



# 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: \_\_\_\_\_

日期: \_\_\_\_\_

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日期: \_\_\_\_\_

<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>	
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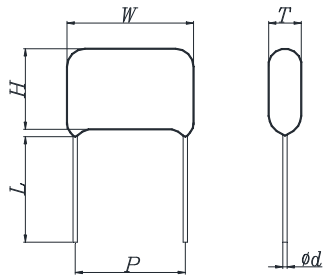


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**CBB21/22 金属化聚丙烯薄膜介质电容器**
**CBB21/22 Metallized polypropylene film dielectric capacitor**

**■ 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°C				
工作温度 Operating temperature	-40°C~105°C (+85°C to +105°C: decreasing factor 1.25% per°C 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°C ±5°C, 1kHz)				
绝缘电阻 Insulation resistance	R ≥ 30000M Ω , C <sub>N</sub> ≤ 0.33 μ F		(20°C, 100V, 1min)		
	RC <sub>N</sub> ≥ 5000S, C <sub>N</sub> > 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

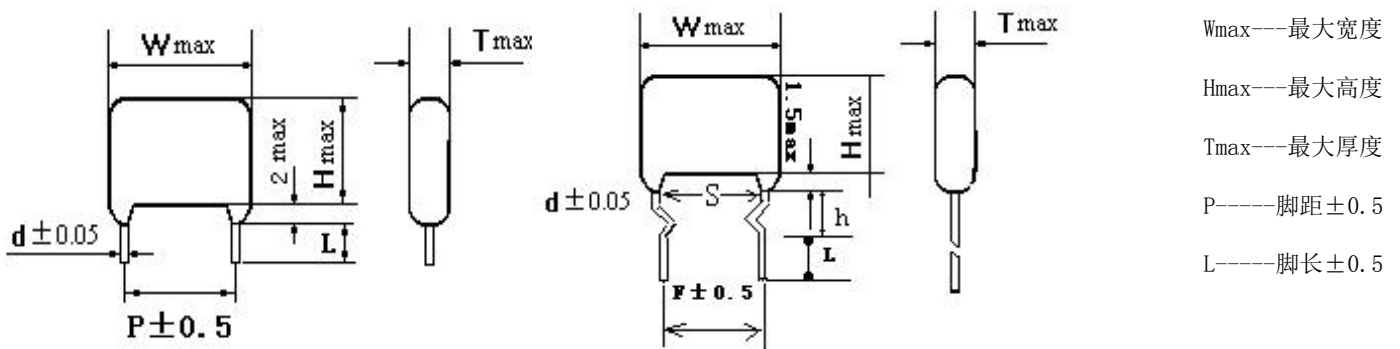
**■ Main purpose**

- 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



### ■承认规格登记表 Size and specification

#### ●尺寸 (mm) (T\*H\*W)

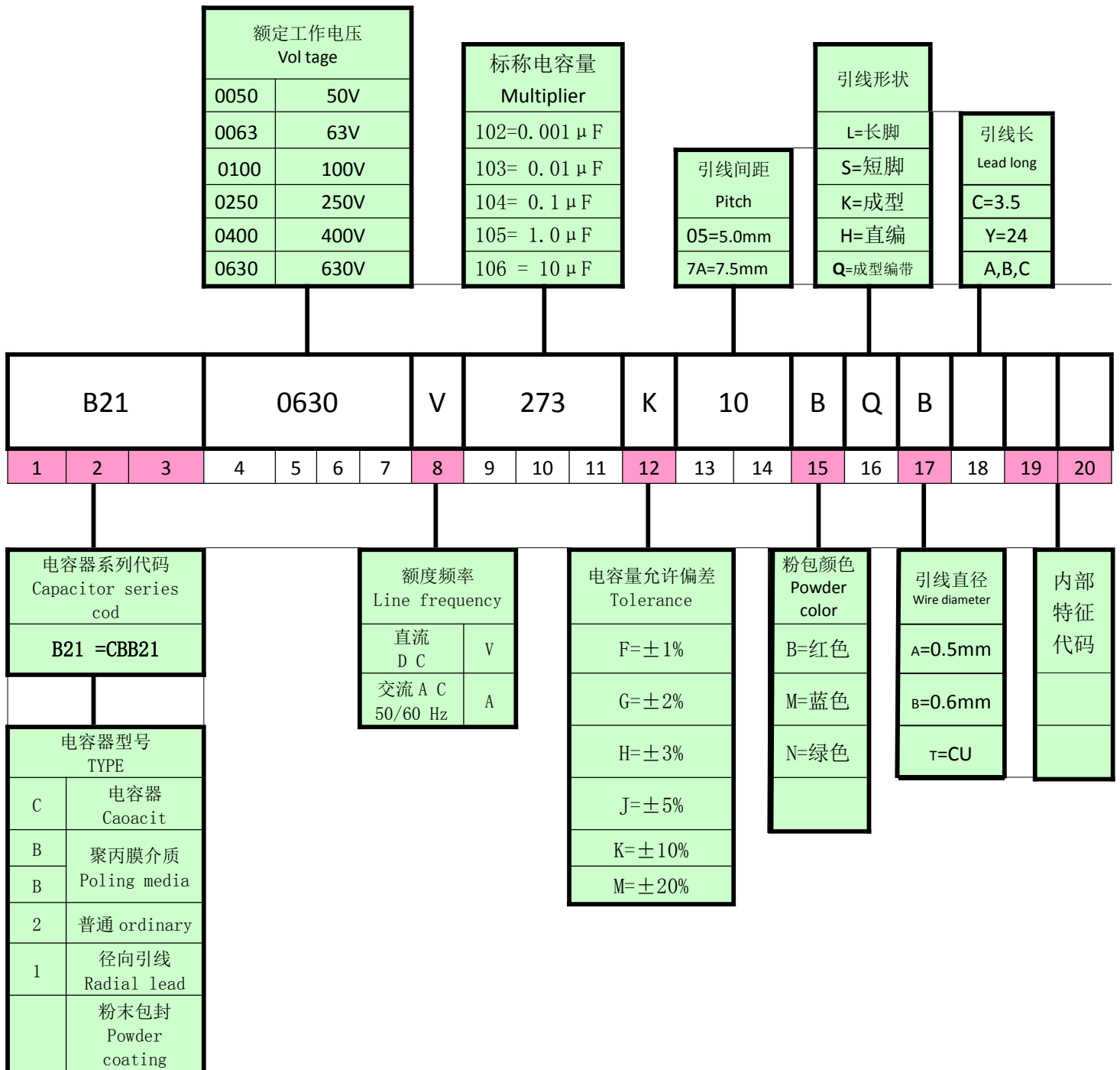


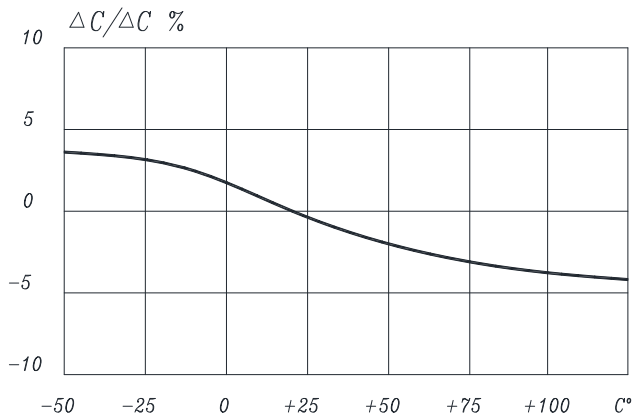
#### ●.规格 Specification:

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	--	22X1000V102 J05BLAY**	CBB22X-1000V102J	4.3*8.0*8.0*5.0	0.5	$\geq 20$	--

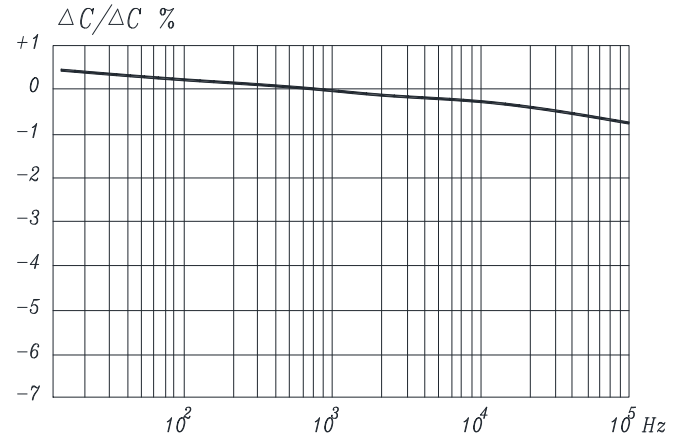
**■ 电容器编码说明 Capacitor coding specification**

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

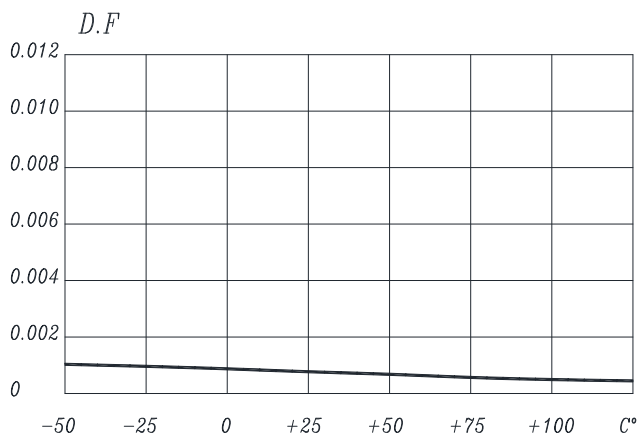


**■特性曲线图 Characteristic curve**


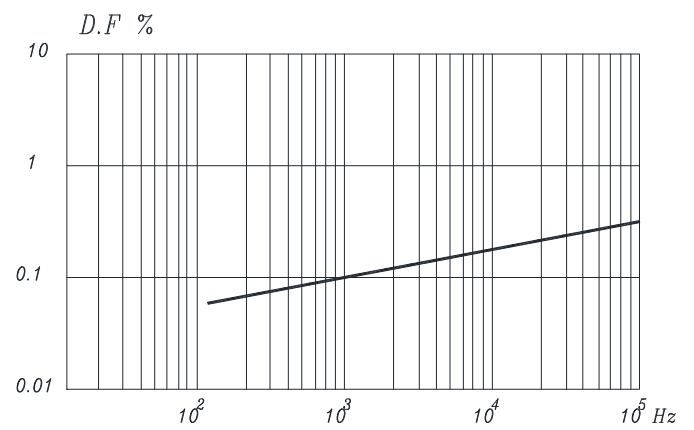
电容量随温度变化的曲线 ( 1KHz )  
Is the temperature curve of the capacitance



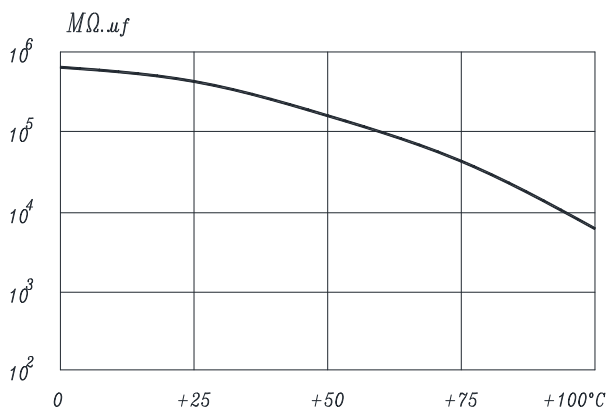
电容量随频率变化的曲线  
Capacitance may vary in frequency



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	1.4U <sub>r</sub> 2sec
4	绝缘电阻 Insulation resistance	R ≥ 30000M Ω, C <sub>n</sub> ≤ 0.33 μ F IR ≥ 5000S C <sub>n</sub> > 0.33 μ F	充电电压 U <sub>r</sub> < 500V Charging voltage 100v 环境温度 20℃, 测量时间 60S
			充电电压 U <sub>r</sub> > 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 & tg δ (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 U <sub>al</sub> : 拉力 Pull: φ d=0.5mm 5N φ d=0.6mm 10N 弯曲试验 bend U <sub>b</sub> : 弯力 The quill of bend φ d=0.5mm 2.5N φ 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 & tg δ (1KHz)	
	温度快速变化 Rapid change of temperature	外观无可见损伤 There shall be no visible damage	Θ <sub>a</sub> = -40℃ Θ <sub>b</sub> = +105℃ 持续的时间= 30 分钟 5 个周期,

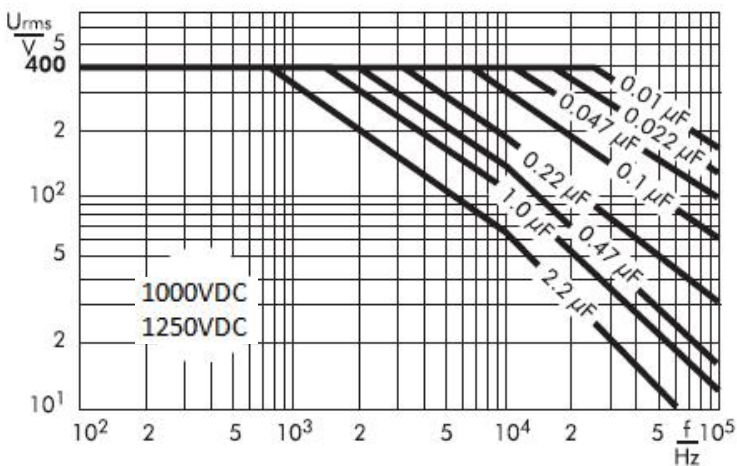
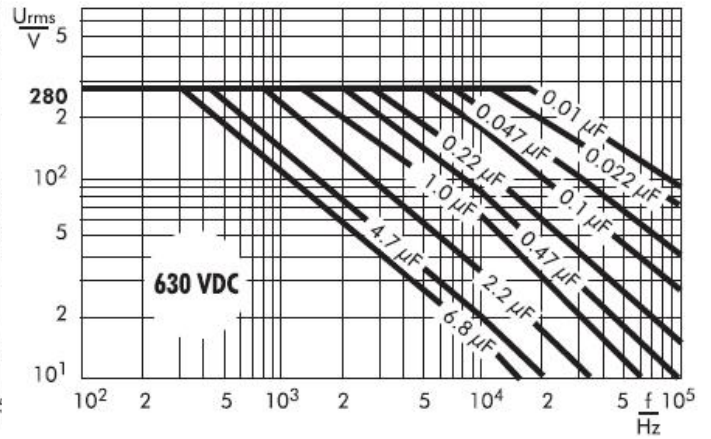
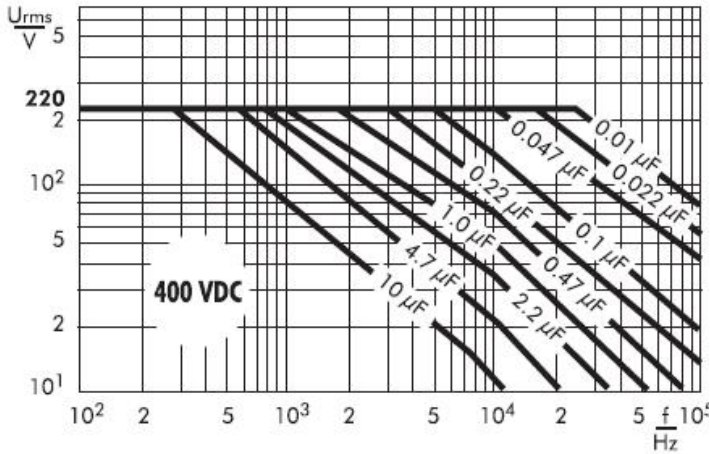
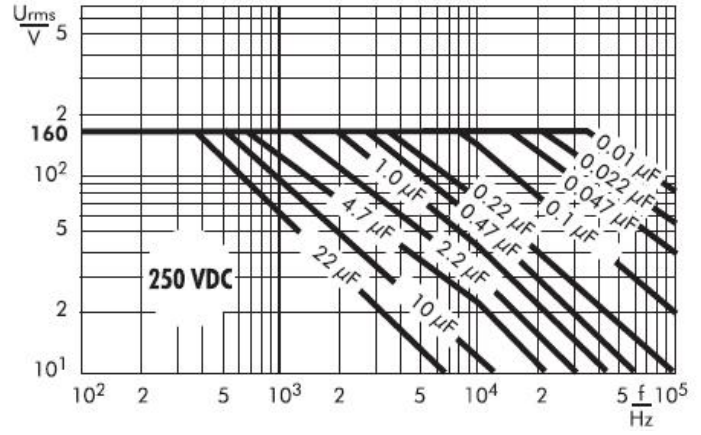
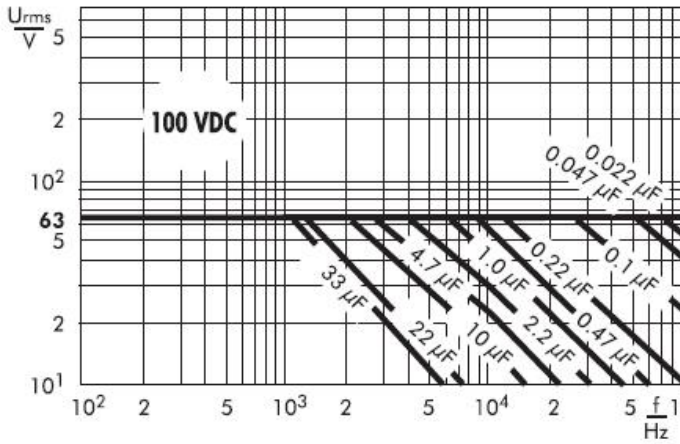
			5cycles, Duration:=30min	
	振动 Vibration	外观无可见损伤 There shall be no visible damage	频率:10 ~ 500HZ 振幅 0.75mm 或加速度 98m/S <sup>2</sup> 三个方向每个方向各 2h 共 6h Ferequance10~500HZ Amplitude0.75m;Acceleration98m/ S <sup>2</sup> Amplitude 3 direction 2h per direction Duration 6h	
	碰撞 Bump	外观无可见损伤 There shall be no visible 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>0</sup> C 持续 16 小时 +105 <sup>0</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>0</sup> C 持续 2h -40 <sup>0</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>0</sup> C~35 <sup>0</sup> C 大气压 8.5kpa 持续 1 小时 The pressure of 15 <sup>0</sup> C~35 <sup>0</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>0</sup> C 相对湿度: 93 ± 2% RH 试验时间: 56 天 Temperature: 40 ± 2 <sup>0</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

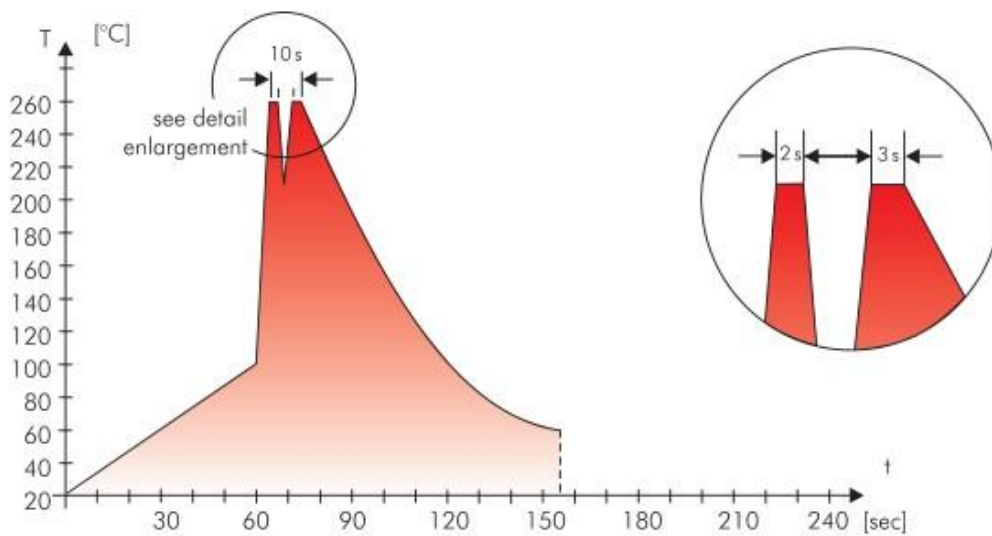
Dwell time: t 5 sec

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