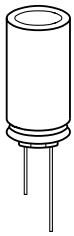
General-purpose grade capacitors
Standard series



KAL0707-F

Applications

- For applications where the capacitor is submitted to voltage inversion
- Audio frequency dividers
- For filtering, coupling and pulse circuits

Features

- Miniaturized dimensions

Construction

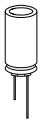
- Radial leads
- Non polarized
- Charge-discharge proof
- Aluminum case with insulating sleeve
- Stand off rubber seal
- Case with safety vent from diameter 6,3 mm

Delivery mode

Special terminal configurations and packing

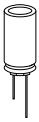
- Bulk
- Taped, Ammo pack
- Cut
- Kinked
- PAPR (protection against polarity reversal)

Refer to page 503 for further details and ordering example.



Specifications and characteristics in brief

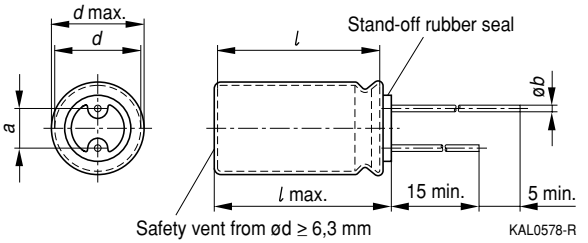
Rated voltage U_R	10 … 100 VDC	
Surge voltage U_S	1,15 · U_R	
Rated capacitance C_R	0,47 … 1 000 µF	
Capacitance tolerance	± 20 % ≙ M	
Useful life		Requirements:
85 °C; U_R; $I_{\sim R}$	> 2 000 h	$\Delta C/C$ ≤ ± 45 % of initial value
40 °C; U_R; $I_{\sim R}$	> 100 000 h	tan δ ≤ 3 times initial specified limit
		I_L ≤ initial specified limit
		Failure percentage: ≤ 1 %
		Failure rate: ≤ 100 fit (≤ 100 · 10^{-9}/h)
		(for definiton “fit”, refer to chapter *“Quality”*, page 62)
Voltage endurance test		Post test requirements:
85 °C; U_R	1 000 h with the polarity inverted every 250 h	ΔC/C ≤ ± 20 % of initial value
		tan δ ≤ 1,5 times initial specified limit
		I_L ≤ initial specified limit
Vibration resistance	To IEC 60068-2-6, test Fc: displacement amplitude 0,75 mm, frequency range 10 … 2000 Hz, acceleration max.10 *g*, duration 3 × 2 h	
IEC climatic category	To IEC 60068-1: 40/085/56 (– 40 °C/+ 85 °C/56 days damp heat test)	
Sectional specification	IEC 60384-4	



B42822

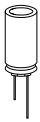
Bipolar – 85 °C

Dimensional drawing



Dimensions and weights

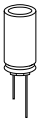
Dimensions (mm)				Approx. weight
$d \times l$	$d_{max} \times l_{max}$	$a \pm 0{,}5$	b	g
5 × 11	5,5 × 12	2,0	0,50 ± 0,05	0,5
6,3 × 11	6,8 × 12	2,5	0,50 ± 0,05	0,7
8 × 11	8,5 × 12	3,5	0,60 ± 0,05	1,0
10 × 12,5	10,5 × 13,5	5,0	0,60 ± 0,05	1,6
10 × 16	10,5 × 17	5,0	0,60 ± 0,05	1,9
10 × 20	10,5 × 22	5,0	0,60 ± 0,05	2,6
12,5 × 25	13 × 27	5,0	0,60 ± 0,05	4,5
16 × 25	16,5 × 27	7,5	0,80 ± 0,05	7,5
16 × 31,5	16,5 × 33,5	7,5	0,80 ± 0,05	7,8
18 × 35	18,5 × 36	7,5	0,80 ± 0,1	13



Overview of available types

U_R (VDC)	10	16	25	35	50	100
C_R (µF)	Case dimensions $d \times l$ (mm)					
0,47					5 × 11	5 × 11
1					5 × 11	5 × 11
2,2					5 × 11	6,3 × 11
3,3					5 × 11	6,3 × 11
4,7			5 × 11	5 × 11	5 × 11	8 × 11
10		5 × 11	5 × 11		8 × 11	10 × 12,5
22	5 × 11	6,3 × 11	8 × 11		10 × 12,5	10 × 16
33	6,3 × 11	8 × 11			10 × 20	10 × 20
47	6,3 × 11	8 × 11		10 × 12,5	10 × 20	12,5 × 25
100		10 × 12,5		10 × 20	12,5 × 25	16 × 25
150						16 × 31,5
220	10 × 20	10 × 20	12,5 × 25		16 × 25	18 × 35
330		12,5 × 25	12,5 × 25		16 × 31,5	
470		12,5 × 25		16 × 31,5		
1 000	16 × 25					

Other capacitance and voltage ratings are available upon request.



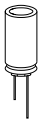
B42822

Bipolar – 85 °C

Technical data and ordering codes

U_R VDC	C_R 120 Hz 20 °C µF	Case dimensions $d \times l$ mm	$I_{L,\,max}$ 5 min 20 °C µA	tan δ_{max} 120 Hz 20 °C	ESR_{max} 120 Hz 20 °C Ω	$I_{\sim R}$ 120 Hz 85 °C mA	Ordering code[1)]
10	22	5 × 11	6,6	0,20	12	33	B42822A3226M00*
	33	6,3 × 11	9,9	0,20	8,0	46	B42822A3336M00*
	47	6,3 × 11	14	0,20	5,6	55	B42822A3476M00*
	220	10 × 20	6	0,20	1,2	201	B42822A3227M00*
	1 000	16 × 25	300	0,20	0,26	594	B42822A3108M00*
16	10	5 × 11	4,8	0,16	21	25	B42822A4106M00*
	22	6,3 × 11	10,6	0,16	9,7	42	B42822A4226M00*
	33	8 × 11	16	0,16	6,4	60	B42822A4336M00*
	47	8 × 11	23	0,16	4,5	72	B42822A4476M00*
	100	10 × 12,5	48	0,16	2,1	124	B42822A4107M00*
	220	10 × 20	106	0,16	0,96	225	B42822A4227M00*
	330	12,5 × 25	158	0,16	0,64	337	B42822A4337M00*
	470	12,5 × 25	226	0,16	0,45	402	B42822A4477M00*
25	4,7	5 × 11	3,5	0,16	45	17	B42822A5475M00*
	10	5 × 11	7,5	0,16	21	25	B42822A5106M00*
	22	8 × 11	17	0,16	9,7	49	B42822A5226M00*
	220	12,5 × 25	165	0,16	0,96	275	B42822A5227M00*
	330	12,5 × 25	248	0,16	0,64	337	B42822A5337M00*
35	4,7	5 × 11	4,9	0,15	40	18	B42822A7475M00*
	47	10 × 12,5	49	0,15	3,9	91	B42822A7476M00*
	100	10 × 20	105	0,15	1,9	162	B42822A7107M00*
	470	16 × 31,5	494	0,15	0,39	533	B42822A7477M00*

1) * = "0" for bulk version.
For taping versions, other lead configurations and packing information see page 503.



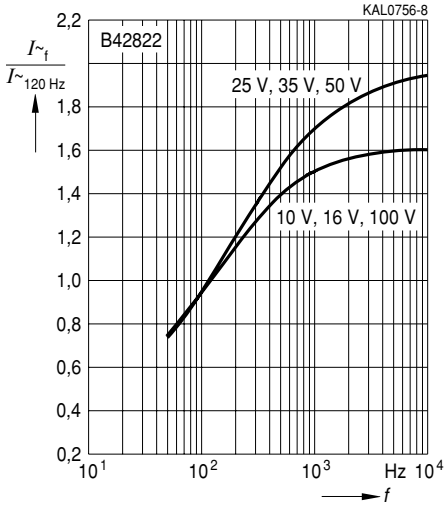
Technical data and ordering codes

U_R VDC	C_R 120 Hz 20 °C µF	Case dimensions $d \times l$ mm	$I_{L,\,max}$ 5 min 20 °C µA	tan δ_{max} 120 Hz 20 °C	ESR_{max} 120 Hz 20 °C Ω	$I_{\sim R}$ 120 Hz 85 °C mA	Ordering code[1]
50	0,47	5 × 11	3,0	0,15	339	6,0	B42822A6474M00*
	1,0	5 × 11	3,0	0,15	159	9,0	B42822A6105M00*
	2,2	5 × 11	3,5	0,15	72	14	B42822A6225M00*
	3,3	5 × 11	4,9	0,15	48	17	B42822A6335M00*
	4,7	5 × 11	7,0	0,15	34	30	B42822F6475M00*
	10	8 × 11	15	0,15	16	38	B42822A6106M00*
	22	10 × 12,5	33	0,15	7,2	67	B42822A6226M00*
	33	10 × 20	50	0,15	4,8	101	B42822A6336M00*
	47	10 × 20	71	0,15	3,4	120	B42822A6476M00*
	100	12,5 × 25	150	0,15	1,6	214	B42822A6107M00*
	220	16 × 25	330	0,15	0,72	357	B42822A6227M00*
	330	16 × 31,5	495	0,15	0,50	484	B42822A6337M00*
100	0,47	5 × 11	5,0	0,12	423	9,0	B42822A9474M00*
	1,0	5 × 11	5,0	0,12	199	12	B42822A9105M00*
	2,2	6,3 × 11	8,8	0,12	90	27	B42822A9225M00*
	3,3	6,3 × 11	13	0,12	60	31	B42822A9335M00*
	4,7	8 × 11	19	0,12	42	47	B42822A9475M00*
	10	10 × 12,5	40	0,12	20	68	B42822A9106M00*
	22	10 × 16	88	0,12	9,0	108	B42822A9226M00*
	33	10 × 20	132	0,12	6,0	155	B42822A9336M00*
	47	12,5 × 25	188	0,12	4,2	192	B42822A9476M00*
	100	16 × 25	400	0,12	2,0	350	B42822A9107M00*
	150	16 × 31,5	600	0,12	1,3	460	B42822A9157M00*
	220	18 × 35	880	0,12	0,90	580	B42822A9227M00*

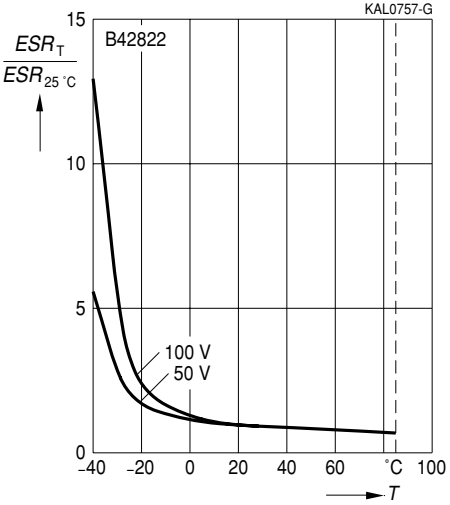
Preferred types

1) * = "0" for bulk version.
For taping versions, other lead configurations and packing information see page 503.

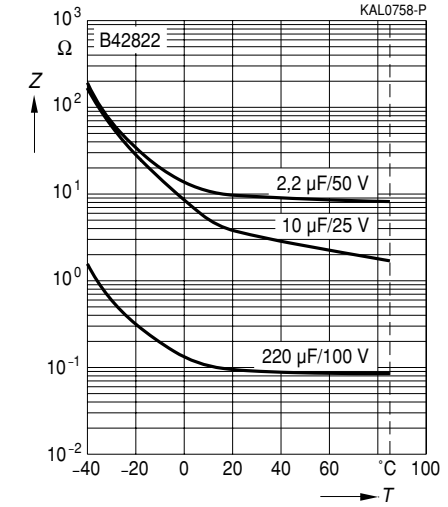
Frequency factor of permissible ripple current *I~*
versus frequency *f*



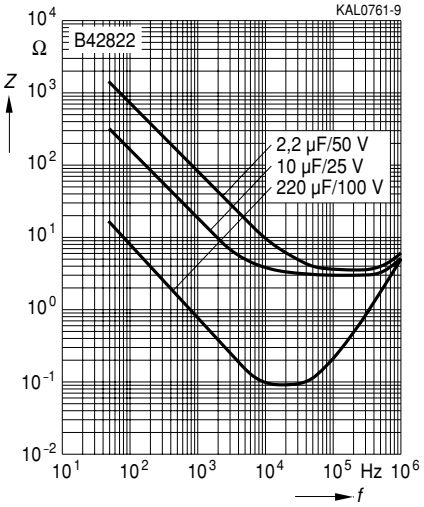
Equivalent series resistance *ESR*
at *f* = 120 Hz versus temperature *T*
Typical behavior

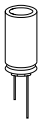


Impedance Z at *f* = 10 kHz
versus temperature *T*
Typical behavior

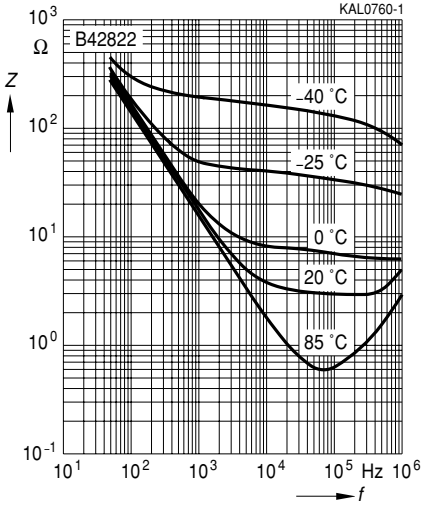


Impedance Z
versus frequency *f*
Typical behavior at 20 °C

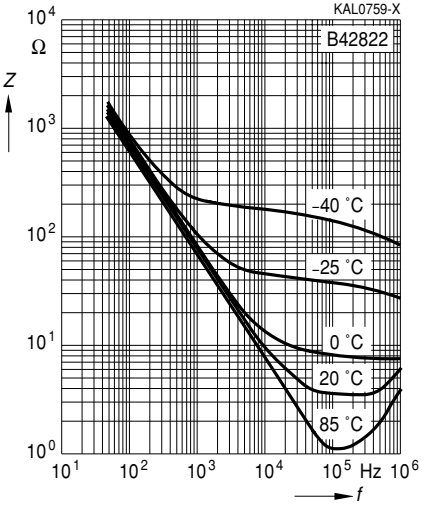




Impedance Z
versus frequency *f* and temperature *T*
for 10 µF/25 V
Typical behavior



Impedance Z
versus frequency *f* and temperature *T*
for 2,2 µF/50 V
Typical behavior



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