

General-purpose grade capacitors
Standard series

Applications

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

Features

- Miniaturized dimensions

Construction

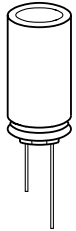
- Radial leads
- Non polarized
- Charge-discharge proof
- Aluminum case with insulating sleeve
- Stand off rubber seal
- Case with safety vent from diameter 6,3 mm

Delivery mode

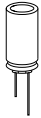
Special terminal configurations and packing

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

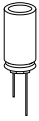
Refer to page 503 for further details and ordering example.



KAL0707-F


Specifications and characteristics in brief

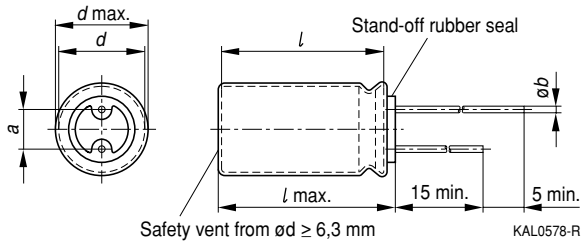
Rated voltage U_R	10 ... 100 VDC	
Surge voltage U_S	$1,15 \cdot U_R$	
Rated capacitance C_R	0,47 ... 1 000 μ F	
Capacitance tolerance	$\pm 20 \% \triangleq M$	
Useful life 85 °C; U_R ; $I_{\sim R}$ 40 °C; U_R ; $I_{\sim R}$	> 2 000 h > 100 000 h	Requirements: $\Delta C/C \leq \pm 45 \%$ of initial value $\tan \delta \leq 3$ times initial specified limit $I_L \leq$ initial specified limit Failure percentage: $\leq 1 \%$ Failure rate: ≤ 100 fit ($\leq 100 \cdot 10^{-9}/h$) (for definiton "fit", refer to chapter "Quality", page 62)
Voltage endurance test 85 °C; U_R	1 000 h with the polarity inverted every 250 h	Post test requirements: $\Delta C/C \leq \pm 20 \%$ of initial value $\tan \delta \leq 1,5$ times initial specified limit $I_L \leq$ 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

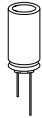
Bipolar – 85 °C

Dimensional drawing



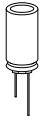
Dimensions and weights

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 (μ F)	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	$\tan \delta_{\max}$ 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.

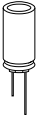

Technical data and ordering codes

U_R VDC	C_R 120 Hz 20 °C μF	Case dimensions $d \times l$ mm	$I_{L, \max}$ 5 min 20 °C μA	$\tan \delta_{\max}$ 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.

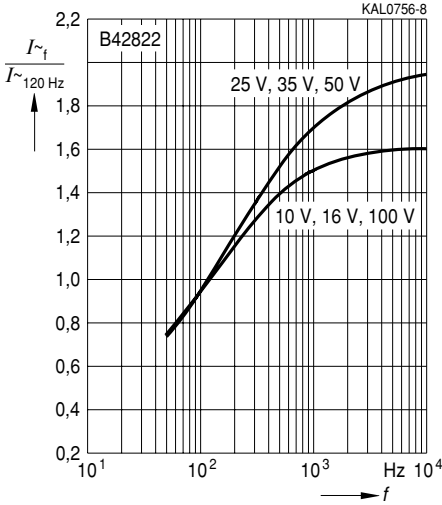
For taping versions, other lead configurations and packing information see page 503.



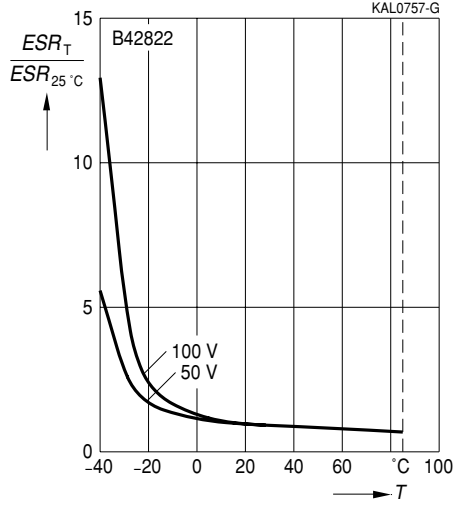
B42822

Bipolar – 85 °C

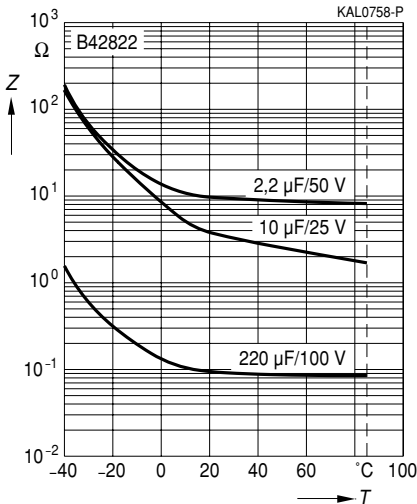
Frequency factor of permissible ripple current I_{\sim} versus frequency f



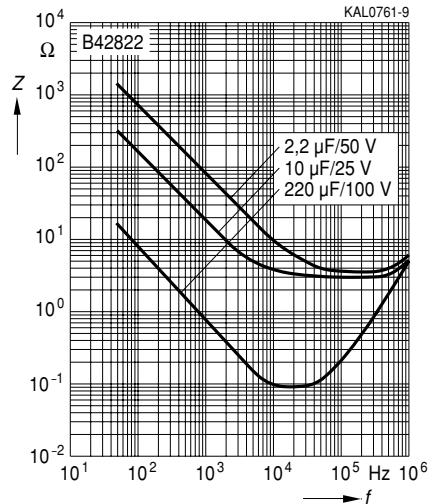
Equivalent series resistance ESR at $f = 120 \text{ Hz}$ versus temperature T
Typical behavior

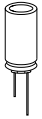


Impedance Z at $f = 10 \text{ kHz}$ versus temperature T
Typical behavior



Impedance Z versus frequency f
Typical behavior at 20 °C



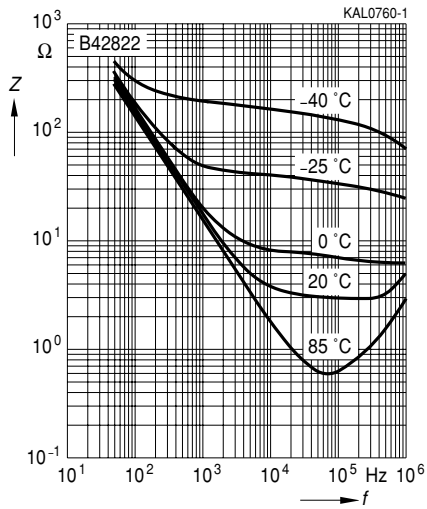


Impedance Z

versus frequency f and temperature T

for 10 μ F/25 V

Typical behavior

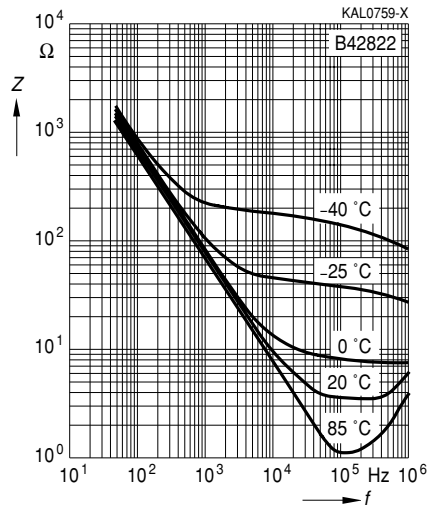


Impedance Z

versus frequency f and temperature T

for 2,2 μ F/50 V

Typical behavior



Herausgegeben von EPCOS AG

Unternehmenskommunikation, Postfach 80 17 09, 81617 München, DEUTSCHLAND

☎ ++49 89 636 09, FAX (0 89) 636-2 26 89

© EPCOS AG 2002. Vervielfältigung, Veröffentlichung, Verbreitung und Verwertung dieser Broschüre und ihres Inhalts ohne ausdrückliche Genehmigung der EPCOS AG nicht gestattet.

Bestellungen unterliegen den vom ZVEI empfohlenen Allgemeinen Lieferbedingungen für Erzeugnisse und Leistungen der Elektroindustrie, soweit nichts anderes vereinbart wird.

Diese Broschüre ersetzt die vorige Ausgabe.

Fragen über Technik, Preise und Liefermöglichkeiten richten Sie bitte an den Ihnen nächstgelegenen Vertrieb der EPCOS AG oder an unsere Vertriebsgesellschaften im Ausland. Bauelemente können aufgrund technischer Erfordernisse Gefahrstoffe enthalten. Auskünfte darüber bitten wir unter Angabe des betreffenden Typs ebenfalls über die zuständige Vertriebsgesellschaft einzuholen.

Published by EPCOS AG

Corporate Communications, P.O. Box 80 17 09, 81617 Munich, GERMANY

☎ ++49 89 636 09, FAX (0 89) 636-2 26 89

© EPCOS AG 2002. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.