



General purpose grade capacitors
Ultra-miniaturized dimensions

Applications

- General-purpose applications, mainly used in compact electronic equipments

Features

- Ultra-miniaturized dimensions
- Low profile

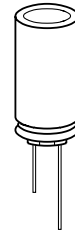
Construction

- Dimension 4 × 5 mm
- Charge-discharge proof, polar
- Aluminum case with insulating sleeve
- Minus pole marking on the insulating sleeve
- Stand off rubber seal

Delivery mode

- Bulk
- Taped, Ammo pack

Refer to page 503 for further details and ordering example.



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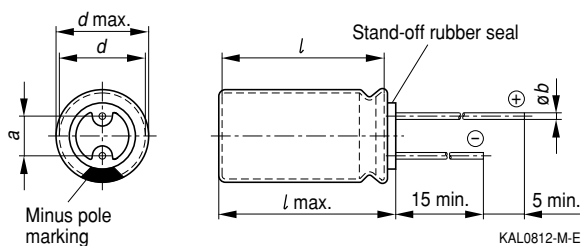
Low Profile – 85 °C



Specifications and characteristics in brief

Rated voltage U_R	6,3 ... 50 VDC	
Surge voltage U_S	$1,15 \cdot U_R$	
Rated capacitance C_R	0,1 ... 22 μ F	
Capacitance tolerance	$\pm 20 \% \triangleq M$	
Useful life 85 °C; U_R ; I_{-R} 40 °C; U_R ; $1,3 \cdot I_{-R}$	> 1 000 h > 40 000 h	Requirements: $\Delta C/C \leq \pm 50 \%$ of initial value $\tan \delta \leq 3$ times initial specified limit $I_L \leq$ initial specified limit Failure percentage: $\leq 3 \%$ 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	Post test requirements: $\Delta C/C \leq \pm 25 \%$ of initial value $\tan \delta \leq 2$ 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	

Dimensional drawing



Dimensions and weight

Dimensions (mm)				Approx. weight g
$d \times l$	$d_{max} \times l_{max}$	$a \pm 0,5$	b	
4×5	$4,5 \times 6$	1,5	$0,45 \pm 0,05$	0,3



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Low Profile – 85 °C

Overview of available types

U_R (VDC)	6,3	10	16	35	50
C_R (μF)	Case dimensions $d \times l$ (mm)				
0,10					4 × 5
0,22					4 × 5
0,33					4 × 5
0,47					4 × 5
1,0					4 × 5
2,2					4 × 5
3,3				4 × 5	4 × 5
4,7				4 × 5	
10			4 × 5		
15		4 × 5			
22	4 × 5				

Other capacitance and voltage ratings are available upon request.

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⁾
6,3	22	4 × 5	3,0	0,22	14	22	B41820A2226M00*
10	15	4 × 5	3,0	0,20	18	20	B41820A3156M00*
16	10	4 × 5	3,0	0,17	23	18	B41820A4106M00*
35	3,3	4 × 5	3,0	0,12	48	12	B41820A7335M00*
	4,7	4 × 5	3,0	0,12	34	14	B41820A7475M00*
50	0,10	4 × 5	3,0	0,10	1 326	1,0	B41820A6104M00*
	0,22	4 × 5	3,0	0,10	603	2,0	B41820A6224M00*
	0,33	4 × 5	3,0	0,10	402	4,0	B41820A6334M00*
	0,47	4 × 5	3,0	0,10	282	5,0	B41820A6474M00*
	1,0	4 × 5	3,0	0,10	133	7,0	B41820A6105M00*
	2,2	4 × 5	3,0	0,10	60	11	B41820A6225M00*
	3,3	4 × 5	3,0	0,10	40	13	B41820A6335M00*

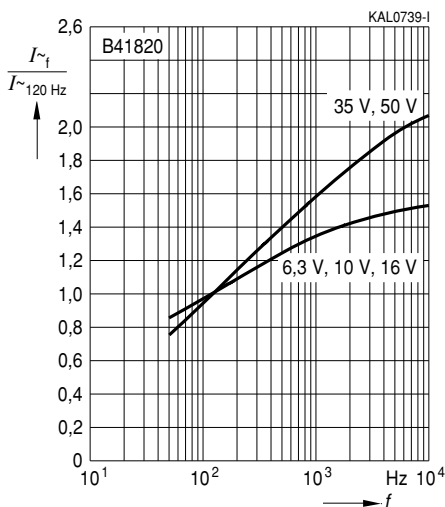
Preferred types

1) * = "0" for bulk version.

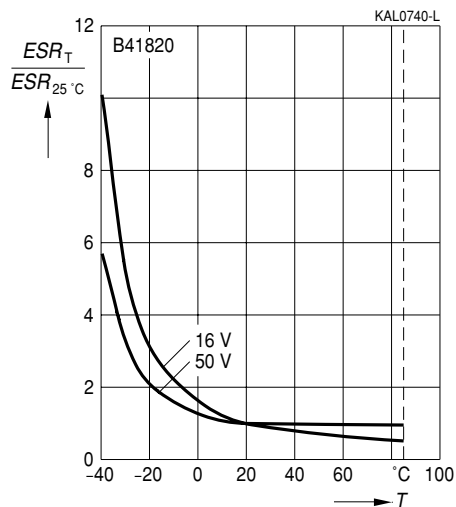
For taping versions, other lead configurations and packing information see page 503.



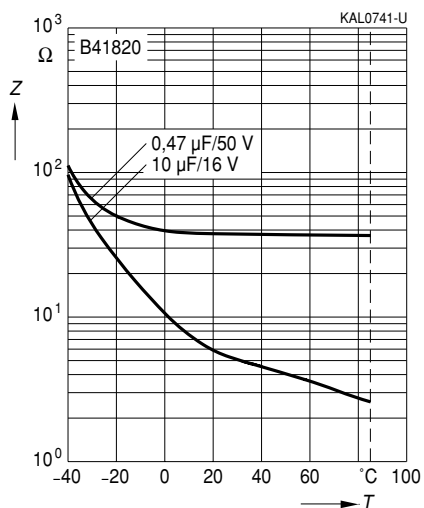
Frequency factor of permissible ripple current I_{\sim} versus frequency f



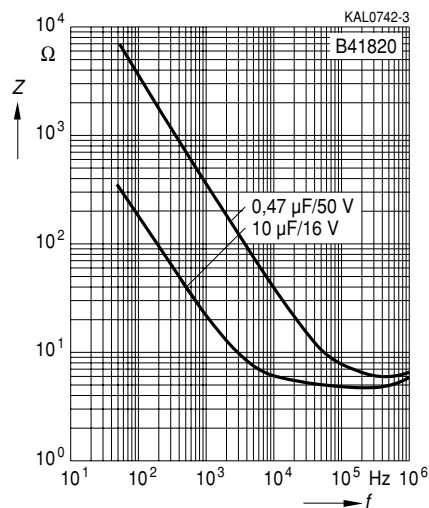
Equivalent series resistance ESR at $f = 120$ Hz versus temperature T
Typical behavior

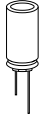


Impedance Z at $f = 10$ kHz versus temperature T
Typical behavior



Impedance Z versus frequency f
Typical behavior at 20 °C

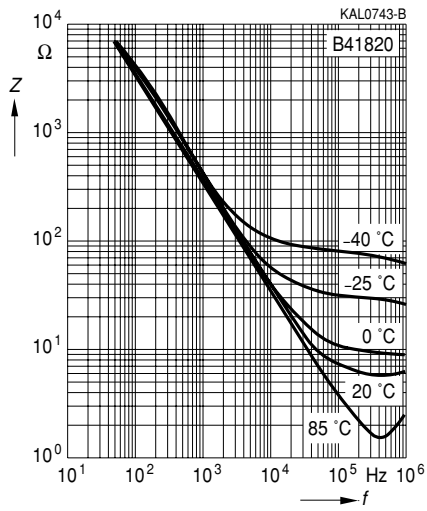




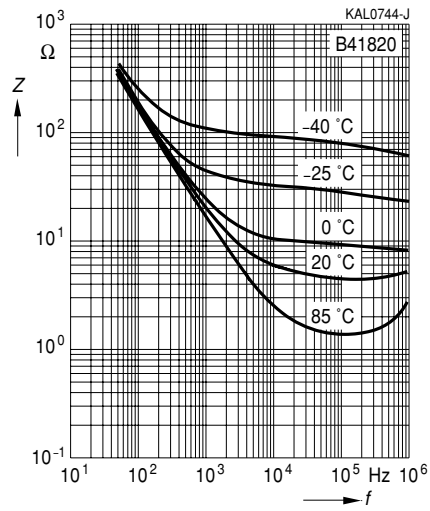
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Low Profile – 85 °C

Impedance Z
versus frequency f and temperature T
for 0,47 $\mu\text{F}/50\text{ V}$
Typical behavior



Impedance Z
versus frequency f and temperature T
for 10 $\mu\text{F}/16\text{ V}$
Typical behavior at 20 °C



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