

Applications

- Electronic ballasts

Features

- Very long useful life
- High ripple current capability
- High voltage capability
550 V / 85 °C / 500 h
500 V / 105 °C / 4 000 h
- Outstanding performance

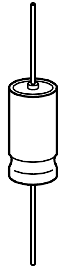
Construction

- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Negative pole connected to case
- Axial leads, welded to ensure perfect electrical contact

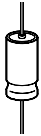
Taping and packing

- Bulk
- Pallet package
- Capacitors with $d \times l \leq 16 \times 30$ mm are also available taped on reel.

For details on taping and packing, refer to page 342.



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Specifications and characteristics in brief

Rated voltage U_R	450 VDC				
Surge voltage U_S	550 V at 85 °C, 500 V at 105 °C				
Rated capacitance C_R	6,8 ... 33 μ F				
Capacitance tolerance	– 10/+ 30 % $\triangle$ Q				
Leakage current I_L (5 min, 20 °C)	$I_L \leq 0,3 \mu A \cdot \left(\frac{C_R}{\mu F} \cdot \frac{U_R}{V} \right)^{0,7} + 4 \mu A$				
Self-inductance ESL ¹⁾	Diameter d	12 mm	14 mm	16 mm	18 mm
	Length l	Approx. ESL (nH)			
	25 mm	—	22	26	—
	30 mm	21	24	29	34
	39 mm	—	—	33	38
Useful life		Requirements:			
105 °C; U_R ; $I_{\sim R}$	> 10 000 h	$\Delta C/C \leq \pm 30$ % of initial value			
105 °C; 500 V; $I_{\sim R}$	> 4 000 h	$ESR \leq 3$ times initial specified limit			
85 °C; U_R ; $I_{\sim max}$	> 25 000 h	$I_L \leq$ initial specified limit			
85 °C; U_R ; $I_{\sim R}$	> 50 000 h	Failure percentage: ≤ 1 %			
75 °C; 500 V; $I_{\sim R}$	> 50 000 h	Failure rate: ≤ 20 fit ($\leq 20 \cdot 10^{-9}/h$)			
40 °C; U_R ; $2,2 \cdot I_{\sim R}$	> 250 000 h	(for definiton “fit”, refer to chapter “Quality”, page 62)			
Voltage endurance test	5 000 h	Post test requirements:			
105 °C; U_R		$\Delta C/C \leq \pm 10$ % of initial value			
		$ESR \leq 1,3$ % 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 Hz to 55 Hz, acceleration max. 10 g, duration 3×2 h				
IEC climatic category	To IEC 60068-1: 40/105/56 (– 40 °C/+ 105 °C/56 days damp heat test)				
Detail specification	Similar to CECC 30301-801				
Sectional specification	IEC 60384-4				

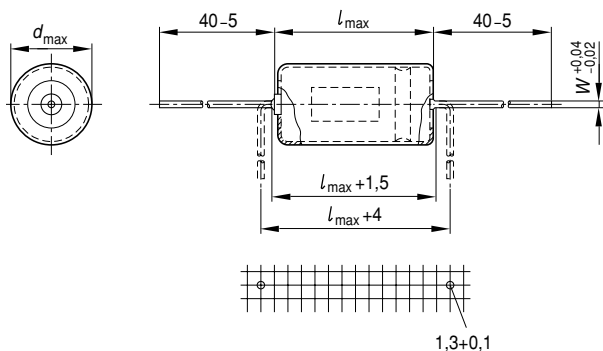
1) If optimum circuit design is used, the values are lower by 30 %.



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High Performance – 105 °C

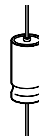
Dimensional drawings



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Dimensions, weights and packing units

$d \times l$ mm	$d_{\max} \times l_{\max}$ mm	Wire W mm	Approx. weight g	Packing units (pieces)		
				Bulk	Reel	Pallet
12 × 30	12,5 × 30,5	0,8	5,1	600	450	288
14 × 30	14,5 × 30,5	0,8	6,8	400	350	200
16 × 30	16,5 × 30,5	0,8	8,9	350	250	180
16 × 39	16,5 × 40	0,8	11,7	300	—	180
18 × 39	18,5 × 40	1,0	14,7	250	—	160



Case dimensions and ordering codes

U_R	C_R	Case dim. $d \times l$	Ordering code		
VDC	μF	mm	Bulk	Pallet package	Reel
450	6,8	12 × 30	B43698A5685Q000	B43698A5685Q007	B43698A5685Q009
	10	14 × 30	B43698A5106Q000	B43698A5106Q007	B43698A5106Q009
	15	16 × 30	B43698A5156Q000	B43698A5156Q007	B43698A5156Q009
	22	16 × 39	B43698A5226Q000	B43698A5226Q007	
	33	18 × 39	B43698A5336Q000	B43698A5336Q007	

Technical data

C_R	ESR_{typ}	ESR_{max}	ESR_{max}	ESR_{max}	Z_{max}	$I_{~max}$	$I_{~max}$	$I_{~R}$
100 Hz	100 Hz	100 Hz	100 Hz	10 kHz	100 kHz	10 kHz	10 kHz	10 kHz
20 °C	20 °C	20 °C	–25 °C	20 °C	20 °C	40 °C	85 °C	105 °C
μF	Ω	Ω	Ω	Ω	Ω	A	A	A
450 VDC								
6,8	7,2	12,0	180	5,5	5,4	1,00	0,82	0,43
10	4,9	8,1	120	3,8	3,7	1,30	1,05	0,55
15	3,2	5,4	80	2,5	2,4	1,75	1,35	0,73
22	2,2	3,7	50	1,7	1,6	2,40	1,90	1,00
33	1,5	2,5	40	1,2	1,1	3,00	2,40	1,25

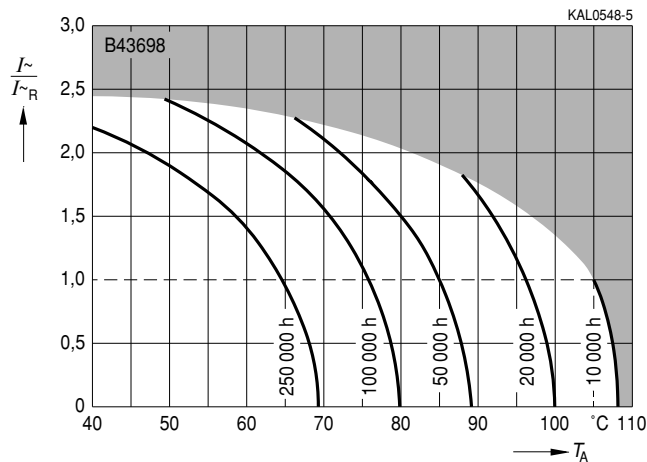


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High Performance – 105 °C

Useful life

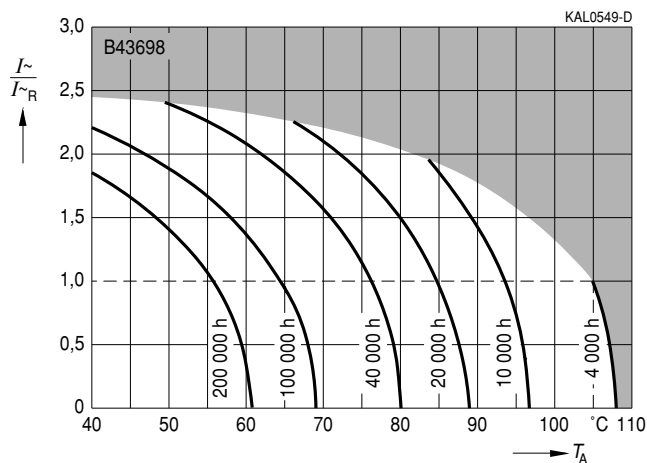
depending on ambient temperature T_A under ripple current operating conditions at $U_R^{1)}$



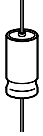
Useful life

depending on ambient temperature T_A under ripple current operating conditions at $U_{op}^{1)}$

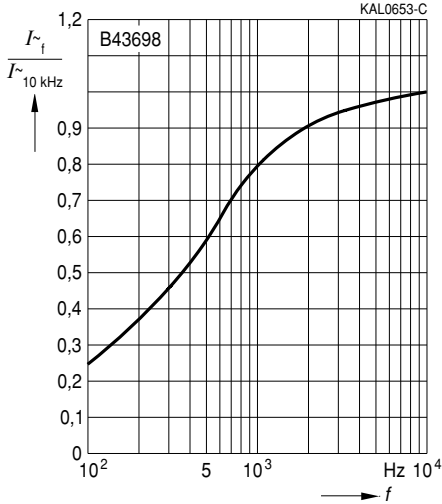
$U_{op} = 500 \text{ V}$



1) Refer to page 40 for an explanation on how to interpret the useful life graphs.

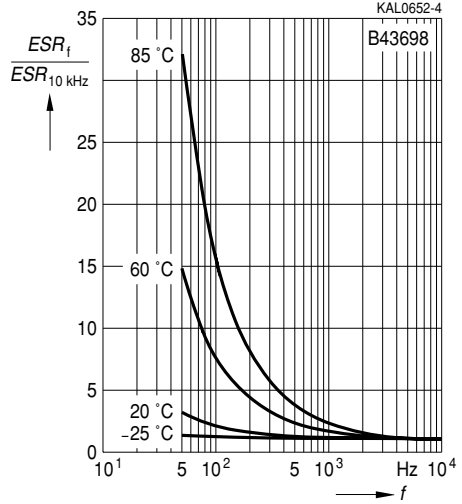


Frequency factor of permissible ripple current $I_{\sim}$ versus frequency f



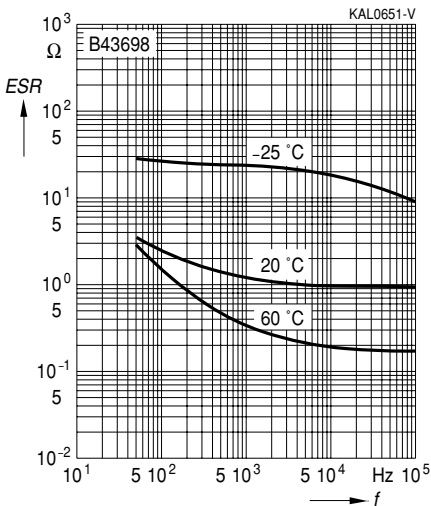
Frequency characteristics of ESR at different temperatures

Typical behavior



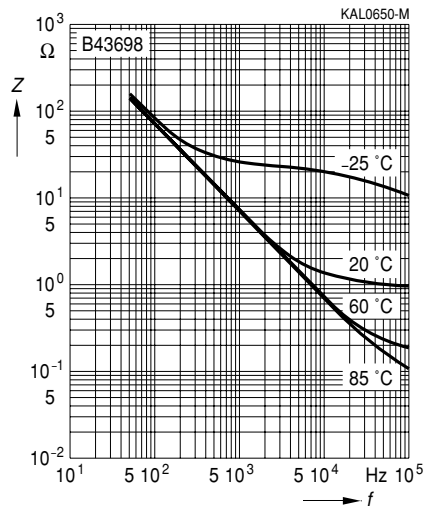
Equivalent series resistance ESR versus frequency f at different temperatures

Typical behavior for 22 $\mu\text{F}/450 \text{ V}$



Impedance Z versus frequency f at different temperatures

Typical behavior for 22 $\mu\text{F}/450 \text{ V}$



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