

## **SPECIFICATION**

- Supplier : Samsung electro-mechanics
- Product : Thick Film chip RESISTOR

• Samsung P/N: RC1005J\*\*\*CS

- Description :
- 1005, ±5%, (1Ω~10MΩ), 1/16W

A. Samsung Part Number

	RC         1005         J         ***         CS           ①         ②         ③         ④         ⑤
① Code designation	Samsung Thick - Film Chip Resistor
<ul> <li>② Dimension</li> <li>③ Registeres tolerance</li> </ul>	1005 (mm code) L: 1.0 ± 0.05 mm W: 0.5 ± 0.05 mm T: 0.35 ± 0.05 mm
③ Resistancs tolerance	±5 %
④ Nominal resistance value	** 3digits Left 2 digits : Resistance value, Right 1 digits : Exponential number of 10. ex) $101 : 10 \times 10^1 = 10 \times 10 = 100\Omega$ ** 4digits Left 3 digits : Resistance value, Right 1 digits : Exponential number of 10. ex) $4222 : 422 \times 10^2 = 422 \times 100 = 42.2 k\Omega$ Read alphabet "R" as decimal point "000" : Jumper(0 $\Omega$ ) ex) $3R7 : 3.7 = 3.7\Omega / 88R7 : 88.7 = 88.7\Omega$
<b>5</b> Packing code	7" Reel packaging

## B. Samsung Reliablility Test and Judgement condition

	Judgement		Test condition	
	Resistor	Jumper	Resistor	Jumper
Direct Current	Within the regulated resistance	50mΩ Max	Voltage apply Within 5 sec	
Resistance	tolerance.			
Short-time	Less than $\pm(1\%+0.1\Omega)$ of the initial value	50mΩ Max	Apply 2.5 times rated voltage for 5sec	Max Surge
Overload	No evidence of mechanical damage			Current
Intermittent	Less than $\pm(3\%+0.1\Omega)$ of the initial value	50mΩ Max	2.5 times of rated voltage.	Max Surge
Overload	No evidence of mechanical damage		1 sec On, 25 sec Off / 10,000cycles	Current
Dielectric	No evidence of mechanical damage		Apply Voltage for 1minute	
Withstanding Voltage			0603:50v	
Insulation	Over 1,000MΩ		1005,1608:100v	
Resistance			Other: 500v	
	■ J-Grade		Test Temperature(°C) 20°C→-55°C/20°C→1	
Temperature	1Ω≤R<10Ω:+300/-200ppm/ ິC		T.C.R(ppm/°C) = $\frac{R - R_0}{R_0} \times \frac{1}{T - T_0} \times 1$	06
Characteristic	10Ω≤R≤1MΩ:±100ppm/ິC(0603±250ppm)		$R_0 \times \frac{1}{T - T_0} \times 1$	0
	1MΩ <r≤10mω:±300ppm td="" ຶc<=""><td></td><td></td><td></td></r≤10mω:±300ppm>			
	■ F-Grade		T₀: 20 ± 2 ℃, R0 : Resistance at	T0 (Ω)
	10Ω≤R≤1MΩ:±100ppm/ິC(0603±250ppm)		T : Test temperature , R : Resistance	e at T (Ω)
Solderability	Coverage: $95\% \leq$ each termination.		Solder Temp : 245 °C	
			Dipping time : 3 sec	

	Judgement		Test condition	
Bending test	Less than ±(0.5%+0.05Ω)of the initial value	50mΩ Max	3mm of bending shall be applied	
	No evidence of mechanical damage		for 5sec.	
Adhesive strength	No mechanical damage or sign of disconnection		Test strengh : 5N	
of termination			Test time: Applying pressure for 10seconds	
Resistance to	Less than $\pm(1\%+0.05\Omega)$ of the initial value	50mΩ Max	260±5℃ , 10 sec	
soldering heat	No evidence of mechanical damage			
Anti-Vibration	Less than $\pm(1\%+0.05\Omega)$ of the initial value	50mΩ Max	Test amplitude : 1.5mm	
test	No evidence of mechanical damage		Frequency $10 \text{Hz}$ -55 $\text{Hz}$ -10 $\text{Hz}$ / 2hr in x,y,z direction.	
Temperature	Less than $\pm(1\%+0.1\Omega)$ of the initial value	50mΩ Max	100cycles, -55 ℃/30min ↔125 ℃/30min	
cycle	No evidence of mechanical damage		sweep time:5min	
Load life	Less than $\pm(3\%+0.1\Omega)$ of the initial value	50mΩ Max	Test voltage: rated voltage / 70±2 °C	
	No evidence of mechanical damage		1,000hours(90min:On , 30min:Off)	
Low Temp.	Less than $\pm(3\%+0.1\Omega)$ of the initial value	50mΩ Max	Dwell in -55 $^\circ\!\!\!\!\mathrm{C}$ chamber without loading	
Exposure	No evidence of mechanical damage		for 1,000hours	
High Temp	Less than $\pm(3\%+0.1\Omega)$ of the initial value	50mΩ Max	Dwel in 125 $^\circ\!\!\!\mathrm{C}$ or 155 $^\circ\!\!\!\mathrm{C}$ chamber without loading	
Exposure	No evidence of mechanical damage		for 1,000hours	
Moisture	Less than $\pm(3\%+0.1\Omega)$ of the initial value	50mΩ Max	Test voltage: rated voltage / 40±2 °C	
Resistance	No evidence of mechanical damage		1,000hours(90min:On,30min:Off) / 90~95% RH	

## C. Recommended Soldering method :

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

\* For the more detail Specification, Please refer to the samsung chip RESISTOR catalogue.