



深圳市凯琦佳科技股份有限公司

铝电解电容器

PH20400471M2H002

400V470 μ F

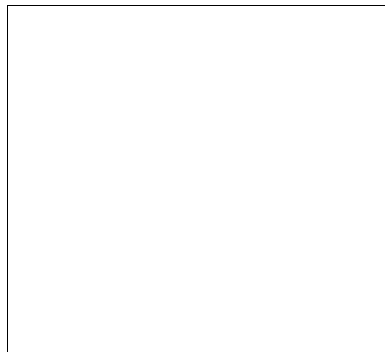
Φ 30 X 50

纳入规格书

客户名称:

物料编码:

受领印栏



注：对此规格书确认后，在确认后签名，返传一份与敝公司



Snap-in Al-capacitors 铝电解电容器

PH20400471M2H002 400V 470 μ F Φ 30 X 50 105 $^{\circ}$ C 2000h

Features:

- 标准系列Standard Series
- 小型化Compact size
- 高可靠性High reliability
- 符合ROHS要求ROHS compatible
- 高纹波电流High ripple current capability
- 105 $^{\circ}$ C负载寿命达到2000小时Load life of 2000h at 105 $^{\circ}$ c

Aluminum Electrolytic Capacitors Specification

Capacitors with Snap-in

焊片式铝电解电容器规格书

Series/Type: PH20
Ordering code: PH20400471M2H002
Date: April 13, 2016
Version: 1

拟定created: 张恋 审核checked : 宋向华 批准 approval:



1. 适用范围Adapt Range

本产品规格书适用于深圳市凯琦佳科技股份有限公司电解电容器产品系列：
The product specification is adapted to series Aluminum :
SHENZHEN CECTN TECHNOLOGY CO.,LTD

PH20
PH20

2. 部品编号 Part Number System

PH20	400	471	M	2	H	0	02
↓	↓	↓	↓	↓	↓	↓	↓
系列	标称电压	额定容量	容量组别	焊针个数	直径	端子类型	在包装方面有特殊要求
Series	Rated V (V)	Rated C (μF)	C Tolerance	terminal	D code	Terminal style	Some special requirements on packing
	400	470		2个焊针	30	目录标示的标准长端子	

3. 电气特性Electrical characteristics (表1)

额定电压 Rated WV (V. DC)	浪涌电压 Surge (V. DC)	额定容量 Rated C (μ F)	容量偏差 C Tol. (%)	损耗角 正切 TGD (MAX)	ESR典型值 Typical ESR (mΩ)	漏电流 IL (mA , MAX, 5min)	额定纹波电流 Rated ripple current (A)	其它 others
400	440	470	-20~+20	0.15	203.3	1.30	1.68	
at 120Hz 20℃							105℃120Hz	
气候类别 Environmental Category : 40/105/56 (工作温度为-40℃至+105℃, 稳态湿热试验为56天)								

4. 性能特性Specification

No.	项目Item	特性 Characteristics
1	外观检查 Visual examination marking (Non-Destructive)	外观: 无任何异常 Appearance: no remarkable abnormality
2	外形尺寸 Dimensions (Non-Destructive)	见外形图 See to dimensions
3	漏电流 Leakage current (Non-Destructive)	见表1 See to table 1
4	容量 Capacitance (Non-Destructive)	见表1 See to table 1
5	损耗角正切 Tangent of the loss angle (Non-Destructive)	见表1 See to table 1
6	端子强度 Robustness of terminations	拉力: 端子应能承受不小于20N的拉力后, 端子无可见损伤, 端子的铆接处不松动。 Tension: The terminal is required to withstand the tension of no less than 20N without noticeable damages and loose of rivet joint. 扭曲力: 端子应能承受不小于15N的扭曲力并在180°方向上受力两次, 端子无可见损伤, 端子的铆接处不松动。 Torsion: The terminal is required to endure the torsion of no less than 15N and can bear force twice at an angle of 180° without noticeable damages and loose of rivet joint.



7	振动 Vibration	<p>频率范围Frequency range: 10—55Hz 振幅: 0.75mm Total Amplitude: 0.75mm 条件: X.Y.Z 方向各2小时 Direction and duration of vibration: 3 orthogonal directions mutually each for 2 hours Total 6 hours 静电容量测试时无接触不良, 断线及短路, 端子无机械损伤 Capacitance: During the test, measured value to be stabilized (when measured several times within 30 min before completion of test)Appearance: No remarkable abnormality 静电容量变化: 初始值的-15~+15%以内 Capacitance change: Within -15~+15% of the initial value</p>			
8	稳态湿热 Dump heat	<p>温度: 40±2℃ 湿度: 90-95%Rh 时间: 56天 Test Temperature :40±2℃ Relative Hwmidity:90-95%Rh Test time: 56天 试验后常温放置1-2小时 To expose in the atmospheric condition for 1 to 2 hours after completion of test 漏电流: 不超过规定值 Leakage current: Not more than the specified value 静电容量变化: 初始值的-20~+20%以内 Capacitance change: Within -20~+20%of the initial value 损耗角正切: 不超过规定值 Dissipation Factor: Not more than the specified value 绝缘电阻(使用金属箔法): 大于100MΩ Insulation Resistance (Using metal foil) : ≥100MΩ</p>			
9	耐久性 Endurance	时间 (Time)	2000h	温度temperature	105℃
		<p>电压: 额定电压(叠加规定纹波电流) 试验后常温放置16h测定 Applied Voltage:maximum value of DC voltage overlapped by an allowable ripple current. The capacitors shall then be removed from the test chamber and stabilized at room temperature for 16 hrs. after。 漏电流: 不超过规定值 Leakage Current:Not more than the specified value 电容量变化: 初始值的-20~+20%以内 Capacitance change:within-20~+20% of the initial value 损耗角正切: 不超过规定值的1.75倍 Dissipation Factor:Not more than 175% of the specified value</p>			
10	浪涌 Surge	印加电压 (VDC)	440	温度temperature	15~30℃
		<p>周期: 6±0.5min 30±5sec 充电 A period:6±0.5min(charging for 30±5sec) 充电电阻: 1000Ω 回数: 1000 times Series protective resistance The number of times 漏电流: 不超过规定值 Leakage Current:Not more than the specified value 电容量变化: 初始值的15%以内 Capacitance change:within 15% of the initial value 损耗角正切: 不超过规定值的1.75倍 Dissipation Factor:Not more than 175% of the specified value</p>			



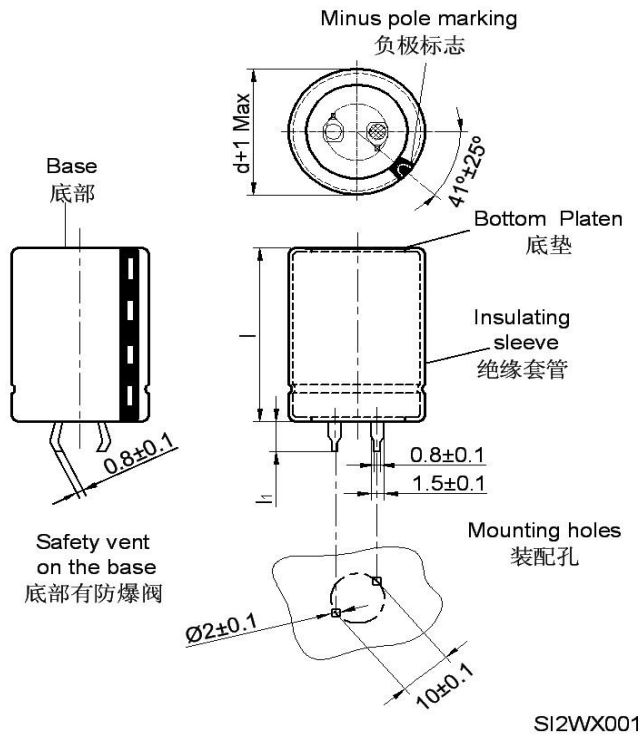
11	压力释放 Pressure relief	电容器上印加10A 逆向直流电, 防爆阀正常动作, 无金属片飞散, 起火, 爆炸。 The capacitor is shall be connected in inverse polarity, and applied DC current at 10A constant, The pressure relief device shall open in such a way as to avoid any danger of fire or explosion of capacitor elements	
12	高温贮存 Storage at upper category temperature	温度 (temperature)	105°C
		时间(Time): 1000h 电压处理: 常温下电容器串联保护电阻(1K), 加额定电压30分钟, 印加后放电, 常温放置24-48小时 Condition: Following this period the capacitors shall be removed from the test chamber and be allowed to stabilize at room temperature. Next they shall be connected to a series limiting resistor (1K), with DC. Rated Voltage applied for 30 min. after which the capacitors shall be discharged. The capacitor shall be stored under room temperature for 24 -48 hours. 漏电流: 不超过规定值 Leakage Current: Not more than the specified value 电容量变化: 初始值的20%以内 Capacitance change: within 20% of the initial value 损耗角正切: 不超过规定值的2倍 Dissipation Factor: Not more than 200% of the specified value	
13	绝缘耐压 insulation withstanding voltage	2000VAC施加于短路的端子和固定卡箍之间, 1分钟不破坏 A voltage of 2000VAC is applied for one minute between the terminals shorted each other and the mounting clamp on insulating sleeve covering the case, there shall not be damaged	

5. 标识Marking

1
 |
 C E C T N
 PH20M2H002 _____ 2
 ┌───────────────────┐ 3
 470μF 400V- _____ 4
 CE 105°C
 |
 5

No.	项目Item	No.	项目Item
1	商标 Brand	4	额定电压 Rated voltage
2	产品系列编码 Products number	5	温度类别 Climate category
3	静电容量 Capacitance		

6. 外型图Dimensions



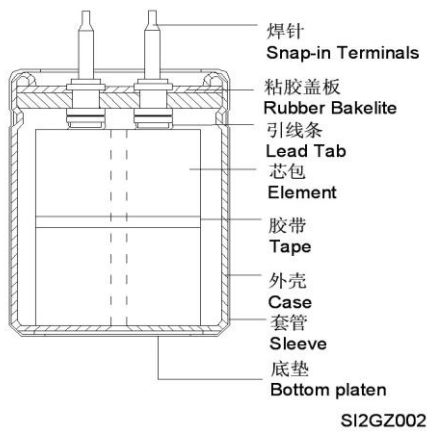
d: 30+1mm

l: 50±2mm

l₁: 6.0±1mm

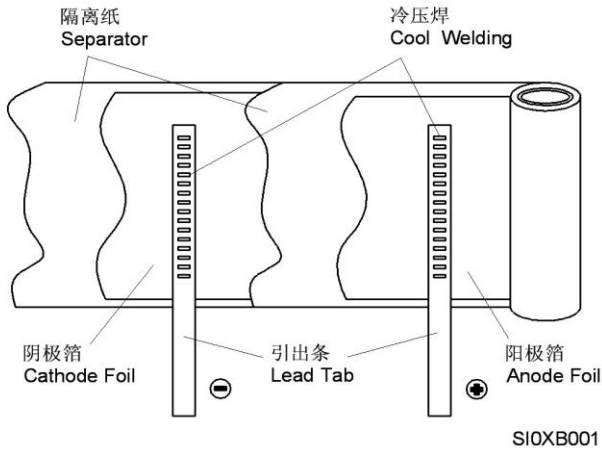
7. 构造图Frame drawing

7-1构造图(Frame drawing)





7-2工艺芯包分解图 (Element drawing)





8. 纹波电流系数 Multiplier for ripple current

8-1 频率系数 Frequency Coefficient

频率 (Hz) Freq.	V_R	50	120	300	1K	$\geq 10K$
系数 Coe.	160-250	0.75	1.00	1.17	1.32	1.45
系数 Coe.	350-500	0.70	1.00	1.13	1.30	1.41

8-2 温度系数 Temperature Coefficient

温度(°C) Tem.	+40	+55	+70	+85	+105
系数 Coe.	2.7	2.5	2.1	1.7	1.0

9. 包装 Packaging

9-1 包装数量 Packaging Quantity

电容器尺寸	装箱数量
Capacitor Size	Qty per carton
Φ 30X50	204 PCS

9-2 包装箱材质 Material of Packaging Carton

瓦楞纸

Corrugated Cardboard

9-3 包装箱尺寸 Dimensions of Packaging Carton

外箱尺寸 Carton Dimensions :	400mm X 300mm X 209mm
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10. 生产日期的表示方法 Production date code

YY.MM.

例 EX: 11 08

2011年8月份

Production date: produced in August.2011