.05	7.5
16	31.5 +2.0	7.5	0.80 ±0.05	7.8
16	35.5 +2.0	7.5	0.80 ±0.05	9.2
18	20 +2.0	7.5	0.80 ±0.1	8.0
18	25 +2.0	7.5	0.80 ±0.1	9.0
18	31.5 +2.0	7.5	0.80 ±0.1	11.0
18	35 +2.0	7.5	0.80 ±0.1	13.0
18	40 +2.5	7.5	0.80 ±0.1	16.0



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Low ESR, compact – 125 °C

Overview of available types

Other voltage and capacitance ratings are available upon request.

V_R (V DC)	25	35	50
	Case dimensions $d \times l$ (mm)		
C_R (μF)			
470		12.5 × 20	12.5 × 20
680		12.5 × 20	12.5 × 25 16 × 20
820			12.5 × 30
1000		12.5 × 25	12.5 × 35 16 × 25 18 × 20
1200	12.5 × 20	12.5 × 30 16 × 20	12.5 × 40 16 × 31.5 18 × 25
1500		12.5 × 35 18 × 20	16 × 35.5
1800	12.5 × 25 16 × 20	12.5 × 40 16 × 25	18 × 31.5
2200	12.5 × 30	16 × 31.5 18 × 25	18 × 35
2700	12.5 × 35 16 × 25 18 × 20	16 × 35.5 18 × 31.5	18 × 40
3300	12.5 × 40 16 × 31.5	18 × 35	
3900	16 × 35.5 18 × 25		
4700	18 × 31.5	18 × 40	
5600	18 × 35		
6800	18 × 40		


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Low ESR, compact – 125 °C

Overview of available types

Other voltage and capacitance ratings are available upon request.

V_R (V DC)	63	75	100
	Case dimensions d × l (mm)		
C_R (μF)			
200			16 × 20
270			18 × 20
300			16 × 25
330		16 × 20	
360			16 × 31.5
390			18 × 25
470	16 × 20	16 × 25 18 × 20	16 × 35.5
510			18 × 31.5
560		16 × 31.5 18 × 25	18 × 35
620			18 × 35
680	16 × 25 18 × 20	16 × 35.5 18 × 31.5	
750			18 × 40
820	16 × 31.5	18 × 35	
1000	16 × 35.5 18 × 25		
1200	18 × 31.5	18 × 40	
1500	18 × 35		
1800	18 × 40		



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Low ESR, compact – 125 °C

Technical data and ordering codes

C_R 120 Hz 20 °C μF	Case dimensions $d \times l$ mm	ESR_{max} 10 kHz –40 °C Ω	ESR_{max} 10 kHz 20 °C Ω	Z_{max} 100 kHz 20 °C Ω	$I_{AC,R}$ 100 kHz 125 °C mA	Ordering code (composition see below)
$V_R = 25 V$ DC						
1200	12.5 × 20	0.384	0.048	0.044	1820	B41895G5128M***
1800	12.5 × 25	0.296	0.037	0.033	2400	B41895G5188M***
1800	16 × 20	0.296	0.037	0.034	2280	B41895H5188M***
2200	12.5 × 30	0.264	0.033	0.029	2560	B41895G5228M***
2700	12.5 × 35	0.224	0.028	0.024	2970	B41895G5278M***
2700	16 × 25	0.232	0.029	0.026	2860	B41895H5278M***
2700	18 × 20	0.280	0.035	0.032	2490	B41895J5278M***
3300	12.5 × 40	0.200	0.025	0.021	3600	B41895G5338M***
3300	16 × 31.5	0.208	0.026	0.023	3160	B41895H5338M***
3900	16 × 35.5	0.184	0.023	0.020	3590	B41895G5398M***
3900	18 × 25	0.216	0.027	0.024	3200	B41895H5398M***
4700	18 × 31.5	0.200	0.025	0.022	3390	B41895G5478M***
5600	18 × 35	0.176	0.022	0.019	4200	B41895G5568M***
6800	18 × 40	0.152	0.019	0.016	4600	B41895G5688M***

Composition of ordering code

*** = Version

000 = for standard leads, bulk

001 = for kinked leads, bulk (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25$ mm and $\varnothing 16 \dots 18$ mm)

002 = for cut leads, bulk (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25$ mm and $\varnothing 16 \dots 18$ mm)

003 = for crimped leads, blister (for $\varnothing 16 \dots 18$ mm)

004 = for J leads, blister (for $\varnothing 12.5 \dots 18$ mm, excluding $d \times l = 12.5 \times 30/35/40$ and 18×40 mm)

008 = for taped leads, Ammo pack, lead spacing $F = 5.0$ mm (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25$ mm)

009 = for taped leads, Ammo pack, lead spacing $F = 7.5$ mm (for $d \times l = 16 \times 20 \dots 16 \times 31.5$ mm and $18 \times 20 \dots 18 \times 31.5$ mm)

012 = for bent 90° leads, blister (for $\varnothing 16 \dots 18$ mm)


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Low ESR, compact – 125 °C

Technical data and ordering codes

C_R 120 Hz 20 °C μF	Case dimensions $d \times l$ mm	ESR_{max} 10 kHz –40 °C Ω	ESR_{max} 10 kHz 20 °C Ω	Z_{max} 100 kHz 20 °C Ω	$I_{AC,R}$ 100 kHz 125 °C mA	Ordering code (composition see below)
$V_R = 35 V DC$						
470	12.5 × 20	0.384	0.048	0.044	1820	B41895G7477M***
680	12.5 × 20	0.384	0.048	0.044	1820	B41895G7687M***
1000	12.5 × 25	0.296	0.037	0.033	2400	B41895G7108M***
1200	12.5 × 30	0.264	0.033	0.029	2560	B41895G7128M***
1200	16 × 20	0.296	0.037	0.034	2280	B41895H7128M***
1500	12.5 × 35	0.224	0.028	0.024	2970	B41895G7158M***
1500	18 × 20	0.280	0.035	0.032	2490	B41895H7158M***
1800	12.5 × 40	0.200	0.025	0.021	3600	B41895G7188M***
1800	16 × 25	0.232	0.029	0.026	2860	B41895H7188M***
2200	16 × 31.5	0.208	0.026	0.023	3160	B41895G7228M***
2200	18 × 25	0.216	0.027	0.024	3200	B41895H7228M***
2700	16 × 35.5	0.184	0.023	0.020	3590	B41895G7278M***
2700	18 × 31.5	0.200	0.025	0.022	3390	B41895H7278M***
3300	18 × 35	0.176	0.022	0.019	4200	B41895G7338M***
4700	18 × 40	0.152	0.019	0.016	4600	B41895G7478M***

Composition of ordering code

*** = Version

- 000 = for standard leads, bulk
- 001 = for kinked leads, bulk (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25$ mm and $\varnothing 16 \dots 18$ mm)
- 002 = for cut leads, bulk (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25$ mm and $\varnothing 16 \dots 18$ mm)
- 003 = for crimped leads, blister (for $\varnothing 16 \dots 18$ mm)
- 004 = for J leads, blister (for $\varnothing 12.5 \dots 18$ mm, excluding $d \times l = 12.5 \times 30/35/40$ and 18×40 mm)
- 008 = for taped leads, Ammo pack, lead spacing $F = 5.0$ mm (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25$ mm)
- 009 = for taped leads, Ammo pack, lead spacing $F = 7.5$ mm (for $d \times l = 16 \times 20 \dots 16 \times 31.5$ mm and $18 \times 20 \dots 18 \times 31.5$ mm)
- 012 = for bent 90° leads, blister (for $\varnothing 16 \dots 18$ mm)



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Low ESR, compact – 125 °C

Technical data and ordering codes

C_R 120 Hz 20 °C μF	Case dimensions $d \times l$ mm	ESR_{max} 10 kHz –40 °C Ω	ESR_{max} 10 kHz 20 °C Ω	Z_{max} 100 kHz 20 °C Ω	$I_{\text{AC,R}}$ 100 kHz 125 °C mA	Ordering code (composition see below)
$V_R = 50 \text{ V DC}$						
470	12.5 × 20	0.552	0.069	0.065	1500	B41895G6477M***
680	12.5 × 25	0.416	0.052	0.048	1900	B41895G6687M***
680	16 × 20	0.368	0.046	0.043	2040	B41895H6687M***
820	12.5 × 30	0.360	0.045	0.041	2510	B41895G6827M***
1000	12.5 × 35	0.304	0.038	0.034	2510	B41895G6108M***
1000	16 × 25	0.272	0.034	0.031	2620	B41895H6108M***
1000	18 × 20	0.336	0.042	0.039	2240	B41895J6108M***
1200	12.5 × 40	0.256	0.032	0.027	2870	B41895G6128M***
1200	16 × 31.5	0.240	0.030	0.027	2940	B41895H6128M***
1200	18 × 25	0.256	0.032	0.029	2750	B41895J6128M***
1500	16 × 35.5	0.208	0.026	0.023	3300	B41895G6158M***
1800	18 × 31.5	0.232	0.029	0.026	3140	B41895G6188M***
2200	18 × 35	0.200	0.025	0.022	3510	B41895G6228M***
2700	18 × 40	0.168	0.021	0.018	3940	B41895G6278M***

Composition of ordering code

*** = Version

000 = for standard leads, bulk

001 = for kinked leads, bulk (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25 \text{ mm}$ and $\varnothing 16 \dots 18 \text{ mm}$)

002 = for cut leads, bulk (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25 \text{ mm}$ and $\varnothing 16 \dots 18 \text{ mm}$)

003 = for crimped leads, blister (for $\varnothing 16 \dots 18 \text{ mm}$)

004 = for J leads, blister (for $\varnothing 12.5 \dots 18 \text{ mm}$, excluding $d \times l = 12.5 \times 30/35/40$ and $18 \times 40 \text{ mm}$)

008 = for taped leads, Ammo pack, lead spacing $F = 5.0 \text{ mm}$ (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25 \text{ mm}$)

009 = for taped leads, Ammo pack, lead spacing $F = 7.5 \text{ mm}$ (for $d \times l = 16 \times 20 \dots 16 \times 31.5 \text{ mm}$ and $18 \times 20 \dots 18 \times 31.5 \text{ mm}$)

012 = for bent 90° leads, blister (for $\varnothing 16 \dots 18 \text{ mm}$)


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Low ESR, compact – 125 °C

Technical data and ordering codes

C_R 120 Hz 20 °C μF	Case dimensions $d \times l$ mm	ESR_{max} 10 kHz –40 °C Ω	ESR_{max} 10 kHz 20 °C Ω	Z_{max} 100 kHz 20 °C Ω	$I_{AC,R}$ 100 kHz 125 °C mA	Ordering code (composition see below)
$V_R = 63 V DC$						
470	16 \times 20	0.792	0.091	0.085	1790	B41895A8477M***
680	16 \times 25	0.583	0.067	0.061	2030	B41895A8687M***
680	18 \times 20	0.652	0.075	0.070	1910	B41895B8687M***
820	16 \times 31.5	0.513	0.059	0.053	2330	B41895A8827M***
1000	16 \times 35.5	0.435	0.050	0.044	2580	B41895A8108M***
1000	18 \times 25	0.470	0.054	0.049	2280	B41895B8108M***
1200	18 \times 31.5	0.400	0.046	0.041	2580	B41895A8128M***
1500	18 \times 35	0.348	0.040	0.035	2890	B41895A8158M***
1800	18 \times 40	0.304	0.035	0.030	3210	B41895A8188M***
$V_R = 75 V DC$						
330	16 \times 20	0.957	0.110	0.102	1790	B41895A0337M***
470	16 \times 25	0.696	0.080	0.073	2030	B41895A0477M***
470	18 \times 20	0.783	0.090	0.084	1910	B41895B0477M***
560	16 \times 31.5	0.618	0.071	0.064	2330	B41895A0567M***
560	18 \times 25	0.565	0.065	0.059	2280	B41895B0567M***
680	16 \times 35.5	0.522	0.060	0.053	2580	B41895A0687M***
680	18 \times 31.5	0.478	0.055	0.049	2580	B41895B0687M***
820	18 \times 35	0.418	0.048	0.042	2890	B41895A0827M***
1200	18 \times 40	0.365	0.042	0.036	3210	B41895A0128M***

Composition of ordering code

*** = Version

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- 001 = for kinked leads, bulk (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25$ mm and $\varnothing 16 \dots 18$ mm)
- 002 = for cut leads, bulk (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25$ mm and $\varnothing 16 \dots 18$ mm)
- 003 = for crimped leads, blister (for $\varnothing 16 \dots 18$ mm)
- 004 = for J leads, blister (for $\varnothing 12.5 \dots 18$ mm, excluding $d \times l = 12.5 \times 30/35/40$ and 18×40 mm)
- 008 = for taped leads, Ammo pack, lead spacing $F = 5.0$ mm (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25$ mm)
- 009 = for taped leads, Ammo pack, lead spacing $F = 7.5$ mm (for $d \times l = 16 \times 20 \dots 16 \times 31.5$ mm and $18 \times 20 \dots 18 \times 31.5$ mm)
- 012 = for bent 90° leads, blister (for $\varnothing 16 \dots 18$ mm)



Technical data and ordering codes

C_R 120 Hz 20 °C μF	Case dimensions $d \times l$ mm	ESR_{max} 10 kHz –40 °C Ω	ESR_{max} 10 kHz 20 °C Ω	Z_{max} 100 kHz 20 °C Ω	$I_{AC,R}$ 100 kHz 125 °C mA	Ordering code (composition see below)
$V_R = 100 V DC$						
200	16 \times 20	1.148	0.132	0.110	1580	B41895G9207M***
270	18 \times 20	0.948	0.109	0.091	1690	B41895G9277M***
300	16 \times 25	0.827	0.095	0.079	1990	B41895G9307M***
360	16 \times 31.5	0.713	0.082	0.068	2250	B41895G9367M***
390	18 \times 25	0.670	0.077	0.064	2110	B41895G9397M***
470	16 \times 35.5	0.583	0.067	0.056	2500	B41895G9477M***
510	18 \times 31.5	0.566	0.065	0.054	2410	B41895G9517M***
560	18 \times 35	0.461	0.053	0.044	2690	B41895G9567M***
620	18 \times 35	0.461	0.053	0.044	2690	B41895G9627M***
750	18 \times 40	0.409	0.047	0.039	2880	B41895G9757M***

Composition of ordering code

*** = Version

000 = for standard leads, bulk

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002 = for cut leads, bulk (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25$ mm and $\varnothing 16 \dots 18$ mm)

003 = for crimped leads, blister (for $\varnothing 16 \dots 18$ mm)

004 = for J leads, blister (for $\varnothing 12.5 \dots 18$ mm, excluding $d \times l = 12.5 \times 30/35/40$ and 18×40 mm)

008 = for taped leads, Ammo pack, lead spacing $F = 5.0$ mm (for $d \times l = 12.5 \times 20 \dots 12.5 \times 25$ mm)

009 = for taped leads, Ammo pack, lead spacing $F = 7.5$ mm (for $d \times l = 16 \times 20 \dots 16 \times 31.5$ mm and $18 \times 20 \dots 18 \times 31.5$ mm)

012 = for bent 90° leads, blister (for $\varnothing 16 \dots 18$ mm)



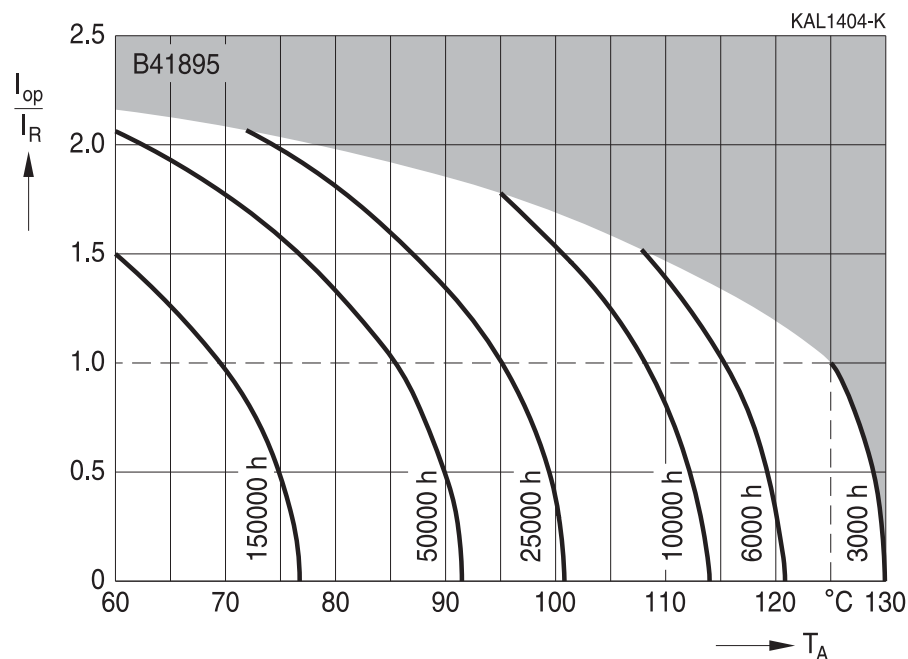
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Low ESR, compact – 125 °C

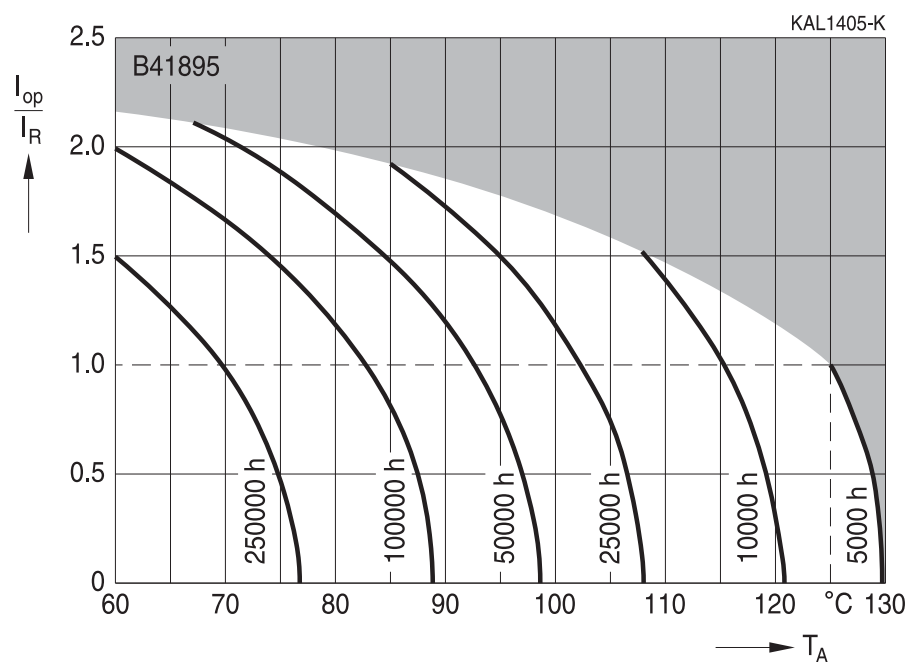
Useful life¹⁾ $V_R \leq 75 \text{ V DC}$

depending on ambient temperature T_A under ripple current operating conditions

$l \leq 25 \text{ mm}$



$l > 25 \text{ mm}$

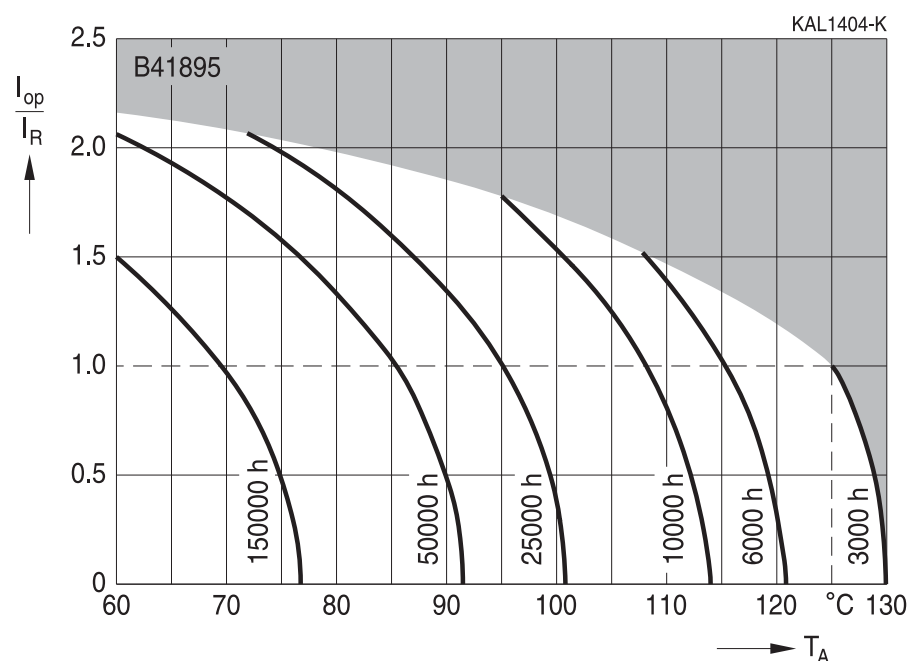


1) Refer to chapter "General technical information, 5 Useful life" on how to interpret useful life.

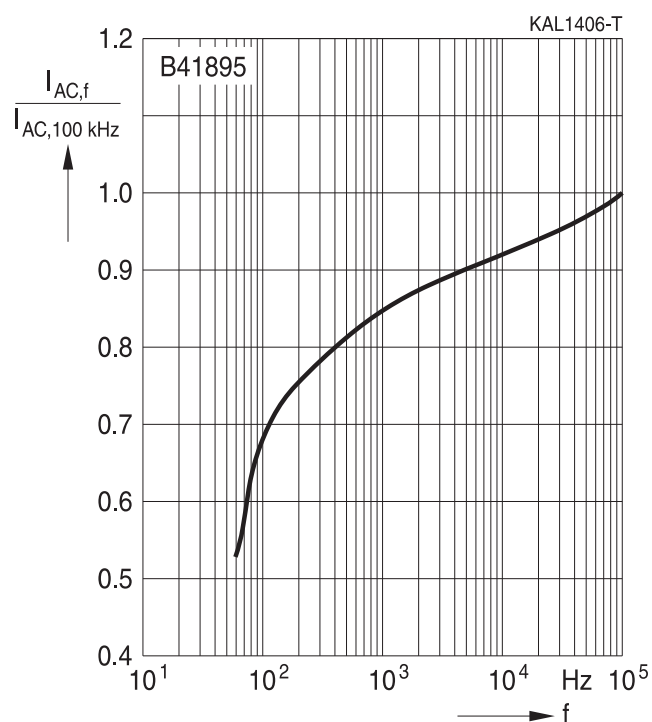


Useful life²⁾ $V_R = 100 \text{ V DC}$

depending on ambient temperature T_A under ripple current operating conditions



Frequency factor of permissible ripple current I_{AC} versus frequency f



2) Refer to chapter "General technical information, 5 Useful life" on how to interpret useful life.



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Low ESR, compact – 125 °C

Taping, packing and lead configurations

Taping

Single-ended capacitors are available taped in Ammo pack from diameter 8 to 18 mm as follows:

Lead spacing $F = 3.5$ mm ($\varnothing d = 8$ mm)

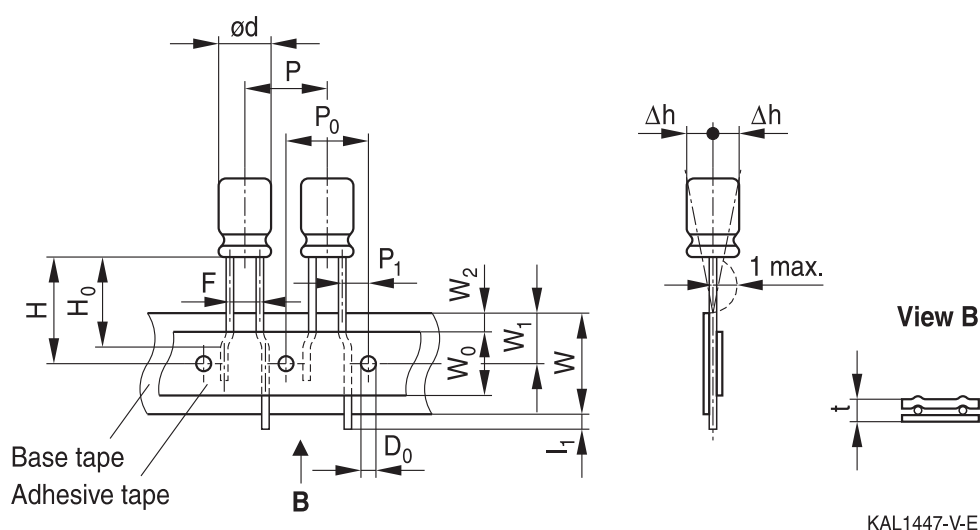
Lead spacing $F = 5.0$ mm ($\varnothing d = 8 \dots 12.5$ mm)

Lead spacing $F = 7.5$ mm ($\varnothing d = 16 \dots 18$ mm).

The dimensions for F , P_1 and 1 max. are specified with reference to the center of the terminal wires.

Lead spacing 3.5 mm ($\varnothing d = 8$ mm)

Last 3 digits of ordering code: 006



Dimensions in mm

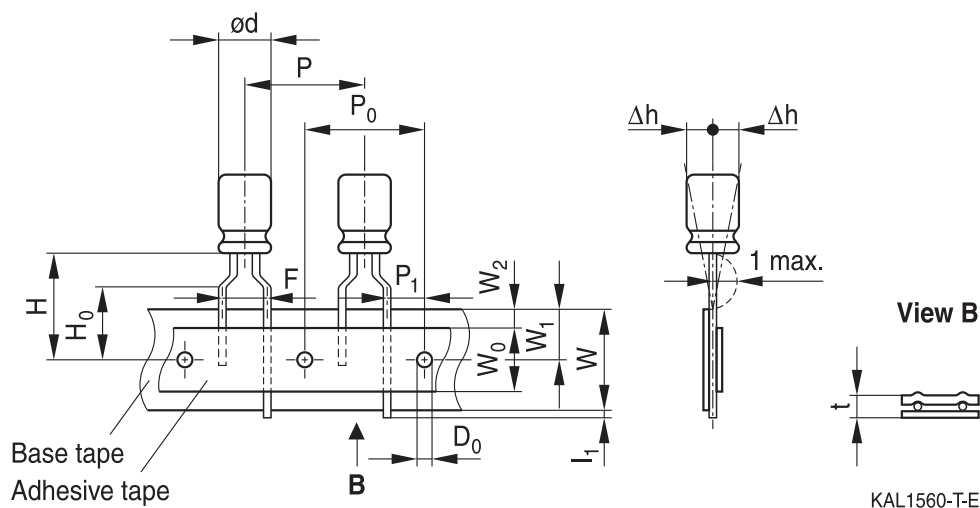
$\varnothing d$	F	H	W	W_0	W_1	W_2	P	P_0	P_1	L_1	t	Δh	D_0
8	3.5	18.5	18.0	9.5	9.0	3.0	12.7	12.7	4.6	1.0	0.7	1.0	4.0
Tolerance	+0.8 -0.2	± 1.0	± 0.5	min.	± 0.5	max.	± 1.0	± 0.3	± 0.6	max.	± 0.2	max.	± 0.2

Leads can also run straight through the taping area.



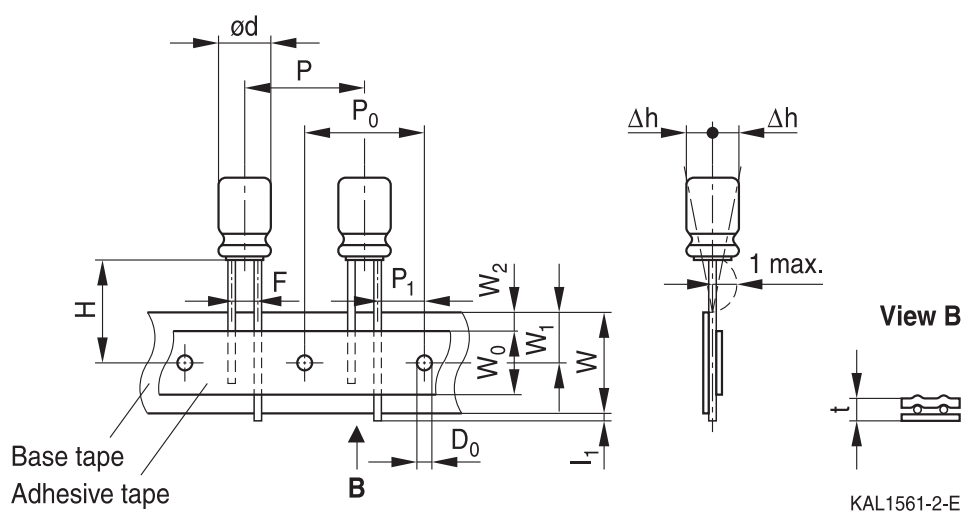
Lead spacing 5.0 mm ($\varnothing d = 8$ mm)

Last 3 digits of ordering code: 008



Lead spacing 5.0 mm ($\varnothing d = 10 \dots 12.5$ mm)

Last 3 digits of ordering code: 008



Dimensions in mm

$\varnothing d$	F	H	W	W_0	W_1	W_2	H_0	P	P_0	P_1	I_1	t	Δh	D_0
8	5.0	20.0	18.0	9.5	9.0	1.5	16.0	12.7	12.7	3.85	1.0	0.6	1.0	4.0
10		19.0		9.5			—	12.7	12.7	3.85				
12.5		19.0		11.5			—	15.0	15.0	5.0				
Tolerance	+0.8 -0.2	± 0.75	± 0.5	min.	± 0.5	max.	± 0.5	± 1.0	± 0.2	± 0.5	max.	+0.3 -0.2	max.	± 0.2

Taping is available up to dimensions $d \times l = 12.5 \times 25$ mm.

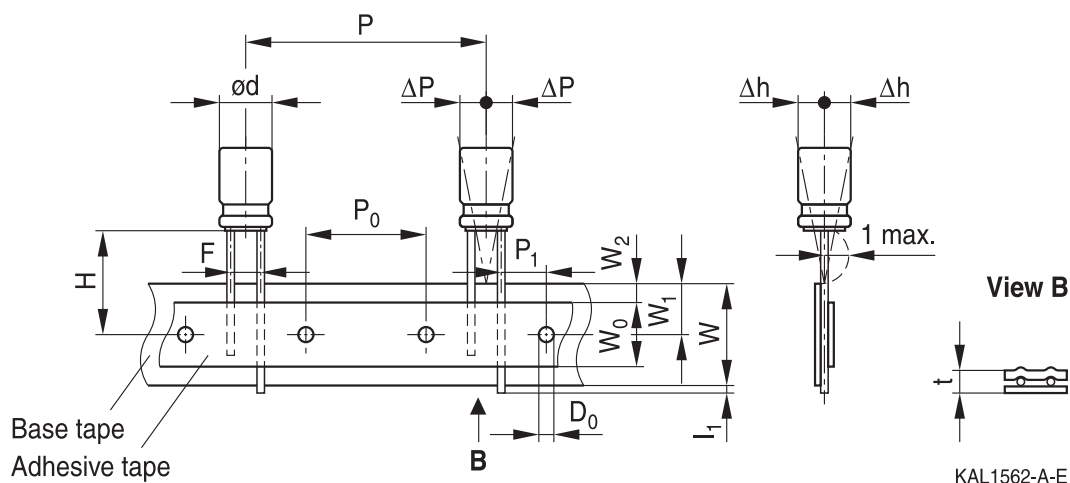


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Low ESR, compact – 125 °C

Lead spacing 7.5 mm ($\varnothing d = 16 \dots 18$ mm)

Last 3 digits of ordering code: 009



Dimensions in mm

$\varnothing d$	F	H	W	W_0	W_1	W_2	P	P_0	P_1	I_1	t	ΔP	Δh	D_0
16	7.5	18.5	18.0	12.5	9.0	1.5	30.0	15.0	3.75	1.0	0.7	0	0	4.0
18														
Tolerance	± 0.8	-0.5 $+0.75$	± 0.5	min.	± 0.5	max.	± 1.0	± 0.2	± 0.5	max.	± 0.2	± 1.0	± 1.0	± 0.2

Taping is available up to dimensions $d \times l = 16 \times 31.5$ mm and 18×31.5 mm.



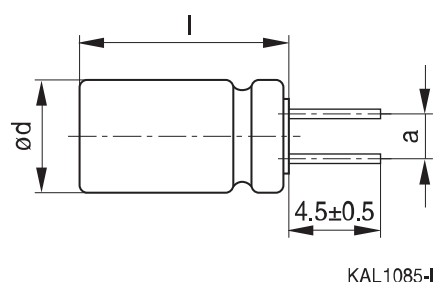
Cut or kinked leads

Single-ended capacitors are available with cut or kinked leads. Other lead configurations also available upon request.

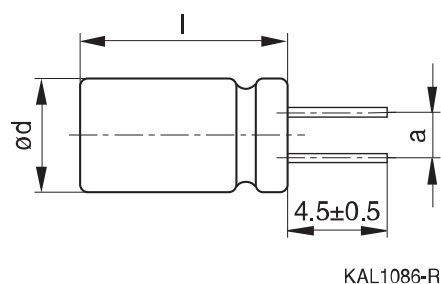
Cut leads

Last 3 digits of ordering code: 002

With stand-off rubber seal



With flat rubber seal



Case size $d \times l$ (mm)	Dimensions (mm) $a \pm 0.5$
10 × 12.5	5.0
10 × 16	5.0
10 × 20	5.0
12.5 × 20	5.0
12.5 × 25	5.0
16 × 20	7.5
16 × 25	7.5
16 × 31.5	7.5
16 × 35.5	7.5
18 × 20	7.5
18 × 25	7.5
18 × 31.5	7.5
18 × 35	7.5
18 × 40	7.5



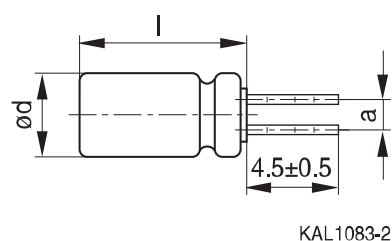
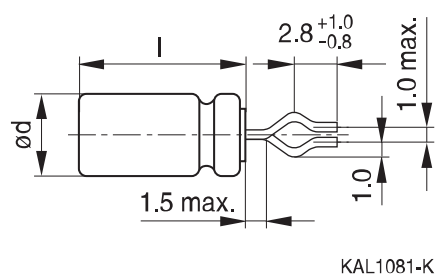
B41895

Low ESR, compact – 125 °C

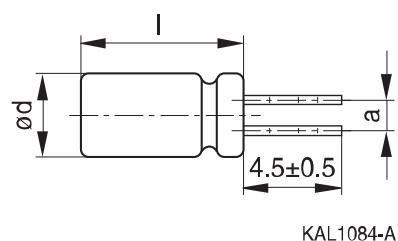
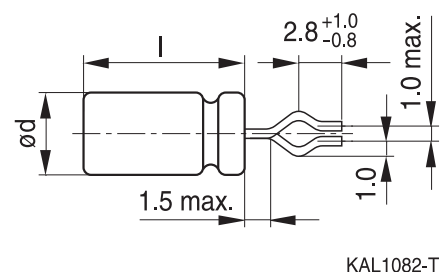
Kinked leads

Last 3 digits of ordering code: 001

With stand-off rubber seal



With flat rubber seal



Case size d × l (mm)	Dimensions (mm) a ±0.5
10 × 20	5.0
12.5 × 20	5.0
12.5 × 25	5.0
16 × 20	7.5
16 × 25	7.5
16 × 31.5	7.5
16 × 35.5	7.5
18 × 20	7.5
18 × 25	7.5
18 × 31.5	7.5
18 × 35	7.5
18 × 40	7.5



PAPR leads (Protection Against Polarity Reversal)

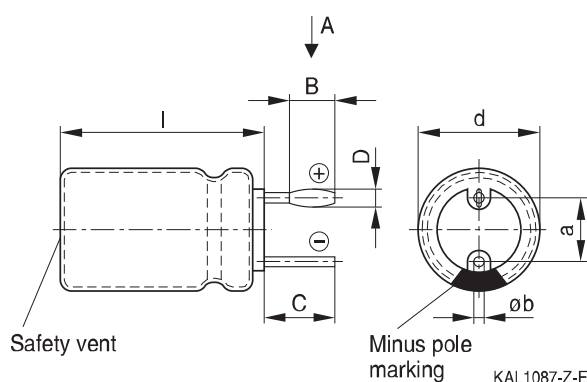
These lead configurations ensure correct placement of the capacitor on the PCB with regard to polarity. PAPR leads are available for diameters from 10 mm up to 18 mm (excluding $d \times l = 12.5 \times 30/35/40$ mm).

There are three configurations available: Crimped leads, J leads, bent 90° leads.

Crimped leads

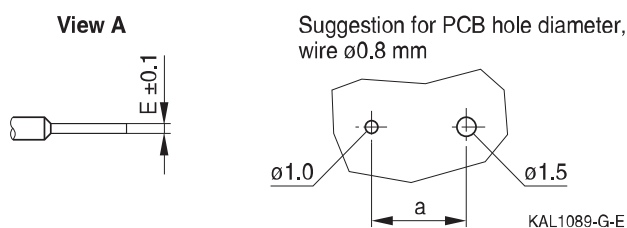
Last 3 digits of ordering code: 003

With stand-off rubber seal



The series B41898 has no sleeve nor minus pole marking, the positive pole is marked on the aluminum case side instead.

Suggestion for PCB hole diameter



Case size $d \times l$ (mm)	Dimensions (mm)					
	$B \pm 0.2$	$C \pm 0.5$	$D \pm 0.1$	$E \pm 0.1$	$a \pm 0.5$	$\varnothing b$
16 × 20	1.5	3.0	1.3	0.3	7.5	0.8 ± 0.05
16 × 25	1.5	3.0	1.3	0.3	7.5	0.8 ± 0.05
16 × 31.5	1.5	3.0	1.3	0.3	7.5	0.8 ± 0.05
16 × 35.5	1.5	3.0	1.3	0.3	7.5	0.8 ± 0.05
18 × 20	1.5	3.0	1.3	0.3	7.5	0.8 ± 0.1
18 × 25	1.5	3.0	1.3	0.3	7.5	0.8 ± 0.1
18 × 31.5	1.5	3.0	1.3	0.3	7.5	0.8 ± 0.1
18 × 35	1.5	3.0	1.3	0.3	7.5	0.8 ± 0.1
18 × 40	1.5	3.0	1.3	0.3	7.5	0.8 ± 0.1

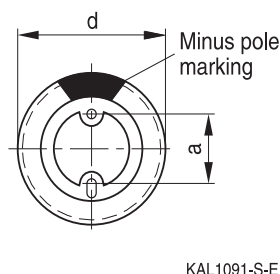
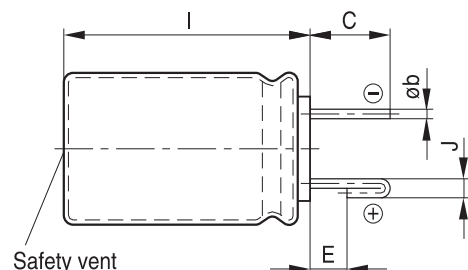


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J leads

Last 3 digits of ordering code: 004

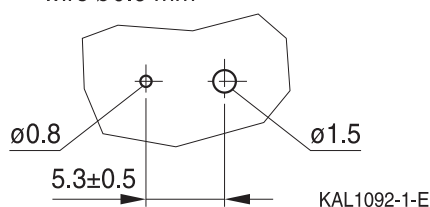


The series B41898 has no sleeve nor minus pole marking, the positive pole is marked on the aluminum case side instead.

KAL1091-S-E

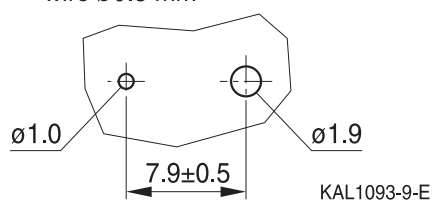
Suggestion for PCB hole diameter

Suggestion for PCB hole diameter,
wire $\varnothing 0.6$ mm



KAL1092-1-E

Suggestion for PCB hole diameter,
wire $\varnothing 0.8$ mm



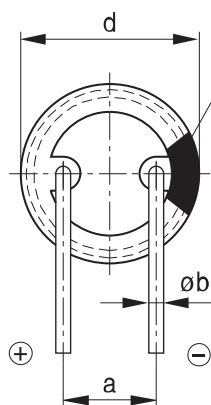
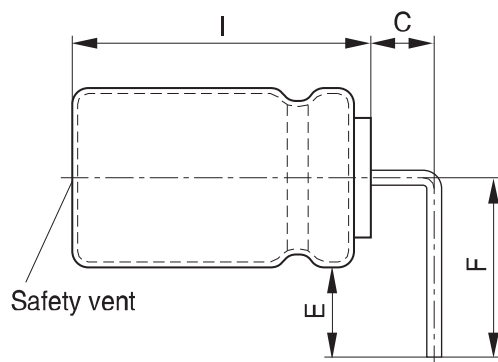
KAL1093-9-E

Case size $d \times l$ (mm)	Dimensions (mm)				
	$C \pm 0.5$	$E \pm 0.5$	$J \pm 0.2$	$a \pm 0.5$	$\varnothing b$
10 × 12.5	3.2	0.7	1.2	5.0	0.6 ± 0.05
10 × 16	3.2	0.7	1.2	5.0	0.6 ± 0.05
10 × 20	3.2	0.7	1.2	5.0	0.6 ± 0.05
12.5 × 20	3.2	0.7	1.2	5.0	0.6 ± 0.05
12.5 × 25	3.2	0.7	1.2	5.0	0.6 ± 0.05
16 × 20	3.5	0.7	1.6	7.5	0.8 ± 0.05
16 × 25	3.5	0.7	1.6	7.5	0.8 ± 0.05
16 × 31.5	3.5	0.7	1.6	7.5	0.8 ± 0.05
16 × 35.5	3.5	0.7	1.6	7.5	0.8 ± 0.05
18 × 20	3.5	0.7	1.6	7.5	0.8 ± 0.1
18 × 25	3.5	0.7	1.6	7.5	0.8 ± 0.1
18 × 31.5	3.5	0.7	1.6	7.5	0.8 ± 0.1
18 × 35	3.5	0.7	1.6	7.5	0.8 ± 0.1



Bent 90° leads for horizontal mounting pinning

Last 3 digits of ordering code: 012



Minus pole marking

The series B41898 has no sleeve nor minus pole marking, the positive pole is marked on the aluminum case side instead.

KAL1094-H-E

Case size d × l (mm)	Dimensions (mm)				
	C ±0.5	E ±0.5	F ±0.5	a ±0.5	Øb
16 × 20	4.0	4.0	12.0	7.5	0.8 ±0.05
16 × 25	4.0	4.0	12.0	7.5	0.8 ±0.05
16 × 31.5	4.0	4.0	12.0	7.5	0.8 ±0.05
16 × 35.5	4.0	4.0	12.0	7.5	0.8 ±0.05
18 × 20	4.0	4.0	13.0	7.5	0.8 ±0.1
18 × 25	4.0	4.0	13.0	7.5	0.8 ±0.1
18 × 31.5	4.0	4.0	13.0	7.5	0.8 ±0.1
18 × 35	4.0	4.0	13.0	7.5	0.8 ±0.1
18 × 40	4.0	4.0	13.0	7.5	0.8 ±0.1

Bent leads for diameter 12.5 mm available upon request.

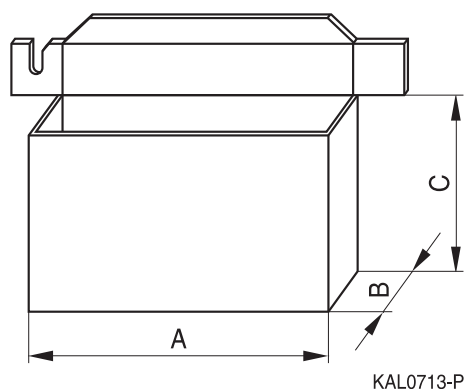


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Low ESR, compact – 125 °C

Packing units and box dimensions

Ammo pack



Case size d × l mm	Dimensions (mm)			Packing units pcs.
	A _{max}	B _{max}	C _{max}	
8 × 11.5	345	60	240	1000
10 × 12.5	345	60	280	750
10 × 16	345	65	200	500
10 × 20	345	65	200	500
12.5 × 20	345	65	260	500
12.5 × 25	345	70	260	500
16 × 20	325	65	285	300
16 × 25	325	65	285	300
16 × 31.5	325	80	275	300
18 × 20	325	65	285	250
18 × 25	325	65	285	250
18 × 31.5	325	80	275	250



Overview of packing units and code numbers

						PAPR			
Case size d × l	Stan- dard, bulk pcs.	Taped, Ammo pack			Kinked leads, bulk pcs.	Cut leads, bulk pcs.	Crimped leads, blister pcs.	J leads, blister pcs.	Bent 90° leads, blister pcs.
mm	pcs.	pcs.			pcs.	pcs.	pcs.	pcs.	pcs.
8 × 11.5	1000	1000			—	—	—	—	
10 × 12.5	1000	750			—	1000	—	900	
10 × 16	1000	500			—	1000	—	675	
10 × 20	500	500			500	500	—	500	
12.5 × 20	350	500			350	350	—	300	1)
12.5 × 25	250	500			500	500	—	225	1)
12.5 × 30	200	—			—	—	—	—	
12.5 × 35	175	—			—	—	—	—	
12.5 × 40	175	—			—	—	—	—	
16 × 20	250	300			200	200	200	200	420
16 × 25	250	300			200	200	216	216	216
16 × 31.5	200	300			250	250	180	180	180
16 × 35.5	100	—			100	100	150	150	150
18 × 20	175	250			175	175	200	200	420
18 × 25	150	250			150	150	200	200	200
18 × 31.5	100	250			100	100	150	150	150
18 × 35	100	—			100	100	150	150	150
18 × 40	125	—			100	100	72	—	72
The last three digits of the complete ordering code state the lead configuration	000	Code	F (mm)	d (mm)	001	002	003	004	012
		006	3.5	8					
		008	5	8...12.5					
		009	7.5	16...18					

1) Available upon request



B41895

Low ESR, compact – 125 °C

Cautions and warnings

Personal safety

The electrolytes used by EPCOS have been optimized both with a view to the intended application and with regard to health and environmental compatibility. They do not contain any solvents that are detrimental to health, e.g. dimethyl formamide (DMF) or dimethyl acetamide (DMAC).

Furthermore, some of the high-voltage electrolytes used by EPCOS are self-extinguishing.

As far as possible, EPCOS does not use any dangerous chemicals or compounds to produce operating electrolytes, although in exceptional cases, such materials must be used in order to achieve specific physical and electrical properties because no alternative materials are currently known. We do, however, restrict the amount of dangerous materials used in our products to an absolute minimum.

Materials and chemicals used in EPCOS aluminum electrolytic capacitors are continuously adapted in compliance with the EPCOS Corporate Environmental Policy and the latest EU regulations and guidelines such as RoHS, REACH/SVHC, GADSL, and ELV.

MDS (Material Data Sheets) are available on the EPCOS website for all types listed in the data book. MDS for customer specific capacitors are available upon request.

MSDS (Material Safety Data Sheets) are available for all of our electrolytes upon request.

Nevertheless, the following rules should be observed when handling aluminum electrolytic capacitors: No electrolyte should come into contact with eyes or skin. If electrolyte does come into contact with the skin, wash the affected areas immediately with running water. If the eyes are affected, rinse them for 10 minutes with plenty of water. If symptoms persist, seek medical treatment. Avoid inhaling electrolyte vapor or mists. Workplaces and other affected areas should be well ventilated. Clothing that has been contaminated by electrolyte must be changed and rinsed in water.



Product safety

The table below summarizes the safety instructions that must be observed without fail. A detailed description can be found in the relevant sections of chapter "General technical information".

Topic	Safety information	Reference chapter "General technical information"
Polarity	Make sure that polar capacitors are connected with the right polarity.	1 "Basic construction of aluminum electrolytic capacitors"
Reverse voltage	Voltages of opposite polarity should be prevented by connecting a diode.	3.1.6 "Reverse voltage"
Mounting position of screw-terminal capacitors	Screw terminal capacitors must not be mounted with terminals facing down unless otherwise specified.	11.1. "Mounting positions of capacitors with screw terminals"
Robustness of terminals	The following maximum tightening torques must not be exceeded when connecting screw terminals: M5: 2.5 Nm M6: 4.0 Nm	11.3 "Mounting torques"
Mounting of single-ended capacitors	The internal structure of single-ended capacitors might be damaged if excessive force is applied to the lead wires. Avoid any compressive, tensile or flexural stress. Do not move the capacitor after soldering to PC board. Do not pick up the PC board by the soldered capacitor. Do not insert the capacitor on the PC board with a hole space different to the lead space specified.	11.4 "Mounting considerations for single-ended capacitors"
Soldering	Do not exceed the specified time or temperature limits during soldering.	11.5 "Soldering"
Soldering, cleaning agents	Do not allow halogenated hydrocarbons to come into contact with aluminum electrolytic capacitors.	11.6 "Cleaning agents"
Upper category temperature	Do not exceed the upper category temperature.	7.2 "Maximum permissible operating temperature"
Passive flammability	Avoid external energy, e.g. fire.	8.1 "Passive flammability"