杭州光之神科技发展有限公司

CBB21(MPP）金属化聚丙烯膜电容器（包封型）

版　次	XY/01	页　次	第1页　共15页

规格承认书

ROHS　SVHC

SPECIFICATION FOR APPROVAL

客户名称(CUSTOMERS)：

客户料号(CUSTOMERS M.NO)：

型号（TYPE）：金属化聚丙烯膜电容器
Metallized Polypropylene Film Capacitor

品名规格(SEPCIFICATION)：

产品料号(OUR PN)：

适用机种(FOR MODEL NO.)：

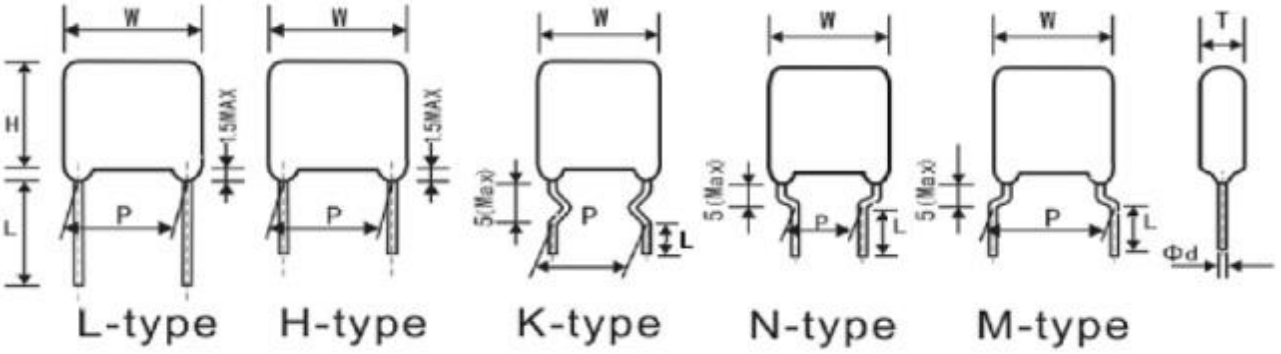
日期（DATE）：

杭州光之神科技发展有限公司			客户承认
ShanTou XinYin Electronics Technology Co.,Ltd			Approved by customer
拟制	审核	核准	
Drafted	Checked	Approved	

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1.规格尺寸
Specification & Dimensions



☑　□　□　□　□

客户料号 Customer materials	品名规格 Specification	外形尺寸（单位：mm） Dimensions and Drawings					
		W±0.5	H±0.5	T±0.5	Lmin	d±0.05	P±0.5

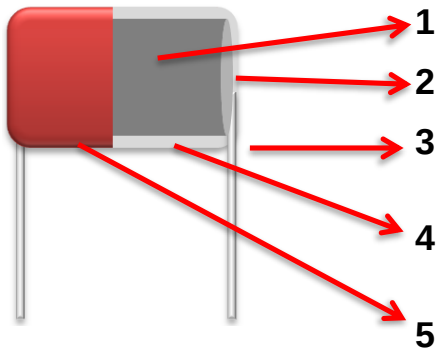
2. 产品介绍
Products Introduction

CBB 电容是由金属化聚丙烯薄膜，采用无感结构卷绕而成，引线采用镀锡铜包钢线，外部使用阻燃环氧粉体封装而成。具有良好的自愈功能和优良的阻燃性，符合UL94-V0标准。

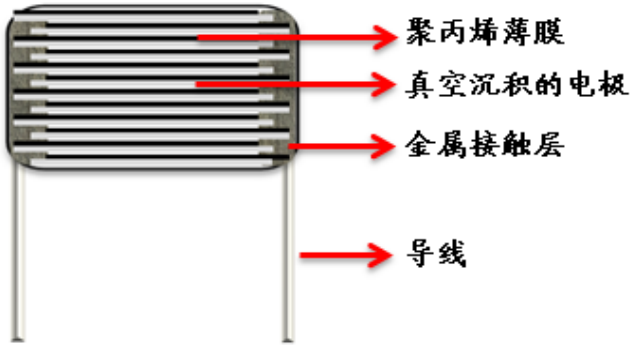
CBB are winded with metallized polypropylene film dielectric,Non-inductive construction, tinned copper wire leads,and flame retardant epoxy resin coating.
They have excellent features of self-healing and good flame retardant according to UL 94-V0

3. 产品结构和关键材料
Construction and main materials of products

Metallized film construction



The internal structure



NO	关键材料 Main Materials	材料规格 Specification	备注 Remark
1	金属化聚丙烯薄膜 Metallized polypropylene Film	MPPZAH or MPPA(4～12μm)	…
2	锌锡层 Zn,Sn line	锌+锌锡合金 Zn or Zn and Sn alloy	…
3	导线 Terminal	镀锡铜包钢线(Φ0.6 or 0.78mm) CP(tinned copper wire leads)	允许偏差 ±0.05mm
4	内封装材料 Inside Coating Material	环氧树脂 Epoxy resin	UL94-V0
5	外封装材料 Outside Coating Material	环氧粉末 Epoxy power	UL94-V0

注：以上材料均符合环保要求
Note:All of the Materials are in compliance with the requirements of RoHS AND REACH.

4. 典型应用
Type application

本产品用于隔直流，耦合，去耦，滤波，旁路，计时，温控，广泛应用于通信设备，数据处理设备，工业设备，自动控制系统以及其他大型电子设备的理想元件。
The Products are suitable for blocking,coupling,decoupling,filtering,by pass,timing,temperature control and idea for use in telecommunication equipments, data processing equipments, industrial instruments,automatic control systems and other general electronic equipments,Etc.

5. 特点
Features

5.1 无感结构 Non-induction construction
5.2 优良的耐湿性 High moisture-resistance
5.3 自愈性 Self-healing property
5.4 阻燃性(符合UL 94V-0） Flame retardant type（compliance with UL 94V-0）
5.5 非常小的损耗 Very small loss
5.6 优秀的容量，损耗的频率和温度特性 Excellent capacitance and DF for frequency and temperature characteristics
5.7 高绝缘阻值 High insulation resistance

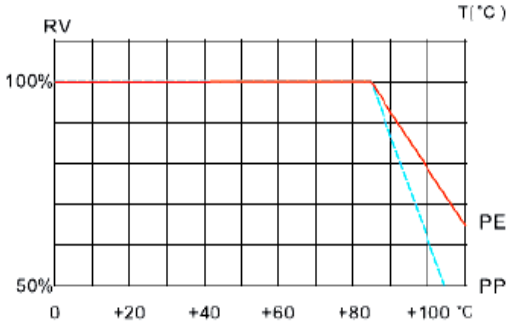
6. 电气特性
Electrical specifications

如无其他说明，电气特性请参考IEC 60384-16:2005
Unless otherwise specified,electric characteristics shall refer to IEC 60384-16:2005

项目 Item	特性要求 Characteristic requirement		测试方法及条件 Test method&Condition
工作温度 Operating Temperature	-40℃～+105℃ 在温度85℃(AC form 75℃)以上时，每上升1度，额定电压下降1.35% +85℃ ~ +105℃(AC FROM 75℃): derating factor 1.35% per℃ for R.V(DC)		
容量范围 Capacitance Range	0.001μF ~ 10.0μF		1KHz ,1.0Vrms ,25℃
容量偏差 Capacitance Tolerance	±2%(G),±2.5%(H),±3%(I),±5%(J),±10%(K)		1KHz ,1.0Vrms ,25℃
额定电压 Rated Voltage	100/160/250/400/450/630/1000V		
损耗角正切 Dissipation Factor	1KHz<0.10%		1KHz ,1.0Vrms ,25℃
绝缘阻值 Insulation Resistance	C≤0.33μF IR>30000MΩ	C>0.33μF IR>15000s	100VDC,60s,25℃
端子间电压 Withstand voltage Between Terminals	应无永久性击穿或飞弧 No permanent breakdown or flashover		1.6U_R(d.c) 60s Cut off Current 10mA , ARC=OFF, Voltage raising time 5 ~ 10s,

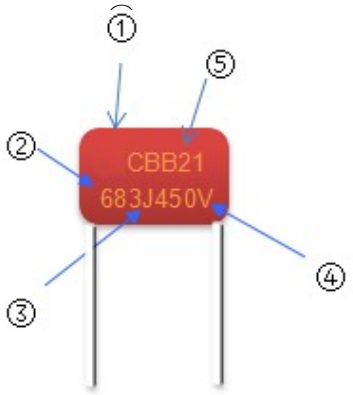
注：额定电压定义：在工作温度范围内，电容持续运行的可承受电压.但是，工作温度在85℃~105℃之间时(AC form 75℃)，每上升1℃，额定工作电压应下降1.35%。

Note:Rated voltage is defined the voltage which shall be capable of appling to capacitors continuously in the operating temperature range.However,rated voltage shall be derated 1.35% per℃ when capacitors operation temperature is between 85℃ to 105℃(AC from 75℃).



7. 印字
Marking

例：



⑴薄膜商标 logo（可客制化）
⑵静电容量 Capacitance:（683J,0.068μF）
⑶允许误差 Capacitance Tolerance:(J)±5%的误差值
⑷额定电压 Rated Voltage：450VDC
⑸产品类别 Product Class：CBB21

8. 电流对频率特性

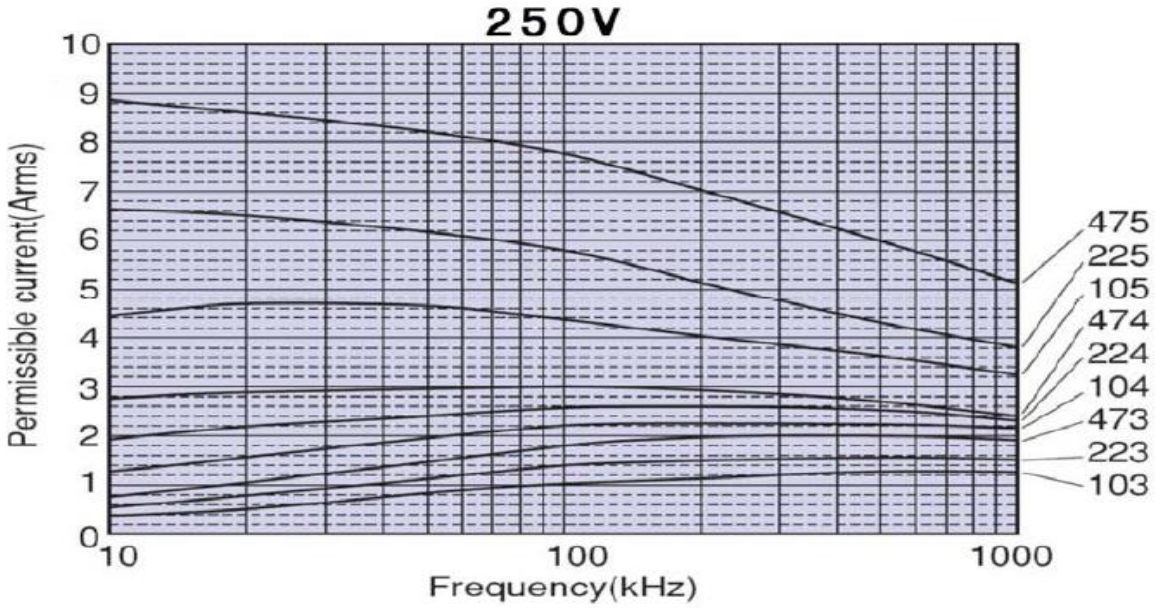
Arms Vs Frequency

A permissible current is regulated by both a root-mean-square value current and a peak current.
A root-mean-square value current is to be a permissible current value to frequency attached.
The values of continuous peak current in the allowable peak current shall be those of continuous current,
And the values of single peak current shall be those of discontinuous current such as rush current in
Switching on or off. The highest number of times of single peak current shall be limited to 10,000times.
(In case of exceeding 10,000times,please contact us.)

允许电流通常由均方根电流和尖峰电流表示。

均方根电流如下附图所示
允许尖峰电流中的连续尖峰电流值应为持续电流，
单个尖峰电流应为不连续电流，如开关动作中的脉冲电流.
最高次数的单峰电流次数应限制在10000次内(若有超过10000次，请告知我们)。

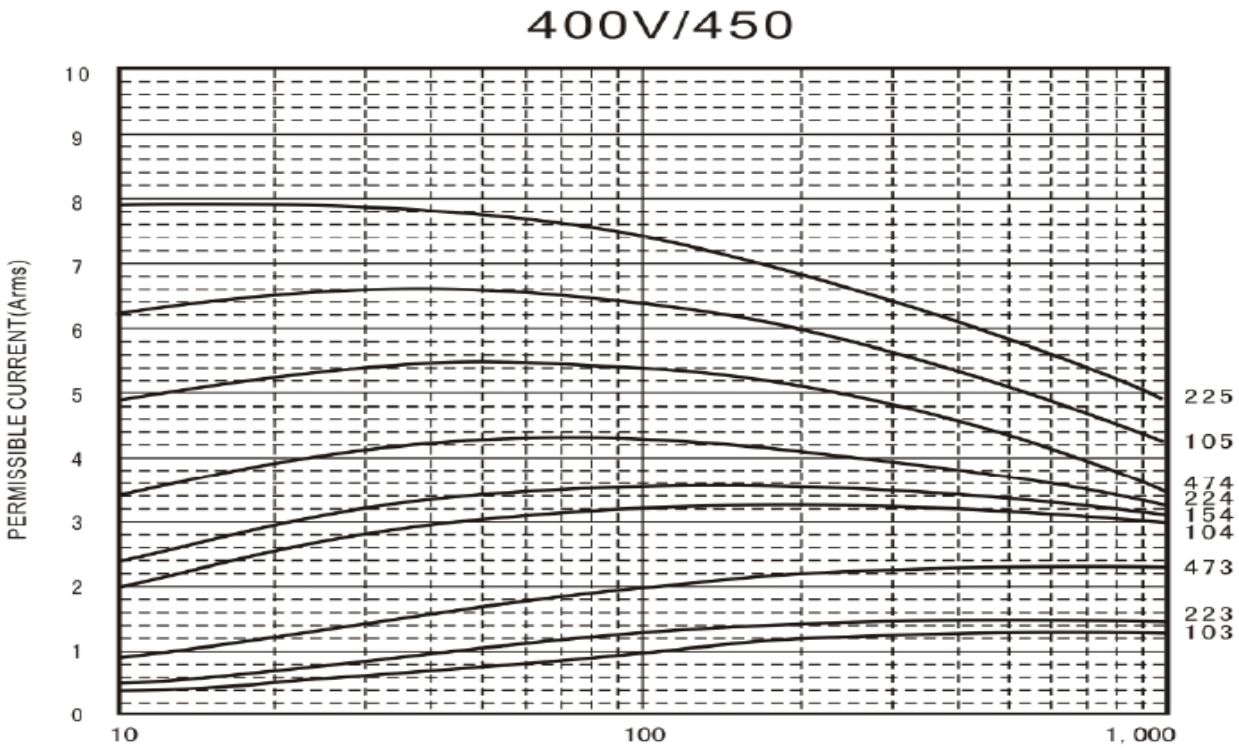
Characteristics of permissible current (Arms)Vs Frequency -（ sinusoidal wave , △T≤12℃)
允许电流（Arms）对频率特性曲线图（正弦波 ， △T≤12℃）



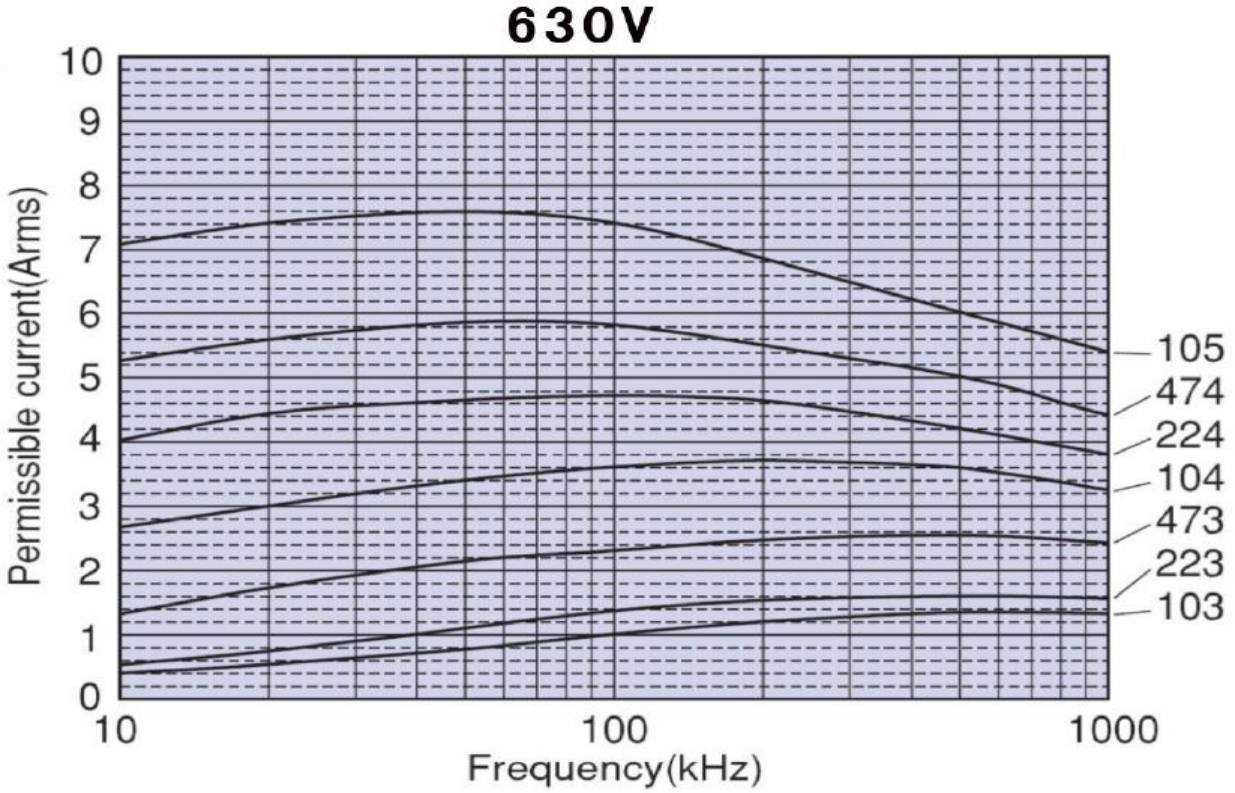
Characteristics of permissible current (Arms)Vs Frequency

电流Vs频率特性图

允许电流（Arms）对频率特性曲线图（ 正弦波 ， △T≤12℃）

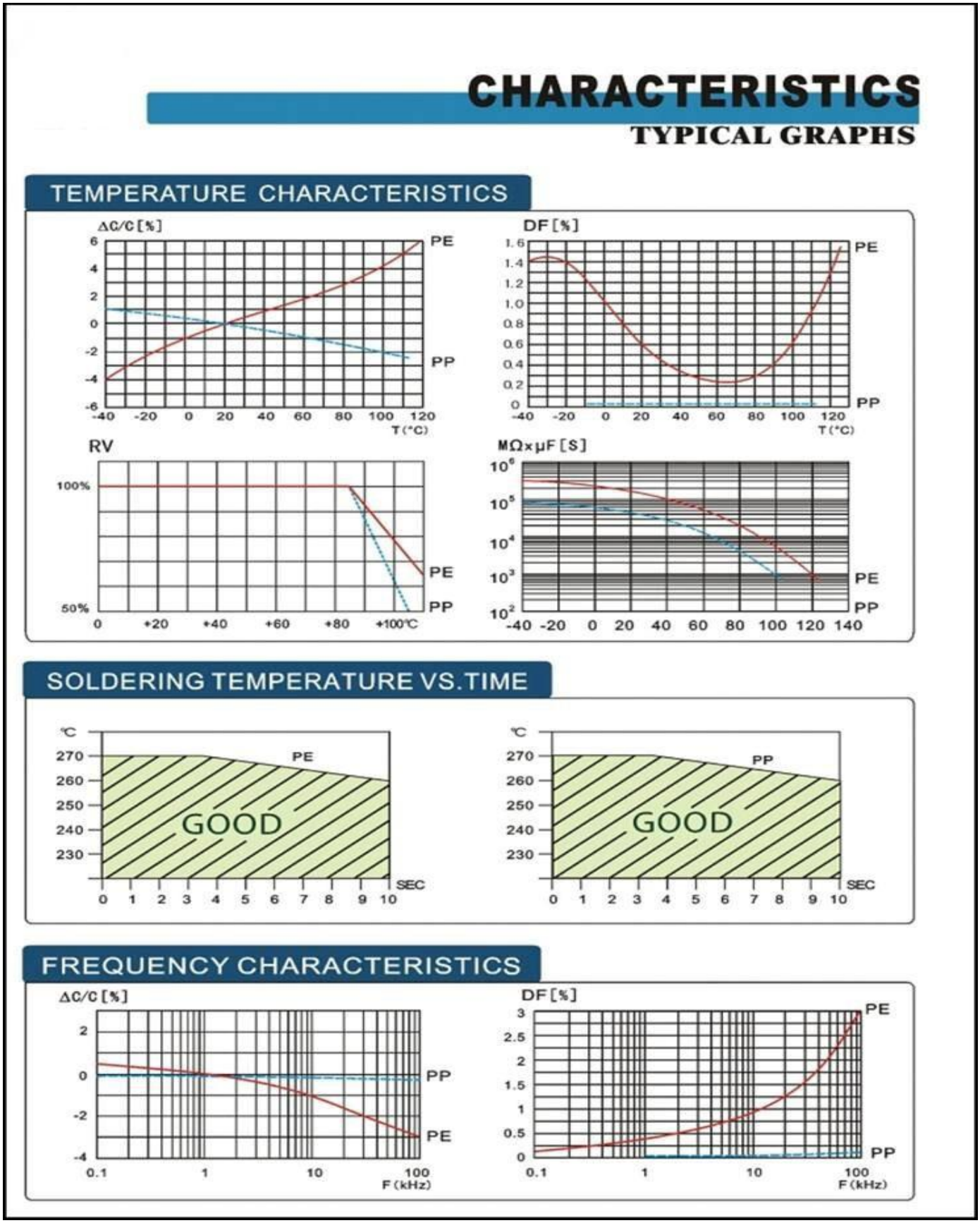


允许电流（Arms）对频率特性曲线图（ 正弦波 ， △T≤12℃）



9.温度特性

TEMPERATURE CHARACTERISTICS



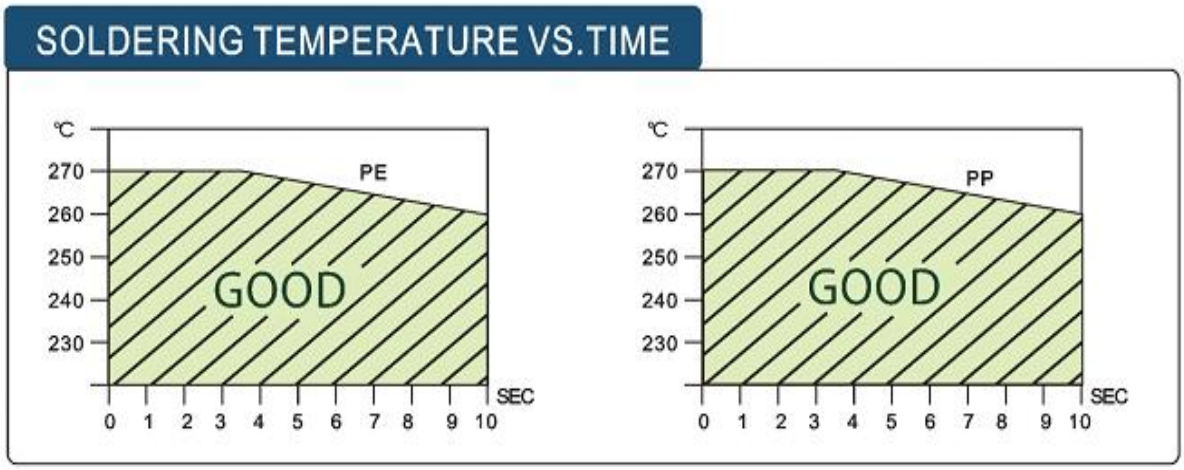
10.使用指导
Guide in useage

10.1 焊锡
Soldering

当焊接电容器时，焊锡热会通过引线端子和封装层传递到电容素子，因此必须注意高温和长时间焊接引起的电容电气特性衰减或损坏。请确认焊锡在以下温度范围内。

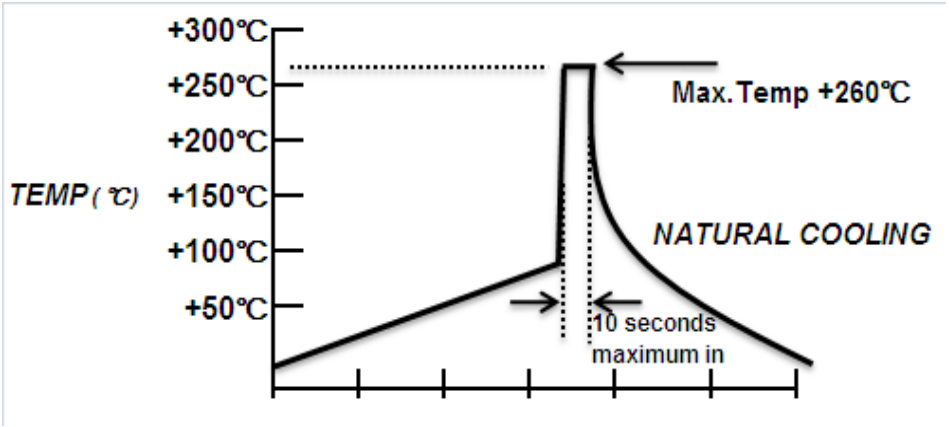
When soldering a capacitor,heat in soldering is conducted to the element of the capacitor from wire lead and an enclosure,and hence it should be noted that soldering under high temperature and long period may cause deterioration of characteristic or breakdown of capacitors.

Be sure to solder within the following temperature condition range.



10.2波峰焊
FLOW / WAVE SOLDERING

PRODUCTS: FILM CAPACITORS (Application of Through-Hole)



10.3烙铁焊接
soldering iron

当使用烙铁焊接时，烙铁尖端温度不得超过350℃，焊接时间不超过5秒

When using soldering iron,iron tip temperature less than 350℃,Soldering time(sec.)within 5 seconds.

11. 环保要求
Enviroment requirement

11.1 符合RoHS要求 Compliance with the requirement of RoHS.
11.2 符合REACH要求 Compliance with the requirement of REACH.
11.3 符合无卤（如要求） Without Halogen(as required).
11.4 附件2为第三方测试的RoHS和REACH报告
Please see the attachment 2 for the test reprots of the Rohs and Reach by a third party .

12. 参考标准
Reference standards

GB-T2693-2001（IDT IEC 60384-1-1999） 电子设备用固定电容器 第1部分 总规范
GB-T10190-2012 电子设备用固定电容器 第16部分 分规范 金属化聚丙烯膜介质直流固定电容器
IEC-60384-16-2005电子设备用固定电容器 第16部分 分规范 金属化聚丙烯膜介质直流固定电容器
GB-T 2828.1-2012 计数抽样检验程序 第1部分 按接收质量限(AQL)检索逐批检验抽样计划

GB-T2693-2001（IDT IEC 60384-1-1999） Fixed capacitors for use in electronic equipment –Part 1: Generic specification

GB-T10190-2012 Fixed capacitors for use in electronic equipment –Part 16:Sectional specification: Fixed metallized polypropylene film D.C. capacitor

IEC-60384-16-2005 Fixed capacitors for use in electronic equipment –Part 16:Sectional specification: Fixed metallized polypropylene film D.C. capacitor

GB-T 2828.1-2012 Sampling procedures for inspection by attributes—Part 1: Sampling schemes indexed by acceptance quality limit (AQL)for lot-by-lot inspection (ISO 2859-1:1999, IDT)

13. 包装
Packing



塑料袋最小包装，数量50、100、200、500、1000PCS
Plastic bag is the minimum packing.the quantity are 50、100、200、500、1000PCS.
袋内放置产品合格环保标识标签，包括料号，规格，数量，LOT批号，生产日期等
The label of the RoHS include the product name、specification、quantity、lot No、manufacture date etc.



N袋小包装装一内箱
One inner box have N PCS bags
内箱尺寸为（长×宽×高）=23×30×30cm
Inner box size （L×W×H）=23×30×30cm
有环保标识
Marking for RoHS AND SVHC



两内箱装一外箱
One outer box have two Inner boxes
外箱尺寸为（长×宽×高）=48×32.2×33cm
Outer box size （L×W×H）=48×32.2×33cm
有环保标识
Marking for RoHS AND SVHC

14.存储条件
Storage conditions

14.1 请注意，长时间产品暴露在空气中会导致引线氧化，焊接性能衰减。
It should be noted that the solderability of the terminals may be deteriorted when stored barely in an atmosphere for a long preriods

14.2 不能放置在高温高湿环境中，请遵循以下存储条件（原包装下保存）
It shouldn't be located in particularly high temperature and high humidity, it must submit to the following conditions(keeping in the original package)

温度 Temperature: 35℃ MAX
相对湿度 Relative humidity：60% MAX

14.3 存储时间：最长12个月（以包装袋上标注的生产日期为准）
Storage period:Losse:12 monthes max
(from the manufacturing date marked on the label in package bag)

15.可靠性实验
Reliability test

15.1 测试条件：除非另有规定，所有试验和测量均应在GB2421–81第4.3条（IEC68　1第5.3条）中规定的试验用标准大气条件下进行,条件如下：
Test condition:Unless otherwise specified ,all tests and measurements shall be made under standard atmospheric conditions for testing as given in GB2421-81 NO.4.3(IEC68-1 NO.5.3),AS follows

温　　度 Temperature：　15℃－35℃
相对湿度 Relative humidity：25%— 75%
气　　压 Air pressure：　86—106Kpa (860—1060mbra)

15.2如对测试结果有任何疑问，则按一下限制测试：
If there may be any doubt on the results, measurements shall be made within the following limits.
环境温度 Ambient temperature:25±2℃
环境湿度 Relative humidity:50～70%

15.3 电性参数参考
Electric characteristics shall refer to
IEC 60384-1:2016 ;
IEC 60384-16:2005;
IEC 60068-2-1;
IEC 60068-2-2;
IEC 60068-2-6;
IEC 60068-2-20;
IEC 60068-2-21;
IEC 60068-2-27;
IEC 60060-1;

15.4 电性参数
Electric characteristics

项目 Item	特性要求 Characteristic requirement		测试方法及条件 Test method&Condition
容量范围 Capacitance Range	0.001μF ~ 10.0μF		IEC60384-16 4.2.2 IEC60384-1 4.7
容量偏差 Capacitance Tolerance	±2%(G),±2.5%(H),±3%(I),±5%(J),±10%(K)		1KHz ,1.0Vrms ,25℃
额定电压 Rated Voltage	100/160、200/250、400、450、630、1000V		
损耗角正切 Dissipation Factor	1KHz<0.10%		1KHz ,1.0Vrms ,25℃
绝缘阻值	C_R≤0.33μF	C_R>0.33μF	
Insulation Resistance	IR>50000MΩ	IR≥15000S	100VDC,60s,25℃
端子间电压 Withstand voltage Between Terminals	应无永久性击穿或飞弧 No permanent breakdown or flashover		$1.6U_R$(d.c) 60s Cut off Current 10mA , ARC=OFF, Voltage raising time 5～10s,

15.5 寿命实验
Life Test

NO	项目 Item		特性要求 Characteristic requirement	测试方法及条件 Test method&Condition		
1	端子强度 Terminal Strength	拉伸强度 Pull Strength	无可见机械损伤 There shall be no visible mechanical damage	线径㎜ wire diameter	荷重 Load	时间 Time
				≤0.5	5N	10S
				0.5<d≤0.8	10N	10S
				0.8<d≤1.25	20N	10S
				IEC60384-16 C4.3 IEC60384-1 C4.13		
				IEC60068 2-21 Test Ua1		
		弯曲强度 Bending Strength	无可见机械损伤 There shall be no visible mechanical damage	线径㎜ wire diameter	荷重 Load	次数 Times
				≤0.5	5N	90℃×4
				0.5<d≤0.8	5N	90℃×4
				0.8<d≤1.25	5N	90℃×4
				IEC60384-16 C4.3 IEC60384-1 C4.13 IEC60068 2-21 Test Ua1		

15.5 寿命实验 Life Test

NO.	项目 Item		特性要求 Characteristic requirement	测试方法及条件 Test method&Condition
2	可焊性 Solderability		端子引线周围至少95%的面积均匀附锡，且本体无破裂等损坏现象 锡料成分Sn 97.5%+ Ag 2%+Cu 0.5% At least 95% of the Circumference of the Lead wire.Around load surface dipped into with new soler, the body be no visible damage.	焊锡温度：235±5℃ Solder temp 浸渍时间：2.0±0.5s Immersion time IEC60384-16 C4.5 IEC60384-1 C4.15 IEC60068-2-20 Test Ta
3	耐焊接热 Resistance to Soldering heat	外观 Appearance	无可见损伤,标志清晰 No visible damage，The marking shall be legible。	焊锡温度：260±5℃ Solder temp 浸渍时间：10±1s Immersion time 恢复时间1-2小时 Then recovery at ordinary condition 1~2hours IEC60384-16 C4.4 IEC60384-1 C4.14 IEC60068-2-20 Test Ta
		容量变化 Capacitance Variation	△ C/C≤5%	
		损耗 Dissipation Factor	△ tgδ<0.0080 C_R≤1.0μF △ tgδ<0.0050 C_R>1.0μF at 1KHz	
		耐电压 Withstand Voltage	1.6 U_R（d.c）60s耐电压后无击穿或飞弧 No permanent breakdown or flashover	
		绝缘电阻 Insulation Resistance	△ R/R≤50%	
4	耐久性 Endurance	外观 Appearance	无可见损伤,标志清晰 No visible damage，The marking shall be legible。	温度Temp：105±3℃ 持续时间：Duration 1000+48H 施加电压voltage：1.25 U_R(d.c.)50Hz 恢复时间至少16小时 Then recovery at ordinary condition at least 16 hours IEC60384-16 C4.12 IEC60384-1 C4.23 IEC60068-2-2
		容量变化 Capacitance Variation	△ C/C≤10%	
		损耗 Dissipation Factor	△tgδ<0.0080 C_R≤1.0μF △tgδ<0.0050 C_R>1.0μF at 1KHz	
		耐电压 Withstand Voltage	1.6 U_R（d.c）60s耐电压后无击穿或飞弧 No permanent breakdown or flashover	
		绝缘电阻 Insulation Resistance	△ R/R≤50%	
5	稳态湿热 Damp heat, steady state	外观 Appearance	无可见损伤,标志清晰 No visible damage，The marking shall be legible。	温度Temp：40±2℃ 湿度：90-95%RH Humidity 持续时间：56 day Duration 电容不施加电压 恢复时间1-2小时 Then recovery at ordinary condition 1-2 hours IEC60384-16 C4.11 IEC60384-1 C4.22 IEC60068-2-78 Test Cab
		容量变化 Capacitance Variation	△ C/C≤5%	
		损耗 Dissipation Factor	△ tgδ<0.0080 C_R≤1.0μF △ tgδ<0.0050 C_R>1.0μF at 1KHz	
		耐电压 Withstand Voltage	1.6 U_R（d.c）60s耐电压后无击穿或飞弧 No permanent breakdown or flashover	
		绝缘电阻 Insulation Resistance	△ R/R≤50%	

15.5 寿命实验　Life Test

NO	项目 Item		特性要求 Characteristic requirement	测试方法及条件 Test method&Condition
6	干热 Dry heat	外观 Appearance	无可见损伤,标志清晰 No visible damage，The marking shall be legible。	温度Temp 105±2℃ 持续时间： 16H Duration 恢复时间不低于4小时 Then recovery at ordinary condition at least 4 hours IEC60384-16 C4.10.2 IEC60384-1 C4.21.3 IEC60068-2-2, test Bb
		容量变化 Capacitance Variation	△ C/C≤5%	
		损耗 Dissipation Factor	△ tgδ <0.0080 C_R≤1.0μF △ tgδ <0.0050 C_R>1.0μF at 1KHz	
		耐电压 Withstand Voltage	1.6 U_R （d.c） 60s耐电压后无击穿或飞弧 No permanent breakdown or flashover	
		绝缘电阻 Insulation Resistance	△ R/R≤50%	
7	寒冷 Cold	外观 Appearance	无可见损伤,标志清晰 No visible damage，The marking shall be legible。	温度Temp：-40±2℃ 持续时间： 4H Duration 恢复时间不低于4小时 Then recovery at ordinary condition at least 4 hours IEC60384-16 C4.10.4 IEC60384-1 C4.21.5 IEC60068-2-1, test Ab
		容量变化 Capacitance Variation	△ C/C≤5%	
		损耗 Dissipation Factor	△ tgδ <0.0080 C_R≤1.0μF △ tgδ <0.0050 C_R>1.0μF at 1KHz	
		耐电压 Withstand Voltage	1.6 U_R （d.c） 60s耐电压后无击穿或飞弧 No permanent breakdown or flashover	
		绝缘电阻 Insulation Resistance	△ R/R≤50%	
8	浪涌 Surge	外观 Appearance	无可见损伤,标志清晰 No visible damage，The marking shall be legible。	When C_R ≤ 1.0 μF UP = 1.6U_R When C_R > 1.0 μF UP =U_R time:10s Cycle times:24次 前三次脉冲没有发生自愈性击穿，则可停止，为合格 IEC60384-1 C4.26 IEC60060-1
		容量变化 Capacitance Variation	△ C/C≤5%	
		损耗 Dissipation Factor	△ tgδ <0.0080 C_R≤1.0μF △ tgδ <0.0050 C_R>1.0μF at 1KHz	
		耐电压 Withstand Voltage	1.6 U_R （d.c） 60s耐电压后无击穿或飞弧 No permanent breakdown or flashover	
		绝缘电阻 Insulation Resistance	△ R/R≤50%	

15.5 寿命实验　Life Test

NO	项目 Item		特性要求 Characteristic requirement	测试方法及条件 Test method&Condition
9	充放电 Charge and discharge	外观 Appearance	无可见损伤,标志清晰 No visible damage，The marking shall be legible。	Test voltage: U_R (d.c.) time:1Cycle/s Cycle times:10000 dv/dt:100 V/μs. resistor: $(220*10^{-6}/ C_R)\Omega$ IEC60384-16 C4.13 IEC60384-1 C4.27
		容量变化 Capacitance Variation	△ C/C≤5%	
		损耗 Dissipation Factor	△ tgδ <0.0080 C_R≤1.0μF △ tgδ <0.0050 C_R>1.0μF at 1KHz	
		耐电压 Withstand Voltage	1.6 U_R （d.c） 60s耐电压后无击穿或飞弧 No permanent breakdown or flashover	
		绝缘电阻 Insulation Resistance	△ R/R≤50%	
10	振动 Vibration	外观 Appearance	无可见损伤,标志清晰 No visible damage，The marking shall be legible。	上下左右前后三个方向各2H，频率10-55Hz 振幅0.75mm或98m/S^2 3 directions at 2 hours each 10-55Hz at 0.75mm or 98m/s^2 IEC60384-16 C4.7 IEC60384-1 C4.17 IEC 60068-2-6, test Fc,
11	碰撞或冲击 Bump	外观 Appearance	无可见损伤,标志清晰 No visible damage，The marking shall be legible。	次数 number of bumps: 1000 or 4000 加速度 Acceleration: 400 m/s^2 Pulse duration: 6 ms IEC60384-16 C4.8 IEC60384-1 C4.18 IEC 60068-2-27, test Eb,