

# SPECIFICATION



• Date : Aug 23, 2013

- Supplier : Samsung electro-mechanics
- Product : Tantalum capacitor
- Samsung P/N : **TCSCS1A106KAAR**
- User Part No :
- Description : CAP,TANTAL,10 $\mu$ F,10V, $\pm$ 10%,3216-16

## 1. Samsung Part Number

TC      SCS      1A      106      K      A      A      R  
 ①          ②          ③          ④          ⑤          ⑥          ⑦          ⑧

① Tantalum Capacitor	TC
② Series	SCS
③ Rated Voltage	10V
④ Capacitance	10 $\mu$ F
⑤ Capacitance tolerance	$\pm$ 10%
⑥ Case size code	3216-16 L: 3.2 $\pm$ 0.2 mm W: 1.6 $\pm$ 0.2 mm H: 1.6 $\pm$ 0.2 mm
⑦ Packing code	7" reel
⑧ Taping code	Taping direction code

## 2. Reliability Test and Judgment Condition 1

Item	Performance	Test condition
Capacitance	Within specified tolerance	120Hz, maximum 1.0Vrms, maximum 1.5Volt D.C, at 25 $^{\circ}$ C
Tan $\delta$ (DF)	Within specified value	120Hz, maximum 1.0Vrms, maximum 1.5Volt D.C, at 25 $^{\circ}$ C
Impedance(Z) & ESR	Within specified value	100kHz, maximum 1.0Vrms, maximum 1.5Volt D.C, at 25 $^{\circ}$ C
Leakage current	Within specified value	The rated DC voltage shall be applied to terminals across the test capacitor charge Time: 5 min.
Temperature Characteristics	"-55 $^{\circ}$ C : $\Delta$ C/C -10~0% "+85 $^{\circ}$ C : $\Delta$ C/C 0~10% "+125 $^{\circ}$ C : $\Delta$ C/C 0~15%	From -55 $^{\circ}$ C to 125 $^{\circ}$ C,
Adhesion Strength	No peeling shall be occur on the terminal electrode	1005mm size : 2N, for 10 $\pm$ 1 sec. 1608~7343mm size : 5N, for 10 $\pm$ 1 sec.
Electrode Strength	Within specified tolerance Tan $\delta$ , LC : initial spec.	Bending to the limit (3mm) with 1.0mm/sec.
Solder ability	More than 95% of terminal surface is to be soldered newly	SnAg3.0Cu0.5 solder :245 $\pm$ 5 $^{\circ}$ C, 3 $\pm$ 0.3sec (preheating : 80~120 $^{\circ}$ C for 10~30sec.)
Resistance to Soldering heat	Capacitance change : within $\pm$ 15% Tan $\delta$ , LC : initial spec.	Solder pot : 260 $\pm$ 5 $^{\circ}$ C, 10 $\pm$ 1sec.
Vibration Test	Capacitance change : within $\pm$ 5% Tan $\delta$ , LC : initial spec.	Amplitude : 1.5mm From 10Hz to 55Hz (return : 1min.) 2hours $\times$ 3 direction (x, y, z)
Moisture Resistance	Capacitance change : within $\pm$ 10% Tan $\delta$ , LC : initial spec.	40 $\pm$ 2 $^{\circ}$ C, 90~95%RH, 500+8/-0hrs
High Temperature Resistance	Capacitance change : within $\pm$ 10% Tan : initial spec. LC : 125% or less specified initial value	With the rated voltage Max. operating temperature 2000/-0hrs
Temperature Cycling	Capacitance change : within $\pm$ 5% Tan $\delta$ , LC : initial spec.	1 cycle condition (Min. operating temperature $\rightarrow$ 25 $^{\circ}$ C $\rightarrow$ Max. operating temperature $\rightarrow$ 25 $^{\circ}$ C) 5 cycle test

## 3. Recommended Soldering method

Reflow ( Reflow Peak Temperature : 260 $\pm$ 5  $^{\circ}$ C, 10sec. Max )

With Pb-free products, if used under 235  $^{\circ}$ C, the quality confirmation must be needed.

## 4. Ratings & Part Number Reference

Part Number	Capacitance	Leakage Current	DF %	ESR
TCSCS1A106KAAR	10 $\mu$ F	1 $\mu$ A	8%	2 $\Omega$