

# **Aluminum Electrolytic Capacitors**

Capacitors with screw terminals

Series/Type: B43704, B43724

Date: September 22, 2016

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B43704, B43724

High ripple current - 85 °C 高纹波电流型 - 85 °C

### Long life grade capacitors 长寿命级电容器

#### **Applications**

#### 应用

- Wind power converters and solar inverters 风能变流器和太阳能逆变器
- Professional power supplies 专业电源
- Uninterruptible power supplies 不间断电源

#### **Features**

#### 特点

- High CV product, i.e. very compact 高容量高电压电容器,紧凑型
- High reliability and very high ripple current capability 高可靠性与超高耐纹波电流能力
- All-welded constructions ensure reliable electrical contact 全焊结构,确保可靠的电气接触性
- PAPR terminals available (Protection Against Polarity reversal) 可选PAPR型端子(带极性颠倒保护)
- RoHS-compatible 符合RoHS要求

#### Construction

#### 结构

- Charge/discharge-proof, polar 耐充放电,有极性
- Aluminum case with insulating sleeve 铝质外壳,带绝缘套管
- Poles with screw terminal connections 螺钉连接电极
- Mounting with ring clips, clamps or threaded stud 采用卡夹/卡环或底部螺栓安装
- The bases with threaded stud types are not insulated. 带螺栓的型号底部不绝缘



Capacitors with screw terminals 螺钉式电容器 B43704, B43724									
High ripple current − 85 °C 高纹波电流型 − 85 °C									
Specifications and cha	Specifications and characteristics in brief								
规格性能参数一览表									
Rated voltage V <sub>R</sub>	400 55	O V DC							
额定电压V <sub>R</sub>									
Surge voltage V <sub>S</sub>	1.10 · V <sub>R</sub>								
浪涌电压V <sub>S</sub>	-40 °C	. OF OC							
Operating temperature range	-40 °C	+65 °C							
工作温度范围									
Rated capacitance C <sub>R</sub>	820 18	000 uF							
额定电容量CR									
(20 °C,120 Hz)									
Capacitance tolerance	±20% (M)								
电容量公差									
Dissipation factor (max.)									
损耗正切角(最大值) 20 ℃, 120 Hz.	0.2								
Leakage current I <sub>leak</sub>		/ C.p.	$V_{P}$ \ $^{0.85}$						
(20 °C,after 5 minutes)	$I_{leak} \le 0.02$	$0\mu A \cdot \left(\frac{C_R}{\mu F}\right)$	$\left(\frac{V}{V}\right)$ -	+ 4μ <i>A</i>					
漏电流 I <sub>leak</sub> (20 ℃, 5分		\pi_	• /						
钟后)									
Useful life	400 V	550 V	Require	ments	要求:				
使用寿命	500 V	330 V	△C/C	≤ ±15	% of initi	al value	初始值的±	15%	
(85 °C, V <sub>R</sub> , I <sub>AC,R</sub> )			tan δ	≤ 1.75	times ini	tial speci	fied limit 1	1.75倍初如	台规定值
	>12000 h	>8000 h	I <sub>leak</sub>			-	始规定值	- 11 1 1027	
Shelf life									
储存寿命		ge for 1000			-			•	
		test after re ours before	_	-	S. Alter te	esi. V <sub>R</sub> ic	be applie	ed 101 30 1	ninutes,
		应is belore 贮存1000小			- 由灾。	2.必须答:	今 <b>体田</b> 寿命	5河岸山水	+甘由性
		预处理方》							
		3,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							
Frequency multiplier for	d (mm)	VR (V DC)			120 Hz	300 Hz	1 kHz	10 kHz	20 kHz
rated ripple current (Guiding values)*	51.6	450 550		0.94	1.00	1.23	1.42	1.50	1.50
额定纹波电流频率系数		400	0.72	0.94	1.00	1.22	1.39	1.44	1.42
(参考值)*	64.3	500, 550 450	0.71	0.94	1.00	1.23	1.40	1.47	1.46
٠٠٠/	04.3	400	0.72	0.94	1.00	1.22	1.36	1.36	1.32
	76.9	500, 550	0.73	0.95	1.00	1.21	1.35	1.33	1.30
	90	550	30						
	76.9	450	0.70	0.05	4.00	4.00	4.00	4.00	4.04
	90	450, 500	0.73	0.95	1.00	1.20	1.32	1.26	1.21
	76.9	400	0.75	0.96	1.00	1.16	1.23	1.17	1.13
	90	400	0.76	0.95	1.00	1.15	1.21	1.11	1.05

<sup>\*</sup>Frequency and temperature multipliers are intended for guidance purpose only. In general, each single capacitor has individual values. Please refer to the AlCap Useful Life Calculation Tool, available from EPCOS web page (Design Support > Design Tools > Aluminum Electrolytic Capacitors > AlCap Useful Life Calculation Tool). \*频率和温度的额定纹波电流系数仅为参考值,具体计算请使用在EPCOS官网上的铝电解电容寿命计算工具。



Capacitors with screw terminals 螺钉式电容器 B43704, B43724										
High ripple current - 85 ℃ 高纹波电流型 - 85 ℃										
Temperature multipliers	d (mm)	VR (V DC)	l (mm)	+40 °C	+50 °C	+60 °C	+70 °C	+85 °C		
for rated ripple current	51.6, 64.3		all	2.0	1.8	1.7	1.5	1.0		
at natural convection	76.9	400	l≤156.2	2.0	1.0	1.7		1.0		
(Guiding values)*	76.9	450	l≥168.7	1.9	1.8	1.6	1.4	1.0		
额定纹波电流温度系数	90		all	1.5	1.0	1.0	1.7	1.0		
自然冷却(参考值)*	51.6, 64.3	500	all	2.3	2.1	1.9	1.6	1.0		
	76.9		l≤156.2	2.0	۷. ۱	1.0	1.0	1.0		
	76.9	000	l≥168.7	2.2	2.1	1.8	1.6	1.0		
	90		all	2.2	2.1	1.0	1.0			
	51.6, 64.3		all	2.5	2.3	2.0	1.7	1.0		
	76.9	550	l≤156.2	2.0	2.0	2.0	1.7	1.0		
	76.9	330	l≥168.7	2.4	2.2	1.9	1.6	1.0		
	90		all	۷.٦	2.2	1.0	1.0	1.0		
Sectional specification 分规范	IEC 60384	4								

<sup>\*</sup>Frequency and temperature multipliers are intended for guidance purpose only. In general, each single capacitor has individual values. Please refer to the AlCap Useful Life Calculation Tool, available from EPCOS web page (Design Support > Design Tools > Aluminum Electrolytic Capacitors > AlCap Useful Life Calculation Tool). \*频率和温度的额定纹波电流系数仅为参考值,具体计算请使用在EPCOS官网上的铝电解电容寿命计算工具。



B43704, B43724

### High ripple current - 85 °C 高纹波电流型 - 85 °C

### Ripple current capability

### 耐纹波电流能力

Due to the ripple current capability of the contact elements, the following current upper limits must not be exceed:

因为接触元件的耐纹波电流能力限制,工作电流不得超过下表的极限值

Capacitor diameter 电容器直径	51.6 mm	64.3 mm	76.9 mm	90 mm
I <sub>AC,max</sub>	45 A	60 A	67 A	80 A

### **Dimensional drawings**

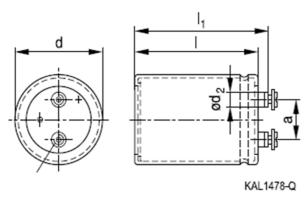
尺寸图

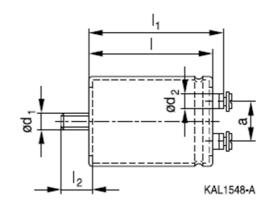
#### B43704

Ring clip/clamp mounting 卡环或卡夹安装

#### B43724

Threaded stud mounting 底部螺栓安装





M5: Min. reach of screw = 9.5 mm M5: 螺纹最小深度 = 9.5 mm

M6: Min. reach of screw = 12 mm M6: 螺纹最小深度 = 12 mm

Positive pole marking: +

正极标志: +

For types with threaded stud the bases is not insulated. Also refer to the mounting instructions in chapter "Capacitors with screw terminals - Accessories".

带底部螺栓,底部不绝缘。安装说明,参阅章节"螺钉式电容器 - 附件"。

Screw terminals with UNF threads are available upon request.

带UNF螺纹的螺钉产品可以供应

The can is insulated with one sleeve layer

铝壳以单层套管绝缘



B43704, B43724

High ripple current - 85 ℃ 高纹波电流型 - 85 ℃

**Dimensions and weights** 

尺寸与重量

Terminal 端子	` ,							Approx. weight (g)
ر (االح	d d	1 ± 1	l <sub>1</sub> ± 1	l <sub>2</sub> +0/ -1	d <sub>1</sub>	d <sub>2</sub> max.	a +0.2/-0.4	
		80.7	87.2					220
		96.7	103.2					250
M5	51.6 +0.5/-1	105.7	112.2			10.2	22.2	280
		118.2	124.7					320
		130.7	137.2					350
		80.7	87.2					370
		96.7	103.2					400
M5	64.3 +0.5/-1	105.7	112.2			13.2	28.5	440
IVIO	04.3 +0.3/-1	118.2	124.7			13.2	20.5	510
		130.7	137.2					600
		143.2	149.7					630
		96.7	102.5					570
		105.7	111.5	17	M12			620
		118.2	124.0					700
		130.7	136.5					800
M6	76.9 +0.5/-1	143.2	149.0			17.7	31.7	840
		156.2	162.0					920
		168.7	174.5					1000
		190.7	196.5					1150
		220.7	226.5					1300
		120	125.3					1000
		144.5	149.8					1200
M6	90 +0.5/-1.5	170.0	175.3			17.7	31.7	1400
		197.0	202.3					1700
		221.0	226.3					1900



Capacitors with screw terminals 螺钉式电容器 B43704, B43724

High ripple current - 85 ℃ 高纹波电流型 - 85 ℃

## **Packing**

### 包装

Capacitor diameter	Packing units (pcs.) 包装单位(件)				
电容器直径	包装单位 (件)				
51.6 mm	22				
64.3 mm	15				

Capacitor diameter 电容器直径	Length 长度	Packing units (pcs.) 包装单位 (件)
76.9 mm	All	12
90 mm	All	8

For ecological reasons the packing is pure cardboard. 为保护生态环境,包装仅使用纸板.

#### **Accessories**

#### 附件

The following items are included in the delivery package, but are not fastened to the capacitors: 以下物品已包含在交货包装中,但没有固定到电容器上:

	Thread	Toothed washers	Screws/nuts	Maximum torque
	螺纹	带齿垫圈	螺钉或螺帽	最大扭矩
For terminals	M5	A5.1 DIN6797	Outer hex-cross screw with	2.5 Nm
用于端 <del>了</del>			spring and plain washer M5 x 10	thread depth
			外六角十字型螺钉及弹垫垫圈和	t≥ 8 mm
			平垫圈 M5×10	
	M6	A6.4 DIN6797	Outer hex-cross screw with	4.0 Nm
			spring and plain washer M6 x 12	thread depth
			外六角十字型螺钉及弹垫垫圈和	t≥ 9.5 mm
			平垫圈 M6 x 12	
For mounting <sup>1)</sup>	M12	J 12.5 DIN 6797	Hex nut BM 12 DIN 439	10 Nm
用于安装 <sup>1)</sup>			六角螺母 BM 12 DIN 439	

The following items must be ordered separately. For details, refer to chapter "Screw terminals – accessories" 以下物品需要另外购买。详情参阅章节"螺钉式电容器一附件"。

Item	Type
物品	型号
Ring clips	B44030
卡环	
Clamps for capacitors with d≥64.3 mm	B44030
电容器用卡夹, d≥64.3 mm	
Insulating parts	B44020
绝缘部件	

<sup>&</sup>lt;sup>1)</sup>with different mounting method, this item is not always required. it will be delivered upon customer request accordingly.

由于安装方式不同,该配件不一定都适用。仅当客户提出需求时,EPCOS将配送该部件。



B43704, B43724

High ripple current - 85 ℃ 高纹波电流型 - 85 ℃

Technical dates and ordering codes 技术参数与订货编码

$\overline{V_R}$	C	Coop	ECD	ı	lı .	
<b>v</b> R	C <sub>R</sub>	Case	ESR <sub>typ</sub>	I <sub>AC,max</sub>	I <sub>AC,R</sub>	
	120 Hz	dimensions	120 Hz	120 Hz	120 Hz	Ordering code
	20 °C	d × l	20 °C	60 ºC	85 °C	Graeming seas
V DC	μF	mm	mΩ	Α	Α	
400	1500	51.6 x 80.7	70	14.1	8.25	B437*4A9158M0##
	1800	51.6 x 96.7	60	16.3	9.59	B437*4A9188M0##
	2200	51.6 x 105.7	50	18.7	10.9	B437*4A9228M0##
	2700	51.6 x 118.2	38	21.6	12.6	B437*4A9278M0##
	3300	64.3 x 96.7	32	24.4	14.2	B437*4A9338M0##
	3900	64.3 x 105.7	28	27.3	15.9	B437*4A9398M0##
	4700	64.3 x 130.7	22	31.1	18.2	B437*4A9478M0##
	4700	76.9 x 96.7	24	31.6	18.4	B437*4B9478M0##
	5600	64.3 x 143.2	19	35.1	20.5	B437*4A9568M0##
	5600	76.9 x 118.2	19	35.6	20.8	B437*4B9568M0##
	6800	76.9 x 130.7	16	40.2	23.5	B437*4A9688M0##
	8200	76.9 x 156.2	13	45.6	26.6	B437*4A9828M0##
	8200	90.0 x 120.0	13	48.0	28.9	B437*4B9828M0##
	10000	76.9 x 168.7	11	52.1	31.4	B437*4A9109M0##
	10000	90.0 x 144.5	11	54.4	32.8	B437*4B9109M0##
	12000	76.9 x 220.7	9.2	59.4	36.0	B437*4A9129M0##
	12000	90.0 x 170.0	9.2	61.1	36.9	B437*4B9129M0##
	15000	90.0 x 197.0	7.4	70.6	42.7	B437*4A9159M0##
	18000	90.0 x 221.0	6.3	79.9	48.3	B437*4A9189M0##

# Composition of ordering code 订货编码规则

# \*= Mounting style 装配方式

0 = for capacitors with ring clip/clamp mounting

带卡环固定的电容器

2 = for capacitors with threaded stud 带底部螺栓电容器 ## = Design 设计

00 = for standard capacitors 标准型号

50 = for terminals with PAPR style PAPR型端子



B43704, B43724

High ripple current - 85 ℃ 高纹波电流型 - 85 ℃

Technical dates and ordering codes 技术参数与订货编码

				П	T	
$V_R$	C <sub>R</sub> 120 Hz	Case dimensions	ESR <sub>typ</sub> 120 Hz	I <sub>AC,max</sub> 120 Hz	I <sub>AC,R</sub> 120 Hz	
	20 °C	d x l	20 °C	60 °C	85 °C	Ordering code
\ / <b>D</b> O		mm	mΩ			
V DC	μF			Α	Α	
450	1200	51.6 x 80.7	75	12.7	7.54	B437*4A5128M0##
	1500	51.6 x 96.7	60	15.2	8.99	B437*4A5158M0##
	1800	51.6 x 105.7	50	17.2	10.1	B437*4A5188M0##
	1800	64.3 x 80.7	50	17.4	10.3	B437*4B5188M0##
	2200	51.6 x 118.2	40	19.8	11.7	B437*4A5228M0##
	2200	64.3 x 96.7	40	19.8	11.7	B437*4B5228M0##
	2700	64.3 x 96.7	34	22.5	13.3	B437*4A5278M0##
	3300	64.3 x 118.2	28	25.8	15.2	B437*4A5338M0##
	3300	76.9 x 96.7	28	26.9	15.9	B437*4B5338M0##
	3900	64.3 x 130.7	24	29.0	17.1	B437*4A5398M0##
	3900	76.9 x 105.7	24	29.7	17.5	B437*4B5398M0##
	4700	76.9 x 118.2	20	33.4	19.7	B437*4A5478M0##
	5600	76.9 x 130.7	17	37.4	22.1	B437*4A5568M0##
	5600	90.0 x 120.0	17	40.0	24.5	B437*4B5568M0##
	6800	76.9 x 156.2	14	42.6	25.2	B437*4A5688M0##
	6800	90.0 x 144.5	14	45.0	27.5	B437*4B5688M0##
	8200	76.9 x 190.7	12	48.5	29.7	B437*4A5828M0##
	8200	90.0 x 144.5	12	50.5	30.8	B437*4B5828M0##
	10000	76.9 x 220.7	9.7	55.9	34.2	B437*4A5109M0##
	10000	90.0 x 170.0	9.7	57.3	35.0	B437*4B5109M0##
	12000	90.0 x 197.0	8.1	64.7	39.5	B437*4A5129M0##

### Composition of ordering code

# 订货编码规则

- \*= Mounting style 装配方式
  - 0 = for capacitors with ring clip/clamp mounting

带卡环固定的电容器

2 = for capacitors with threaded stud 带底部螺栓电容器 ## = Design

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Technical dates and ordering codes 技术参数与订货编码

17						
$V_R$	$C_R$	Case	$ESR_{typ}$	$I_{AC,max}$	$I_{AC,R}$	
	120 Hz	dimensions	120 Hz		120 Hz	Ordering code
	20 °C	d × l	20 °C	60 °C	85°C	
V DC	μF	mm	mΩ	Α	Α	
500	820	51.6 x 80.7	100	10.4	5.42	B437*4A6827M0##
	1000	51.6 x 96.7	85	11.8	6.19	B437*4A6108M0##
	1200	51.6 x 96.7	70	13.4	7.00	B437*4A6128M0##
	1500	51.6 x 118.2	55	15.7	8.18	B437*4A6158M0##
	1500	64.3 x 80.7	60	15.8	8.25	B437*4B6158M0##
	1800	51.6 x 130.7	50	17.9	9.34	B437*4A6188M0##
	1800	64.3 x 96.7	50	17.8	9.29	B437*4B6188M0##
	2200	64.3 x 105.7	40	20.3	10.6	B437*4A6228M0##
	2700	64.3 x 118.2	32	23.4	12.1	B437*4A6278M0##
	2700	76.9 x 96.7	32	24.2	12.6	B437*4B6278M0##
	3300	64.3 x 143.2	26	26.9	14.0	B437*4A6338M0##
	3300	76.9 x 118.2	26	27.5	14.3	B437*4B6338M0##
	3900	76.9 x 130.7	22	30.6	15.9	B437*4A6398M0##
	4700	76.9 x 143.2	19	34.6	18.0	B437*4A6478M0##
	4700	90.0 x 120.0	19	37.0	19.7	B437*4B6478M0##
	5600	76.9 x 168.7	16	39.4	21.0	B437*4A6568M0##
	5600	90.0 x 144.5	16	41.1	21.9	B437*4B6568M0##
	6800	76.9 x 190.7	13	45.2	24.1	B437*4A6688M0##
	6800	90.0 x 170.0	13	46.4	24.8	B437*4B6688M0##
	8200	76.9 x 220.7	11	51.8	27.6	B437*4A6828M0##
	8200	90.0 x 197.0	11	52.4	28.0	B437*4B6828M0##
	10000	90.0 x 221.0	9	60.0	32.0	B437*4A6109M0##

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Technical dates and ordering codes 技术参数与订货编码

recimiea	dates and or	dering bodes 及作多	双一切处理吗			
$V_R$	C <sub>R</sub> 120 Hz 20 °C	Case dimensions d x I	ESR <sub>typ</sub> 120 Hz 20 °C	I <sub>AC,max</sub> 120 Hz 60 °C	I <sub>AC,R</sub> 120 Hz 85 ºC	Ordering code
V DC	μF	mm	mΩ	А	Α	
550	820	51.6 x 80.7	120	10.3	5.11	B437*4A7827M0##
	1000	51.6 x 96.7	100	11.7	5.83	B437*4A7108M0##
	1200	51.6 x 105.7	85	13.3	6.62	B437*4A7128M0##
	1200	64.3 x 80.7	85	13.6	6.75	B437*4B7128M0##
	1500	51.6 x 130.7	65	15.6	7.77	B437*4A7158M0##
	1500	64.3 x 96.7	65	15.6	7.78	B437*4B7158M0##
	1800	64.3 x 96.7	55	17.6	8.75	B437*4A7188M0##
	2200	64.3 x 118.2	45	20.2	10.0	B437*4A7228M0##
	2200	76.9 x 96.7	45	21.1	10.4	B437*4B7228M0##
	2700	64.3 x 130.7	38	23.3	11.5	B437*4A7278M0##
	2700	76.9 x 105.7	38	24.0	11.8	B437*4B7278M0##
	3300	76.9 x 118.2	32	27.2	13.5	B437*4A7338M0##
	3900	76.9 x 143.2	26	30.4	15.0	B437*4A7398M0##
	3900	90.0 x 120.0	26	32.6	16.5	B437*4B7398M0##
	4700	76.9 x 156.2	22	34.5	17.0	B437*4A7478M0##
	4700	90.0 x 144.5	22	36.4	18.5	B437*4B7478M0##
	5600	76.9 x 190.7	19	39.2	19.9	B437*4A7568M0##
	5600	90.0 x 144.5	19	40.9	20.7	B437*4B7568M0##
	6800	76.9 x 220.7	15	45.1	22.9	B437*4A7688M0##
	6800	90.0 x 170.0	15	46.3	23.5	B437*4B7688M0##
	8200	90.0 x 197.0	13	52.4	26.6	B437*4A7828M0##

### **Composition of ordering code**

### 订货编码规则

- \*= Mounting style 装配方式
  - 0 = for capacitors with ring clip/clamp mounting ## 5环周克格克密器

带卡环固定的电容器

2 = for capacitors with threaded stud 带底部螺栓电容器 ## = Design

00 = for standard capacitors 标准型号

50 = for terminals with PAPR style PRPR型端子



B43704, B43724

High ripple current - 85 ℃ 高纹波电流型 - 85 ℃

#### Bar code label and marking of the capacitor 条形码标签和电容器标签

Below is an example of bar code label on package:

以下为包装箱上条形码标签示例:

EPCOS Alum Elect Capacitor RoHS Compatible 6800μF/400V/76.9X143mm Screw

(1P) PROD ID: B43310B9688M001

(9K) PROD ORDER NO: 09060040 (D) D/C: 090618

(T) BATCH NO: XD09069017 NO:029 (Q) QTY: 12

- Brand 品牌

(1P) Ordering code 订购代码 (9K) Product order numbe 订单号

(D) Date code (yywwdd) 日期代码 (年月日)

(T) Batch number 批号 (Q) Quantity 数量

The example below shows how the capacitor sleeve are marked: 以下示例说明电容器套管上的标签内容:

Logo 标志

B43310-B9688-M1 —— Part number (ordering code) 料号(订购代码)

6800 μF (M) —— Rated capacitance, tolerance (in coded form) 额定电容、容差(代码形式)

400V 40/085/56 —— Rated voltage, climatic category 额定电压、气候分类

06.09 X —— Month and year of production 月. 年(生产日期)

The climatic category is specified according to IEC 60068–1. If there is not enough space on the case, the following codes may be used:

气候类别符合IEC 60068-1。如果壳体上没有足够空间,可使用以下代码:

E.g.: 40/085/56, in codedform, would read GPF 例如: 40/085/56的代码形式为GPF

1st letter(lower category temperature) 首字母(下限类别温度)

Code letter 代码字母	F	G	н
Temperature 温度(°C)	-55	-40	-25

2nd letter (upper category temperature) 第二字母(上限类别温度)

Code letter 代码字母	К	М	Р	S	U
Temperature 温度(℃)	+125	+105(+100)	+85	+70	+60

3rd letter (humidity) 第三字母 (湿度)

Letter F: withstands IEC60068-2-78 Cab (damp heat, steady state), test duration 56 days.

字母F: 经受IEC 60068-2-78试验箱(湿度、恒稳态),试验周期56天



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