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Aluminum electrolytic capacitors

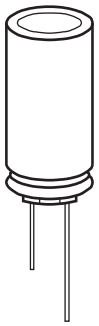
Single-ended capacitors

Series/Type: **B41858**

Date: December 2016

EPCOS AG is a TDK Group Company.

Long-life grade capacitors



Applications
- Automotive electronics
- For use in output circuits of switch-mode power supplies of compact design
- For professional industrial electronics, telecommunications and data processing equipment

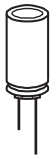
Features
- Low impedance at high frequency
- High reliability
- Low ESR
- High ripple current capability
- RoHS-compatible

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

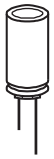
Refer to chapter "Single-ended capacitors – Taping, packing and lead configurations" for further details.



Specifications and characteristics in brief

Rated voltage V_R Surge voltage V_S	10 ... 100 V DC 1.15 · V_R							
Rated capacitance C_R Capacitance tolerance	22 ... 10000 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)	10	16	25	35	50	63	100
	tan δ (max.)	0.19	0.16	0.14	0.12	0.10	0.10	0.08
Leakage current I_{leak} (20 °C, 5 min)	$I_{leak} = 0.01\ \mu A \cdot \left(\frac{C_R}{\mu F} \cdot \frac{V_R}{V}\right)$							
Self-inductance ESL	Diameter (mm)	8 ... 12.5		16		18		
	ESL (nH)	20		26		34		
Useful life[1)] 105 °C; V_R; $I_{AC,R}$	> 3000 h for d = 8 mm > 5000 h for d ≥ 10 mm							
Requirements	$\lvert\Delta C/C\rvert$ ≤ 40% of initial value tan δ ≤ 3 times initial specified limit I_{leak} ≤ initial specified limit							
Voltage endurance test 105 °C; V_R	3000 h for d = 8 mm 5000 h for d ≥ 10 mm							
Post test requirements	$\lvert\Delta C/C\rvert$ ≤ 30% 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: 55/105/56 (−55 °C/+105 °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.

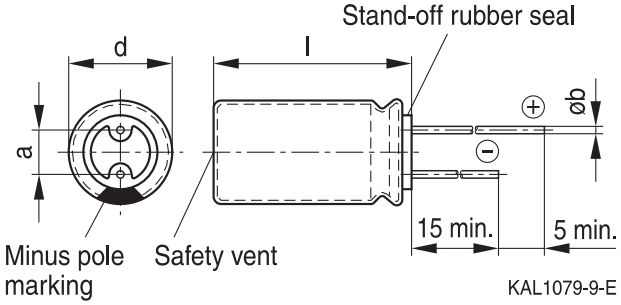


B41858

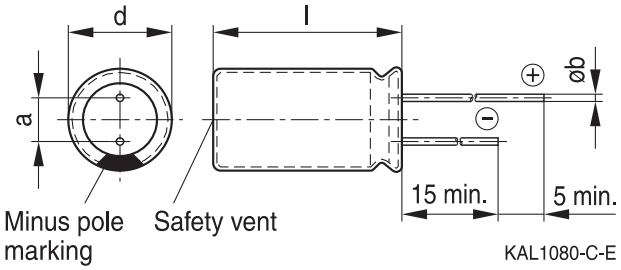
Low impedance – 105 °C

Dimensional drawings

With stand-off rubber seal
Diameters (mm): 10, 12.5, 16, 18

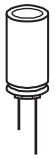


With flat rubber seal
Diameter (mm): 8



Dimensions and weights

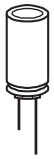
Dimensions (mm)				Approx. weight
d +0.5	l	a ±0.5	b	g
8	11.5 +1.5	3.5	0.60 ±0.05	1.0
10	12.5 +1.0	5.0	0.60 ±0.05	1.6
10	16 +1.0	5.0	0.60 ±0.05	1.9
10	20 +2.0	5.0	0.60 ±0.05	2.6
12.5	20 +2.0	5.0	0.60 ±0.05	3.6
12.5	25 +2.0	5.0	0.60 ±0.05	4.5
12.5	30 +2.0	5.0	0.80 ±0.05	5.3
12.5	40 +2.0	5.0	0.80 ±0.05	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 +2.0	7.5	0.80 ±0.1	16.0



Overview of available types

Other voltage and capacitance ratings are available upon request.

V_R (V DC)	10	16	25	35
	Case dimensions d × l (mm)			
C_R (µF)				
100				8 × 11.5
120				8 × 11.5
150				8 × 11.5
180			8 × 11.5	10 × 12.5
220			8 × 11.5	10 × 12.5
270		8 × 11.5	10 × 12.5	
330	8 × 11.5	8 × 11.5	10 × 12.5	10 × 16
390	8 × 11.5			
470	8 × 11.5	10 × 12.5	10 × 16	10 × 20
560	10 × 12.5	10 × 16	10 × 16	10 × 20
680	10 × 12.5	10 × 16	10 × 20	12.5 × 20
820	10 × 16	10 × 20	10 × 20	
1000	10 × 16	10 × 20	12.5 × 20	12.5 × 25 16 × 20
1200	10 × 16	10 × 20		16 × 20
1500	10 × 20	12.5 × 20	12.5 × 25	12.5 × 40 16 × 25
1800	10 × 20	12.5 × 25	16 × 20	16 × 25 18 × 20
2200	12.5 × 20	12.5 × 25	12.5 × 40 16 × 25 18 × 20	18 × 25
2700	12.5 × 25	16 × 20	16 × 31.5 18 × 20	18 × 31.5
3300	12.5 × 25 16 × 20	12.5 × 40 16 × 25	18 × 25	16 × 35.5 18 × 31.5
3900	12.5 × 40 16 × 20	16 × 31.5 18 × 20	16 × 35.5 18 × 31.5	18 × 35
4700	18 × 20	18 × 25	18 × 31.5	18 × 40
5600	12.5 × 40		18 × 35	
6800	16 × 31.5	18 × 31.5	18 × 40	
8200	18 × 31.5	18 × 35		
10000	18 × 35	18 × 40		



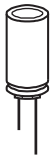
B41858

Low impedance − 105 °C

Overview of available types

Other voltage and capacitance ratings are available upon request.

V_R (V DC)	50	63	100
	Case dimensions d × l (mm)		
C_R (µF)			
22			8 × 11.5
33			10 × 16
47			10 × 20
68		8 × 11.5	
100	8 × 11.5	10 × 12.5	12.5 × 20
120	10 × 12.5	10 × 16	12.5 × 25
150	10 × 12.5	10 × 16	
180	10 × 16	10 × 20	12.5 × 30 16 × 20
220	10 × 16	10 × 20	16 × 25
270		12.5 × 20	12.5 × 40 18 × 20
330	10 × 20	12.5 × 20	16 × 31.5 18 × 25
390		12.5 × 25	18 × 31.5
470	12.5 × 20	12.5 × 25 16 × 20	18 × 35
560	12.5 × 25		18 × 35
680	12.5 × 30	12.5 × 40 16 × 25 18 × 20	18 × 40
820	12.5 × 40 16 × 20	16 × 31.5 18 × 25	
1000	16 × 31.5 18 × 20	16 × 31.5	
1200	18 × 20	18 × 31.5	
1500	18 × 25	18 × 35	
1800	16 × 35.5 18 × 31.5	18 × 40	
2200	18 × 35		
2700	18 × 40		



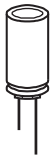
Technical data and ordering codes

C_R 120 Hz 20 °C µF	Case dimensions d × 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 105 °C mA	Ordering code (composition see below)
V_R = 10 V DC						
330	8 × 11.5	2.195	0.274	0.246	436	B41858C3337M***
390	8 × 11.5	2.195	0.274	0.246	436	B41858C3397M***
470	8 × 11.5	2.195	0.274	0.246	436	B41858C3477M***
560	10 × 12.5	1.035	0.129	0.113	746	B41858C3567M***
680	10 × 12.5	1.035	0.129	0.113	746	B41858C3687M***
820	10 × 16	0.946	0.118	0.105	846	B41858C3827M***
1000	10 × 16	0.946	0.118	0.105	846	B41858C3108M***
1200	10 × 16	0.944	0.118	0.105	846	B41858C3128M***
1500	10 × 20	0.584	0.073	0.062	1202	B41858C3158M***
1800	10 × 20	0.584	0.073	0.062	1202	B41858C3188M***
2200	12.5 × 20	0.496	0.062	0.060	1396	B41858C3228M***
2700	12.5 × 25	0.327	0.041	0.034	2028	B41858C3278M***
3300	12.5 × 25	0.327	0.041	0.034	2028	B41858C3338M***
3300	16 × 20	0.307	0.038	0.033	2146	B41858D3338M***
3900	12.5 × 40	0.240	0.030	0.025	2858	B41858C3398M***
3900	16 × 20	0.307	0.038	0.033	2146	B41858D3398M***
4700	18 × 20	0.271	0.034	0.031	2381	B41858C3478M***
5600	12.5 × 40	0.243	0.030	0.025	2858	B41858C3568M***
6800	16 × 31.5	0.192	0.024	0.022	3122	B41858C3688M***
8200	18 × 31.5	0.165	0.021	0.020	3539	B41858C3828M***
10000	18 × 35	0.160	0.020	0.018	3864	B41858C3109M***

Composition of ordering code

*** = Version

000 = for standard leads, bulk
001 = for kinked leads, bulk (for d × l = 10 × 20 mm ... 18 × 40 mm, excluding 12.5 × 30/40 mm)
002 = for cut leads, bulk (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 mm)
003 = for crimped leads, blister (for ∅ 16 ... 18 mm)
004 = for J leads, blister (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 and 18 × 40 mm)
006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for d × l = 8 × 11.5 ... 12.5 × 25 mm)
009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 20 ... 16 × 31.5 mm and 18 × 20 ... 18 × 31.5 mm)
012 = for bent 90° leads, blister (for ∅ 16 ... 18 mm)



B41858

Low impedance − 105 °C

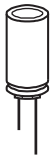
Technical data and ordering codes

C_R 120 Hz 20 °C µF	Case dimensions d × 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 105 °C mA	Ordering code (composition see below)
V_R = 16 V DC						
270	8 × 11.5	2.192	0.274	0.246	436	B41858D4277M***
330	8 × 11.5	2.192	0.274	0.246	436	B41858D4337M***
470	10 × 12.5	1.035	0.129	0.113	746	B41858C4477M***
560	10 × 16	0.944	0.118	0.105	846	B41858C4567M***
680	10 × 16	0.946	0.118	0.105	846	B41858C4687M***
820	10 × 20	0.584	0.073	0.062	1202	B41858C4827M***
1000	10 × 20	0.584	0.073	0.062	1202	B41858C4108M***
1200	10 × 20	0.584	0.073	0.062	1202	B41858C4128M***
1500	12.5 × 20	0.496	0.062	0.060	1396	B41858C4158M***
1800	12.5 × 25	0.327	0.041	0.034	2028	B41858C4188M***
2200	12.5 × 25	0.327	0.041	0.034	2028	B41858C4228M***
2700	16 × 20	0.307	0.038	0.033	2146	B41858C4278M***
3300	12.5 × 40	0.243	0.030	0.025	2858	B41858D4338M***
3300	16 × 25	0.251	0.031	0.029	2483	B41858C4338M***
3900	16 × 31.5	0.192	0.024	0.022	3122	B41858D4398M***
3900	18 × 20	0.271	0.034	0.031	2381	B41858C4398M***
4700	18 × 25	0.217	0.027	0.024	2941	B41858C4478M***
6800	18 × 31.5	0.165	0.021	0.020	3539	B41858C4688M***
8200	18 × 35	0.160	0.020	0.018	3864	B41858C4828M***
10000	18 × 40	0.125	0.016	0.015	4467	B41858C4109M***

Composition of ordering code

*** = Version

- 000 = for standard leads, bulk
- 001 = for kinked leads, bulk (for d × l = 10 × 20 mm ... 18 × 40 mm, excluding 12.5 × 30/40 mm)
- 002 = for cut leads, bulk (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 mm)
- 003 = for crimped leads, blister (for ∅ 16 ... 18 mm)
- 004 = for J leads, blister (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 and 18 × 40 mm)
- 006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
- 008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for d × l = 8 × 11.5 ... 12.5 × 25 mm)
- 009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 20 ... 16 × 31.5 mm and 18 × 20 ... 18 × 31.5 mm)
- 012 = for bent 90° leads, blister (for ∅ 16 ... 18 mm)



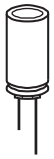
Technical data and ordering codes

C_R 120 Hz 20 °C µF	Case dimensions d × 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 105 °C mA	Ordering code (composition see below)
V_R = 25 V DC						
180	8 × 11.5	2.192	0.274	0.246	436	B41858D5187M***
220	8 × 11.5	2.192	0.274	0.246	436	B41858D5227M***
270	10 × 12.5	1.032	0.129	0.113	746	B41858C5277M***
330	10 × 12.5	1.035	0.129	0.113	746	B41858C5337M***
470	10 × 16	0.946	0.118	0.105	846	B41858C5477M***
560	10 × 16	0.944	0.118	0.105	846	B41858C5567M***
680	10 × 20	0.584	0.073	0.062	1202	B41858C5687M***
820	10 × 20	0.584	0.073	0.062	1202	B41858C5827M***
1000	12.5 × 20	0.496	0.062	0.060	1396	B41858C5108M***
1500	12.5 × 25	0.327	0.041	0.034	2028	B41858C5158M***
1800	16 × 20	0.307	0.038	0.033	2146	B41858C5188M***
2200	12.5 × 40	0.243	0.030	0.025	2858	B41858D5228M***
2200	16 × 25	0.251	0.031	0.029	2483	B41858C5228M***
2200	18 × 20	0.248	0.031	0.031	2381	B41858E5228M***
2700	16 × 31.5	0.192	0.024	0.022	3122	B41858D5278M***
2700	18 × 20	0.271	0.034	0.031	2381	B41858C5278M***
3300	18 × 25	0.217	0.027	0.024	2941	B41858C5338M***
3900	16 × 35.5	0.168	0.021	0.019	3408	B41858D5398M***
3900	18 × 31.5	0.165	0.021	0.020	3539	B41858C5398M***
4700	18 × 31.5	0.165	0.021	0.020	3539	B41858D5478M***
5600	18 × 35	0.160	0.020	0.018	3864	B41858D5568M***
6800	18 × 40	0.128	0.016	0.015	4467	B41858C5688M***

Composition of ordering code

*** = Version

- 000 = for standard leads, bulk
- 001 = for kinked leads, bulk (for d × l = 10 × 20 mm ... 18 × 40 mm, excluding 12.5 × 30/40 mm)
- 002 = for cut leads, bulk (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 mm)
- 003 = for crimped leads, blister (for ∅ 16 ... 18 mm)
- 004 = for J leads, blister (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 and 18 × 40 mm)
- 006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
- 008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for d × l = 8 × 11.5 ... 12.5 × 25 mm)
- 009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 20 ... 16 × 31.5 mm and 18 × 20 ... 18 × 31.5 mm)
- 012 = for bent 90° leads, blister (for ∅ 16 ... 18 mm)



B41858

Low impedance − 105 °C

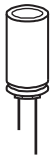
Technical data and ordering codes

C_R 120 Hz 20 °C µF	Case dimensions d × 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 105 °C mA	Ordering code (composition see below)
V_R = 35 V DC						
100	8 × 11.5	2.192	0.274	0.246	436	B41858C7107M***
120	8 × 11.5	2.192	0.274	0.246	436	B41858D7127M***
150	8 × 11.5	2.192	0.274	0.246	436	B41858C7157M***
180	10 × 12.5	1.035	0.129	0.113	746	B41858C7187M***
220	10 × 12.5	1.035	0.129	0.113	746	B41858C7227M***
330	10 × 16	0.946	0.118	0.105	846	B41858C7337M***
470	10 × 20	0.584	0.073	0.062	1202	B41858C7477M***
560	10 × 20	0.584	0.073	0.062	1202	B41858C7567M***
680	12.5 × 20	0.496	0.062	0.060	1396	B41858C7687M***
1000	12.5 × 25	0.327	0.041	0.034	2028	B41858C7108M***
1000	16 × 20	0.304	0.038	0.033	2146	B41858D7108M***
1200	16 × 20	0.307	0.038	0.033	2146	B41858C7128M***
1500	12.5 × 40	0.243	0.030	0.025	2858	B41858D7158M***
1500	16 × 25	0.251	0.031	0.029	2483	B41858C7158M***
1800	16 × 25	0.248	0.031	0.029	2483	B41858E7188M***
1800	18 × 20	0.271	0.034	0.031	2381	B41858C7188M***
2200	18 × 25	0.217	0.027	0.024	2941	B41858C7228M***
2700	18 × 31.5	0.165	0.021	0.020	3539	B41858C7278M***
3300	16 × 35.5	0.168	0.021	0.019	3408	B41858E7338M***
3300	18 × 31.5	0.165	0.021	0.020	3539	B41858D7338M***
3900	18 × 35	0.160	0.020	0.018	3864	B41858C7398M***
4700	18 × 40	0.125	0.016	0.015	4467	B41858C7478M***

Composition of ordering code

*** = Version

- 000 = for standard leads, bulk
- 001 = for kinked leads, bulk (for d × l = 10 × 20 mm ... 18 × 40 mm, excluding 12.5 × 30/40 mm)
- 002 = for cut leads, bulk (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 mm)
- 003 = for crimped leads, blister (for ∅ 16 ... 18 mm)
- 004 = for J leads, blister (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 and 18 × 40 mm)
- 006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
- 008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for d × l = 8 × 11.5 ... 12.5 × 25 mm)
- 009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 20 ... 16 × 31.5 mm and 18 × 20 ... 18 × 31.5 mm)
- 012 = for bent 90° leads, blister (for ∅ 16 ... 18 mm)



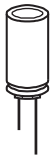
Technical data and ordering codes

C_R 120 Hz 20 °C µF	Case dimensions d × 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 105 °C mA	Ordering code (composition see below)
V_R = 50 V DC						
100	8 × 11.5	5.168	0.646	0.573	340	B41858C6107M***
120	10 × 12.5	2.984	0.373	0.336	555	B41858C6127M***
150	10 × 12.5	2.984	0.373	0.336	555	B41858C6157M***
180	10 × 16	1.400	0.175	0.160	778	B41858C6187M***
220	10 × 16	1.400	0.175	0.160	778	B41858C6227M***
330	10 × 20	1.000	0.125	0.118	1030	B41858C6337M***
470	12.5 × 20	0.880	0.110	0.104	1300	B41858C6477M***
560	12.5 × 25	0.712	0.089	0.082	1490	B41858C6567M***
680	12.5 × 30	0.360	0.045	0.043	2140	B41858C6687M***
820	12.5 × 40	0.269	0.034	0.032	2799	B41858C6827M***
820	16 × 20	0.401	0.050	0.046	1820	B41858D6827M***
1000	16 × 31.5	0.260	0.032	0.030	2653	B41858C6108M***
1000	18 × 20	0.477	0.048	0.044	1997	B41858D6108M***
1200	18 × 20	0.384	0.048	0.044	1997	B41858C6128M***
1500	18 × 25	0.382	0.038	0.036	2417	B41858C6158M***
1800	16 × 35.5	0.232	0.029	0.026	2896	B41858D6188M***
1800	18 × 31.5	0.300	0.030	0.028	2989	B41858C6188M***
2200	18 × 35	0.268	0.027	0.024	3320	B41858C6228M***
2700	18 × 40	0.210	0.021	0.020	3871	B41858C6278M***

Composition of ordering code

*** = Version

000 = for standard leads, bulk
001 = for kinked leads, bulk (for d × l = 10 × 20 mm ... 18 × 40 mm, excluding 12.5 × 30/40 mm)
002 = for cut leads, bulk (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 mm)
003 = for crimped leads, blister (for ∅ 16 ... 18 mm)
004 = for J leads, blister (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 and 18 × 40 mm)
006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for d × l = 8 × 11.5 ... 12.5 × 25 mm)
009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 20 ... 16 × 31.5 mm and 18 × 20 ... 18 × 31.5 mm)
012 = for bent 90° leads, blister (for ∅ 16 ... 18 mm)



B41858

Low impedance − 105 °C

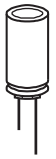
Technical data and ordering codes

C_R 120 Hz 20 °C µF	Case dimensions d × 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 105 °C mA	Ordering code (composition see below)
V_R = 63 V DC						
68	8 × 11.5	4.328	0.541	0.488	310	B41858C8686M***
100	10 × 12.5	4.616	0.577	0.500	354	B41858C8107M***
120	10 × 16	3.075	0.308	0.279	519	B41858C8127M***
150	10 × 16	2.464	0.308	0.279	519	B41858C8157M***
180	10 × 20	1.986	0.199	0.180	705	B41858C8187M***
220	10 × 20	1.592	0.199	0.180	705	B41858C8227M***
270	12.5 × 20	1.688	0.169	0.153	876	B41858C8277M***
330	12.5 × 20	1.688	0.169	0.153	876	B41858C8337M***
390	12.5 × 25	1.236	0.124	0.112	1118	B41858C8397M***
470	12.5 × 25	0.992	0.124	0.112	1118	B41858E8477M***
470	16 × 20	1.037	0.104	0.094	1272	B41858C8477M***
680	12.5 × 40	0.717	0.072	0.065	1785	B41858C8687M***
680	16 × 25	0.772	0.077	0.070	1600	B41858D8687M***
680	18 × 20	0.960	0.096	0.087	1427	B41858E8687M***
820	16 × 31.5	0.541	0.054	0.049	2092	B41858C8827M***
820	18 × 25	0.761	0.076	0.069	1735	B41858D8827M***
1000	16 × 31.5	0.540	0.054	0.049	2092	B41858C8108M***
1200	18 × 31.5	0.518	0.052	0.047	2294	B41858C8128M***
1500	18 × 35	0.441	0.044	0.040	2592	B41858C8158M***
1800	18 × 40	0.375	0.038	0.034	2967	B41858C8188M***

Composition of ordering code

*** = Version

- 000 = for standard leads, bulk
- 001 = for kinked leads, bulk (for d × l = 10 × 20 mm ... 18 × 40 mm, excluding 12.5 × 30/40 mm)
- 002 = for cut leads, bulk (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 mm)
- 003 = for crimped leads, blister (for ∅ 16 ... 18 mm)
- 004 = for J leads, blister (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 and 18 × 40 mm)
- 006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
- 008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for d × l = 8 × 11.5 ... 12.5 × 25 mm)
- 009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 20 ... 16 × 31.5 mm and 18 × 20 ... 18 × 31.5 mm)
- 012 = for bent 90° leads, blister (for ∅ 16 ... 18 mm)



Technical data and ordering codes

C_R 120 Hz 20 °C µF	Case dimensions d × 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 105 °C mA	Ordering code (composition see below)
V_R = 100 V DC						
22	8 × 11.5	12.219	1.222	1.114	205	B41858C9226M***
33	10 × 16	6.542	0.654	0.589	357	B41858C9336M***
47	10 × 20	3.688	0.461	0.423	460	B41858C9476M***
100	12.5 × 20	3.048	0.305	0.281	647	B41858C9107M***
120	12.5 × 25	2.038	0.204	0.188	864	B41858C9127M***
180	12.5 × 30	1.732	0.173	0.159	1009	B41858C9187M***
180	16 × 20	1.313	0.131	0.122	1119	B41858D9187M***
220	16 × 25	0.985	0.099	0.091	1402	B41858C9227M***
270	12.5 × 40	1.314	0.131	0.121	1309	B41858C9277M***
270	18 × 20	1.260	0.126	0.119	1220	B41858D9277M***
330	16 × 31.5	0.973	0.097	0.090	1546	B41858C9337M***
330	18 × 25	1.008	0.101	0.095	1477	B41858D9337M***
390	18 × 31.5	0.720	0.072	0.068	1907	B41858C9397M***
470	18 × 35	0.679	0.068	0.063	2061	B41858C9477M***
560	18 × 35	0.679	0.068	0.063	2061	B41858C9567M***
680	18 × 40	0.438	0.044	0.042	2683	B41858C9687M***

Composition of ordering code

*** = Version

000 = for standard leads, bulk
001 = for kinked leads, bulk (for d × l = 10 × 20 mm ... 18 × 40 mm, excluding 12.5 × 30/40 mm)
002 = for cut leads, bulk (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 mm)
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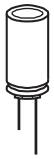
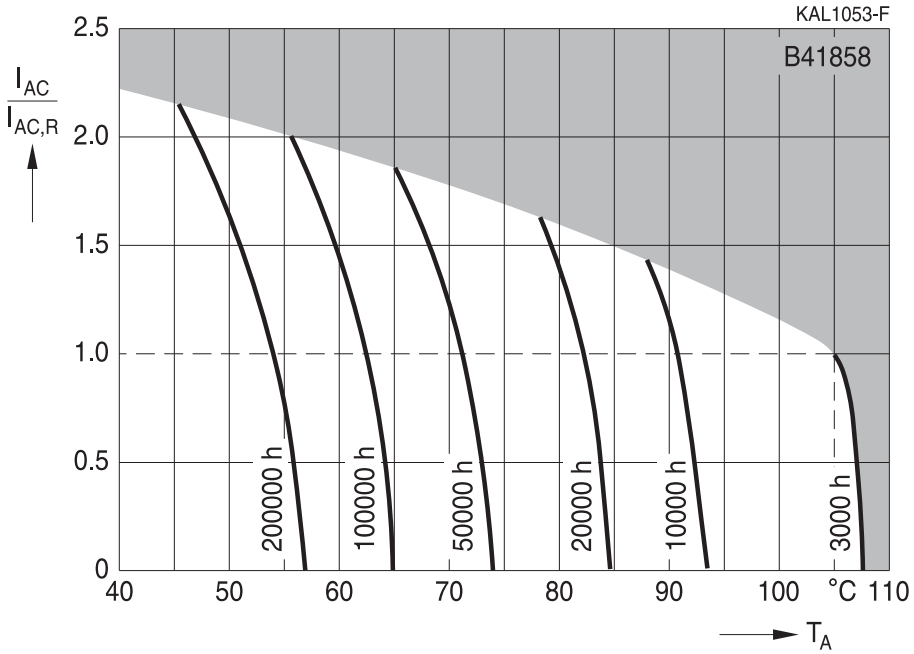
004 = for J leads, blister (for ∅ 10 ... 18 mm, excluding d × l = 12.5 × 30/40 and 18 × 40 mm)
006 = for taped leads, Ammo pack, lead spacing F = 3.5 mm (for ∅ 8 mm)
008 = for taped leads, Ammo pack, lead spacing F = 5.0 mm (for d × l = 8 × 11.5 ... 12.5 × 25 mm)
009 = for taped leads, Ammo pack, lead spacing F = 7.5 mm (for d × l = 16 × 20 ... 16 × 31.5 mm and 18 × 20 ... 18 × 31.5 mm)
012 = for bent 90° leads, blister (for ∅ 16 ... 18 mm)



Useful life[1)]

depending on ambient temperature T_A under ripple current operating conditions

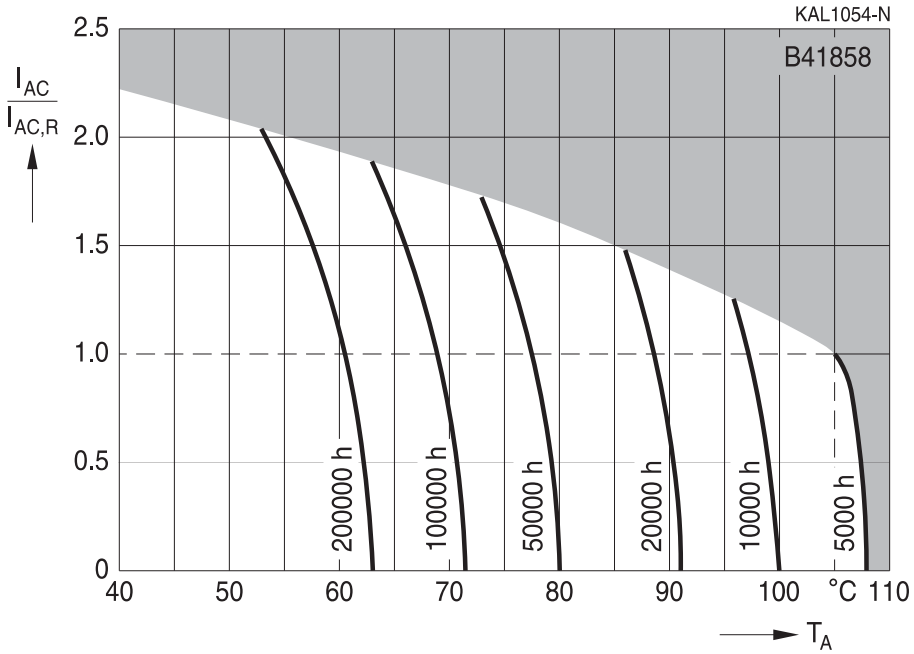
d = 8 mm



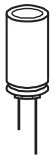
Useful life[1)]

depending on ambient temperature T_A under ripple current operating conditions

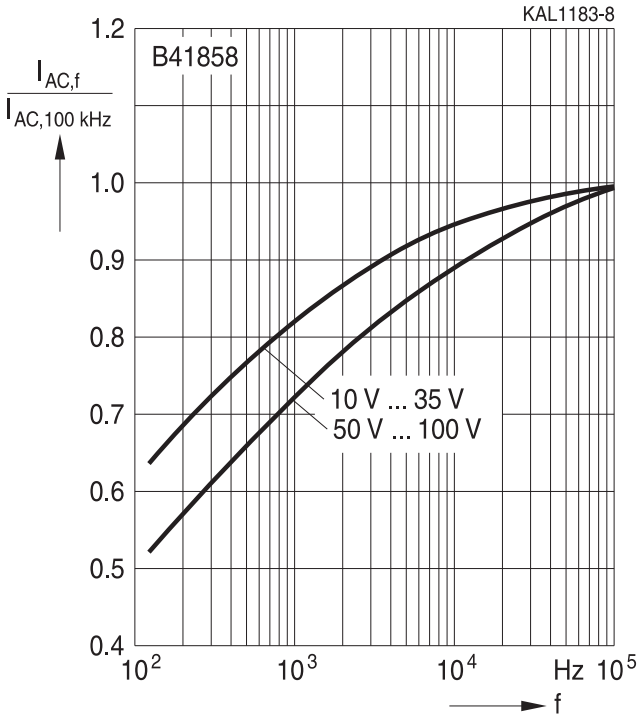
d ≥ 10 mm

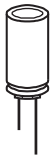


1) Refer to chapter "General technical information, 5 Useful life" on how to interpret useful life.



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





Taping, packing and lead configurations

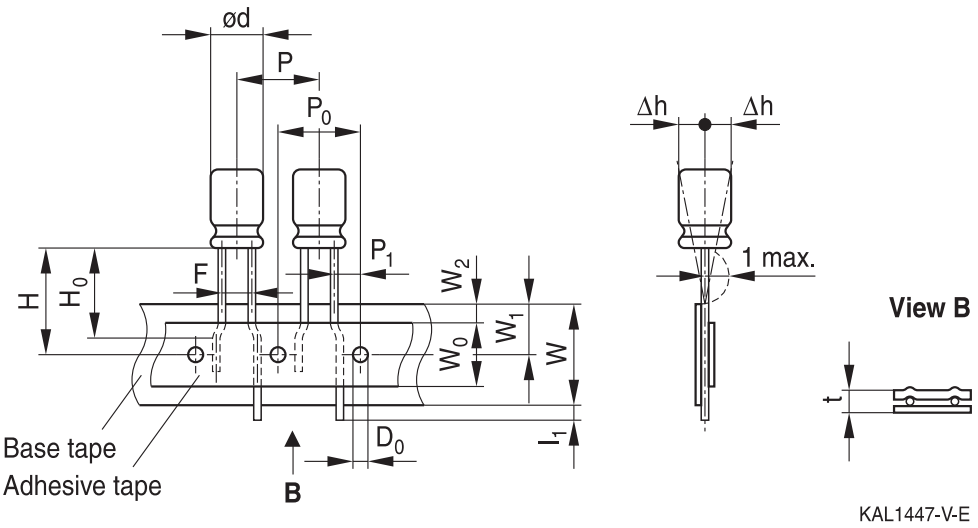
Taping

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

Lead spacing F = 3.5 mm (∅ d = 8 mm)
Lead spacing F = 5.0 mm (∅ d = 8 … 12.5 mm)
Lead spacing F = 7.5 mm (∅ d = 16 ... 18 mm).

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

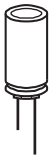
Lead spacing 3.5 mm (∅ d = 8 mm)
Last 3 digits of ordering code: 006



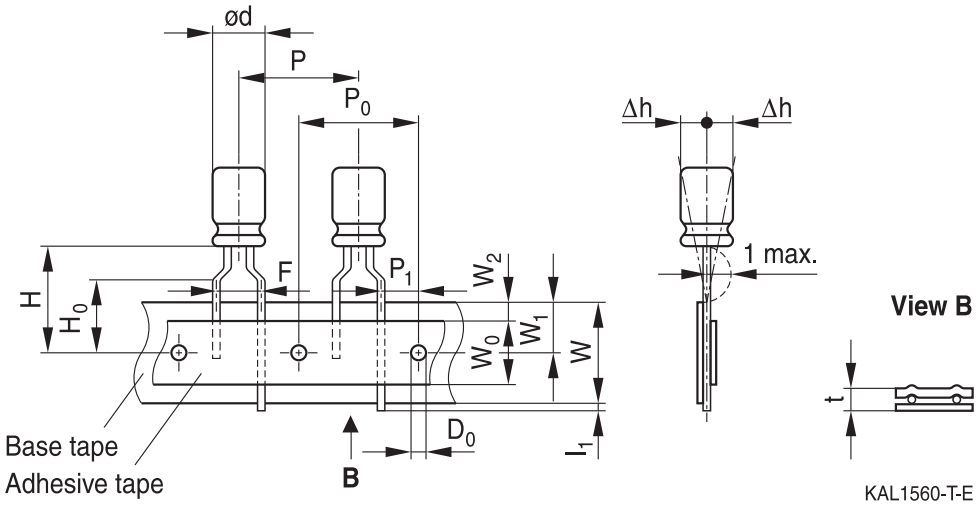
Dimensions in mm

∅ 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

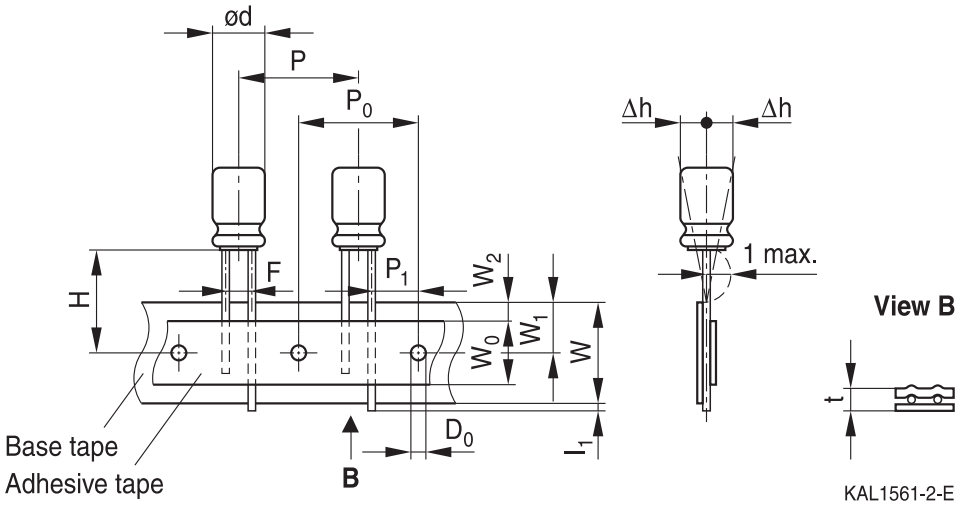
Leads can also run straight through the taping area.



Lead spacing 5.0 mm (∅ d = 8 mm)
Last 3 digits of ordering code: 008



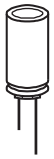
Lead spacing 5.0 mm (∅ d = 10 ... 12.5 mm)
Last 3 digits of ordering code: 008



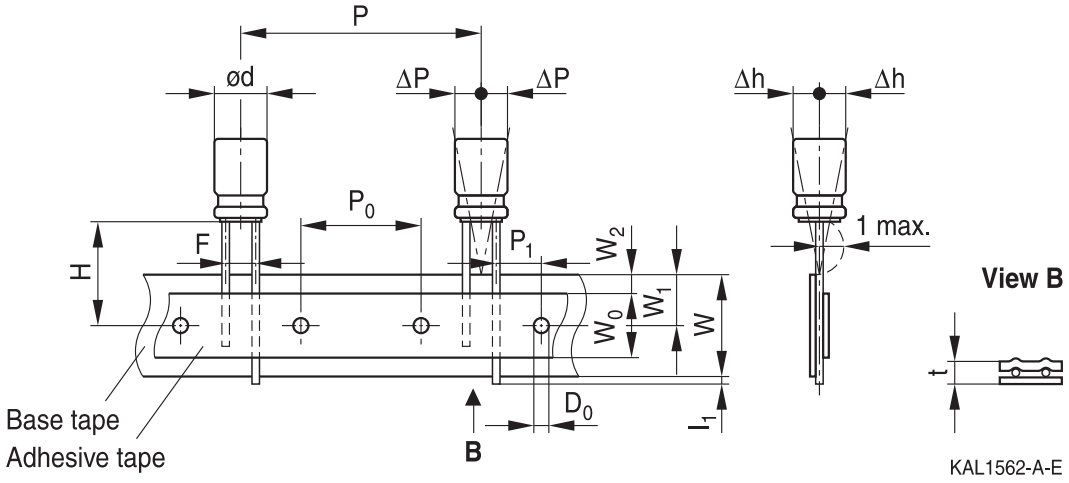
Dimensions in mm

∅ d	F	H	W	W_0	W_1	W_2	H_0	P	P_0	P_1	l_1	t	Δh	D_0
8		20.0		9.5			16.0	12.7	12.7	3.85				
10	5.0	19.0	18.0	9.5	9.0	1.5	–	12.7	12.7	3.85	1.0	0.6	1.0	4.0
12.5		19.0		11.5			–	15.0	15.0	5.0				
Toler-ance	+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 × l = 12.5 × 25 mm.



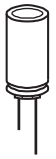
Lead spacing 7.5 mm (∅ d = 16 ...18 mm)
Last 3 digits of ordering code: 009



Dimensions in mm

∅ d	F	H	W	W_0	W_1	W_2	P	P_0	P_1	l_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 × l = 16 × 31.5 mm and 18 × 31.5 mm.



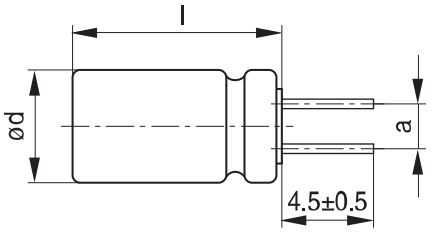
Cut or kinked leads

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

Cut leads

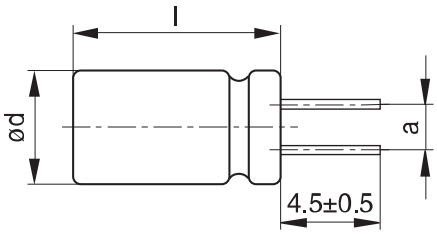
Last 3 digits of ordering code: 002

With stand-off rubber seal



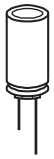
KAL1085-I

With flat rubber seal



KAL1086-R

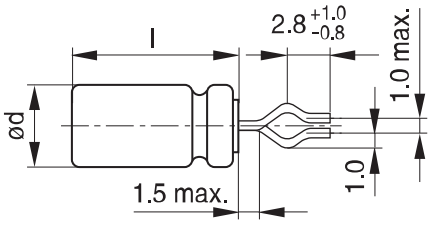
Case size d × l (mm)	Dimensions (mm) a ±0.5
10 × 12.5	5.0
10 × 16	5.0
10 × 20	5.0
12.5 × 20	5.0
12.5 × 25	5.0
16 × 20	7.5
16 × 25	7.5
16 × 31.5	7.5
16 × 35.5	7.5
18 × 20	7.5
18 × 25	7.5
18 × 31.5	7.5
18 × 35	7.5
18 × 40	7.5



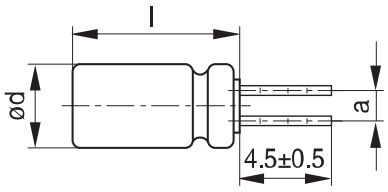
Kinked leads

Last 3 digits of ordering code: 001

With stand-off rubber seal

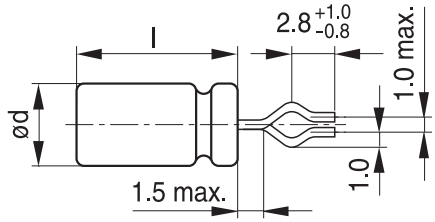


KAL1081-K

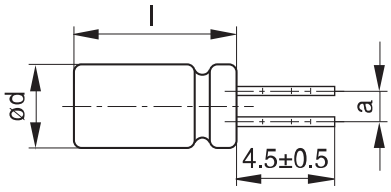


KAL1083-2

With flat rubber seal

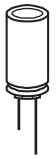


KAL1082-T



KAL1084-A

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

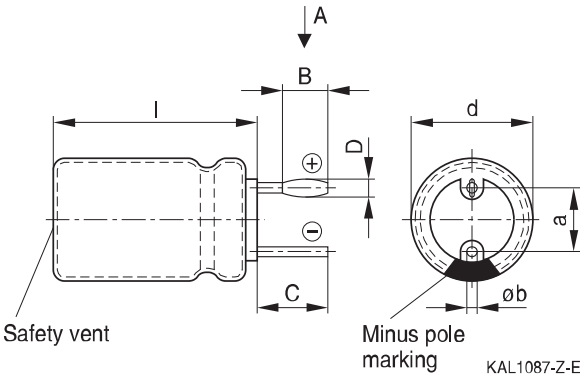


PAPR leads (Protection Against Polarity Reversal)

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 × l = 12.5 × 30/35/40 mm).
There are three configurations available: Crimped leads, J leads, bent 90° leads.

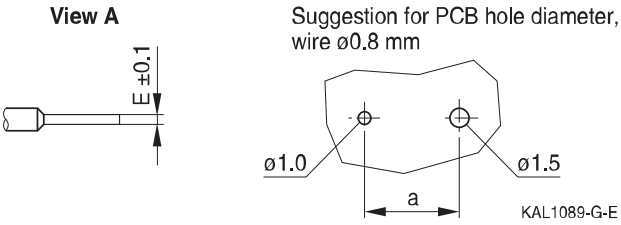
Crimped leads
Last 3 digits of ordering code: 003

With stand-off rubber seal

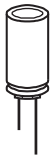


The series B41898 has no sleeve nor minus pole marking, the positive pole is marked on the aluminum case side instead.

Suggestion for PCB hole diameter

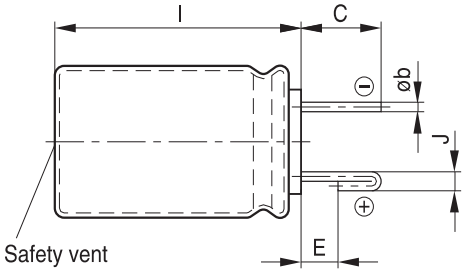


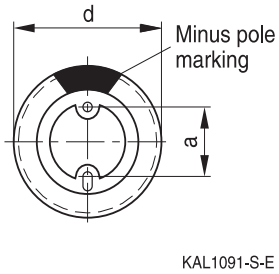
Case size	Dimensions (mm)					
d × l (mm)	B ±0.2	C ±0.5	D ±0.1	E ±0.1	a ±0.5	∅b
16 × 20	1.5	3.0	1.3	0.3	7.5	0.8 ±0.05
16 × 25	1.5	3.0	1.3	0.3	7.5	0.8 ±0.05
16 × 31.5	1.5	3.0	1.3	0.3	7.5	0.8 ±0.05
16 × 35.5	1.5	3.0	1.3	0.3	7.5	0.8 ±0.05
18 × 20	1.5	3.0	1.3	0.3	7.5	0.8 ±0.1
18 × 25	1.5	3.0	1.3	0.3	7.5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



J leads

Last 3 digits of ordering code: 004

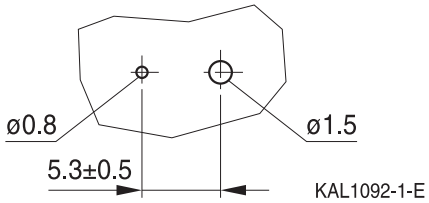




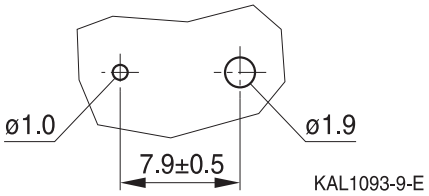
The series B41898 has no sleeve nor minus pole marking, the positive pole is marked on the aluminum case side instead.

Suggestion for PCB hole diameter

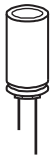
Suggestion for PCB hole diameter, wire ø0.6 mm



Suggestion for PCB hole diameter, wire ø0.8 mm

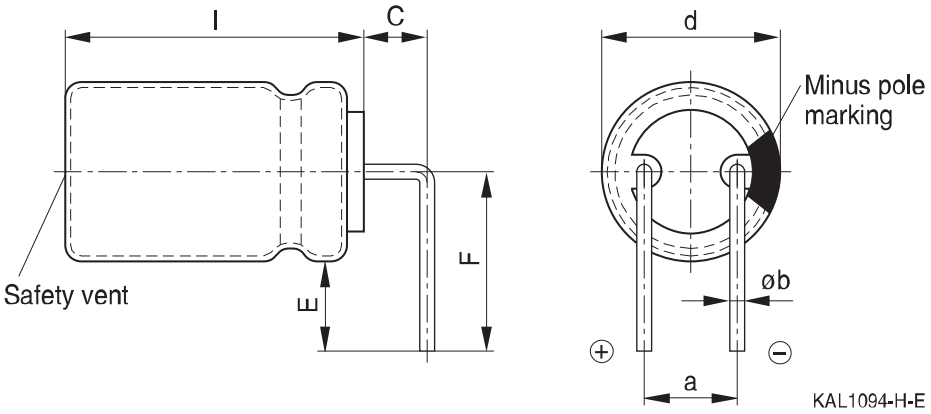


Case size	Dimensions (mm)				
d × l (mm)	C ±0.5	E ±0.5	J ±0.2	a ±0.5	∅b
10 × 12.5	3.2	0.7	1.2	5.0	0.6 ±0.05
10 × 16	3.2	0.7	1.2	5.0	0.6 ±0.05
10 × 20	3.2	0.7	1.2	5.0	0.6 ±0.05
12.5 × 20	3.2	0.7	1.2	5.0	0.6 ±0.05
12.5 × 25	3.2	0.7	1.2	5.0	0.6 ±0.05
16 × 20	3.5	0.7	1.6	7.5	0.8 ±0.05
16 × 25	3.5	0.7	1.6	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



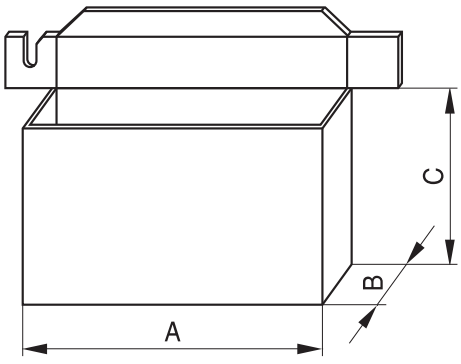
The series B41898 has no sleeve nor minus pole marking, the positive pole is marked on the aluminum case side instead.

Case size	Dimensions (mm)				
d × l (mm)	C ±0.5	E ±0.5	F ±0.5	a ±0.5	∅b
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

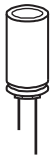
Bent leads for diameter 12.5 mm available upon request.

Packing units and box dimensions

Ammo pack



Case size d × l	Dimensions (mm)			Packing units
mm	A_{max}	B_{max}	C_{max}	pcs.
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 mm	Standard, bulk pcs.	Taped, Ammo pack pcs.			Kinked leads, bulk pcs.	Cut leads, bulk pcs.	Crimped leads, blister pcs.	J leads, blister pcs.	Bent 90° leads, blister 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 **006** **008** **009**	F (mm) 3.5 5 7.5	d (mm) 8 8...12.5 16...18	**001**	**002**	**003**	**004**	**012**

1) Available upon request