

**KNSCHA**<sup>®</sup>

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:

( Product Name )

客户料号:

( Customer part number )

科尼盛料号:

( KNSCHA number )

型号规格:

( Specifications )

铝电解电容

Aluminum Electrolytic Capacitor

ST-50470UF450V01EC4326

KNSCHA ST-50 450V470μF Φ35\*40L

KNSCHA ST-50 450V470μF Φ35\*40L

制 造  
(Manufacture)

Approval

拟 制  
(Fiction)审 核  
(Chief)核 准  
(Approval)

刘淑芬

刘军军

薛子文

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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# ST-50 Series

Item Name	Rating	Case size	KNS LIFE
ST-50470UF450V01EC4326	ST-50 450V470UF	Φ 35*40	5000 hours

## 1. Operating Temp. Range

- 40°C ~ + 105°C

## 2. Electrical Characteristics

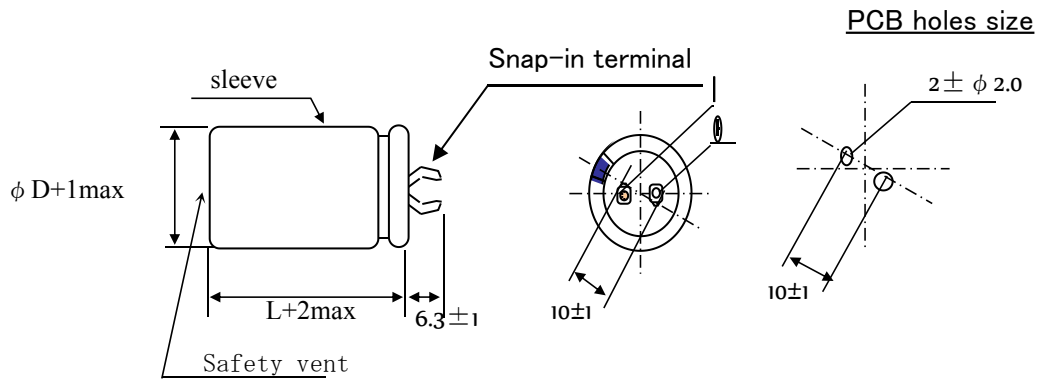
See Table 1.

【Table 1】

Rated Voltage VDC	Surge Voltage VDC	Nominal Static Capacitance (μF)	Tolerance on Capacitance (%) 20°C 120Hz	Dissipation Factor (tanδ)max 20°C 120Hz	Leakage Current 5min. 20°C (μA)	Permissible Ripple Current (mA rms) 105°C 120Hz
450	500	470	-20 ~ +20	0.15	4,230	2,650

## 3. Shape and Dimensions ST-50 Series

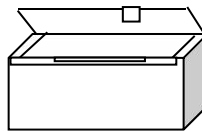
### ◆ Shape and Dimensions



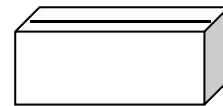
φ D	L
35	40

## 4. Packing shape

4-1 Inner Box



4-2 Outer box



4-3 Quantity per package

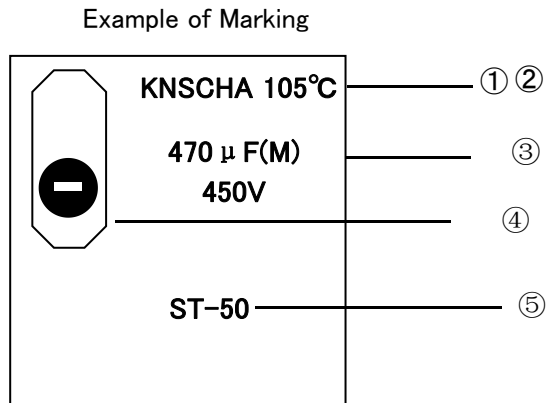
Unit (mm)

Φ D	L	Out box
35	40	240pcs

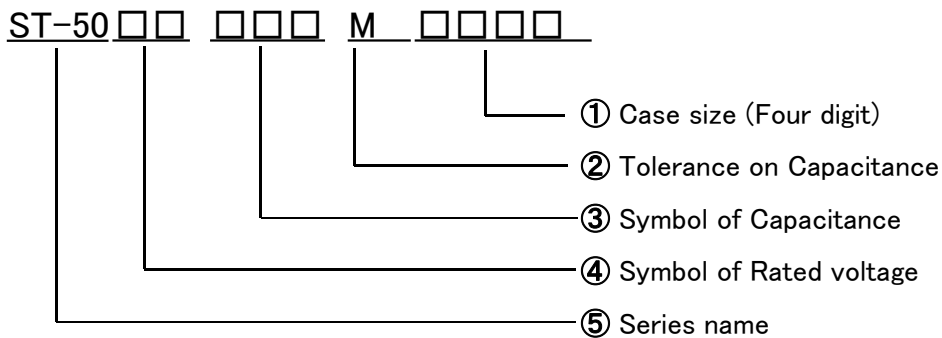
## 5. Marking

Following items are printed with white color on coffee color sleeve

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



## 6. Type numbering system



④

Volt.	Symbol
450	2W

③

Capacitance	Example
470	471

①

Case size (Four digit) Example

Case size	Symbol
35*40	3540

②

Tolerance on Capacitance

M	±20%

7. Characteristics  
7-1.

No.	Item	Performance	Test Method			
1	Leakage Current	$I = 4,230 \mu A$ Whichever is smaller (After 5min)	Protection Resistor : $1000 \pm 10 \Omega$ Applied Volt : Rated Voltage Measuring time : 5minutes			
2	Static Capacitance	$- 20\% \sim + 20\%$	Measured Frequency : $120\text{Hz} \pm 20\%$ Measured Voltage $\leq 0.5\text{Vrms}, 1.5 \sim 2.0\text{VDC}$			
3	Dissipation Factor (tanδ)	0.15 and Under	Same as condition of Capacitors			
4	High Temp. Load Characteristics	Leakage Current	$\leq$ the value specified in Table 1			
		Cap. Change	$\leq \pm 20\%$ of initial value			
		Dissipation Factor	$\leq 200\%$ of value specified in Table			
		Appearance	No rSHArkable abnormality			
5	High Temp. no load Characteristics	Leakage Current	$\leq$ the value specified in Table 1			
		Cap. Change	$\leq \pm 15\%$ of initial value			
		Dissipation Factor	$\leq 150\%$ of value specified in Table			
		Appearance	No rSHArkable abnormality			
6	Impedance Ratio	$W V$	450			
		$Z(-25^\circ\text{C})/Z(+20^\circ\text{C})$	8			
		$Z(-40^\circ\text{C})/Z(+20^\circ\text{C})$	12			
7	Temperature Characteristics	Stage	Item	Performance	Stage	Test Temp(°C)
		2	Impedance Ratio	less than the value mentioned in 4-5,	1	$20 \pm 2$
		4	Cap. Change	$\leq \pm 25\%$ against value in stage 3	2	$-25 \pm 3$ ;
		After the capacitor is held at temperature of each stage and reaches temperature stability, measure performance.			3	$-40 \pm 3$ ;
					4	$20 \pm 2$
					5	$105 \pm 2$
6	$20 \pm 2$					
8	Surge Voltage	Item	PerforSHAnce			
		Leakage Current	$\leq$ the initial specified value			
		Cap. Change	$\leq \pm 15\%$ against value before test			
		Dissipation Factor	$\leq$ the initial specified value			
		Appearance	No rSHAKable abnormality			
Test Temp. $15 \sim 35^\circ\text{C}$ Test volt. Surge Volt. Specified in 2 Voltage apply. 1,000times of chage for $30 \pm 5\text{sec}$ , under frequency of $6 \pm 0.5\text{sec}$ , and discharge for 5min30sec.						

## 7-2.Characteristics

No.	Item	Performance	Test Method
9	Vibration Resistance	Capacitance	Stability required
		Cap. Change	≤±5% of the initial specified value
		Appearance	No rSHArkable 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)			
10	Solderbility	3/4 area of surrounding directions of surface should be covered with new solder.	Solder: Sn-Ag, Sn-Cu Type Soldering Temp : 240±5°C Dipping degree : 2~2.5mm Flux : Ethanol solution (JIS K8101) or Isopropylalchol (JIS K8839) solution of Rosin (JIS K5902)
11	Resistance to Soldering	Leakage Current	≤ Initial specified value
		Cap. Change	≤ ±10% of initial value
		Dissipation Factor	≤ Initial specified in value
		Appearance	No rSHArkable abnormality
12	Resistance to Humidity	Leakage Current	≤ Initial specified value
		Cap. Change	≤ ±15% of initial value
		Dissipation Factor	≤ Initial spesified value
		Appearance	No rSHArkable abnormality
13	Perssure valve moment charact-eristics	There must not be thing ignition, scattering the resolution that that case works safely	
		Test Temp. : 40±2°C	
		Humidity 90~95%	
		Test Time : 500 ± 8 hours	
		After the above condition,restored to normal temp, and then measured.	
		Dcmethod: impress the reverse voltage and of 1A, I cancel an electric current.	

## 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 Soldeing

8-1 Soldering by soldering iron  
Temperature of iron top : 270~350°C  
Operating time : within 3 sec.

8-2 Flow soldering.  
Preheat : PCB surface temperature 120°C±5°C  
Solder Temp : 260°C±5°C  
Solder Dipping Temp. : 2~4sec.

## 11 Cleaning of PC boad after soldering

Using follwing solvents is possible but make sure followingcondition  
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 then 60°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.

## 12 Effective life for storage

Storage conditions:

- ① Temperature range must be between 5-35°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, sulfurous acid, chlorine, ammonium, etc.)
- ⑥ Must be free from ozone, ultraviolet rays or any other radiation
- ⑦ Must be kept in capacitor original package