



規格承認書

(SPECIFICATION FOR APPROVAL)

File No.: Q/BH .TS16949.13TECH1303

Product Name: Metallized polyethylene naphthalate film surface mounted D.C. capacitor
(Stacked version)

Product Type: C51(CLN51 聚萘乙酯膜)

Product Code: C51

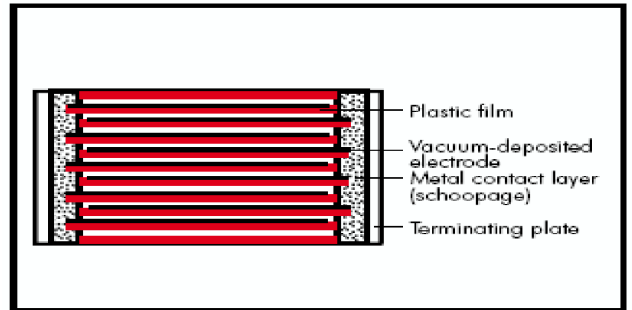
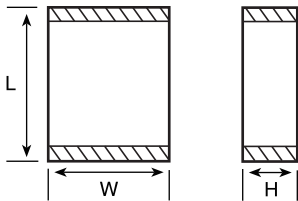
Customer:

Customer Code:

Issue Date: (V3.0)

金属化聚萘乙酯膜表面安装直流固定电容器(PEN)
Metallized polyethylene naphthalate film surface mounted D.C. capacitor (Stacked version) Internal construction:

■ 外形图 Outline Drawing



■ 特点

- 采用无外封装叠片式技术, 体积小
- 性能稳定, 具有良好的温度特性、频率特性、电压特性、时间稳定性和防潮特性
- 可靠性高, 自愈性好
- 无压电效应, 无极性, 无非线性失真
- 等效串联电阻低, 噪音电平低
- 抗脉冲能力强
- 抗热冲击, 抗机械冲击能力强

■ Features

- Uncoated, stacked construction, small size
- Stability versus temperature, frequency, voltage, time and humidity
- Reliable quality due to self-healing effect
- No piezoelectric effect, non-polar construction, non-linearity distortion
- Low ESR, low noise level
- High dv/dt ability
- No cracking under thermal impact or mechanical bump

■ 用途

- 通讯(XDSL, 基站, 分配器)
- 汽车(引擎控制系统, 安全系统, 汽车收音机, 导航系统, 空调)
- 照明(电子镇流器)
- DC/DC 交换器
- 家用电器(液晶显示器, 等离子电视)

■ Applications

- Telecom (XDSL, base station, multiplexer)
- Automotive(engine control system, safety system, car radio, navigation system, air-conditioning)
- Lighting (electronic ballast)
- DC/DC convertor
- Consumer (LCD, PDP)

■ 技术要求 Specifications

引用标准 Reference Standard	IEC 60384-23	
气候类别 Climatic Category	55/125/56	
额定温度 Rated Temperature	100℃	
工作温度范围 Operating Temperature Range	-55℃~125℃ (+100℃ to +125℃: decreasing factor 1.25% per ℃ for UR)	
额定电压 Rated Voltage	50/63V、100V、250V、400V、630V、1000V	
电容量范围 Capacitance Range	0.001μF~12μF	
电容量偏差 Capacitance Tolerance	± 5%(J), ± 10%(K), ± 20%(M)	
耐电压 Voltage Proof	1.4UR (5s)	
损耗角正切 Dissipation Factor	≤ 0.008 (20℃, 1kHz)	
绝缘电阻 Insulation Resistance	≥ 1 000MΩ, CR ≤ 0.33μF ≥ 400s, CR > 0.33μF	UR < 100V, 充电电压10V UR ≥ 100V, 充电电压100V (20℃, 1min)
最大脉冲爬升速率Maximum Pulse Rise Time (dV/dt): 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 working voltage (U) is lower than the rated voltage (UR),the capacitor can be worked at a higher dV/dt.In this case, the maximum allowed dV/dt is obtain by multiplying the right value with UR/U.	50/63V	50
	100V	70
	250V	100
	400V	150
	630V	200
	1000V	400
焊接工艺 Welding process	回流焊 (Reflow soldering recommended)	



C51
CLN51 series

产品编码说明 Part number system

■ 18位产品代码如下:

The 18 digits part number is formed as follow:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
C	5	1															

第1~3位	薄膜电容器系列代码	Digit 1 to 3	Series code of film capacitor
	C51=CLN51		C51=CLN51
第4~5位	直流额定电压	Digit 4 to 5	DC rated voltage
	1H=50V 1J=63V 2A=100V		1H=50V 1J=63V 2A=100V
	2E=250V 2G=400V 2J=630V 3A=1 000V		2E=250V 2G=400V 2J=630V 3A=1 000V
第6~8位	标称容量	Digit 6 to 8	Rated capacitance value
	举例: 103=10 × 10 ³ pF=0.01μF		For example: 103=10 × 10 ³ pF=0.01μF
第9位	容量偏差	Digit 9	Capacitance tolerance
	J= ± 5%, K= ± 10%, M= ± 20%		J= ± 5%, K= ± 10%, M= ± 20%
第10位	对于SMD是包装代码	Digit 10	Packaging code
	0表示散装, 1表示编带(参见第19页)		0=bulk 1=taping(refer to pag. 19)
第11位	内部特征码	Digit 11	Internal use
第12~15位	对于SMD是外形尺寸代码	Digit 12 to 15	Dimension code
第16~18位	内部特征码	Digit 16 to 18	Internal use

■ 外形尺寸 Dimensions(mm)

Dimension Code	1812	2220	2824	4030	5040	6054
L	4.8 ± 0.3	5.9 ± 0.3	7.3 ± 0.4	10.5±0.4	13.0±0.4	15.5±0.4
W	3.2 ± 0.4	5.1 ± 0.4	6.1 ± 0.5	7.6±0.5	10.2±0.5	13.7±0.5

50/63Vdc#			
C _R (μF)	Size	H max	Part number
0.0010	1812	1.8	C511J102-*01812+++
0.0012	1812	1.9	C511J122-*01812+++
0.0015	1812	1.8	C511J152-*01812+++
0.0018	1812	2.1	C511J182-*01812+++
0.0022	1812	2.3	C511J222-*01812+++
0.0027	1812	2.7	C511J272-*01812+++
0.0033	1812	1.8	C511J332-*01812+++
0.0039	1812	1.9	C511J392-*01812+++
0.0047	1812	2.2	C511J472-*01812+++
0.0056	1812	2.5	C511J562-*01812+++
0.0068	1812	1.9	C511J682-*01812+++
0.0082	1812	2.2	C511J822-*01812+++
0.010	1812	2.0	C511J103-*01812+++
0.012	1812	2.3	C511J123-*01812+++
0.015	1812	2.8	C511J153-*01812+++
0.018	1812	1.8	C511J183-*01812+++
0.022	1812	2.0	C511J223-*01812+++
0.027	1812	2.3	C511J273-*01812+++
0.033	1812	2.7	C511J333-*01812+++
0.039	1812	3.1	C511J393-*01812+++
0.047	1812	2.3	C511J473-*01812+++
0.056	1812	2.6	C511J563-*01812+++
0.068	1812	3.0	C511J683-*01812+++
0.082	1812	1.9	C511J823-*01812+++
0.10	1812	2.2	C511J104-*01812+++
0.12	1812	2.5	C511J124-*01812+++
0.15	1812	3.0	C511J154-*01812+++
0.18	1812	2.0	C511J184-*01812+++

50/63Vdc#			
C _R (μF)	Size	H max	Part number
0.22	1812	2.3	C511J224-*01812+++
0.27	1812	2.7	C511J274-*S1812+++
0.33	1812	3.2	C511J334-*S1812+++
0.39	2220	3.5	C511J394-*02220+++
0.47	2220	2.3	C511J474-*02220+++
0.56	2220	2.7	C511J564-*02220+++
0.68	2220	3.1	C511J684-*02220+++
0.82	2220	3.6	C511J824-*S2220+++
1.0	2220	4.3	C511J105-*S2220+++
1.2	2824	3.3	C511J125-*02824+++
1.5	2824	4.0	C511J155-*02824+++
1.8	4030	2.9	C511J185-*04030+++
2.2	4030	3.4	C511J225-*04030+++
2.7	4030	4.0	C511J275-*04030+++
3.3	4030	4.8	C511J335-*04030+++
3.9	5040	3.5	C511J395-*05040+++
4.7	5040	4.1	C511J475-*05040+++
5.6	5040	4.8	C511J565-*05040+++
6.8	6054	3.7	C511J685-*06054+++
8.2	6054	4.3	C511J825-*06054+++
10.0	6054	5.1	C511J106-*06054+++
12.0	6054	6.0	C511J126-*06054+++

备注: 1. “#” 当额定电压为50Vdc时, 第4~5位是1H. “#” when the rated voltage is 50Vdc, the digit 4~5 is 1H.
 2. “-” 表示容量偏差. “-” =capacitance tolerance code, M= ± 20%,K= ± 10%,J= ± 5%
 3. “*” 表示包装代码. 0表示散装, 1表示编带. “*” =packaging code,0=bulk, 1=taping (refer to pag. 19)



C51
CLN51 series

Guang Zhou Nan Cai Electronic CO.,LTD.
<http://www.cgznc.com>

■ 续 (Continued)

100Vdc			
C _R (μF)	Size	H max	Part number
0.0010	1812	1.8	C512A102-*01812+++
0.0012	1812	1.9	C512A 122-*01812+++
0.0015	1812	1.8	C512A 152-*01812+++
0.0018	1812	2.1	C512A 182-*01812+++
0.0022	1812	2.3	C512A 222-*01812+++
0.0027	1812	2.7	C512A 272-*01812+++
0.0033	1812	1.8	C512A 332-*01812+++
0.0039	1812	1.9	C512A 392-*01812+++
0.0047	1812	2.2	C512A 472-*01812+++
0.0056	1812	2.5	C512A 562-*01812+++
0.0068	1812	1.9	C512A 682-*01812+++
0.0082	1812	2.2	C512A 822-*01812+++
0.010	1812	2.0	C512A103-*01812+++
0.012	1812	2.3	C512A123-*01812+++
0.015	1812	2.8	C512A153-*01812+++
0.018	1812	1.8	C512A183-*01812+++
0.022	1812	2.0	C512A223-*01812+++
0.027	1812	2.3	C512A273-*01812+++
0.033	1812	2.7	C512A333-*01812+++
0.039	1812	3.1	C512A393-*01812+++
0.047	1812	2.3	C512A473-*01812+++
0.056	1812	2.6	C512A563-*01812+++
0.068	1812	3.0	C512A683-*01812+++
0.082	1812	1.9	C512A823-*01812+++
0.10	1812	2.2	C512A104-*01812+++
0.12	1812	2.5	C512A124-*S1812+++
0.15	1812	3.0	C512A154-*S1812+++
0.18	2220	2.1	C512A184-*02220+++
0.22	2220	2.2	C512A224-*02220+++
0.27	2220	2.6	C512A274-*02220+++
0.33	2220	3.0	C512A334-*02220+++
0.39	2220	3.5	C512A394-*S2220+++
0.47	2220	4.2	C512A474-*S2220+++
0.56	2824	3.3	C512A564-*02824+++
0.68	2824	3.8	C512A684-*02824+++
0.82	2824	4.5	C512A824-*02824+++
1.0	4030	3.2	C512A105-*04030+++
1.2	4030	3.7	C512A125-*04030+++
1.5	4030	4.5	C512A155-*04030+++
1.8	5040	3.4	C512A185-*05040+++
2.2	5040	4.0	C512A225-*05040+++
2.7	5040	4.7	C512A275-*05040+++
3.3	6054	3.7	C512A335-*06054+++
3.9	6054	4.2	C512A395-*06054+++
4.7	6054	4.9	C512A475-*06054+++
5.6	6054	5.8	C512A565-*06054+++

250Vdc			
C _R (μF)	Size	H max	Part number
0.0010	1812	1.8	C512E102-*01812+++
0.0012	1812	1.9	C512E122-*01812+++
0.0015	1812	1.8	C512E152-*01812+++
0.0018	1812	2.1	C512E182-*01812+++
0.0022	1812	2.3	C512E222-*01812+++
0.0027	1812	2.7	C512E272-*01812+++
0.0033	1812	1.8	C512E332-*01812+++
0.0039	1812	1.9	C512E392-*01812+++
0.0047	1812	2.2	C512E472-*01812+++
0.0056	1812	2.5	C512E562-*01812+++
0.0068	1812	1.9	C512E682-*01812+++
0.0082	1812	2.2	C512E822-*01812+++
0.010	1812	2.0	C512E103-*01812+++
0.012	1812	2.3	C512E123-*01812+++
0.015	1812	2.8	C512E153-*01812+++
0.018	1812	1.8	C512E183-*S1812+++
0.022	1812	2.0	C512E223-*S1812+++
0.027	1812	2.3	C512E273-*S1812+++
0.033	1812	2.7	C512E333-*S1812+++
0.039	1812	3.1	C512E393-*S1812+++
0.047	2220	2.0	C512E473-*02220+++
0.056	2220	2.3	C512E563-*02220+++
0.068	2220	2.6	C512E683-*02220+++
0.082	2220	3.1	C512E823-*S2220+++
0.10	2220	3.6	C512E104-*S2220+++
0.12	2220	4.2	C512E124-*S2220+++
0.15	2824	3.5	C512E154-*02824+++
0.18	2824	4.0	C512E184-*02824+++
0.22	4030	2.8	C512E224-*04030+++
0.27	4030	3.3	C512E274-*04030+++
0.33	4030	3.9	C512E334-*04030+++
0.39	4030	4.4	C512E394-*04030+++
0.47	5040	3.3	C512E474-*05040+++
0.56	5040	3.8	C512E564-*05040+++
0.68	5040	4.5	C512E684-*05040+++
0.82	6054	3.5	C512E824-*06054+++
1.0	6054	4.1	C512E105-*06054+++
1.2	6054	4.8	C512E125-*06054+++
1.5	6054	5.8	C512E155-*06054+++

备注: 1. “-”表示容量偏差。“-”=capacitance tolerance code, M=±20%,K=±10%,J=±5%
2. “*”表示包装代码。0表示散装, 1表示编带。“*”=packaging code,0=bulk, 1=taping (refer to pag. 19)

■ 续 (Continued)

400Vdc			
C _R (μF)	Size	H max	Part number
0.0010	1812	1.8	C512G102-*01812+++
0.0012	1812	1.9	C512122-*01812+++
0.0015	1812	1.9	C512G152-*01812+++
0.0018	1812	2.1	C512G182-*01812+++
0.0022	1812	2.3	C512G222-*01812+++
0.0027	1812	2.7	C512G272-*01812+++
0.0033	1812	1.8	C512G332-*01812+++
0.0039	1812	1.9	C512G392-*01812+++
0.0047	1812	2.2	C512G472-*01812+++
0.0056	1812	2.5	C512G562-*01812+++
0.0068	1812	1.9	C512G682-*01812+++
0.0082	1812	2.2	C512G822-*01812+++
0.010	1812	2.5	C512G103-*01812+++
0.012	1812	2.9	C512G123-*01812+++
0.015	2220	1.8	C512G153-*02220+++
0.018	2220	2.0	C512G183-*02220+++
0.022	2220	2.4	C512G223-*02220+++

400Vdc			
C _R (μF)	Size	H max	Part number
0.027	2220	2.8	C512G273-*02220+++
0.033	2220	3.3	C512G333-*02220+++
0.039	2220	3.8	C512G393-*02220+++
0.047	2220	4.5	C512G473-*02220+++
0.056	2824	3.6	C512G563-*02824+++
0.068	2824	4.2	C512G683-*02824+++
0.082	4030	3.2	C512G823-*04030+++
0.10	4030	3.7	C512G104-*04030+++
0.12	4030	4.3	C512G124-*04030+++
0.15	5040	2.8	C512G154-*05040+++
0.18	5040	3.2	C512G184-*05040+++
0.22	5040	3.8	C512G224-*05040+++
0.27	5040	4.7	C512G274-*05040+++
0.33	6054	3.5	C512G334-*06054+++
0.39	6054	4.1	C512G394-*06054+++
0.47	6054	4.8	C512G474-*06054+++
0.56	6054	5.6	C512G564-*06054+++

630Vdc			
C _R (μF)	Size	H max	Part number
0.0015	2220	2.2	C512J152-*02220+++
0.0018	2220	2.2	C512J182-*02220+++
0.0022	2220	2.4	C512J222-*02220+++
0.0027	2220	2.8	C512J272-*02220+++
0.0033	2220	3.3	C512J332-*02220+++
0.0039	2220	3.8	C512J392-*02220+++
0.0047	2220	2.3	C512J472-*02220+++
0.0056	2220	2.6	C512J562-*02220+++
0.0068	2220	3.0	C512J682-*02220+++
0.0082	2220	2.2	C512J822-*02220+++

630Vdc			
C _R (μF)	Size	H max	Part number
0.010	2220	2.6	C512J103-*02220+++
0.012	2220	3.0	C512J123-*02220+++
0.015	2220	3.6	C512J153-*02220+++
0.018	2220	4.2	C512J183-*02220+++
0.027	2824	4.6	C512J273-*02824+++
0.047	4030	4.6	C512J473-*04030+++
0.056	5040	2.7	C512J563-*05040+++
0.082	5040	3.7	C512J823-*05040+++
0.10	5040	4.4	C512J104-*05040+++
0.22	6054	5.9	C512J224-*06054+++

1 000Vdc			
C _R (μF)	Size	H max	Part number
0.015	4030	3.1	C513A153_*04030+++
0.018	4030	3.5	C513A183_*04030+++
0.022	4030	4.1	C513A223_*04030+++
0.027	4030	4.9	C513A273_*04030+++
0.033	4030	5.8	C513A333_*04030+++
0.039	5040	3.4	C513A393_*05040+++

1 000Vdc			
C _R (μF)	Size	H max	Part number
0.047	5040	4.0	C513A473_*05040+++
0.056	5040	4.6	C513A563_*05040+++
0.072	5040	5.8	C513A723_*05040+++
0.082	5040	6.3	C513A823_*05040+++
0.10	6054	5.1	C513A104_*06054+++
0.12	6054	5.9	C513A124_*06054+++

备注: 1. “-”表示容量偏差。 “-”=capacitance tolerance code, M=±20%,K=±10%,J=±5%

2. “*”表示包装代码。0表示散装, 1表示编带(参见19页)。“**”=packaging code,0=bulk, 1=taping (refer to pag. 19)