

JAKEC®

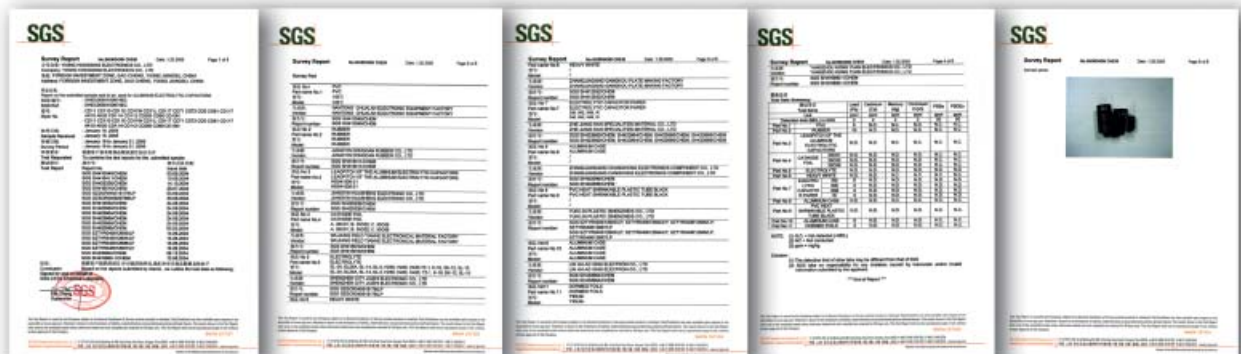


PROFESSIONAL ALUMINUM ELECTROLYTIC CAPACITORS MANUFACTURER

专 业 设 计 、 制 造 铝 电 解 电 容 器

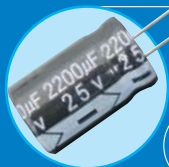


Our goods are **SGS** certificated by authoritative organization and **ROHS** is marked on our package



Quality Price Service Creation
Your best supplier in China

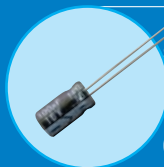
品质 价格 服务 创新 您最好的中国供应商



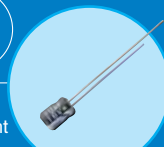
CD11(GS)
Miniature standard
小型化标准品



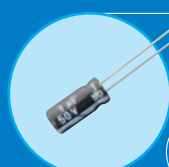
CD110(PT)
Color TV Standard
彩电级



CD110X(SX)
Super Miniature 7mm Height
7mm超小型品



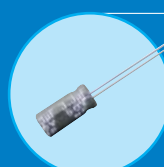
CD11W(LM)
Super Miniature 5mm Height
5mm超小型品



CD11L(ML)
Low Leakage Current
低漏电流品



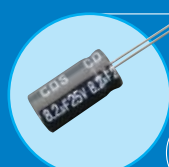
CD11T(MT)
Long Life
低长寿命品



CD71(NP)
Non-Polar Standard
无极性标准品



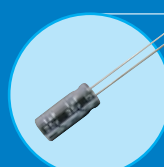
CD72(BP)
Non-polar Speaker
无极性音频品



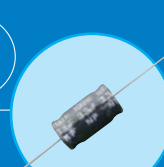
CDS(HX)
For Horizontal Deflection
特性校正



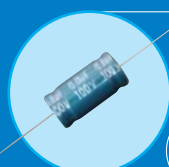
CD81(TR)
High Temp. (105°C)
耐高温品



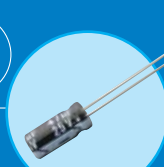
CD117(SH)
High Precision Stability
高精度稳定品



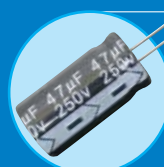
AK10(AN)
Axial Bi-Polar
卧式无极性



AK20(AB)
Axial Bi-Polar
卧式分频品



CD11H(GF)
High Frequency
Low Impedance
高频低阻抗



CD11Z(SZ)
Middle And High Voltage
Standard
中高压标准品



CD293(BZ)
Standard Miniaturized
中高压标准品



CD60(QD)
Motor Starting
交流马达启动用



CD13N(PK)
High Ripple Current
高纹波



CD21S(PS)
Flash Lamp Circuits
in camera



CD294(SK)
105c 2000hrs
High Ripple Current

Full range of products

Fast delivery

Our best promise

齐全的规格

迅捷的交货

是我们最好的承诺

■ EXPLANATION OF PART NUMBERS 料号说明

special requirement

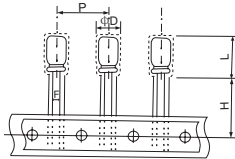
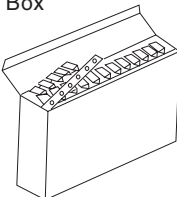
EC		PT		221		M		016		FFB		R	
Series	Code	Cap(uf)	Code	Toler (mce%)	Code	Voltage	Code	Feature	Code	PCB Terminal	Code		
CD11	GS	0.1	0R1	+5	J	6.3	6R3	Bulk packing	PL	Vertieal	V		
CD110	PT	0.22	R22	-5		10	010			Radial	R		
CD110X	SX	0.33	R33	+10	K	16	016	Lead cut	CC	Snap in	S		
CD11W	LM	0.47	R47	-10		25	025			Lug	L		
CD11L	ML	1	1R0	+15	L	35	035	lead cut&formed	FC	Serew	G		
CD11T	MT	2.2	2R2	-15		50	050			Axial	A		
CD71	NP	3.3	3R3	+20	M	100	100	Snap-in&lead cut	MC				
CD72	BP	4.7	4R7	-20		160	160						
CDS	HX	10	100	+100	P	200	200	Snap-in forming	FM				
CD81	TR	22	220	0		250	250						
CD117	SH	33	330	+30	Q	330	330	Taped ammo-pack F=5mm	FFB / FFA				
AK10	AN	47	470	-10		350	350						
AK20	AB	100	101	+20	R	400	400	Taped ammo-pack straight lead	FFC				
CD11H	GF	220	221	-0		450	450						
CD11Z	SZ	330	331	+50	T								
CD293	BZ	470	471	-10									
CD60	QD	1000	102	+75	U								
CD13N	PK	2200	222	-10									
CD21S	PS	3300	332	+20	V								
CD294	SK	4700	472	-10									
		10000	103	+20	H								
		22000	223	-5									
				+30	F								
				-0									



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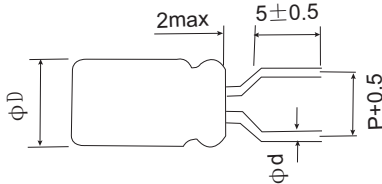
RADIAL LEAD TAPING

Lead Taping Capacitors for Automatic Insertion

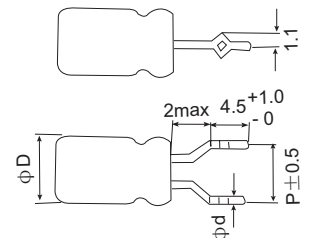
Code	Case range		Dimensions				From	External form Drawing	Packing Form
	∅D	L (max)	H±0.75	H0±0.5	F±0.5	P±0.1			
FF	4-8	7	17.5	16	5.0	12.7	B	FromA 	Flat Box 
	5-6.3	13.0	18.5						
	8	22.0	20.0						
	10	22.0	18.5	-		15.0	A		
	12.5	27	18.5	-					
	16-18	27	18.5	-					

LEAD CUT AND FORMING

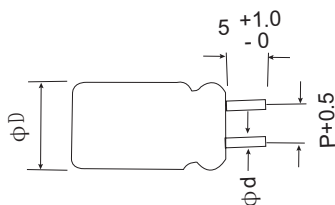
Lead configuration:FC($\Phi 5$, 6.3, 8)



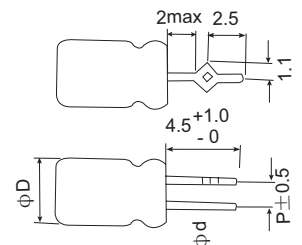
Lead configuration:FM($\Phi 5$, 6.3, 8)



Lead configuration:CC($\Phi 10$, 12.5, 16, 18)



Lead configuration:MC($\Phi 10$, 12.5, 16, 18)



NO. 编号	SERIES 系列	FEATURES APPLICATIONS 特性、应用	OPERATURE TEMPERATURE RANGE(°C) 使用温度范围	RATED VOLTAGE(V) 额定电压	CAPACITANCE RANGE(μF) 标称电容量	SHAPEOR TYPE 结构形成	PAGE 页次
1	CD11 (SS)	Miniature standard 小型化标准品	-40~+85	6.4~450	0.1~10000	Radial 径向引线式	1-2
2	CD110 (TN)	Color TV Standard 彩电级	-40~+85	6.3~100	0.1~10000	Radial 径向引线式	3
			-25~+85	100~250	1.0~250		
3	CD11X (SX)	Super Miniature 7mm Height 7mm超小型品	-40~+105	6.3~63	0.1~470	Radial 径向引线式	4
4	CD11W (SSX)	Super Miniature 5mm Height 5mm超小型品	-40~+105	4~50	0.1~330	Radial 径向引线式	5
5	CD11L (ML)	Low Leakage Current 低漏电流品	-40~+85	6.3~100	0.1~4700	Radial 径向引线式	6
6	CD11T (MT)	Long Life 低长寿命品	-40~+85	6.3~100	1.0~4700	Radial 径向引线式	7
7	CD71 (NP)	Non-Polar Standard 无极性标准品	-40~+85	6.3~100	0.47~6800	Radial 径向引线式	8
8	CD72 (BP)	Non-polar Speaker 无极性音频品	-40~+85	10~100	0.47~47	Radial 径向引线式	9
9	CDS (NP)	For Hori Zontal Deflection 特性校正	-40~+85	10~100	0.47~47	Radial 径向引线式	10
10	CD81 (TR)	High Temp.(105°C) 耐高温品	-40~+105	10~100	1.0~4700	Radial 径向引线式	11
			-25~+105	160~450	1.0~200		
11	CD117 (SH)	High Precision Stability 高精度稳定品	-40~+85	10~50	0.47~470	Radial 径向引线式	12
12	AK10 (BP)	Axial Bi-Polar 卧式无极性	-40~+85	50~100	1.0~100	Axial 轴向引线式	13
13	AK20 (BP)	Axial Bi-Polar 卧式分频品	-40~+85	50~100	1.0~220	Axial 轴向引线式	14
14	CD11H (GF)	High Frequency Low Impedance 高频低阻抗	-40~+105	6.3~250	0.47~6800	Radial 径向引线式	15-16
15	CD11Z (SZ)	Middle And High Voltage Standard 中高压标准品	-40~+85	160~450	1~220	Radial 径向引线式	17
16	CD293 (BZ)	Standard Miniaturized 中高压标准品	-40~+85	160~400	33~470	Snap-in 焊针	18
17	CD60 (QD)	Motor Starting 交流马达启动用	-20~+55	110~220	50~400	Lug 焊片	19
18	CD13N (PK)	High Ripple Current 高纹波	-40~+85	160~450	220~15000	Screw 螺栓	20
19	CD21S (PS)	Flash Lamp Circuits in camera	-20 ~ +55	330v	20~370	radial 径向引线式	21
20	CD294 (SK)	105c 2000his High Ripple Currert	-40 ~ +105	10-400v	39~2200	snap-in 焊针	22-23



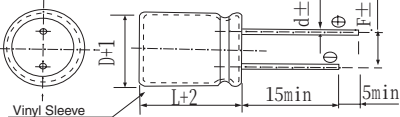
CD11(GS) SERIES

Miniature Standard

- ▶ Miniature Standard,good stable and reliable performances.
- ▶ $D \geq 8\text{mm}$ equipped with pressure release device.
- ▶ Widely used in DC or pulse circuit of TV,VCD(DVD), AUDIO systems,telecommunications and computers.

小型化标准品

- ▶ 小型化标准品，性能稳定、可靠。
- ▶ 直径 $\geq 8\text{mm}$ 者具有压力释放装置。
- ▶ 广泛用于电视机、VCD（DVD）、音响、通讯、电脑等电子装备的直流或脉动电路中。

Item 项目	Characteristics 特性											
Size and its tolerance 尺寸及其误差 	∅ D	5	6	8	10	12	13	16	18	22	25	26
	F ± 0.5	2.0	2.5	3.5	5.0			7.5		10	12.5	
	d ± 0.1	0.5			0.6			0.8				
Operating Temp. Range 使用温度范围	-40℃～+85℃											
Rated Working Voltage 额定工作电压UR	6.3～450Vdc											
Capacitance Range 电容量范围CR	0.1～10000 μ F(+20℃,100 or 120Hz)											
Capacitance Tol. 电容量允许偏差ΔC/CR	±20%, +30%,-10%(+20℃,100 or 120Hz)											
Dissipation Factor tg δ 损耗角正切值	At +20℃ and 100 or 120Hz,for CR>1000 μ F, tg δ add 0.02 per another 1000 μ F. +20℃, 100 or 120Hz, 电容量大于1000 μ F者, 每增加1000 μ Ftg δ 增加0.02。											
	UR (V)	6.3	10	16	25	35	50,63	100	160～250	400,450		
	(A grade)A 级	0.24	0.22	0.20	0.15	0.12	0.10	0.08	0.16	0.20		
	(B grade)B 级	GB5995-86										
Leakage Current IL 漏电流	A grade A 级 ≤0.03·CR·UR or 5 μA (≤100Vdc) whichever is greater 取较大者 ≤0.03·CR·UR + 10 μA (≥160Vdc) B grade B 级 GB5995-86 At+20℃,after 2 minutes application of UR (升到额定电压后2分钟时读数)											
Load Life 高温负荷	At +85℃ after UR applied for 1000 hours. + 85℃ ,施加UR1000小时后：											
	ΔC	+20%,-30% (6.3Vdc)、±20%(10-100Vdc)、±15%(≥160Vdc) of initial measured value (初始值)										
	DF(tg δ)	≤200% (≤100Vdc)、150% (≥160Vdc) of initial specified value (规定值)										
	LC(IL)	≤ initial specified value (规定值)										
Shelf Life 高温储存	After shelf for 500 hours(without voltage applied) at +85℃,then restored for 16 hours at room temp. +85℃,500小时 (不加电压) 后, 经不少于16小时的室温恢复：											
	ΔC	+20%,-30% (6.3Vdc)、±20%(10-100Vdc)、±15%(≥160Vdc) of initial measured value (初始值)										
	DF(tg δ)	≤200% (≤100Vdc)、150% (≥160Vdc) of initial specified value (规定值)										
	LC(IL)	≤200% of initial specified value (规定值)										
Others 其它	GB5995-86											

Note: We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

■ CD11(GS) SERIES Case Size of Standard Products 标准尺寸

$C_R(\mu F) \backslash U_R(V)$	6.3	10	16	25	35	50	63	100
0.1~0.68						5×11	5×11	5×11
1.0						5×11	5×11	5×11
2.2						5×11	5×11	5×11
3.3						5×11	5×11	5×11
4.7					5×11	5×11	5×11	5×11
10			5×11	5×11	5×11	5×11	5×11	6×12
22	5×11	5×11	5×11	5×11	5×11	5×11	6×11	8×14
33	5×11	5×11	5×11	5×11	5×11	6×12	8×12	10×13
47	5×11	5×11	5×11	5×11	6×11	6×12	8×12	10×15
100	5×11	5×11	5×11	6×12	8×11	8×12	8×12	10×20
220	5×12	5×12	6×12	8×12	8×14	10×15	10×17	12×25
330	6×12	6×12	8×12	8×12	10×15	10×17	12×20	16×25
470	6×12	8×12	8×12	8×14	10×17	10×20	13×20	16×30
1000	8×12	8×12	10×15	10×18	13×20	13×26	16×31	19×40
2200	10×15	10×15	12×20	13×21	16×27	16×32	18×41	25×40
3300	10×20	12×20	13×21	16×27	16×36	18×36	22×42	35×50
4700		13×21	13×26	16×27	18×36	22×40	22×50	35×50
6800		16×25	16×26	16×36	19×40	22×50	25×50	35×60
10000		16×30	19×30	19×40	22×40	25×50	30×50	35×70

Note: We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

$C_R(\mu F) \backslash U_R(V)$	160	200	250	400	450
0.1~0.68					
1.0	5×12	6×12	6×12	8×12	8×12
2.2	6×12	8×12	8×12	8×12	8×14
3.3	6×12	8×12	8×12	8×14	8×14
4.7	8×12	8×12	8×14	10×20	10×20
10	8×14	10×15	10×17	12×20	12×20
22	10×15	10×20	12×20	12×25	16×25
33	10×20	12×20	12×25	18×20	16×30
47	13×21	12×20	13×25	18×27	18×30
100	13×26	16×27	16×30	22×35	22×40
220	16×36	18×36	22×30	25×40	25×50
330	22×35	22×40	25×40	30×40	30×50
470	22×40	22×50	25×50	30×50	35×50

Note: We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

■CD110(PT) SERIES

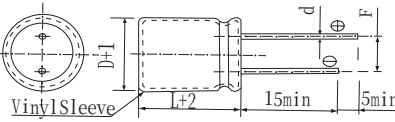


Color TV Standard

- ▶ Better stable and reliable performance, good uniformity.
- ▶ $D \geq 8\text{mm}$ equipped with pressure release device.
- ▶ Be used widely in DC or pulse circuit of color TV, color tubes, telecommunications and computers.

彩电标准级品

- ▶ 性能稳定、可靠，一致性好。
- ▶ 直径 $\geq 8\text{mm}$ 者具有压力释放装置。
- ▶ 广泛用于彩色电视机和彩色显示、通讯、电脑等电子装备的直流或脉动电路中。

Item 项目	Characteristics 特性										
Size and its tolerance 尺寸及其误差 	Ø D	5	6	8	10	12	13	16	18		
	F ± 0.5	2.0	2.5	3.5	5.0			7.5			
	d ± 0.1	0.5			0.6			0.8			
Operating Temp. Range 使用温度范围	-40℃~+85℃(≤100VDC) -25℃~+85℃(160、250VDC)										
Rated Working Voltage 额定工作电压UR	6.3~250VDC										
Capacitance Range 电容量范围CR	0.1~10000 μ F(+20℃,100 or 120HZ)										
Capacitance Tol.电容量允许偏差ΔC / CR	±20%, ⁺³⁰ ₋₁₀ %(+20℃,100 or 120HZ)										
Dissipation Factor tg δ 损耗角正切值	At +20℃ and 100 or 120Hz,for CR>1000 μ F, tg δ add 0.02 per another 1000 μ F. +20℃, 100 or 120HZ, 电容量大于1000 μ F者, 每增加1000 μ F tg δ 增加0.02。										
	UR(V)	6.3	10	16	25	35	50	63	100	160	250
	tg δ	0.24	0.22	0.16	0.14	0.12	0.10	0.09	0.08	0.16	0.18
Leakage Current IL 漏电流	≤0.01·CR·UR or 3 μ A(UR≤100VDC) whichever is greater 取较大者 ≤0.03·CR·UR + 10 μ A(UR≥160VDC) At+20℃,after 2 minutes application of UR (+20℃,升到额定电压后2分钟时读数.)										
	At +85℃after UR applied for 1000 hours . +85℃,施加UR1000小时后:										
Load Life 高温负荷	ΔC	⁺²⁰ ₋₃₀ % (6.3VDC)、±20%(10-100VDC)、±15%(≥160VDC) of initial measured value (初始值)									
	DF(tg δ)	≤150% of initial specified value (规定值)									
	LC(IL)	≤ initial specified value (规定值)									
Shelf Life 高温储存	At +85℃,after shelf for 500 hours(without voltage applied) ,then restored for 16 hours at room temp. 85℃,500小时 (不加电压) 后, 经不少于16小时的室温恢复:										
	ΔC	±20% of initial measured value (初始值)									
	DF(tg δ)	≤150% of initial specified value (规定值)									
	LC(IL)	≤200% of initial specified value (规定值)									
Others 其它	GB9608-88										

Case Size of Standard Products 标准尺寸

$U_R(\text{V})$ $C_R(\mu\text{F})$	6.3	10	16	25	35	50	63	100	160	250
0.1~0.68						5×11	5×11	5×11		
1.0, 1.5						5×11	5×11	5×11	5×11	6×12
2.2						5×11	5×11	5×11	6×12	8×12
3.3						5×11	5×11	5×11	8×12	8×12
4.7				5×11		5×11	5×11	6×11	8×12	8×14
6.8				5×11		5×11	5×11	6×11	10×15	10×15
10			5×11	5×11	5×11	5×11	5×11	6×12	10×15	10×15
15			5×11	5×11	5×11	6×11	6×11	8×12	10×15	10×20
22		5×11	5×11	5×11	5×11	6×11	6×12	8×14	10×17	13×20
33	5×11	5×11	5×11	5×11	5×11	6×12	8×12	10×15	12×20	13×25
47	5×11	5×11	5×11	5×11	6×12	8×11	8×12	10×17	13×20	16×26
68	5×11	5×11	6×11	6×12	6×12	8×12	10×13	10×20	13×25	16×32

$U_R(\text{V})$ $C_R(\mu\text{F})$	6.3	10	16	25	35	50	63	100	160	250
100	5×11	6×11	6×12	8×12	8×12	8×12	10×15	10×22	13×26	16×30
150	5×11	6×12	6×12	8×12	8×12	10×17	10×20	13×21	16×32	
220	5×12	6×12	8×12	8×12	8×14	10×17	12×20	13×25	16×36	
330	6×12	8×12	8×12	8×14	10×15	10×20	13×20	16×32		
470	8×12	8×12	8×14	10×15	10×17	12×20	16×26	16×36		
680	8×14	10×15	10×15	10×17	12×20	16×25	16×26			
1000	8×14	10×15	10×17	10×20	13×20	16×26	16×35			
1500	10×15	10×20	13×20	13×20	16×25	18×32				
2200	10×20	10×20	13×21	13×26	16×27	18×36				
3300	13×20	13×20	13×21	16×32	16×36	18×38				
4700	13×25	13×25	16×25	16×34	18×36	22×42				
6800	16×26	16×26								
10000	16×32									

Note: We can also provide the capacitors according to the customer's request. 注: 亦可按客户要求提供。

■CD110X(SX)(7mm) SERIES



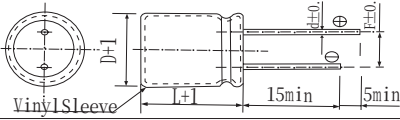
7mm Super Miniature

7mm超小型品

- ▶ Super miniature size, light weight, good stable and reliable performance, good uniformity.

▶ Widely used in electronic equipment of thin and high density assemblies, such as recorders, cameras, computers and telecommunications.
- ▶ 超小体积、轻重量，性能稳定、可靠，一致性好。

▶ 广泛用于收录机、摄像机、计算机、通讯装置等各种高密度组装的薄型电子设备中。

Item 项目	Characteristics 特性							
Size and its tolerance 尺寸及其误差 	ØD	4	5		6		8	
	F ± 0.5	1.5	2.0		2.5		3.5	
	d ± 0.1	0.45			0.5			
Operating Temp. Range 使用温度范围	-40℃～+105℃							
Rated Working Voltage 额定工作电压UR	6.3～63VDC							
Capacitance Range 电容量范围CR	0.1～470 μ F(+20℃,100 or 120Hz)							
Capacitance Tol. 电容量允许偏差△C/ CR	±20%, ^{+30%} _{-10%} (+20℃,100 or 120Hz)							
Dissipation Factor tg δ 损耗角正切值	At +20℃,100 or 120Hz							
	UR (V)	6.3	10	16	25	35	50	63
	tgδ	0.22	0.20	0.16	0.14	0.12	0.10	0.10
Leakage Current IL 漏电流	A grade A级 ≤0.01·CR·UR or 3 μ A whichever is greater 取较大者 At+20℃ after 2 minutes application of UR . (+20℃ ,升到额定电压后2分钟时读数)							
Load Life 高温负荷	At +85℃ after UR applied for 1000 hours . +85℃ ,施加UR1000小时后:							
	△C	±20% of initial measured value (初始值)						
	DF(tg δ)	≤200% of initial specified value (规定值)						
	LC(IL)	≤ initial specified value (规定值)						
Shelf Life 高温储存	At +85℃ ,after shelf for 500 hours(without voltage applied) and then restored for 16 hours at room temp. 85℃,500小时 (不加电压) 后, 经不少于16小时的室温恢复:							
	△C	±20% of initial measured value (初始值)						
	DF(tg δ)	≤200% of initial specified value (规定值)						
	LC(IL)	≤200% of initial specified value (规定值)						

Case Size of Standard Products 标准尺寸

UR(V) CR(μ F)	6.3	10	16	25	35	50	63
0.1～3.3						4×7	4×7
4.7					4×7	4×7	5×7
6.8					4×7	4×7	5×7
10			4×7	4×7	4×7	5×7	6×7
22			4×7	4×7	5×7	6×7	8×9
33		4×7	5×7	5×7	6×7	8×9	
47		4×7	5×7	6×7	6×7		
68		5×7	6×7	8×9	8×9		
100	5×7	5×7	6×7	8×9	8×9		
220	6×7	6×7	8×9				
330	8×9	8×9					
470	8×9						

Note:We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

■CD11W(LM) (5mm) SERIES



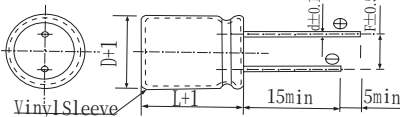
5mm Super Miniature

5mm超小型品

- ▶Ultra miniature series with 5mm height.

▶Used in camera ,auto speaker ,personal stereo ,VCD ,DVD ,mobile telephone ,recrudescent ,etc .
- ▶超小型，5mm 高。

▶适用于照相机、汽车音响、随身听、VCD、DVD、手机、复读机等。

Item 项目	Characteristics 特性							
Size and its tolerance 尺寸及其误差 	Ø D	4		5		6.3		8
	F	1.5		2.0		2.5		2.5
	Ø d	0.45		0.45		0.45		0.45
Operating Temp. Range 使用温度范围	-40℃～+105℃							
Rated Working Voltage 额定工作电压UR	4～50VDC							
Capacitance Tol. 电容量允许偏差△C/CR	±20%,(M)at 120Hz 20℃							
Leakage Current max. 漏电流	I = 0.01CV or 3 μ A whichever is greater after 2 minutes. I:Leakage Current(μ A) C:Rated Capacitance(μ F) V:Working Voltage(V)							
Dissipation Factor max. (at 120Hz,20℃) 损耗角正切值	WV	4	6.3	10	16	25	35	50
	tan δ	0.35	0.27	0.20	0.16	0.14	0.12	0.10
Low Temperature Stability (Impedance ratio at 120Hz) 低温负荷	WV	4	6.3	10	16	25-50		
	Z(-25℃)/Z(+20℃)	7	3	3	2	2		
	Z(-40℃)/Z(+20℃)	12	8	5	4	3		
Load Life 高温负荷	After 1000 hours application for W V. at 105℃ the capacitor shall meet the following limits.							
	△C	±20% of initial measured value(±30% 4V)						(初始值)
	DF(tg δ)	≤200% of initial specified value						(规定值)
	LC(IL)	≤200% of initial specified value						(规定值)
Shelf Life(105℃) 高温储存	After 1000 hours of no load test leakage current capacitance and tan δ are same as load life value. 1000小时（不加电压）后，测试IL, △C , tg δ 同“ 高温负荷 ” 相同。							
Reference Standard 参照标准	JIS C-5141							

Case Size of Standard Products 标准尺寸

WV μ F	4		6.3		10		16		25		35		50	
	SIZE	R C	SIZE	R C	SIZE	R C	SIZE	R C	SIZE	R C	SIZE	R C	SIZE	R C
0.1													4×5	1.6
0.22													4×5	2.4
0.33													4×5	3.2
0.47													4×5	4
0.68													4×5	5.6
1.0													4×5	5.6
2.2													4×5	10
3.3													4×5	12
4.7									4×5	12	4×5	13	5×5	15
6.3									4×5	15	5×5	17	5×5	20
10			4×5	12	4×5	13	4×5	16	5×5	19	5×5	22	6.3×5	26
22	4×5	16	4×5	16	5×5	22	5×5	29	6.3×5	34	6.3×5	36		
33	4×5	20	5×5	23	5×5	29	6.3×5	37	6.3×5	45				
47	4×5	24	5×5	28	6.3×5	35	6.3×5	46						
68	5×5	36	6.3×5	46	6.3×5	47	6.3×5	52						
100	5×5	41	6.3×5	50	6.3×5	52	6.3×5	58						
220	6.3×5	56	8×5	60					Ripple current(Irms) at105℃, 120Hz Case sizeDxL(mm)					
330	8×5	150	8×5	175										

Note:We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

■CD11L(ML) SERIES

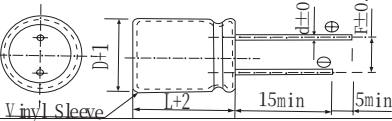


Low Leakage Current

- ▶Low leakage current,high stable and reliable performance
- ▶D≥8mm equipped with pressure release device.
- ▶Be used widely in DC or pulse circuit of colour TV sets,VCD,audio systems,telecommunications and computers.

低漏电流品

- ▶低漏电、高稳定、可靠。
- ▶直径≥8mm 者具有压力释放装置。
- ▶用于彩色电视、VCD、音响、通讯、电脑等电子装备的直流或脉动电路中。

Item 项目	Characteristics 特性									
Size and its tolerance 尺寸及其误差 	ØD	5	6	8	10	12	13	16	18	
	F ± 0.5	2.0	2.5	3.5	5.0			7.5		
	d ± 0.1	0.5			0.6			0.8		
Operating Temp. Range 使用温度范围	-40℃~+85℃									
Rated Working Voltage 额定工作电压U _R	6.3~100V _{DC}									
Capacitance Range 电容量范围C _R	1.0~4700 μF(+20℃,100 or 120Hz)									
Capacitance Tol. 电容量允许偏差ΔC/C _R	±20%, ⁺³⁰ _{,-10} %(+20℃,100 or 120Hz)									
Dissipation Factor tg δ 损耗角正切值	At +20℃,100 or 120Hz,for C _R >1000 μF, tg δ add 0.02 per another 1000 μF. +20℃100 or 120Hz,电容量大于1000 μF者,每增加1000 μF tg δ 增加0.02。									
	U _R (V)	6.3	10	16	25	35	50	63	100	
	tgδ	0.24	0.20	0.20	0.14	0.12	0.10	0.09	0.08	
Leakage Current I _L 漏电流	≤0.002·C _R ·U _R or 1 μA(≥160V _{DC}) whichever is greater 取较大者 At+20℃ after 2 minutes application of U _R . (+20℃,升到额定电压后2分钟时读数)									
Load Life 高温负荷	At +85℃,after U _R applied for 1000 hours. +85℃,施加U _R 1000小时后:									
	ΔC	±20% of initial measured value (初始值)								
	DF(tg δ)	≤150% of initial specified value (规定值)								
Shelf Life 高温储存	LC(I _L)	≤ initial specified value (规定值)								
	At+85℃,after shelf for 500 hours(without voltage applied) , then restored for 16 hours at room temp. +85℃,500小时(不加电压)后,经不少于16小时的室温恢复:									
	ΔC	±20% of initial measured value (初始值)								
	DF(tg δ)	≤150% of initial specified value (规定值)								
	LC(I _L)	≤200% of initial specified value (规定值)								

Case Size of Standard Products 标准尺寸

CR \ UR(V) (μF)	6.3	10	16	25	35	50	63	100
1.0						5×11		5×11
2.2						5×11		5×11
3.3						5×11		5×11
4.7						5×11	5×11	6×11
10			5×11	5×11	5×11	5×11	5×11	6×12
22		5×11	5×11	5×11	5×11	6×11	6×12	8×12
33		5×11	5×11	5×11	6×11	6×12	8×12	10×13
47	5×11	5×11	5×11	6×11	6×12	8×11	8×12	10×17
100	5×11	6×11	6×12	6×12	8×12	10×13	10×15	12×22
220	6×12	6×12	8×12	10×13	8×14	10×20	12×22	16×27
330	6×12	8×12	10×13	10×15	10×17	12×22	12×26	16×31
470	8×12	10×13	10×15	10×17	12×22	13×26	16×27	18×36
1000	10×13	10×17	12×22	13×22	13×26	16×31	16×35	
2200	12×22	13×22	13×26	16×27	16×35	18×41		
3300	13×22	13×26	16×27	16×35				
4700	13×26	16×27	16×31					

Note:We can also provide the capacitors according to the customer's request. 注:亦可按客户要求提供。

CD11T(MT) SERIES

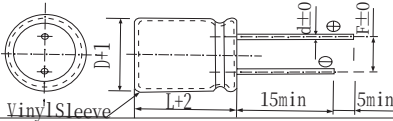
Long Life

- ▶ Better stable and reliable performance, long life.
- ▶ $D \geq 8\text{mm}$ equipped with pressure release device.
- ▶ Be used in DC or pulse circuit of colour TV sets, telecommunications and computers.



长寿命品

- ▶ 该产品性能稳定、可靠，长寿命。
- ▶ 直径 $\geq 8\text{mm}$ 者具有压力释放装置、使用安全。
- ▶ 用于彩色电视、通讯、电脑等电子装备的直流或脉动电路中。

Item 项目	Characteristics 特性										
Size and its tolerance 尺寸及其误差 	ØD	5	6	8	10	12	13	16	18		
	F ± 0.5	2.0	2.5	3.5	5.0			7.5			
	d ± 0.1	0.5			0.6			0.8			
Operating Temp. Range 使用温度范围	-40℃～+85℃(≤100VDC) -25℃～+85℃(160-400VDC)										
Rated Working Voltage 额定工作电压UR	6.3～400VDC										
Capacitance Range 电容量范围CR	0.1～4700 μ F(+20℃,100 or 120Hz)										
Capacitance Tol. 电容量允许偏差ΔC/CR	±20%, +30% ₋₁₀ %(+20℃,100 or 120Hz)										
Dissipation Factor tg δ 损耗角正切值	At +20℃,100 or 120Hz,for CR>1000 μ F, tg δ add 0.02 per another 1000 μ F. +20℃100 or 120Hz,电容量大于1000 μ F者, 每增加1000 μ F tg δ 增加0.02。										
	UR (V)	10	16	25	35	50	63	100	160	250	400
	tgδ	0.22	0.20	0.15	0.12	0.10	0.10	0.10	0.16	0.18	0.20
Leakage Current IL 漏电流	≤0.01·CR·UR or 3 μ A(UR≤100VDC)whichever is greater 取较大者 ≤0.03·CR·UR + 10 μ A(UR≥160VDC) At +20℃,measured after 2 minutes application of UR. (+20℃,升到额定电压后2分钟时读数)										
Load Life 高温负荷	At+85℃ after UR applied for 2000 hours . +85℃,施加UR2000小时后:										
	ΔC	±20% (±30% 6.3V) of initial measured value (初始值)									
	DF(tg δ)	≤200% of initial specified value (规定值)									
	LC(IL)	≤ initial specified value (规定值)									
Shelf Life 高温储存	At 85℃,after shelf for 1000 hours(without voltage applied) ,then restored for 16 hours at room temp. +85℃,1000小时（不加电压）后, 经不少于16小时的室温恢复:										
	ΔC	≤±20% of initial measured value (初始值)									
	DF(tg δ)	≤200% of initial specified value (规定值)									
	LC(IL)	≤200% of initial specified value (规定值)									

Case Size of Standard Products 标准尺寸

C_R U_R (V) (μF)	10	16	25	35	50	63	100	160	250	400
0.1~0.68					5×11		5×11			
1.0, 1.5					5×11		5×11	6×12	6×12	8×12
2.2					5×11		5×11	6×12	8×12	10×13
3.3					5×11		5×11	8×12	8×12	10×15
4.7			5×11		5×11	5×11	6×11	8×12	10×13	10×17
6.8			5×11		5×11	5×11	6×11	10×13	10×15	10×20
10		5×11	5×11	5×11	5×11	5×11	6×12	10×13	10×15	12×22
15		5×11	5×11	5×11	6×11	6×11	8×12	10×15	10×20	13×26
22	5×11	5×11	5×11	5×11	6×11	6×12	8×12	10×20	12×22	16×27
33	5×11	5×11	5×11	6×11	6×12	8×12	10×13	12×22	13×26	16×31
47	5×11	5×11	6×11	6×12	8×11	8×12	10×17	13×22	16×27	16×36
68	5×11	6×11	6×12	6×12	8×12	10×13	10×20	13×26	16×31	18×41

C_R U_R (V) (μF)	10	16	25	35	50	63	100	160	250	400
100	6×11	6×12	6×12	8×12	10×13	10×15	12×22	16×27	16×35	
150	6×12	6×12	8×12	10×13	10×17	10×20	13×26	16×35		
220	6×12	8×12	10×13	10×14	10×20	12×22	16×27	18×36		
330	8×12	10×13	10×15	10×17	12×22	13×26	16×31			
470	10×13	10×15	10×17	12×22	13×26	16×27	18×36			
680	10×13	10×17	12×22	13×22	16×27	16×27				
1000	10×17	12×22	13×22	13×26	16×31	16×35				
1500	12×22	13×22	13×26	16×27	18×36					
2200	13×22	13×26	16×27	16×35	18×41					
3300	13×26	16×27	16×35							
4700	16×27	16×31								
6800	16×35									

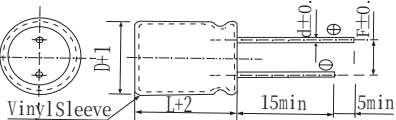
Note: We can also provide the capacitors according to the customer's request. 注: 亦可按客户要求提供。

■ CD71(NP) SERIES
Non-Polar Standard

- ▶The polarity can be reversed standard size.
- ▶used in circuits what polarity is reversed,such as signal coupling, etc.

无极性标准品

- ▶极性可反转或变换，标准尺寸。
- ▶适用于信号耦合等极性需反转变换的电路。

Item 项目	Characteristics 特性								
Size and its tolerance 尺寸及其误差 	ØD	5	6	8	10	12	13	16	18
	F ± 0.5	2.0	2.5	3.5	5.0			7.5	
	d ± 0.1	0.5			0.6			0.8	
Operating Temp. Range 使用温度范围	-40℃~+85℃								
Rated Working Voltage 额定工作电压UR	6.3V~100VDC								
Capacitance Range 电容量范围CR	0.47 μ F~10000 μ F								
Capacitance Tol. 电容量允许偏差△C/CR	±20%,(100Hz,20℃)								
Dissipation Factor tg δ 损耗角正切值	At +20℃ and 100 or 120Hz,for CR>1000 μ F, tg δ add 0.02 per another 1000 μ F. +20℃100 or 120Hz, 电容量大于1000 μ F者, 每增加1000 μ F,tg δ 增加0.02.								
	UR (V)	6.3	10	16	25	35	50	63	100
	tgδ	0.24	0.24	0.22	0.20	0.16	0.14	0.12	0.10
Leakage Current IL 漏电流	≤0.03·CR·UR or 5 μ A whichever is greater 取较大者 At +20℃,after 2 minutes application of UR (+20℃, 升到UR后2分钟时读数)								
	At +85℃ after UR applied for 1000 hours. +85℃,施加UR1000小时后:								
Load Life 高温负荷	△C		±20% of initial measured value (初始值)						
	DF(tg δ)		≤150% of initial specified value (规定值)						
	LC(IL)		≤ initial specified value (规定值)						
Shelf Life 高温储存	At 85℃,after shelf for 500 hours(without voltage applied) , then restored for 16 hours at room temp. +85℃,500小时 (不加电压) 后, 经不少于16小时的室温恢复:								
	△C		±20% of initial measured value (初始值)						
	DF(tg δ)		≤150% of initial specified value (规定值)						
	LC(IL)		≤200% of initial specified value (规定值)						

Case Size of Standard Products 标准尺寸

UR(V) CR (μ F)	6.3	10	16	25	35	50	63	100
0.47						5×11		5×11
1						5×11		5×11
2.2						5×11		6×12
3.3						5×11	5×11	6×12
4.7					5×11	5×11	6×12	6×12
10			5×11	5×11	5×11	6×12	6×12	8×12
22		5×11	5×11	6×12	6×12	8×12	8×12	10×16
33	5×11	5×11	5×11	6×12	8×12	8×12	10×13	13×20
47	5×11	5×11	6×12	6×12	8×12	10×13	10×16	13×20
100	6×12	6×12	8×12	8×12	10×16	10×20	13×20	16×25
220	8×12	8×12	10×13	10×16	13×20	13×25	16×25	18×36
330	8×12	10×16	10×16	13×20	13×20	16×25	16×32	
470	10×12	10×16	10×20	13×20	13×25	16×32	18×36	
1000	10×20	13×20	13×25	16×25	16×32			
2200	13×25	16×25	16×32	18×36				
3300	16×25	16×32	18×36					
4700	16×32	18×36						
6800	16×36							

Note:We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

CD72(BP) SERIES

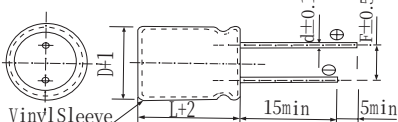
Non-Polar Speaker

- ▶ Low dissipation factor, high ripple current
- ▶ used in speaker dividing network circuits.

无极性音频品

- ▶ 低损耗角正切，高纹波电流。
- ▶ 适用于音频网络分频电路。



Item 项目	Characteristics 特性							
Size and its tolerance 尺寸及其误差 	Ø D	8		10		13		16
	F ± 0.5	3.5		5.0				7.5
	d ± 0.1	0.5		0.6				0.8
Operating Temp. Range 使用温度范围	-40℃～+85℃							
Rated Working Voltage 额定工作电压U _R	10～100V _{DC}							
Capacitance Range 电容量范围C _R	0.47 μF～47 μF							
Capacitance Tol. 电容量允许偏差ΔC/C _R	±10%(+20℃,100 or 120Hz)							
Dissipation Factor tg δ 损耗角正切值	At +20℃,100 or 120Hz +20℃100 or 120Hz							
	U _R (V)	10	16	25	35	50	63	100
	tg δ	0.10	0.08	0.06	0.05	0.05	0.04	0.04
Leakage Current I _L 漏电流	≤0.03·C _R ·U _R or 3 μA whichever is greater 取较大者							
	At +20℃,after 2 minutes application of U _R . (+20℃,升到额定电压后2分钟时读数)							
Load Life 高温负荷	At +85℃,after U _R applied for 1000 hours . +85℃,施加U _R 1000小时后:							
	ΔC	±20% of initial measured value (初始值)						
	DF(tg δ)	≤150% of initial specified value (规定值)						
	LC(I _L)	initial specified value (规定值)						
Shelf Life 高温储存	At+85℃,after shelf for 500 hours(without voltage applied) ,then restored for 16 hours at room temp. +85℃,500小时（不加电压）后，经不少于16小时的室温恢复:							
	ΔC	±20% of initial measured value (初始值)						
	DF(tg δ)	≤150% of initial specified value (规定值)						
	LC(I _L)	≤200% of initial specified value (规定值)						

Case Size of Standard Products 标准尺寸

U _R (V) C _R (µF)	10	16	25	35	50	63	100
0.47					8×12	10×12	10×16
0.68					10×12	10×16	10×20
1.0			8×12	10×12	10×16	10×20	13×20
1.5			8×12	10×12	10×16	10×20	13×20
2.2		8×12	10×12	10×16	10×20	13×20	13×25
3.3	8×12	10×12	10×16	10×20	10×20	13×20	13×25
4.7	10×13	10×16	10×20	10×20	13×20	13×25	16×25
6.8	10×13	10×16	10×20	13×20	13×25	16×25	16×25
10	10×16	10×20	13×20	13×20	16×25	16×25	
15	10×16	10×20	13×20	13×25	16×25		
22	10×20	13×20	13×25	16×25			
33	13×20	13×25	16×25				
47	13×25	16×25					

Note:We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

■CDS(HX) SERIES

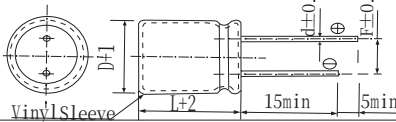
For Horizontal Deflection

- ▶Nonpolar Small loss at high frequency,high ripple current.
▶Used in S correction of horizontal deflection current in TVs.

CDS型特性校正

- ▶无极性产品高频低损耗，高纹波电流。
▶适用于电视机水平偏转电流校正电路。



Item 项目	Characteristics 特 性								
Size and its tolerance 尺寸及其误差 	Ø D	10	13	16			18		
	F ± 0.5	5.0			7.5				
	d ± 0.1	0.6			0.8				
Operating Temp. Range 使用温度范围	-40℃～+85℃								
Rated Working Voltage 额定工作电压U _R	10V～100VDC								
Capacitance Range 电容量范围C _R	0.47 μ F～47 μ F								
Capacitance Tol. 电容量允许偏差△C/C _R	± 10%, ± 20%(+20℃100 or 120Hz)								
Dissipation Factor tg δ 损耗角正切值	+20℃,100 or 120Hz.	U _R (V)	10	16	25	35	50	63	100
		tgδ	0.08	0.06	0.05	0.04	0.04	0.03	0.03
Leakage Current 漏电流	≤ 100 μ A At+20℃,after 5 minutes application of U _R (+20℃,升到额定电压后5分钟时读数)								
Load Life 高温负荷	At +85℃,after U _R applied for 1000 hours (polarity inverson after discharge per 250 hours): + 85℃,施加U _R 1000小时(每250小时放电后更换极性)后：								
	△C	± 15% of initial measured value (初始值)							
	DF(tg δ)	≤ 150% of initial specified value (规定值)							
	LC(I _L)	≤ initial specified value (规定值)							
Shelf Life 高温储存	At+85℃,after shelf for 500 hours(without voltage applied),then restored for 16 hours at room temp. + 85℃,500小时 (不加电压) 后，经不少于16小时的室温恢复：								
	△C	± 15% of initial measured value (初始值)							
	DF(tg δ)	≤ 150% of initial specified value (规定值)							
	LC(I _L)	≤ 200% of initial specified value (规定值)							

Case Size of Standard Products 标准尺寸

UR(V) CR(μF)	10	16	25	35	50	63	100
0.47							13×20
0.68						13×20	13×25
1.0			10×20	10×20	13×20	13×25	16×25
1.5			10×20	13×20	13×25	16×25	16×32
2.2		10×20	13×20	13×25	16×25	16×32	16×36
3.3	10×20	13×20	13×25	16×25	16×32	16×36	18×36
4.7	13×20	13×25	16×25	16×32	16×36	18×36	18×40
6.8	13×25	16×25	16×32	16×36	18×36	18×40	
10	16×25	16×32	16×36	18×36	18×40		
15	16×32	16×36	18×36	18×40			
22	16×36	18×36	18×40				
33	18×36	18×40					
47	18×40						

Note: We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

CD81(TR) (105°C) SERIES

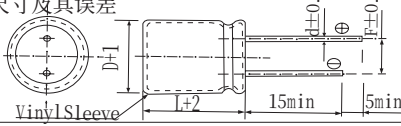


High Temp

- Wide temperature range, stable and reliable performances
- D≥8mm equipped with pressure release device.
- Be used in DC or pulse circuit under enviroment of high temperature.

耐高温品

- 工作环境温度高、性能稳定、可靠。
- 直径≥8mm 者具有压力释放装置。
- 适用于各种设备的高温环境的直流或脉动电路中。

Item 项目	Characteristics 特性									
Size and its tolerance 尺寸及其误差 	ØD	5	6	8	10	12	13	16	18	22
	F ± 0.5	2.0	2.5	3.5	5.0			7.5		10
	d ± 0.1	0.5			0.6			0.8		
Operating Temp. Range 使用温度范围	-40℃~+105℃(10≤100VDC) -25℃~+105℃(160~450VDC)									
Rated Working Voltage 额定工作电压UR	10~450VDC									
Capacitance Range 电容量范围CR	1.0~4700 μF(+20℃,100 or 120Hz)									
Capacitance Tol. 电容量允许偏差ΔC/CR	±20%, +30% ₋₁₀ (+20℃,100 or 120Hz)									
Dissipation Factor tg δ 损耗角正切值	At +20℃ and 100 or 120Hz, for CR>1000 μF, tg δ add 0.02 per another 1000 μF. +20℃,100 或 120Hz,电容量大于1000 μF者, 每增加1000 μF tg δ 增加0.02。									
	UR (V)	10	16	25	35	50,63	100	160~250	400,450	
	tg δ	0.22	0.20	0.15	0.12	0.10	0.08	0.16	0.20	
Leakage Current IL 漏电流	≤0.01·CR·UR or 3 μA(≤100Vdc) whichever is greater 取较大者 ≤0.03·CR·UR + 10 μA(≥160VDC) Measured after 2 minutes application of UR, at +20℃ (+20℃,升到UR后2分钟时读数)									
	At +105℃, after UR applied for 1000 hours . +105℃,施加UR1000小时后:									
Load Life 高温负荷	ΔC	±25% of initial measured value (初始值)								
	DF(tg δ)	≤200% of initial specified value (规定值)								
	LC(IL)	≤ initial specified value (规定值)								
Shelf Life 高温储存	At +105℃, after shelf for 500 hours(without voltage applied) , then restored for 24 hours at room temp. +105℃,500小时 (不加电压) 后, 经不少于16小时的室温恢复:									
	ΔC	±25% of initial measured value (初始值)								
	DF(tg δ)	≤200% of initial specified value (规定值)								
	LC(IL)	≤200% of initial specified value (规定值)								

Frequency Correction Factor for Ripple Current: 纹波电流的频率调整系数

UR(VDC)	CR(µF)	Frequency 频率(Hz)				
		50	100	1K	10K	100K
6.3~100	1.0~10	0.7	1.0	1.6	1.85	2.0
	22~220	0.75	1.0	1.4	1.55	1.6
	330~4700	0.8	1.0	1.15	1.25	1.3
160~450	1.0~220	0.7	1.0	1.4	1.55	1.6

Permissible Ripple Current IR max(+105℃, 100Hz, mA rms):

允许最大纹波电流IR(+105℃, 100Hz, mA rms):

CR (µF) \ UR (V)	10	16	25	35	50	63	100	160	200	250	400	450
1.0					11	11	14	15	16	16	19	20
2.2					18	19	21	24	26	27	30	32
3.3					22	24	28	34	35	38	39	41
4.7					30	33	36	43	47	48	51	55
10			29	37	46	55	60	70	76	80	82	90
22		37	42	51	66	81	108	113	115	124	146	166
33	43	49	58	72	88	101	122	150	156	167	171	184
47	72	78	86	98	116	136	166	190	210	225	243	250
100	93	115	126	153	174	215	256	329	335	365		
220	136	180	230	280	310	388	490	593	628			
330	210	260	320	410	480	560	636					
470	310	360	420	520	650	800	880					
1000	480	600	760	910	1020	1220						
2200	960	1100	1210	1410	1500	1600						
3300	1160	1300	1400	1600	1810							
4700	1400	1510	1750									

Case Size of Standard Products 标准尺寸

CR (µF) \ UR (V)	10	16	25	35	50	63	100	160	200	250	400	450
1.0					5×11	5×11	5×12	5×12	6×12	6×12	8×12	8×12
2.2					5×11	5×11	5×12	6×12	8×12	8×12	10×13	10×15
3.3					5×11	5×11	5×12	8×12	8×12	10×13	10×15	10×17
4.7					5×11	5×11	5×12	8×12	10×13	10×13	10×10	10×20
10			5×11	5×11	5×11	5×12	8×12	10×13	10×17	10×17	12×22	13×26
22		5×11	5×11	5×11	5×12	6×12	10×13	10×20	10×20	12×22	16×27	16×31
33	5×11	5×11	5×11	5×12	6×12	8×12	10×13	12×22	12×22	13×26	16×31	16×36
47	5×11	5×11	5×12	6×12	8×12	8×12	10×17	13×22	13×26	16×27	16×36	18×41
100	6×12	6×12	6×12	8×12	10×13	10×15	12×22	16×27	16×31	16×36		
220	6×12	6×12	8×12	8×12	10×17	12×22	16×27	18×36				
330	8×12	8×13	10×15	10×17	12×22	13×22	16×31					
470	8×14	8×12	10×20	12×22	13×22	16×27	18×36					
1000	10×17	10×11	12×25	13×26	16×27	16×36						
2200	13×22	13×26	13×25	16×31	18×36	22×42						
3300	13×26	16×27	16×31	18×38	22×42							
4700	16×27	16×31	16×32	22×40								

Note: We can also provide the capacitors according to the customer's request.
注: 亦可按客户要求提供。

■CD117(SH) SERIES

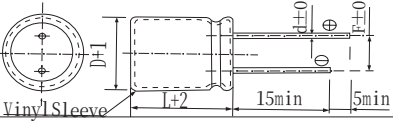


High Precision Stability

- ▶Extremely low dissipation factor,high stability.
- ▶used in TV gathering focus,oscillation frequency and timer circuits.

高精度稳定品

- ▶低损耗角正切，高稳定的性能。
- ▶适用于电视聚焦，振荡，定时回路。

Item 项目	Characteristics 特性						
Size and its tolerance 尺寸及其误差 	ØD	6	8	10	13	16	18
	F ± 0.5	2.5	3.5	5.0		7.5	
	d ± 0.1	0.5		0.6		0.8	
Operating Temp. Range 使用温度范围	-40℃～+85℃						
Rated Working Voltage 额定工作电压U _R	10V～50V _{dc}						
Capacitance Range 电容量范围C _R	0.47 μ F～470 μ F						
Capacitance Tol. 电容量允许偏差ΔC/C _R	± 10%,(100Hz,20℃)						
Dissipation Factor tg δ 损耗角正切值	+20℃, 100 or 120Hz.		U _R (V)				
			10	16	25	35	50
Leakage Current I _L 漏电流	≤0.01·C _R ·U _R or 3 μ A whichever is greater 取较大者						
	At +20℃,after 2 minutes application of U _R (+20℃,升到U _R 后2分钟时读数)						
Load Life 高温负荷	At +85℃ after U _R applied for 1000 hours . +85℃,施加U _R 1000小时						
	ΔC	± 10% of initial measured value (初始值)					
	DF(tg δ)	≤ 150% of initial specified value (规定值)					
	LC(I _L)	≤ initial specified value (规定值)					
Shelf Life 高温储存	At+85℃,after shelf for 500 hours(without voltage applied) , then restored for 16 hours at room temp. +85℃,500小时（不加电压）后，经不少于16小时的室温恢复：						
	ΔC	± 10% of initial measured value (初始值)					
	DF(tg δ)	≤ 150% of initial specified value (规定值)					
	LC(I _L)	≤ 200% of initial specified value (规定值)					

Case Size of Standard Products 标准尺寸

CR(μ F)	UR(V)	10	16	25	35	50
0.47						6×12
1.0					6×12	6×12
2.2				6×12	6×12	6×12
3.3			6×12	6×12	6×12	6×12
4.7		6×12	6×12	6×12	8×12	8×12
10		6×12	8×12	10×13	10×13	10×16
22		8×12	10×13	10×16	10×20	10×20
33		10×13	10×16	10×20	13×20	13×20
47		10×16	10×20	13×20	13×25	13×25
100		10×20	13×20	13×25	16×25	16×25
220		13×20	13×25	16×25	16×32	16×36
330		16×25	16×25	16×32		
470		16×36	16×36			

Note:We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

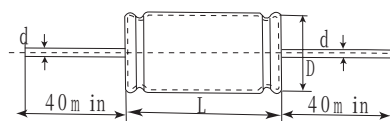
AK10(AN) SERIES



Axial Non-polar

卧式无极性

► Specially designed for use in speaker dividiny net work for low ripple current. ► 本产品经特殊设计用于高频网络分频电路，能耐小纹波电流。

Item 项目	Characteristics 特性									
Size and its tolerance 尺寸及其误差 	ØD	±0.5			±1.0					
		6	8		10		12		13	16
	L ± 0.2	16	16	19	19	21	23	26	31	32
	d ± 0.1	0.6					0.8			
Operating Temp. Range 使用温度范围	-40℃～+85℃									
Rated Working Voltage 额定工作电压UR	50～100V									
Capacitance Range 电容量范围CR	1.0～100 μ F									
Capacitance Tol. 电容量允许偏差ΔC/CR	± 20%, ± 10%(100Hz)									
Dissipation Factor tg δ 损耗角正切值	额定电压UR(V)	50V				100V				
	100Hz	tg δ ≤0.12				tg δ ≤0.10				
Leakage Current IL 漏电流	≤0.03·CR·UR+4 μ A (After 2 minutes application of UR) 施加工作电压两分钟后，漏电流≤0.03·CR·UR+4 μ A。									
Load Life 高温负荷特性	The following specifications shall be satisfied when the capcitors are restored to 25℃ after rated Dc voltage applied for 1000 hours at 85℃,During this test the rated Dc voltage shall be reversed on the capacitor every 125 hours:ΔC≤±20% of initial value,tg δ ≤ 150% of specified value,IL≤specified value. +85℃,施加额定工作电压，每125小时极性变换一次，总计1000小时，恢复常温下测量需满足下列规定： 电容量变化 ΔC≤±20%初始值,tg δ ≤ 150%规定值，IL≤规定值。									

Case Size of Standard Products 标准尺寸：

$C_R (\mu\text{F}) \backslash U_R (\text{V})$	50V	100V
1 μF	6×16	6×16
1.5 μF	6×16	6×16
2.2 μF	6×16	6×16
3.3 μF	6×16	8×16
4.7 μF	6×16	8×16
6.8 μF	6×16	8×19
10 μF	8×16	10×19
15 μF	8×19	10×21
22 μF	10×19	10×24
33 μF	12×23	12×26
47 μF	12×26	13×31
68 μF	12×26	13×31
100 μF	13×31	16×32

Note: We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

Permissible Ripple Curentr (mA at 20°C, 100Hz): 允许最大纹波电流 (mA at 20°C, 100Hz)

	1 μF	1.5 μF	2.2 μF	3.3 μF	4.7 μF	6.8 μF	10 μF	15 μF	22 μF	33 μF	47 μF	68 μF	100 μF
50V	23	28	28	35	41	50	64	88	106	136	162	215	271
100V	23	28	35	43	52	70	88	119	145	184	220	291	391

■ AK20(AB) SERIES

Axial Bi-polar

卧式分频品

► Specially designed for use in speaker dividiny net work for high ripple current. ► 本产品经特殊设计用于高频网络分频电路，能耐大纹波电流。



Item 项目	Characteristics 特 性									
Size and its tolerance 尺寸及其误差	∅D	±0.5			±1.0					
		8	10		12		13	16	18	22
	L ± 2	16	19	21	23	26	31	32	40	45
	d ± 0.1	0.6			0.8					
Operating Temp. Range 使用温度范围	-40℃ ~ +85℃									
Rated Working Voltage 额定工作电压U _R	50 ~ 100V									
Capacitance Range 电容量范围C _R	1.0 ~ 220 μ F									
Capacitance Tol. 电容量允许偏差ΔC/C _R	± 10%(1000Hz)									
Dissipation Factor tg δ 损耗角正切值	额定电压U _R (V)	50V				100V				
	1000Hz	tg δ ≤ 0.10								
Leakage Current I _L 漏电流	≤ 0.03·C _R ·U _R +4 μ A (After 2 minutes application of U _R) 施加工作电压两分钟后，漏电流≤ 0.03·C _R ·U _R +4 μ A.									
Load Life 高温负荷特性	The following specifications shall be satisfied when the capacitors are restored to 25℃ after rated Dc voltage applied for 1000 hours at 85℃,During this test the rated Dc voltage shall be reversed on the capacitor every 125 hours:+85℃ 下,施加额定工作电压,每125小时极性变换一次,总计1000小时,恢复常温下测量需满足下列规定:									
	ΔC	± 20% of initial measured value				(初始值)				
	DF(tg δ)	≤ 150% of initial specified value				(规定值)				
	LC(I _L)	≤ initial specified value				(规定值)				

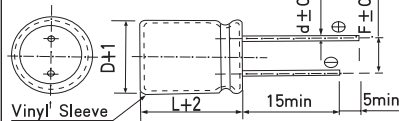
Case Size of Standard Products 标准尺寸

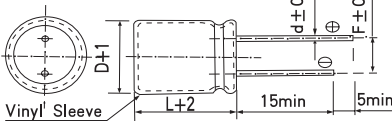
C_R (μ F) U_R (V)	50V	100V
1 μ F	8 × 16	8 × 16
	10 × 19	10 × 19
1.5 μ F	8 × 16	8 × 16
	10 × 19	10 × 19
2.2 μ F	8 × 16	8 × 16
	10 × 19	10 × 19
3.3 μ F	8 × 16	8 × 16
	10 × 19	10 × 19
4.7 μ F	8 × 16	8 × 16
	10 × 19	10 × 19
6.8 μ F	10 × 19	10 × 19
	12 × 23	12 × 23
10 μ F	12 × 23	12 × 23
15 μ F	12 × 23	12 × 23
22 μ F	12 × 23	12 × 23
	13 × 31	13 × 31
	16 × 32	16 × 32
33 μ F	13 × 31	13 × 31
	16 × 32	16 × 32
40 μ F	16 × 32	16 × 32
47 μ F	16 × 32	16 × 32
68 μ F	16 × 32	16 × 32
100 μ F	16 × 32	16 × 32
	18 × 40	18 × 40
150 μ F	18 × 40	18 × 40
220 μ F	18 × 40	18 × 40

■ CD11H(GF) SERIES

High frequency low impedance

►High frequency, low dissipation factor, low inductance and high ripple current. Load life: 105°C, 2000 hours.



Item 项目	Characteristics 特性										
Size and its tolerance 尺寸及其误差 	D±1	10	12	16	19	22					
	F ± 0.5	5.0			7.5			10.0			
	d ± 0.1	0.6			0.8			1.0			
Operating Temp. Range 使用温度范围	-40℃ ~ +105℃										
Rated Working Voltage 额定工作电压范围UR	6.3 ~ 250V										
Nominal Capacitance Range 标称电容量范围CR	0.47 ~ 6800 μ F										
Capacitance Tol. 标称电容量允许偏差ΔC/CR	± 20%										
Dissipation Factor tg δ 损耗角正切值 (20℃, 100Hz)	UR	6.3	10	16	25	35	50	63	100	160	250
	tg δ	0.22	0.19	0.16	0.14	0.12	0.10	0.08	0.08	0.06	0.06
	0.02 is added to every 1000 μ F increase over 1000 μ F. 电容量大于1000 μ F者, 每增加1000 μ F, 其损耗角正切值增加0.02。										
Leakage Current IL 漏电流	I ≤ 0.03·CR·UR(μ A) or (或) 3 μ A (whichever is greater取较大者) (1 minute 1分钟)										
Temperature Characteristics (Impedance ratio at 100Hz) 温度特性	UR(V)		6.3 ~ 10			16 ~ 35			50 ~ 250		
	Z-40℃/Z+20℃		4			3			2		
Load Life 耐久性	At +105℃ after applying rated voltage for 2000 hours and then resumed 16 hours: +105℃,施加额定电压2000小时, 恢复16小时后:										
	ΔC		≤ ± 20% of initial measured value (初始值)								
	DF(tg δ)		≤ 200% of initial specified value (规定值)								
	LC(IL)		≤ initial specified value (规定值)								
Shelf Life 高温储存	At +105℃ after storage for 1000 hours and then resumed 16 hours: +105℃,贮存1000小时,恢复16小时后:										
	ΔC		≤ ± 20% of initial measured value (初始值)								
	DF(tg δ)		≤ 200% of initial specified value (规定值)								
	LC(IL)		≤ 200% of initial specified value (规定值)								

Note: We can also provide the capacitors according to the customer's request. 注: 亦可按客户要求提供。

■CD11H(GF) SERIES



Nominal capacitance, rated voltage, impedance, rated ripple current and case size table
标称电容量、额定电压、阻抗、额定纹波电流与外形尺寸对应表

U _R	6.3			10			16			25			35		
C _R	DxL	Z _{100KHz}	(mA)	DxL	Z _{100KHz}	(mA)	DxL	Z _{100KHz}	(mA)	DxL	Z _{100KHz}	(mA)	DxL	Z _{100KHz}	(mA)
22													10 × 16	0.75	85
33										10 × 16	0.80	28	10 × 16	0.49	125
47							10 × 16	0.80	92	10 × 16	0.55	125	10 × 20	0.34	160
68				10 × 16	0.08	97	10 × 20	0.50	135	10 × 20	0.36	160	12 × 20	0.24	230
100	10 × 16	0.85	99	10 × 16	0.55	135	10 × 20	0.35	175	10 × 20	0.24	245	12 × 20	0.16	305
150	10 × 20	0.49	155	10 × 20	0.35	185	12 × 20	0.23	260	12 × 25	0.16	320	12 × 25	0.12	415
220	10 × 20	0.30	205	10 × 20	0.24	270	12 × 20	0.16	335	12 × 25	0.11	455	16 × 25	0.085	580
330	12 × 20	0.20	310	12 × 20	0.16	350	16 × 25	0.12	455	16 × 25	0.085	610	16 × 30	0.060	810
470	12 × 20	0.14	435	12 × 25	0.12	475	16 × 25	0.09	615	16 × 30	0.065	810	16 × 35	0.046	1130
680	16 × 25	0.10	605	16 × 25	0.085	660	16 × 30	0.065	845	16 × 30	0.046	1180	16 × 35	0.036	1370
1000	26 × 25	0.075	820	16 × 30	0.060	915	16 × 35	0.047	1210	19 × 30	0.036	1430	19 × 30	0.029	1710
1500	16 × 35	0.055	1090	19 × 30	0.045	1290	19 × 30	0.036	1490	19 × 40	0.029	1780	22 × 40	0.024	2120
2200	16 × 35	0.043	1320	19 × 30	0.034	1530	19 × 30	0.028	1800	19 × 40	0.024	2120			
3300	19 × 30	0.034	1530	19 × 35	0.026	1960	19 × 40	0.023	2160						
4700	19 × 35	0.028	1890	19 × 40	0.023	2170									
6800	22 × 40	0.024	2130												

U _R	50			63			100			160			250		
C _R	DxL	Z _{100KHz}	(mA)	DxL	Z _{100KHz}	(mA)	DxL	Z _{100KHz}	(mA)	DxL	Z _{100KHz}	(mA)	DxL	Z _{100KHz}	(mA)
0.47	10 × 12	23.0	11				10 × 12	43.0	8	10 × 16	64.5	12	10 × 16	86.0	12
0.1	10 × 12	00.1	18				10 × 12	17.0	13	10 × 16	25.5	17	10 × 16	34.0	17
1.5	10 × 12	7.50	22				10 × 12	10.0	17	10 × 16	15.0	23	10 × 16	20.0	25
2.2	10 × 12	5.00	27				10 × 12	6.60	21	10 × 20	9.90	25	10 × 20	13.2	29
3.3	10 × 12	3.30	33				10 × 12	4.10	27	12 × 25	6.15	36	12 × 20	8.20	42
4.7	10 × 12	2.20	40				10 × 16	1.80	34	12 × 25	4.20	43	12 × 20	6.11	50
6.8	10 × 12	1.80	45				10 × 20	1.90	41	12 × 25	2.85	65	12 × 25	4.22	65
10	10 × 12	1.40	57	10 × 16	1.06	67	10 × 20	1.20	52	12 × 25	1.80	70	16 × 25	2.88	88
							10 × 25								
15	10 × 16	0.93	72	10 × 20	0.73	92	12 × 20	0.81	65	16 × 30	1.28	120	16 × 35	1.92	120
22	10 × 16	0.65	100	10 × 20	0.52	110	12 × 20	0.55	122	16 × 30	0.08	130	16 × 35	1.30	155
33	10 × 20	0.43	135	10 × 20	0.35	170	12 × 25	0.38	169	16 × 25	0.58	180	16 × 35	0.87	190
									252	16 × 35					
47	10 × 20	0.30	195	12 × 20	0.25	215	16 × 25	0.20	326	19 × 30	0.41	220	19 × 30	0.61	230
68	12 × 20	0.20	255	16 × 25	0.17	315	16 × 30	0.21	438	19 × 30	0.28	260	22 × 40	0.42	280
100	12 × 25	0.14	410	16 × 25	0.12	495	16 × 30	0.15	553	22 × 40	0.18	330	22 × 40	0.34	340
150	16 × 30	0.10	470	16 × 30	0.090	665	19 × 30	0.11	730						
220	16 × 30	0.075	760	16 × 30	0.065	835	19 × 30	0.087	1160						
330	16 × 30	0.055	995	16 × 35	0.049	1090	19 × 35	0.062							
470	19 × 30	0.044	1190	19 × 30	0.039	1420									
680	19 × 30	0.036	1530	22 × 40	0.032	1700									
1000	19 × 35	0.030	1830												

impedance 阻抗 rated ripple current (+105℃, 100Hz) 额定纹波电流

■CD11Z(SZ) SERIES

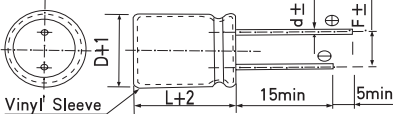


Middle and High Vol Tage

► Medium and high voltage,excellect frequency, used in energy-saving electronic ballasts,switchregulated power supplies ect.

中高压

► 中高压，有良好的频率特性，用于节能电子镇流器和开关式稳定电源等。

Item 项目	Characteristics 特性						
Size and its tolerance 尺寸及其误差 	φ D	±0.5		±1.0			
		6.3	8	10	22	16	19
	F ± 0.5	2.5	3.5	5		7.5	
	d ± 0.1	1.5	0.6	0.6		0.8	
Operating Temp. Range 使用温度范围	-40℃ ~ +85℃						
Rated Working Voltage 额定工作电压UR	160 ~ 450V						
Nominal Capacitance Range 标称电容量范围CR	1 ~ 220 μ F						
Capacitance Tol. 标称电容量允许偏差ΔC/CR	± 20%, ⁺³⁰ / ₋₁₀ %						
Dissipation Factor tg δ (20℃, 100Hz) 损耗角正切值	UR(V)	≤ 250			≥ 350		
	tg δ	0.15			0.20		
Leakage Current IL 漏电流	I ≤ 0.03·CR·UR+10 μ A (Reading after 1 minute 1分钟读数)						
Temperature Characteristics (impedance ratio at 100Hz) 温度特性	UR(V)	160			> 160		
	Z-25℃/Z+20℃	≤ 4			≤ 7		
Load Life 耐久性	At +85℃ after applying rated voltage for 1000 hours and then resumed 16 hours: +85℃,施加额定电压1000小时,恢复16小时后:						
	ΔC	≤ ± 15% of initial measured value (初始值)					
	DF(tg δ)	≤ 150% of initial specified value (规定值)					
	LC(IL)	≤ initial specified value (规定值)					
Shelf Life 高温储存	At +85℃ after storage for 500 hours and then resumed 16 hours: +85℃,贮存500小时,恢复16小时;						
	ΔC	≤ ± 15% of initial measured value (初始值)					
	DF(tg δ)	≤ 120% of initial specified value (规定值)					
	LC(IL)	≤ 200% of initial specified value (规定值)					

Nominal capacitance rated voltage and case size table

标称电容量、额定电压、与外形尺寸对应表

$\frac{D \times L}{C_R} \begin{matrix} \text{mm} \\ (\mu\text{F}) \end{matrix}$	U_R	160	200	250	350	400	450
1		6.3×12	6.3×12	8×12	8×12	10×12	10×12
2.2		8×12	8×12	10×12	10×16	10×16	10×20
3.3		10×12	10×12	10×16	10×16	10×20	12×20
4.7		10×12	10×16	10×16	10×20	12×20	12×25
10		10×16	10×20	12×20	12×25	12×25	16×25
22		12×20	12×25	13×25	16×25	16×30	16×35
33		12×25	16×25	16×25	16×35		
47		16×25	16×25	16×30	19×40		
100		16×35	19×40	19×40			
220		19×40					

Note: We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

■ CD293(BZ) SERIES



Standard

中高压，标准品

► Medium and high voltage, standard.

► 中高压标准品。

Item 项目	Characteristics 特性				
Size and its tolerance 尺寸及其误差 	D ± 1.5	16	22	25	30
	L ± 3	25	30,35,40	40,50	40,50
Operating Temp. Range 使用温度范围	40℃ ~ +85℃				
Rated Working Voltage 额定工作电压U _R	160 ~ 400V				
Nominal Capacitance Range 标称电容量范围C _R	33 ~ 470 μ F				
Capacitance Tolerance 标称电容量允许偏差	-10% ~ 50%				
Dissipation Factor tg δ (20℃, 100Hz) 损耗角正切值	U _R (V)	<350		≥350	
	tg δ	0.18		0.23	
Leakage Current 漏电流	I ≤ 0.03·C _R ·U _R (μ A) or (或) 3mA (which is smaller 取较小者)				
Temperature Characteristics (impedance ratio at 100Hz) 温度特性	U _R (V)	160		>160	
	Z-25℃/Z+20℃	≤4		≤7	
Load Life 耐久性	At +85℃ after applying rated voltage with sepecified ripple current for 1000 hours . +85℃,施加带额定纹波电流的额定电压1000小时, 恢复16小时后 :				
	ΔC	±15% of initial measured value (初始值)			
	DF (tg δ)	≤150% of initial specified value or 0.4(which is greater) ≤1.5倍初始规定值 或 0.4(取较大值).			
	LC(I _L)	≤ initial specified value (规定值)			
Shelf Life 高温储存	At +85℃ after storage for 500 hours then resumed 16 hours 在+85℃储存500小时,恢复16小时后 :				
	ΔC	±20% of initial measured value (初始值)			
	DF (tg δ)	≤120% of initial specified value (规定值)			
	LC(I _L)	≤ 200% of initial specified value (规定值)			

Nominal capacitance, rated voltage, surge voltage and case size table: 标称电容量、额定电压、浪涌电压与外形尺寸对应表：

UR(V) Us(V) DxL(mm) CR(µ F)	160	200	250	315	350	400
	200	250	300	365	400	450
33						22×30
47						22×30
68			16×25	22×30	22×30	22×40
100	22×30	22×30		22×40	22×40	25×40
150	22×30	22×30	22×40	25×40	25×40	25×50
200	25×40	25×40	25×40	25×50	25×50	30×50
		22×35	25×50	30×40	30×50	25×40
330	25×40	25×50	30×40			30×45
470	25×40	30×50				30×50
	25×50					

Note: We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

■ CD60(QD)



Large Can Type

- ▶ More than 30000 times of starting at 55°C.
- ▶ Bi-polar, lug terminal type.
- ▶ For starting AC motor.

大电解

- ▶ 55°C，启动3万次以上。
- ▶ 无极性焊片引出品。
- ▶ 交流电动机起动用。

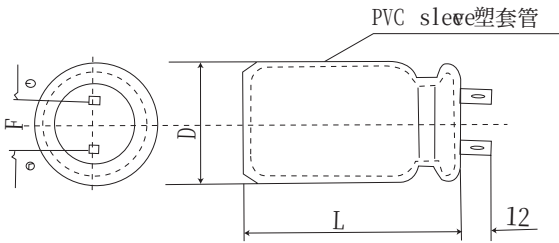
Characteristice 特性规范

Item 项目	Characteristics 特性				
Rated Working Voltage 额定工作电压U _R	110~220VAC				
Operating Temp. Range 使用温度范围	-10°C~+55°C				
Capacitance Tol. 标称电容量允许偏差△C/C _R	±20%(20°C,50/60Hz)				
Dissipation Factor tg δ 损耗角正切值 (20°C, 100Hz)	≤0.10(20°C,50/60Hz)				
Load Characteristic 负荷特性	85% of the maximum voltage is spplied to the capacitors for 1 sec every minute at +55°C,After repeating the bove test 30000 tims,the follwing specifications shall be sat- isfied when the capacitors are restored to 20°C. 在+55°C,电容器每分钟通电一次,每次施加最高电压的0.85倍电压1秒钟,共3万次,经恢复后, <table><tr><td>Capactiance Change 电容量变化</td><td>Within ±15% of the initial value 初测值的±15% 以内</td></tr><tr><td>Dissipation Factor tan δ</td><td>Not more than 0.20 小于0.20</td></tr></table>	Capactiance Change 电容量变化	Within ±15% of the initial value 初测值的±15% 以内	Dissipation Factor tan δ	Not more than 0.20 小于0.20
Capactiance Change 电容量变化	Within ±15% of the initial value 初测值的±15% 以内				
Dissipation Factor tan δ	Not more than 0.20 小于0.20				

Standard Ratings 规格及其外形尺寸

Rated Voltage 规定工作电压U _R (V)	110	125	160	220
Rated Voltage 最高电压U _{A C max} (V)	138	156	200	265
C _R (μF)	DxL(mm)			
50	—	—	30×80	35×80
75	30×60	30×60	30×80	42×80
100	30×60	30×80	35×80	42×100
150	30×80	35×80	42×80	42×120
200	35×80	35×80	42×100	50×120
300	42×80	42×100	42×120	—
400	42×100	42×120	—	—

Dimensions 外形图



D±0.5	30		35	42			50
L±2	60	80	80	80	100	120	120
F±0.1	10		10	15			35

Note:We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

■ CD13N(PK)

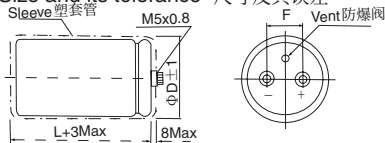
High Ripple Current

高纹波品

- ▶ Used for storing energy of electric wolder and in UPS air conditioners etc.
- ▶ High valtage, large capacitance high ripple current and the device of pressure release.

- ▶用于电焊机储能、UPS不间断电源、空调逆变器电子设备中。
- ▶耐压高、容量大、能承受大纹波电流等特点,并设有压力释放装置。



Item 项目	Characteristics 特性				
Size and its tolerance 尺寸及其误差 	D ± 1	35	50	65	80
	L + 3	80~100	80~120	100~120	100~160
	F ± 1	12.0	21.5	26.5	32.6
Operating Temp. Range 使用温度范围	-40℃~+85℃		-25℃~+85℃		
Rated Working Voltage 额定工作电压UR	160~250V		350~450V		
Nominal Capacitance Range 标称电容量范围CR	220~15000 μ F				
Capacitance Tol. 标称电容量允许偏差ΔC/CR	-10%~+30%				
Leakage Current IL 漏电流	I ≤ 0.02·CR·UR(μ F)或5mA(取较小值)				
Dissipation Factor tg δ 损耗角正切值	tan δ ≤ 0.25				
Load Life 耐久性	At +85℃ after applying rated voltage for 1000 hours and then resumed 16 hours: +85℃,施加额定电压1000小时, 恢复16小时后：				
	△C	≤ ± 15% of initial measured value			(初始值)
	DF(tg δ)	≤ 175% of initial specified value			(规定值)
	LC(IL)	initial specified value			(规定值)
Shelf Life 高温储存	At +85℃ after storage for 500 hours and then resumed 16 hours: 在+85℃储存500小时,恢复16小时后：				
	△C	≤ ± 15% of initial measured value			(初始值)
	DF(tg δ)	≤ 175% of initial specified value			(规定值)
	LC(IL)	≤ 200% of initial specified value			(规定值)

UR(V)	160		200		250		350		400		450	
Item 项目	DxL (mm)	额定纹波电流 (A)	DxL (mm)	额定纹波电流 (A)	DxL (mm)	额定纹波电流 (A)	DxL (mm)	额定纹波电流 (A)	DxL (mm)	额定纹波电流 (A)	DxL (mm)	额定纹波电流 (A)
CR (μ F)												
220									35×80	1.5	35×80	0.86
330									35×100	1.9	35×100	1.1
470							35×80	1.5	50×80	2.3	50×80	1.4
680			35×80	1.7	35×80	1.5	35×100	1.8	50×100	2.5	50×100	1.8
1000	35×80	1.7	35×100	1.9	35×100	1.9	50×80	2.3	50×120	2.8	65×100	2.4
1500	35×100	2.3	50×80	2.5	50×100	2.5	50×120	3.0	65×120	3.1	80×120	3.1
2200	50×80	2.9	50×100	3.2	50×120	3.5	65×100	3.9	80×100	3.8	80×140	4.0
3300	50×100	3.8	50×120	4.1	65×120	4.7	80×120	5.3	80×140	5.1	80×160	5.4
4700	50×120	4.8	65×120	5.2	80×120	5.7	80×140	7.0	80×160	6.7		
8800	65×120	6.3	80×140	6.6	80×150	7.3						
10000	80×100	7.8	80×160	8.6								
15000	80×160	10.6										

■ CD 21S(PS) 型

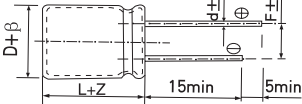
20μF 20μF
300V 300V

PS闪光灯用品

- ▶ Low leakage current, low dissipation factor and small body

▶ Used in flash lamp circuits in camera
- ▶ 低漏电、低损耗、小体积。

▶ 适用于照相机闪光灯充放电电路。

Item 项目		Characteristics 特 性									
Size and its tolerance 尺寸及其误差 	ØD	10	13	14.5	16	17	18	20	22	≥ Ø8 with safety vent ≥ Ø8壳防爆 PVC sleeve PVC塑套	
	F ± 0.5	5.0		7.5				10			
	Ød ± 0.1	0.6		0.8							
	α	1.5							2.0		
	β	0.8							10		
Operating Temp. Range 使用温度范围		-20~+55° C									
Rated Working Voltage 额定工作电压范围		330Vdc									
Capacitance Range 静电容量范围CR		20 μ F~370 μ F									
Capacitance Tol. 静电容量允许偏差ΔC/CR		-10%~+20%(100Hz,20° C)									
(20° C) Leakage current 漏电流(20° C)		I≤CR(μ A) 1 分钟 1minute									
		I:Leakage current 允许漏电流 CR:Rated capacitance 额定静电容量									
Dissipation Factor 损耗角正切值		(V)Rated voltage(v)额定电压				330				100Hz 20° C	
		tg δ(MAX)				0.06					
temerature characteristics (impedance ratio at 100Hz) 温度特性		(V)Rated voltage(v)额定电压				330				100Hz	
		Z-20° C/Z+20° C				2					
Endurance 充放电特性		Charge and discharge at rated voltage at room temperature(+5° C-35° C) in every 30seconds for 5000times with discharge resistance of 0.7-1.0Ω 在高温下(+5° C-35° C), 加额定电压, 充放电间隔30秒, 共5000次, 放电电阻0.7-1.0Ω。 Capacitance change 电容量变化率; initial measured value ±10%初始测量值以内 Leakage current 漏电流: initial specified value ≤150%初始规定值 Dissipation factor 损耗角正切值: initial specified value ≤150%初始规定值									
Shelf Life 高温贮存特性		After storage for 500 hours at 70% then rasumed 16 hours +70° C500小时, 恢复16小时后									
		Capacitance change 电容量变化率; initial measured value ±10%初始值测量以内 Leakage current 漏电流: initial specified value ≤300%初始规定值 Dissipation factor 损耗角正切值: initial specified value ≤150%初始规定值									

Case Size of Standard Products 标准尺寸

WV(V) CR(μ F) 代码		330 VDC							
		2U							
		Ø10	Ø13	Ø14.5	Ø16	Ø17	Ø18	Ø20	Ø16
20	200	10×25	13×20						
40	400	10×30	13×25						
60	600		13×30	14.5×25					
80	800		13×35	14.5×30	16×25				
100	101			14.5×36	16×30	18×28			
120	121				16×36	18×33	18×30		
140	141				16×40	18×37	18×34	20×30	22×28
160	161					18×39	18×36	20×32	22×28
180	181					18×39	18×36	20×32	22×32
200	201					18×48	18×40	20×34	22×36
240	241						18×40	20×40	22×45
370	371								

Note:We can also provide the capacitors according to the customer's request. 注:亦可按客户要求提供。

■CD294(SK) SERIES

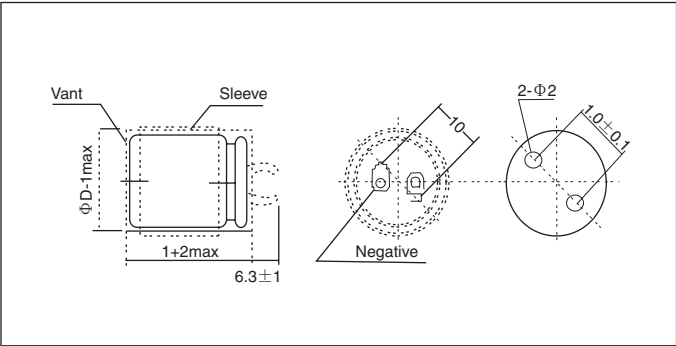
- ▶ Load life of 2000 hours at 105°C
- ▶ High ripple current
- ▶ Smaller Size
- ▶ PCB Mounting



SPECIFICATIONS

Item	Characteristics									
Operating Temperature Range(°C)	-40°C - + 105°C									
Capacitance Tolerance(25°C,120Hz)	± 20%									
Leakage Current(μ A)	0.01CV or 1.2mA whichever is smaller.(at 25°C,after 5 minutes) C:Nominal Capacitance(μ F)V:Rated Voltage(V)									
Dissipation Factor(25°C,120Hz)	Rated Voltage(V)	10	16	25	35	50	63~100	160~200	250~400	
	tan δ	0.45	0.35	0.30	0.25	0.20	0.15	0.12	0.15	
Temperature Stability(120Hz)	Rated Voltage(V)			10,16	25	35	50,63	80,100	160~200	250~400
	Impedance Ratio	Z-25°C/Z+20°C		4	3	3	2	2	3	4
		Z-40°C/Z+20°C		15	10	8	6	5	6	
Load Life(+105°C)	Time			2000 hours						
	Leakage Current			Not more than the specified value.						
	Capacitance Change			Within + 20% of the initial value.						
	Dissipation Factor			Not more than 200% of the specified value.						
Shelf Life(+105°C)	500 hours.No voltage applied.After test:U,to be applied for 60 minutes,24 to 48 hours before measurement.									

DIMENSIONS



MULTIPLIER FOR RIPPLE CURRENT

Frequency coefficient

Freq(Hz) Rated Voltage(V)	50	120	1K	10K	20K
≤ 50	0.95	1	1.10	1.15	1.15
6.3~100	0.95	1	1.16	1.30	1.33
≥ 160	0.90	1	1.20	1.50	1.55

Temperature coefficient

Temperature(°C)	+40	+55	+70	+85	+105
Factor	2.7	2.5	2.1	1.7	1.0

■ **ALUMINUM ELECTROLYTIC CAPACITORS**

► STANDARD RATINGS

WV(V) φD×L(mm)	10		16		25		35		50		63		80		100	
	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple
	uF	mArms	uF	mArms	uF	mArms	uF	mArms	uF	mArms	uF	mArms	uF	mArms	uF	mArms
22×25	6800	1.5	4700	1.4	3300	1.3	2200	1.1	1200	0.96	820	0.92	560	0.76	390	0.64
22×30	10000	1.9	6800	1.8	4700	1.6	2700	1.3	1800	1.2	1200	1.2	820	0.96	560	0.80
22×35	12000	2.1	8200	2.0	5600	1.8	3900	1.6	2200	1.4	1500	1.3	1000	1.1	680	0.92
22×40	15000	2.5	10000	2.3	6800	2.0	4700	1.9	2700	1.6	1800	1.5	1200	1.2	820	1.0
22×50	18000	2.8	15000	2.9	10000	2.6	6800	2.4	-	-	2200	1.7	1800	1.6	1200	1.3
25×25	8200	1.7	6800	1.8	4700	1.6	3300	1.3	1800	1.2	1200	1.1	820	0.96	560	0.80
25×30	12000	2.1	10000	2.2	5600	1.8	3900	1.6	2700	1.5	1500	1.3	1000	1.1	680	0.92
25×35	15000	2.5	12000	2.5	8200	2.2	5600	2.0	3300	1.8	1800	1.5	1500	1.4	1000	1.1
25×40	18000	2.8	15000	2.9	10000	2.6	6800	2.3	-	-	-	-	1800	1.6	-	-
25×50	-	-	18000	3.3	12000	2.9	8200	2.7	5600	2.5	3300	2.2	2200	1.8	1500	1.5
30×25	12000	2.2	10000	2.3	6800	2.0	4700	1.9	2700	1.6	1500	1.4	1200	1.3	820	1.0
30×30	18000	2.8	12000	2.6	8200	2.3	5600	2.1	3300	1.8	2200	1.7	1500	1.5	1000	1.2
30×35	22000	3.2	18000	3.3	12000	2.9	8200	2.9	4700	2.3	2700	2.0	1800	1.6	1200	1.4
30×40	-	-	22000	3.7	15000	3.3	10000	3.0	5600	2.5	3300	2.3	2200	1.9	1500	1.6
30×50	-	-	-	-	18000	3.8	12000	3.4	6800	2.9	4700	2.8	3300	2.3	2200	2.0
35×25	15000	2.6	12000	2.7	8200	2.4	5600	2.2	3300	1.8	2200	1.8	1500	1.5	1000	1.3
35×30	22000	3.3	18000	3.4	12000	3.0	8200	2.8	4700	2.4	2700	2.1	2200	1.9	1200	1.4
35×35	-	-	22000	3.9	15000	3.5	10000	3.1	5600	2.7	-	-	2700	2.2	1800	1.8
35×40	-	-	-	-	18000	3.9	12000	3.5	6800	3.0	4700	2.9	3300	2.4	2200	2.0
35×50	-	-	-	-	-	-	18000	4.5	10000	3.8	6800	3.6	4700	3.2	2700	2.3

WV(V) φD×L(mm)	160		180		200		250		315		350		400	
	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple
	uF	mArms	uF	mArms	uF	mArms	uF	mArms	uF	mArms	uF	mArms	uF	mArms
22×25	180	0.65	180	0.65	150	0.60	100	0.45	56	0.34	56	0.37	39	0.32
22×30	270	0.83	220	0.75	220	0.76	150	0.58	82	0.43	82	0.47	56	0.39
22×35	330	0.94	270	0.86	270	0.87	180	0.65	120	0.53	100	0.53	68	0.45
22×40	390	1.1	390	1.1	330	0.99	220	0.75	150	0.61	120	0.60	82	0.51
22×50	560	1.3	470	1.2	470	1.2	330	0.96	180	0.71	180	0.78	120	0.64
25×25	270	0.82	220	0.75	220	0.76	150	0.58	82	0.42	68	0.43	56	0.40
25×30	390	1.1	330	0.96	270	0.87	220	0.73	120	0.53	100	0.54	68	0.48
25×35	470	1.2	390	1.1	390	1.1	270	0.83	150	0.62	120	0.61	100	0.57
25×40	560	1.3	470	1.2	470	1.3	330	0.95	-	-	180	0.77	120	0.63
25×50	820	1.7	680	1.5	560	1.4	470	1.2	270	0.89	220	0.89	150	0.75
30×25	390	1.1	330	1.0	270	0.92	220	0.77	120	0.56	100	0.57	82	0.53
30×30	560	1.3	470	1.2	390	1.1	270	0.88	180	0.71	150	0.72	100	0.61
30×35	680	1.5	560	1.4	560	1.4	390	1.1	220	0.80	180	0.82	150	0.77
30×40	620	1.7	680	1.6	680	1.6	470	1.2	270	0.92	220	0.93	180	0.87
30×50	1000	2.0	1000	2.0	820	1.8	560	1.4	390	1.2	330	1.2	220	1.0
35×25	470	1.3	390	1.2	390	1.2	270	0.93	180	0.74	150	0.77	100	0.65
35×30	680	1.6	560	1.5	560	1.5	390	1.2	220	0.84	220	0.97	150	0.83
35×35	820	1.8	820	1.8	680	1.7	470	1.3	330	1.1	270	1.1	180	0.93
35×40	1000	2.0	1000	2.1	820	1.9	560	1.5	390	1.2	330	1.3	220	1.1
35×50	1500	2.6	1200	2.4	1200	2.4	820	1.9	470	1.4	470	1.6	330	1.3

Note: We can also provide the capacitors according to the customer's request. 注：亦可按客户要求提供。

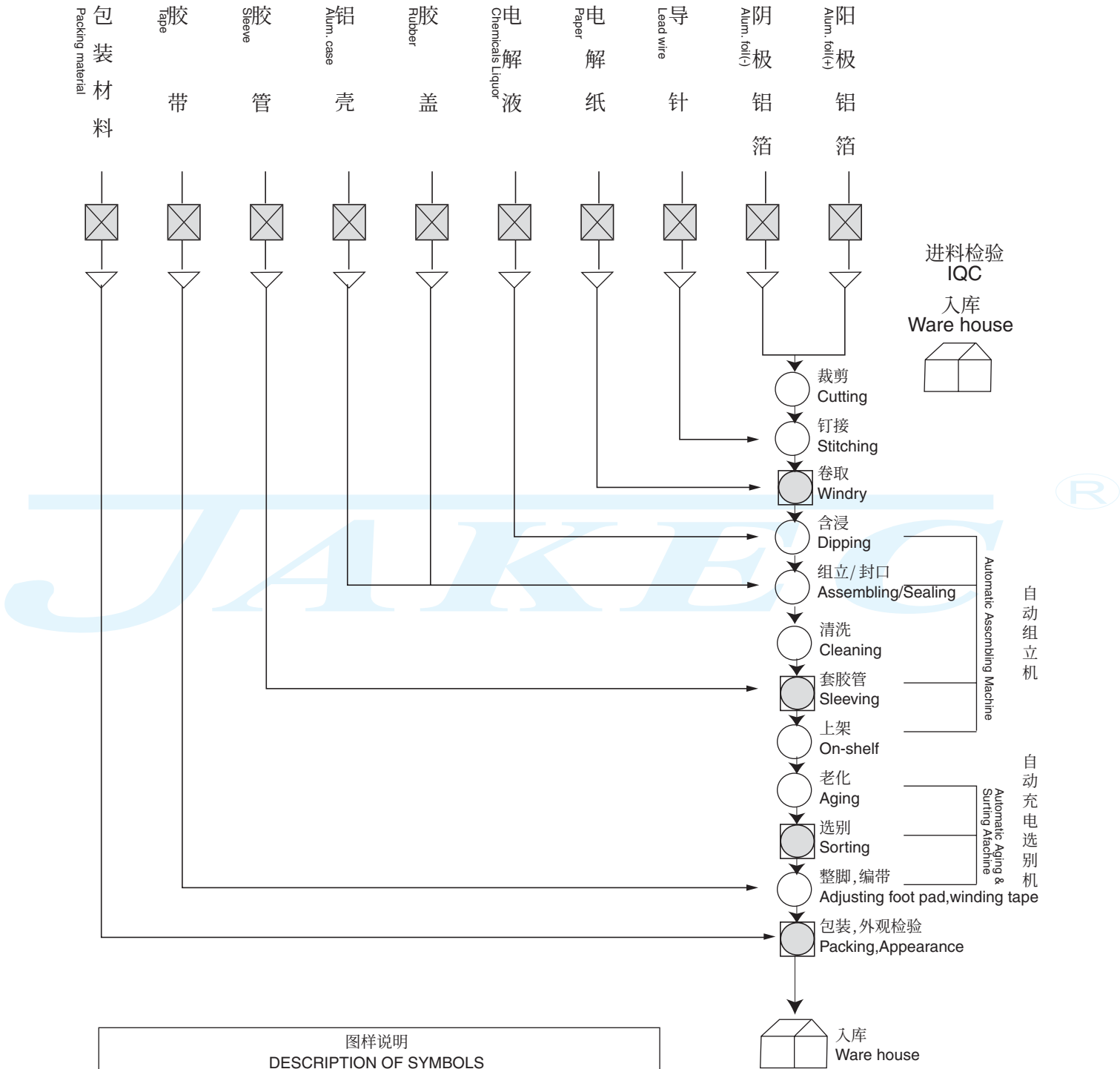
■ Export Packing Detail

▶ 出口包装清单

Case size	Plastic Bag Capacity	Small Box Capacity		Carton Box Capacity		Small Box Size			Carton Box Size		
ΦD×L(mm)	pcs./per bag	Bag/per	pcs./per	small box/	pcs./per	L	H	W	L	H	W
		small box	small box	per carton box	carton box	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
4×7	1000	50	50,000	2	100,000	320	320	235	500	350	330
5×7	1000	40	40,000	2	80,000	320	320	235	500	350	330
6×7	1000	25	25,000	2	50,000	320	320	235	500	350	330
5×11	1000	25	25,000	2	50,000	320	320	235	500	350	330
5×12	1000	25	25,000	2	50,000	320	320	235	500	350	330
6×11	1000	20	20,000	2	40,000	320	320	235	500	350	330
6×12	1000	20	20,000	2	40,000	320	320	235	500	350	330
8×12	500	20	10,000	2	20,000	320	320	235	500	350	330
8×14	500	20	10,000	2	20,000	320	320	235	500	350	330
10×15	250	24	6,000	2	12,000	320	320	235	500	350	330
10×17	250	20	5,000	2	10,000	320	320	235	500	350	330
10×20	250	20	5,000	2	10,000	320	320	235	500	350	330
12×20	200	15	3,000	2	6,000	320	320	235	500	350	330
13×20	100	25	2,500	2	5,000	320	320	235	500	350	330
13×26	100	25	2,500	2	5,000	320	320	235	500	350	330
16×25	100	15	1,500	2	3,000	320	320	235	500	350	330
16×30	50	25	1,250	2	2,500	320	320	235	500	350	330
16×35	50	20	1,000	2	2,000	320	320	235	500	350	330
18×35	50	20	1,000	2	2,000	320	320	235	500	350	330
18×40	50	15	750	2	1,500	320	320	235	500	350	330
22×30	25	20	500	2	1,000	320	320	235	500	350	330
22×40	25	20	500	2	1,000	320	320	235	500	350	330
22×50	25	20	500	2	1,000	300	300	230	480	320	320

ELECTROLYTIC CAPACITOR WORK PROCESS CHART

电 解 电 容 器 制 造 工 程 图



图样说明 DESCRIPTION OF SYMBOLS			
检查 INSPECTION	材料 MATERIAL	部门 DEPT	品管稽查 QC AUDITING

General information for application:

- 1) DC. Electrolytic capacitors can be used on DC or pulse circuit according to its polarity only.
- 2) If the polarity of circuit indication is unclear, NP capacitor is recommended to be used.
- 3) The operating voltage of capacitors can not exceed the rated operating voltage of capacitors.
- 4) Capacitors should not be used at the environmental temperature which exceeding the range of specified operating.
- 5) Capacitors should be stored in cold ($<40^{\circ}\text{C}$) and dry place. If it was long time stored, reaging process with rated voltage must be taken before to using capacitors.
- 6) Capacitors are not suitable operating with sudden charge and discharge frequently repeated.
- 7) Capacitors are not suitable at current value which over the permissible ripple range, if high ripple is required please contact us with details.
- 8) To protect the inside construction of capacitor, the over pull or twisting force to lead wire is not permitted.
- 9) Soldering irons should be kept away from the vinyl insulation sleeve of capacitor which to avoid the cause made over heat or break down the sleeve.
- 10) When capacitors are soldered, soldering temperature should not be permitted over 260°C and soldering time should not permitted over 10 seconds.
- 11) To protect the sleeve, marking and sealing materials on capacitor body, capacitor should never be washed or cleaned by halogenous agents or solvent such as trichlorethane, xylene or acetone etc.

电解电容器使用须知

- 1) 直流铝电解电容器只能按极性使用在直流或脉动电路中。
- 2) 当电路中的极性不明时，建议使用无极性铝电解电容器。
- 3) 铝电解电容器的工作电压不能超过其额定电压。
- 4) 铝电解电容器的环境温度不可超过规定温度范围。
- 5) 铝电解电容器应低温 ($<40^{\circ}\text{C}$) 干燥储存，如长期储存，使用前应以额定电压重新老化。
- 6) 一般铝电解电容器不宜用在频繁快速充放电的电路中。
- 7) 铝电解电容器不适用于超过额定纹波电流范围的回路中，若需要高纹波电流的铝电解电容器请与我们联系。
- 8) 为了保证铝电解电容器的内部结构，其引线不能承受过大拉力或扭曲力。
- 9) 电烙铁应与铝电解电容器塑料套管保持适当的距离，以防止过热造成塑料套管破裂。
- 10) 铝电解电容器焊接时，其焊锡温度不允许超过 260°C ，时间在10秒钟以内。
- 11) 为了保证塑料套管、印刷标志及封口材料不被破坏，铝电解电容器不能用卤化化学药品或类似溶剂清洗，如三氯乙烷、二甲苯或酮类等。