



SPECIFICATION

(Reference sheet)

- Supplier : Samsung electro-mechanics - Samsung P/N : CL05C100JB5NNNC

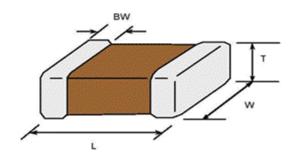
• Product : Multi-layer Ceramic Capacitor • Description : CAP, 10pF, 50V, ± 5%, C0G, 0402

A. Samsung Part Number

<u>CL</u> <u>05</u> <u>C</u> <u>100</u> <u>J</u> <u>B</u> <u>5</u> <u>N</u> <u>N</u> <u>N</u> <u>C</u> ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

① Series	Samsung Multi-layer Ceramic Capacitor					
② Size	0402 (inch code)	L: 1.00 ± 0.05 mm	W: 0.50 ± 0.05 mm			
③ Dielectric	C0G	Inner electrode	Ni			
Capacitance	10 pF	Termination	Cu			
⑤ Capacitance	± 5 %	Plating	Sn 100% (Pb Free)			
tolerance		Product	Normal			
6 Rated Voltage	50 V	Special	Reserved for future use			
① Thickness	0.50 ± 0.05 mm	① Packaging	Cardboard Type, 7" reel			

B. Structure and dimension



Samsung P/N	Dimension(mm)			
(Lead Free)	L	W	Т	BW
CL05C100JB5NNNC	1.00 ± 0.05	0.50 ± 0.05	0.50 ± 0.05	0.25 ± 0.10

C. Samsung Reliability Test and Judgement condition

Considered Within applified televenes				
Capacitance Within specified tolerance 1 Mb ± 10% 0.5~5	Vrms			
Q 600 min	7			
Insulation 10,000Mohm or 500Mohm×μF Rated Voltage 60~12	20 sec.			
Resistance Whichever is smaller				
Appearance No abnormal exterior appearance Microscope ('10)	Microscope ('10)			
Withstanding No dielectric breakdown or 300% of the rated volume	300% of the rated voltage			
Voltage mechanical breakdown				
Temperature C0G	COG			
Characteristics (From -55 °C to 125 °C, Capacitance change should be within ±30PPM/ °C	(From -55℃ to 125℃, Capacitance change should be within ±30PPM/℃)			
Adhesive Strength No peeling shall be occur on the 500g×F, for 10±1 sec.	500g×F, for 10±1 sec.			
of Termination terminal electrode				
Bending Strength Capacitance change : Bending to the limit (1mm)	Bending to the limit (1mm)			
within ±5% or ±0.5pF whichever is larger with 1.0mm/sec.				
Solderability More than 75% of terminal surface SnAg3.0Cu0.5 solder	SnAg3.0Cu0.5 solder			
is to be soldered newly 245±5°C, 3±0.3sec.	245±5℃, 3±0.3sec.			
(preheating : 80~120 ℃ for	(preheating : 80~120 ℃ for 10~30sec.)			
Resistance to Capacitance change : Solder pot : 270±5°C, 10±	Solder pot : 270±5℃, 10±1sec.			
Soldering heat within ±2.5% or ±0.25pF whichever is larger				
Tan δ, IR : initial spec.				
Vibration Test Capacitance change : Amplitude : 1.5mm	Amplitude : 1.5mm			
within ±2.5% or ±0.25pF whichever is larger From 10Hz to 55Hz (return	: 1min.)			
Tan δ, IR : initial spec. 2hours ´ 3 direction (x, y, z	z)			
Moisture Capacitance change : With rated voltage				
Resistance within ±7.5% or ±0.75pF whichever is larger 40±2℃, 90~95%RH, 500+	-12/-0hrs			
Q: 133.33 min				
IR : 500Mohm or 25Mohm × μ F				
Whichever is smaller				
High Temperature Capacitance change : With 200% of the rate	d voltage			
Resistance within ±3% or ±0.3 pF whichever is larger Max. operating temperature	re			
Q: 300 min 1000+48/-0hrs				
IR : 1,000Mohm or 50Mohm × μ F				
Whichever is smaller				
Temperature Capacitance change : 1 cycle condition				
Cycling within ±2.5% or ±0.25pF whichever is larger Min. operating temperatur	e → 25°C			
5 cycle test				

^{*} The reliability test condition can be replaced by the corresponding accelerated test condition.

D. Recommended Soldering method:

Reflow (Reflow Peak Temperature : 260+0/-5℃, 10sec. Max)



A Product specifications included in the specifications are effective as of March 1, 2013.

Please be advised that they are standard product specifications for reference only.

We may change, modify or discontinue the product specifications without notice at any time.

So, you need to approve the product specifications before placing an order.

Should you have any question regarding the product specifications,

please contact our sales personnel or application engineers.

Disclaimer & Limitation of Use and Application

The products listed in this Specification sheet are **NOT** designed and manufactured for any use and applications set forth below.

Please note that any misuse of the products deviating from products specifications or information provided in this Spec sheet may cause serious property damages or personal injury.

We will **NOT** be liable for any damages resulting from any misuse of the products, specifically including using the products for high reliability applications as listed below.

If you have any questions regarding this 'Limitation of Use and Application', you should first contact our sales personnel or application engineers.

- ① Aerospace/Aviation equipment
- 2 Automotive or Transportation equipment (vehicles, trains, ships, etc)
- 3 Medical equipment
- 4 Military equipment
- ⑤ Disaster prevention/crime prevention equipment
- 6 Power plant control equipment
- Atomic energy-related equipment
- Undersea equipment
- Traffic signal equipment
- Data-processing equipment
- ## Electric heating apparatus, burning equipment
- Safety equipment
- ® Any other applications with the same as or similar complexity or reliability to the applications