



# 规格承认书

## SPECIFICATION FOR APPROVAL

产品名称: 金属化聚丙烯薄膜介质电容器  
 Product Name: Metallized polypropylene film dielectric capacitor

产品型号: CBB21/CBB22  
 Product Type: \_\_\_\_\_

产品编码: \_\_\_\_\_  
 Product Code: \_\_\_\_\_

客户名称: \_\_\_\_\_  
 Customers Name: \_\_\_\_\_

客户编码: \_\_\_\_\_  
 Customers Code: \_\_\_\_\_

日期: 2022.02.20  
 Issue Date: \_\_\_\_\_

日期: 2022.02.20  
 Issue Date: \_\_\_\_\_

日期: 2022.02.20  
 Issue Date: \_\_\_\_\_

日期: 2022.02.20  
 Issue Date: \_\_\_\_\_

日期: 2022.02.20  
 Issue Date: \_\_\_\_\_

日期: 2022.02.20  
 Issue Date: \_\_\_\_\_

<p>浙江七星电子股份有限公司 Zhejiang Qixing Electronics Corp., Ltd.</p>	<p>承认厂商 Approved by Customer</p>
<p>拟制 <b>Drafted</b> 审批 <b>Examine and approve</b></p>	
<p>邵宇星 Yuxing Shao</p>	<p>李仲良 Zhongliang LI</p>

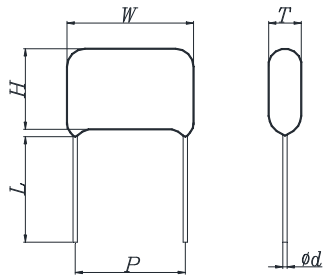


浙江七星电子股份有限公司  
Zhejiang Qixing Electronics Corp., Ltd.

地址: 中国浙江省长兴县煤山镇发展大道 50 号

No. 50, Development Avenue, Meishan Town, Changxing County, Zhejiang Province, P.R.China

Tel: 0572-6295698 Fax: 0572-6295700

**CBB21/22 金属化聚丙烯薄膜介质电容器**
**CBB21/22 Metallized polypropylene film dielectric capacitor**

**■ 特点**

- 金属化聚丙烯膜
- 高频损耗小
- 内部温升小

**■ 主要用途**

- 广泛用于高频、直流、交流和脉冲电流中
- 适用于大屏幕显示器的 S 校正电路
- 适用于各种高频、大电流场合

**■ 技术要求 Technical requirements**

引用标准 Reference criteria	GB/T 10190 (IEC 60384-16)				
气候类别 Climate category	40/105/21				
额定温度 Rated temperature	85℃				
工作温度 Operating temperature	-40℃~105℃ (+85℃to+105℃: decreasing factor 1.25% per℃ for Ur(dc) )				
额定电压 Rated voltage	100V; 250v; 400v; 630v; 1000V; 1250V				
电容量范围 Electricity capacity range	0.001μF~3.3μF				
电容量偏差 Capacitance deviation	±5% (J) ,±10% (K) ,±20% (M)				
耐电压 Voltage resistance	1.4 Ur (5s)				
损耗角正切值 Loss angle tangent	≤15×10 <sup>-4</sup> (+20℃±5℃,1kHz)				
绝缘电阻 Insulation resistance	R≥30000MΩ, CN≤0.33 μ F		(20℃, 100V,1min)		
	RCN≥5000S, CN>0.33 μ F				
最大脉冲爬升: Maximum Pulse Climbing Rate: 若实际工作电压 U 比额定电压 Ur 低, 电容器可工作在更高的 dv/dt 场合, 这样 dv/dt 允许值应为右表值乘以 Ur/U If the actual working voltage U is lower than the rated voltage Or, the capacitor can work in a higher dv/dt case so that the dv/dt allowed value should be multiplied by the right table value Ur/U	Pattern II				
	Ur (V)	dv/dt (V/μs)			
		P=7.5	P=10	P=15	P=22.5
	100V/250V	660	560	310	130
	400V	900	780	600	300
	630V	1500	1200	900	400
	1000V/1250V	2500	2200	-	-

**■ Characteristic:**

- Metallized polypropylene film.
- Low loss at high frequency.
- Internal temperature rise

**■ Main purpose**

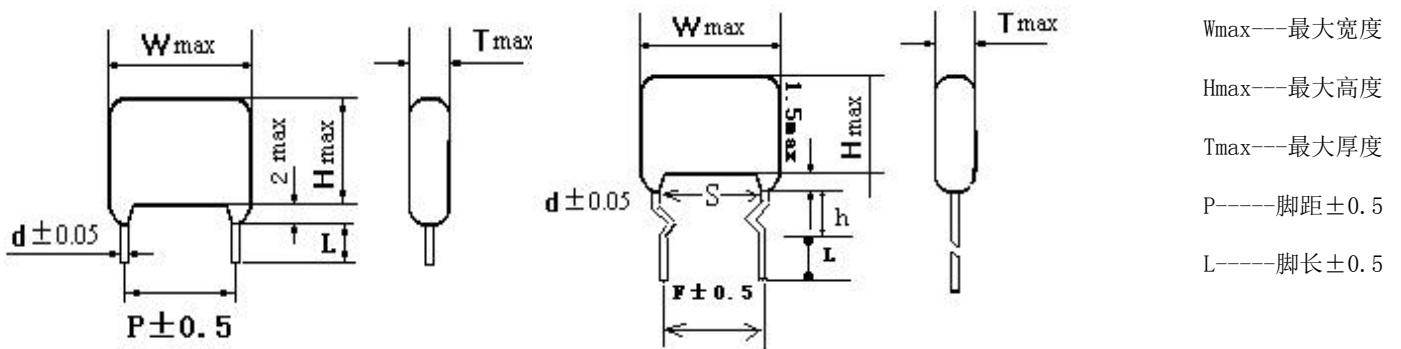
- Widely used in high frequency, dc, ac and pulse current.
- S correction circuit for large screen display.
- Suitable for high frequency and large current motor suppression interference

## ■ 电容器外形尺寸 Capacitor dimensions

100VDC (63VAC) / 250VDC (160VAC)						400VDC (200VAC)							
电容量 CAP	电容器外形尺寸 Capacitor dimensions					电容器代码 Part number	电容量 CAP	电容器外形尺寸 Capacitor dimensions					电容器代码 Part number
	T	H	W	P	Φd			T	H	W	P	Φd	
0.010	4.0	7.7	9.8	7.5	0.6	B210***V103***	0.010	4.1	7.8	9.8	7.5	0.6	B210400V103***
0.015	4.2	7.8	9.8	7.5	0.6	B210***V153***	0.015	4.7	8.4	9.8	7.5	0.6	B210400V153***
0.022	4.8	8.4	9.8	7.5	0.6	B210***V223***	0.022	5.5	9.1	9.8	7.5	0.6	B210400V223***
0.033	4.2	7.9	9.8	7.5	0.6	B210***V333***	0.033	4.8	8.5	12.3	10	0.6	B210400V333***
0.047	4.8	8.5	9.8	7.5	0.6	B210***V473***	0.047	5.4	9.0	12.5	10	0.6	B210400V473***
0.068	4.8	8.5	12.5	10	0.6	B210***V683***	0.068	5.4	9.1	12.5	10	0.6	B210400V683***
0.10	4.7	8.3	12.5	10	0.6	B210***V104***	0.10	6.4	10	12.5	10	0.6	B210400V104***
0.15	5.2	8.9	12.5	10	0.6	B210***V154***	0.15	6.0	11.2	17.5	15	0.6	B210400V154***
0.22	6.1	9.8	12.5	10	0.6	B210***V224***	0.22	7.0	12.2	17.5	15	0.6	B210400V224***
0.33	5.8	11	17.5	15	0.6	B210***V334***	0.33	8.4	14.1	17.5	15	0.8	B210400V334***
0.47	6.6	12	17.5	15	0.6	B210***V474***	0.47	9.8	15.5	17.5	15	0.8	B210400V474***
0.56	7.2	12.4	17.5	15	0.6	B210***V564***	0.56	7.9	15.2	25.2	22.5	0.8	B210400V564***
0.68	7.8	13.5	17.5	15	0.8	B210***V684***	0.68	9.1	15.9	25.2	22.5	0.8	B210400V684***
0.82	8.5	14.2	17.5	15	0.8	B210***V824***	0.82	10	16.7	25.2	22.5	0.8	B210400V824***
1.0	9.3	15.0	17.5	15	0.8	B210***V105***	1.0	10.9	17.7	25.2	22.5	0.8	B210400V105***
1.2	7.5	14.8	25.2	22.5	0.8	B210***V125***							
1.5	8.3	15.6	25.2	22.5	0.8	B210***V155***							
2.2	9.9	18.3	25.2	22.5	0.8	B210***V225***							
3.3	12.1	20.5	25.2	22.5	0.8	B210***V335***							

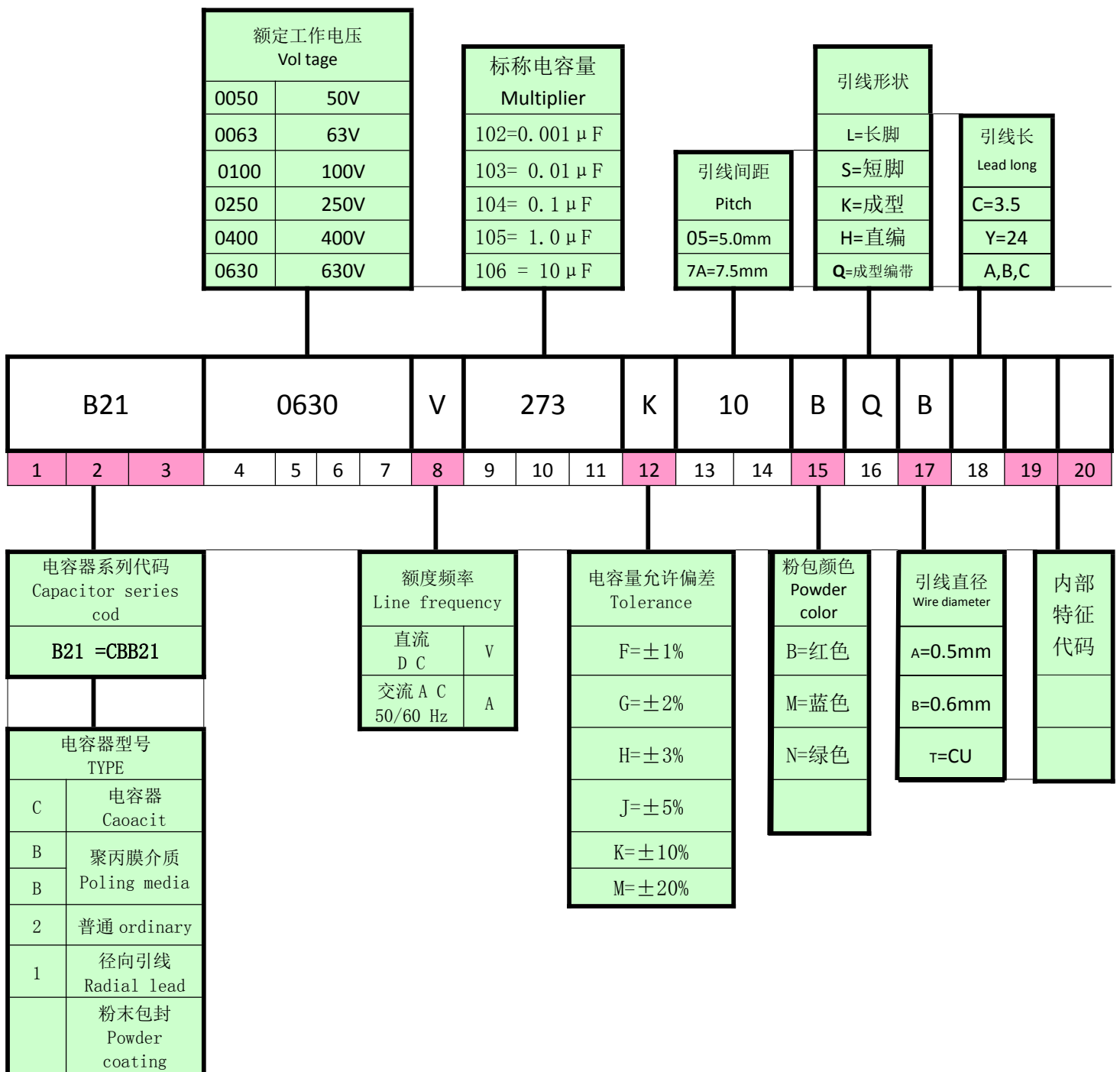
630VDC (220VAC)						1000VDC/ 1250VDC (400VAC)							
电容量 CAP	电容器外形尺寸 Capacitor dimensions					电容器代码 Part number	电容量 CAP	电容器外形尺寸 Capacitor dimensions					电容器代码 Part number
	T	H	W	P	Φd			T	H	W	P	Φd	
0.001	4.3	7.9	10	7.5	0.6	B210630V102***	0.0010	4.3	7.9	10	7.5	0.6	B21****V102***
0.01	4.1	7.8	12.5	10	0.6	B210630V103***	0.0015	4.4	8.1	10	7.5	0.6	B21****V152***
0.015	4.7	8.3	12.5	10	0.6	B210630V153***	0.0022	4.5	8.1	10	7.5	0.6	B21****V222***
0.022	5.3	8.9	12.5	10	0.6	B210630V223***	0.0033	4.5	8.2	10	7.5	0.6	B21****V332***
0.033	6.2	9.9	12.5	10	0.6	B210630V333***	0.0047	4.7	8.3	10	7.5	0.6	B21****V472***
0.047	5.6	10.8	17.5	15	0.6	B210630V473***	0.0056	5.0	8.7	10	7.5	0.6	B21****V562***
0.068	6.5	11.7	17.5	15	0.6	B210630V683***	0.0068	5.2	8.9	12.5	10	0.6	B21****V682***
0.10	7.6	12.8	17.5	15	0.8	B210630V104***	0.01	6.3	9.9	12.5	10	0.6	B21****V103***
0.15	9.0	14.7	17.5	15	0.8	B210630V154***							
0.22	7.9	15.2	25.2	22.5	0.8	B210630V224***							
0.33	10	16.8	25.2	22.5	0.8	B210630V334***							
0.47	11.8	18.6	25.2	22.5	0.8	B210630V474***							
0.56	12.8	19.6	25.2	22.5	0.8	B210630V564***							

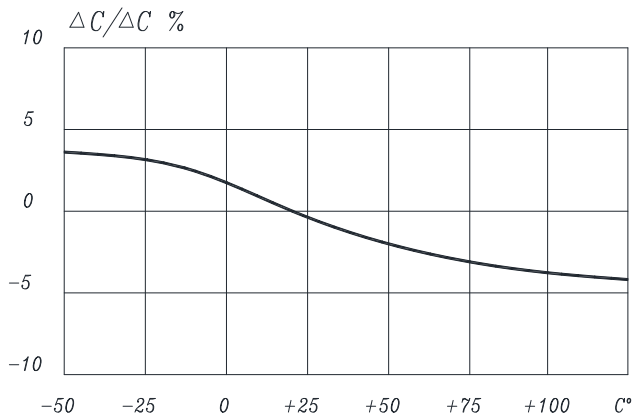
**■承认规格登记表 Size and specification**
**●尺寸 (mm) (T\*H\*W)**

**●.规格 Specification:**

序号 NO	客户料号 Customer NO	七星料号 Spec NO	规格型号 Specification	尺寸 Size T*H*W*P	线径 Line	脚长 Length	备注 Note
1	--	B220630V473 J10BLBY**	CBB22-630V473J	6.3*10.6*12.5*10.0	0.6	$\geq 20$	--

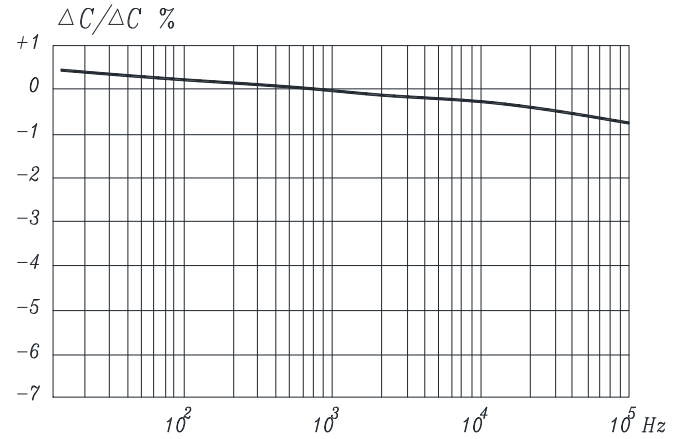
**■ 电容器编码说明 Capacitor coding specification**

● 20 位电容器代码如下：The code of the 20-bit capacitor at the center is as follows:

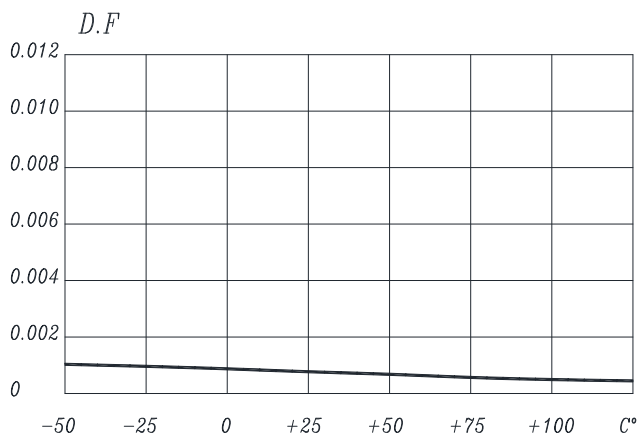


**■特性曲线图 Characteristic curve**


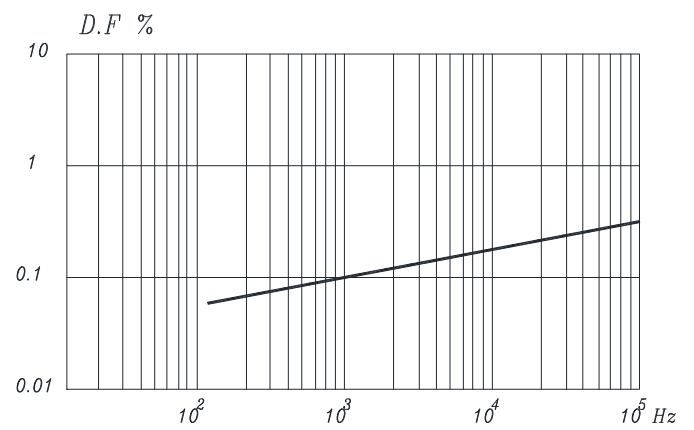
电容量随温度变化的曲线 ( 1KHz )  
Is the temperature curve of the capacitance



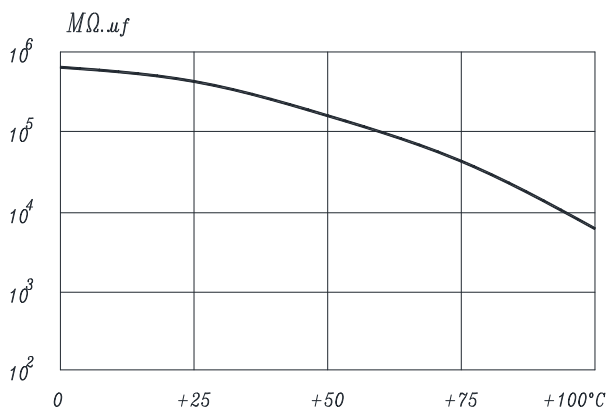
电容量随频率变化的曲线  
Capacitance may vary in frequency



损耗角正切值随温度变化的曲线 ( 1KHz )  
The curve of the tangent of loss Angle with temperature  
temperature



损耗角正切值随频率变化的曲线  
The curve of the tangent of loss Angle with



绝缘电阻随温度变化的曲线 ( 1KHz )  
The curve of insulation resistance to temperature

### ■性能及测试方法 Performance and test methods

No	项目 Item	性能与判据 Performance and criteria	测试方法 Test method (IEC60384-16)
1	电容量允许偏差 Capacitance tolerance	±5% (J) , ±10% (K) , ±20% (M)	
2	损耗角的正切 Tangent of the loss angle	$\text{tg } \delta \leq 0.0015$ (1KHz)	典型测量频率: 1KHz Typical measuring frequency: 1KHz
3	耐电压 Dielectric strength	无飞弧或击穿 There shall be no breakdown or flashover	1.4Ur 2sec
4	绝缘电阻 Insulation resistance	$R \geq 30000M \Omega$ , $C_n \leq 0.33 \mu F$ $IR \geq 5000S$ $C_n > 0.33 \mu F$	充电电压 Ur < 500V Charging voltage 100v 环境温度 20℃, 测量时间 60S
			充电电压 Ur > 500V Charging voltage 500v 环境温度 20℃, 测量时间 60S
5	可焊性 Solder ability	Good quality of tinning 镀锡良好	锡炉温度 Soldre temperature 245℃ ± 5℃ 浸渍时间 Immersion time 2.S ± 0.5S
6	初始测量 Initial measurement	电容量与损耗 Capacitance & $\text{tg } \delta$ (1KHz)	
	引线抗拉强度 Terminal strength	外观无可见损伤 There shall be no visible damage	拉力试验 Tension Ual: 拉力 Pull: $\phi d=0.5mm$ 5N $\phi d=0.6mm$ 10N 弯曲试验 bend Ub: 弯力 The quill of bend $\phi d=0.5mm$ 2.5N $\phi d=0.6mm$ 5N 端子应向每个方向弯曲 2 次 The terminals shall be bent 2times in each direction
	耐焊接热 Resistance to solder heat	无可见损伤 There shall be no visible damage	锡炉温度 Soldre temperature 260℃ ± 5℃ 浸渍时间 Immersion time 10.S ± 1S
	最后的测量 Final measurement	$\Delta C/C \leq \pm 2\%$ 相对于初始值 Relative to the initial value. $\text{tg } \delta \leq 0.0015$ (1KHz)	
7	初始测量 Initial measurement	电容量与损耗 Capacitance & $\text{tg } \delta$ (1KHz)	
	温度快速变化 Rapid change of temperature	外观无可见损伤 There shall be no visible damage	Θa= -40℃ Θb= +105℃ 持续的时间= 30 分钟 5 个周期,

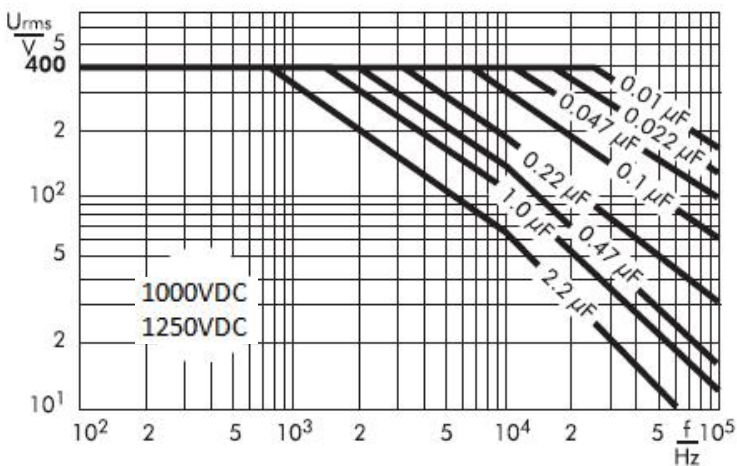
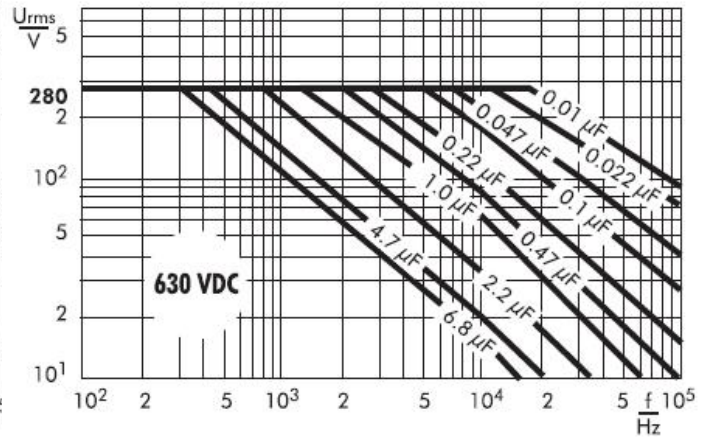
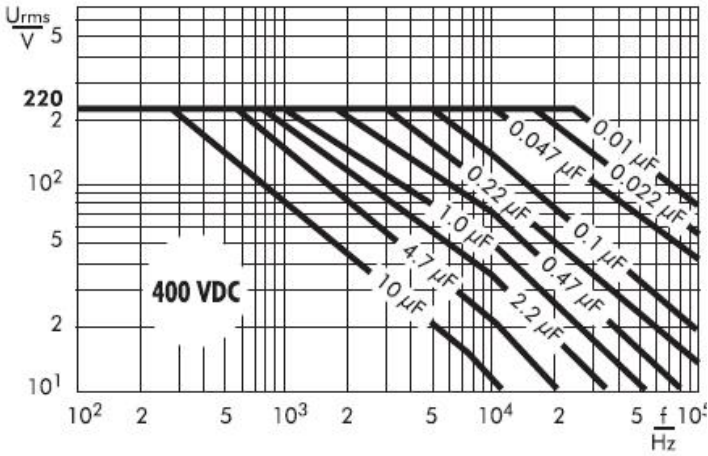
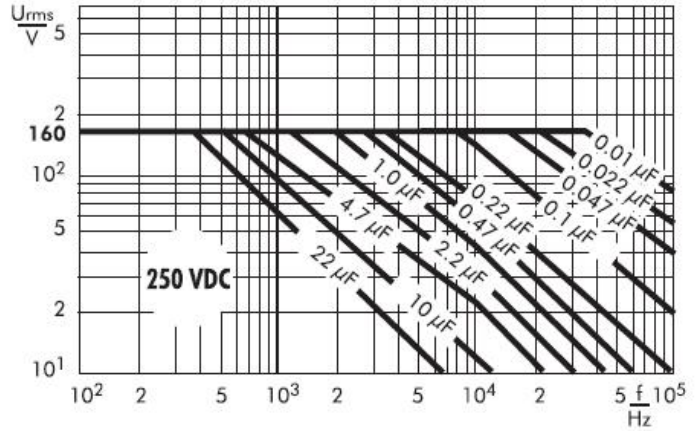
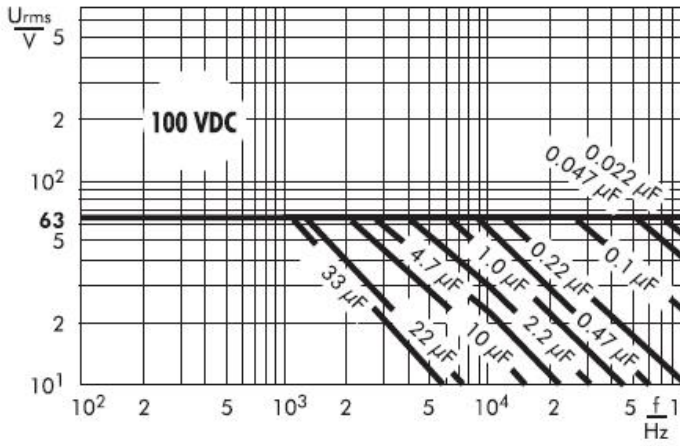
			5cycles, Duration:=30min	
	振动 Vibration	外观无可见损伤 There shall be no visible damage	频率:10 ~ 500HZ 振幅 0.75mm 或加速度 98m/S <sup>2</sup> 三个方向每个方向各 2h 共 6h Ferequance10~500HZ Amplitude0.75m;Acceleration98m/ S <sup>2</sup> Amplitude 3 direction 2h per direction Duration 6h	
	碰撞 Bump	外观无可见损伤 There shall be no visible damage	碰撞次数: 4000 次 加速度: 390m/S <sup>2</sup> 脉冲持持续时间 :6ms Bump times: 4000 Acceleration: 390m/S <sup>2</sup> Duration of pulse: 6ms	
	最后的测量 Final measurement	$\Delta C/C \leq \pm 5\%$ 相对于初始值 Relative to the initial value. $\text{tg } \delta \leq 0.0015$ (1KHz) $IR \geq 50\%$ 规定值 of the rated value		
8	气候顺序 Climate sequenc e	初始测量 Initial measurement	电容量与损耗 Capacitance & $\text{tg } \delta$ (1KHz)	
		干热 Dry heat	+105 <sup>o</sup> C 持续 16 小时 +105 <sup>o</sup> C lasts for 16 hours	
		循环湿热 Damp heat ,Cyclic	试验 Db, 严酷度 b,第一次循环 Test Db,Severity:b,the first cycle	
		寒冷 Cold	-40 <sup>o</sup> C 持续 2h -40 <sup>o</sup> C lasts for 2 hours	
		低气压 Low air pressure	在试验最后 1 分钟施加 Ur 时, 不得有永 久性击穿或飞弧及外壳有害变形 There shall be no permanent down ,flashover or other harmful deformation when applying Ur at the last 1minute	15 <sup>o</sup> C~35 <sup>o</sup> C 大气压 8.5kpa 持续 1 小时 The pressure of 15 <sup>o</sup> C~35 <sup>o</sup> C air is 8.5kpa for 1 hour
		循环湿热 Damp heat ,Cyclic		试验 Db, 严酷度:b, 其余循环 试验结束后, 施加 Ur 1 分钟 Test Db,Severity:b,the other cycles, Applying Ur for 1minute after the test finished
		最后的测量 Final measurement	外观无可见损伤 There shall be no evidence of deformation $\Delta C/C \leq \pm 5\%$ 相对于初始值 Relative to the initial value. $\text{tg } \delta \leq 0.0015$ (1KHz) $IR \geq 50\%$ 规定值 of the rated value	
9	稳态湿热 Damp heat steady state	外观无可见损伤, 标志清晰 There shall be no evidence of deformation And the marking shall be legible $\Delta C/C \leq \pm 5\%$ 相对于初始值 Relative to the initial value. $\text{tg } \delta \leq 0.0015$ (1KHz)	试验温度: 40 ± 2 <sup>o</sup> C 相对湿度: 93 ± 2% RH 试验时间: 56 天 Temperature: 40 ± 2 <sup>o</sup> C Humidity: 93 ± 2% RH Duration:56days	



		IR ≥ 50% 规定值 of the rated value	
10	耐久性 Endurance	外观无可见损伤, 标志清晰 There shall be no evidence of deformation And the marking shall be legible $\Delta C/C \leq \pm 5\%$ 相对于初始值 Relative to the initial value. $\text{tg } \delta \leq 0.0015 (1\text{KHz})$ IR ≥ 50% 规定值 of the rated value	试验温度: +85°C/+105°C ± 2°C 施加电压: $1.25 \times U_R / 1.25U_c$ ( $U_c = 0.5 U_R$ ) 试验时间: 1000 h Temperature: +85°C/+105°C ± 2°C Voltage: $1.25 \times U_R / 1.25U_c$ ( $U_c = 0.5 U_R$ ) Duration: 1000h
11	温度特性 Temperature characteristic	在 b, d, f 点上进行电容量测量 在下限类别温度 -40°C 时的特性: $-10\% \leq (C_b - C_d) / C_d \leq +10\%$ 在上限类别温度 +105°C 时的特性: $0\% \leq (C_b - C_d) / C_d \leq +10\%$ Measuring capacitance at test point b,d,f: Characteristic at lower category temperature -40°C $-10\% \leq (C_b - C_d) / C_d \leq +10\%$ Characteristic at upper category temperature +105°C $0\% \leq (C_b - C_d) / C_d \leq +10\%$	静态方法: 电容器应依次保持以下 温度: a (20 ± 2°C), b (-40 ± 3°C), d (20 ± 2°C), f (+105 ± 3°C), g (20 ± 2°C) Static method :the Capacitors should be kept at the following temperature in turn: a (20 ± 2°C), b (-40 ± 3°C), d (20 ± 2°C), f (+105 ± 3°C), g (20 ± 2°C)
12	充放电 Charging and discharging	$\Delta C/C \leq \pm 5\%$ 相对于初始值 Relative to the initial value. $\text{tg } \delta \leq 0.0015 (1\text{KHz})$ IR ≥ 50% 规定值 of the rated value	Times: 10000 Duration of charging: 0.5S Duration of discharging: 0.5S Charging :rated voltage Charging resistance: $220/C_r (\Omega)$ Discharging resistance: $R = 10/C_r (\Omega)$ or $20 \Omega$ ( whichever is the greater ) Cr: rated capacitance 充放电次数: 10000 次 充电持续时间: 0.5S 放电持续时间: 0.5S 充电电压为额定电压 充电电阻: $220/C_r (\Omega)$ 放电电阻: $R = 10/C_r (\Omega)$ 或 $20 \Omega$ ( 取较大者 ) Cr: 为标称电容量

■最大电压 (Vr.m.s) / 频率表 (正弦波形/环境温度  $\leq 40^{\circ}\text{C}$ )

MAX. VOLTAGE (Vr.m.s.) VERSUS FREQUENCY (sinusoidal wave-form /  $T_h \leq 40^{\circ}\text{C}$ )



## ■ 波峰焊接 Wave soldering

电容器的内部温度必须保持如下:

聚 酯: 预热温度+ 125° C

聚丙烯: 预热温度+ 100° C

单波峰焊接

焊接浴温度: T=260°C

停留时间: 5 秒

双波峰焊接

焊接浴温度:T=260°C

停留时间: 5 秒

由于不同的焊接工艺和热量要求图形仅作为推荐

Internal temperature of the capacitor must be kept as follows:

Polyester: preheating: T max. T 125° C

Polypropylene: preheating: T max. T 100° C

Single wave soldering

Soldering bath temperature: T 260 ° C

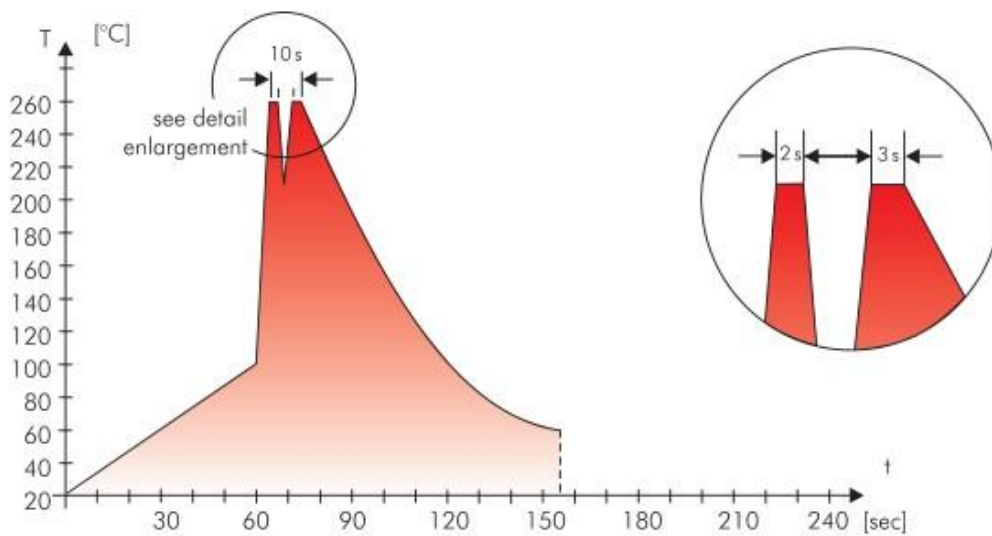
Dwell time: t 5 sec

Double wave soldering

Soldering bath temperature: T 260 ° C

Dwell time: St 5 sec

Due to different soldering processes and heat requirements the graphs are to be regarded as a recommendation only.



双波焊接的典型温度/时间图

Typical temperature/time graph for double wave soldering