

KNSCHA®

全 球 高 端 电 容 器 制 造 商

东 莞 市 科 尼 盛 电 子 有 限 公 司

DONGGUAN KNSCHA ELECTRONICS CO., LTD.

规 格 承 认 书

Specification for approval

客户名称:

(Customer Name)

产品名称: 铝电解电容

(Product Name)

Aluminum Electrolytic Capacitor

客户料号 :

(Customer part number)

科尼盛料号 : 146EC0534

(KNSCHA number)

146EC0534

型号规格:

KNSCHA SHG 50V47μF Φ6.3*7L

(Specifications)

KNSCHA SHG 50V47μF Φ6.3*7L

制 造
(Manufacture)

Approval

拟 制
(Fiction)



刘淑芬

刘军军

徐贵南

客 户

(Customer)

Approval

检 验
(Inspect)

审 核
(Chief)

核 准
(Approval)

东莞市科尼盛电子有限公司

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SHG Series

Aluminum Electrolytic Capacitors

Item Name	Rating	Case size	KNSCHA Lifetime
SHG1H470M-0607	SHG50V47 μ F	$\Phi 6.3*7L$	3000 hours

1. Operating Temp. Range

$-40^{\circ}\text{C} \sim +105^{\circ}\text{C}$

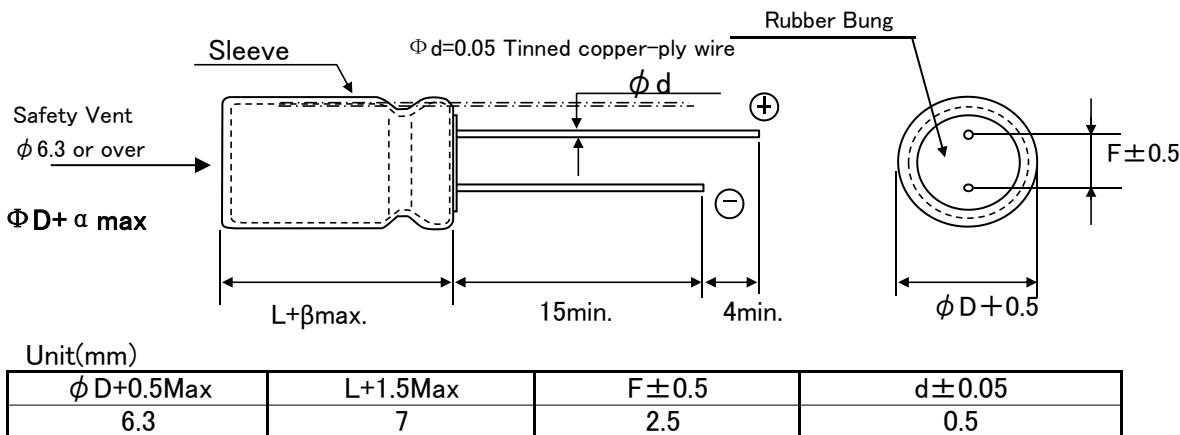
2. Electrical Characteristics

See Table 1.

【Table 1】

Rated Voltage VDC	Surge Voltage VDC	Nominal Static Capacitance (μ F)	Tolerance on Capacitance (%) 20°C 120Hz	Dissipation Factor (tan δ)max 20°C 120Hz	Leakage Current 2min. 20°C (μ A)max	Permissible Ripple Current (mAmps)max 105°C 100KHz	Impedance(Ω) 100KHZ 20°C
50	63	47	-20~+20	0.10	23.5	150	2.8

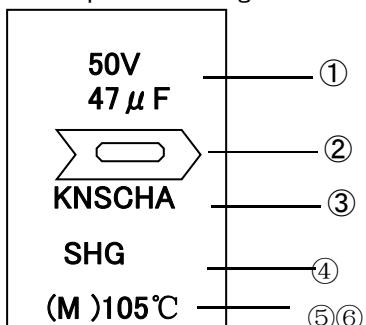
3. Dimensions



4. Marking

Following items are printed with white color on coffee color sleeve

Example of Marking



- ① Rated voltage & Nominal Capacitance
- ② Polarity (negative)
- ③ Trade Mark
- ④ series
- ⑤ Symbol of Capacitance Tolerance (M)
- ⑥ Max Operating Temp.

5. MULTIPLIER FOR RIPPLE CURRENT

① Frequency Coefficient

Cap(μ F)	Freq.(Hz) 60 (50)	120	1K	10K	100K
0.1-47	0.75	0.80	0.85	0.90	1.00
68-680	0.80	0.85	0.90	0.95	1.00
1000-22000	0.85	0.87	0.89	0.92	1.00

② Temperature Coefficient

Ambient Temperature($^{\circ}\text{C}$)	40	60	70	85	105
Coefficient	2.40	2.10	1.78	1.65	1.00

6. Characteristics

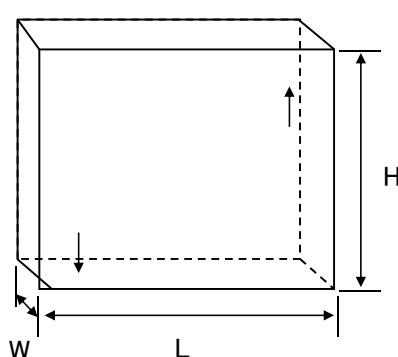
No.	Item	Performance		Test Method												
1	Leakage Current	I= 23.5 μ A (I=0.01CV) I= Max Leakage Current C=Cstatic Capacitor: V=Rated Voltage		Protection Resistor : 1000±10Ω Applied Volt : Rated Voltage Measuring time : 2minutes												
2	Static Capacitance	37.6 ~ 56.4 μ F		Measured Frequency : 120Hz±20% Measured Voltage ≤ 0.5Vrms, 1.5 ~ 2.0VDC												
3	Dissipation Factor (tanδ)	0.10 and Under		Same as condition of Capacitors												
4	High Temp. Load Charac- teristics	Leakage Current	≤the value specified in Table 1	Test Temp. : 105±2°C Applied voltage: Rated voltage Test Time :3,000 hours +72, -0 hours												
		Cap. Change	≤ ±20% of initial value													
		Dissipation Factor	≤200% of value specified in Table													
		Appearance	No remarkable abnormality													
5	High Temp. no load Charac- teristics	Leakage Current	≤the value specified in Table 1	Test Temp. : 105±2°C No voltage applied Test Time :1000 hours +24, -0 hours												
		Cap. Change	≤ ±20% of initial value													
		Dissipation Factor	≤200% of value specified in Table													
		Appearance	No remarkable abnormality													
6	Terminal Strength	Tensile Strength	45N {4.5kg}	Keeping time Tensile 1~5sec Bending 30±5sec												
		Bending Strength	25N {2.5kg}													
7	Impedance Ratio	<table border="1"> <tr> <td>W</td> <td>V</td> <td>50</td> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td></td> <td>3</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td></td> <td>8</td> </tr> </table>		W	V	50	Z-25°C/Z+20°C		3	Z-40°C/Z+20°C		8				
W	V	50														
Z-25°C/Z+20°C		3														
Z-40°C/Z+20°C		8														
8	Temperature Charac - teristics	Stage	Item	Performance	Stage	Test Temp(°C)										
		2,3	Impedance Ratio	less than the value mentioned in 5-7,	1	20±2										
		5	Cap, Change	≤±25% against value in stage 4	2	-25±3;										
				After the capacitor is held at tempereture of each stage and reaches temperature stability, measure performance.												
				3	-25±3;											
				4	20±2											
				5	105±2											
				6	20±2											
9	Surge Voltage	<table border="1"> <tr> <td>Item</td> <td>Perforemance</td> </tr> <tr> <td>Leakage Current</td> <td>≤ the initial specified value</td> </tr> <tr> <td>Cap, Change</td> <td>≤ ±15% against value before test</td> </tr> <tr> <td>Dissipation Factor</td> <td>≤ the initial specified value</td> </tr> <tr> <td>Appearance</td> <td>No remakable abnormality</td> </tr> </table>		Item	Perforemance	Leakage Current	≤ the initial specified value	Cap, Change	≤ ±15% against value before test	Dissipation Factor	≤ the initial specified value	Appearance	No remakable abnormality	Test Temp. 15~35°C Test volt. Surge Volt.Specified in 2 Voltage apply. 1,000times of chage for 30±5sec, under frequency of 6±0.5sec, and discharge for 5min30sec.		
Item	Perforemance															
Leakage Current	≤ the initial specified value															
Cap, Change	≤ ±15% against value before test															
Dissipation Factor	≤ the initial specified value															
Appearance	No remakable abnormality															

6-2. Characteristics

No.	Item	Performance		Test Method
10	Vibration Resistance	Capacitance	Stability required	
		Cap. Change	$\leq \pm 5\%$ of the initial specified value	
		Appearance	No remarkable abnormality	Frequency : 10~55Hz/1min. Width of vibration, 1.5mm Direction and duration X, Y and Z directions, each for 2 hours (Total 9 hours)
11	Solderability	3/4 area of surrounding directions of surface should be covered with new solder.		Solder: Sn-Ag, Sn-Cu Type Soldering Temp : $240 \pm 5^\circ\text{C}$ Dipping degree : 2~2.5mm Flux : Ethanol solution (JIS K8101) or Isopropylalchol (JIS K8839) solution of Rosin (JIS K5902)
12	Resistance to Soldering	Leakage Current	\leq Initial specified value	Soldering Temp. $280 \pm 5^\circ\text{C}$ Soldering Time . $10 \pm 1\text{sec.}$
		Cap. Change	$\leq \pm 10\%$ of initial value	
		Dissipation Factor	\leq Initial specified in value	
		Appearance	No remarkable abnormality	
13	Resistance to Humidity	Leakage Current	\leq Initial specified value	Test Temp. : $40 \pm 2^\circ\text{C}$ Humidity 90~95% Test Time : 500 ± 8 hours After the above condition, restored to normal temp, and then measured.
		Cap. Change	$\leq \pm 15\%$ of initial value	
		Dissipation Factor	\leq Initial spesified value	
		Appearance	No remarkable abnormality	
14	Pressure valve moment characteristics	There must not be thing ignition, scattering the resolution that that case works safely		Dcmethod: impress the reverse voltage and of 1A, I cancel an electric current.

7 Packing method

Packaging shape, size, quantity



Component size	Quantity per
6.3*7	40000pcs.

8 Related Standards JIS C 5141

9 Marking on packing box

- ① Item name
- ② Series name
- ③ Rated Voltage
- ④ Nominal Static Capacitance
- ⑤ Case size
- ⑥ Lot No.
- ⑦ Quantity

10 Leakage

current <Condition>

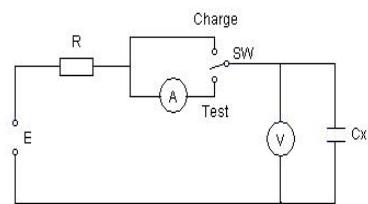
Connecting the capacitor with a protective resistor ($1k\Omega \pm 10\Omega$) in series for 2 minutes, and then, measure leakage current.

<Criteria

I : Leakage current (μA)

$I (\mu A) \leq 0.01CV$ or $3 (\mu A)$ whichever is greater,
measurement circuit refer to right drawing.

C: Capacitance (μF)



11 Soldering

11-1 Soldering by soldering iron

Temperature of iron top : $270 \sim 350^\circ C$
Operating time : within 3 sec.

11-2 Flow soldering.

Preheat : PCB surface temperature $120^\circ C \pm 5^\circ C$
Solder Temp : $260^\circ C \pm 5^\circ C$
Solder Dipping Temp. : $2 \sim 4$ sec.

12 Cleaning of PC board after soldering

Using following solvents is possible but make sure following condition
Solvent

IPA or Alcoholic agent like Pinealpha ST-100S, Cleanthrough 750H, 750L, 710M, 750K, or Technocare FRW-14~17

- ① Cleaning should be made by ultrasonic within 5min, at the temperature less than $60^\circ C$.
- ② Control of pollution is necessary (conductivity, pH, specific gravity, water volume)
- ③ Please do not keep near cleaning agent. Please do not store in air-tight container.
Please let it dry by hot air at the temperature less than maximum operating temp.

13 The situation of using

Please do not use a condenser in the next use environment.

① One circumference environment(weatherability) condition.

(a) Direct water, salt water and environment oil works or become a dew condensation state.

(b) Environment full of harmful gas (a hydrogen chloride, sulfuric acid, nitrous acid, hydrochloric acid, ammonia).

(c) Ozone, infrared rays and the environment where radioactive rays are done collation of
② Vibration shock condition is extreme environment more than rule ranges of delivery specifications.

14 A country of origin

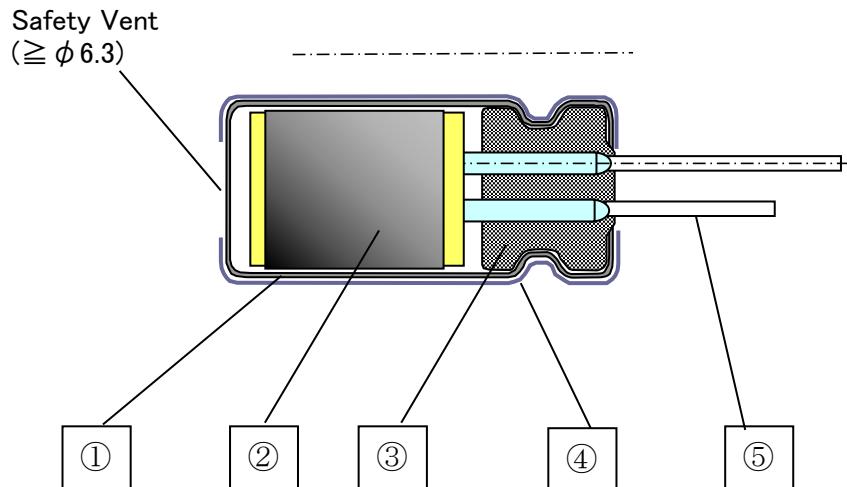
A country of origin of an KNSCHA SHG series aluminum electrolysis condenser of specifications:
China

15 Effective life for storage

Storage conditions:

- ① Temperature range must be between $5 \sim 35^\circ C$
- ② Relative humidity must be less than 75%
- ③ Must be stored indoor
- ④ Must be free from water, oil or salt water
- ⑤ Must be free from toxic gasses (hydrogen sulfide, sulfuric acid, chlorine, ammonium, etc.)
- ⑥ Must be free from ozone, ultraviolet rays or any other radiation
- ⑦ Must be kept in capacitor original package

Aluminum Electrolytic Capacitor SHG Series Structure



No.	Name	Material
①	Case	Aluminum
②	Element (Electrode)	High Purity Aluminum foil
	(Separator)	Manila hemp pulp
	(Electrolyte)	---
③	Rubber Bung	Synthetic Rubber
④	Sleeve	PET
⑤	Lead Wire	Tin plated Steel Wire

Controls of ozone layer destructive chemical materials

Regulated materials : CFCs, Halon, Carbon Tetrachloride, 1,1,1-Trichloroethane

The products and parts do not include the above materials

The products and parts are not used the above materials on process.

The products and parts are not used PBBOs (Poly Bromo Bi-phenyl Oxides).

All materials are mentioned as existing chemical material in the "Law of examine and control of Production of Chemical Material"

The products are not listed in Appendix 1 of Export Trade Rule and Regulation

A condenser of this series supports RoHS regulation.