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# Chip Resistor

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## ■ INTRODUCTION

Chip resistors are general passive component which is useful for derating voltage, current controlling in circuit and surface mounting is available.

Samsung electro mechanics also manufactures a wide range of chip resistors such as general, precision, trimmable and low ohms and so on.

Production is increasing with demand for small size & light weight of set product. We provide ultra-small, high-reliability, high-stability resistors.

We have obtained ISO-9002/QS-9000 and ISO-14001 certification.

## ■ FEATURE AND APPLICATION

### ● Feature

- Very small, thin, and light weight.
- Both flow and reflow soldering are applicable.
- Owing to the reduced lead inductance, the high frequency characteristic is excellent.
- Suitable size and packaging for surface mount assembly.
- Reel type and Bulk type Packaging are applicable.

### ● Application

- General purpose.
- Home Appliances.  
(DVD, Digital TV, Camcorder, VTR, Digital Camera, Audio, Tunner)
- For Computers & Communication Devices.  
(Notebook, Memory Module, Mobile, Network Equipment, etc)

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# Chip Resistor

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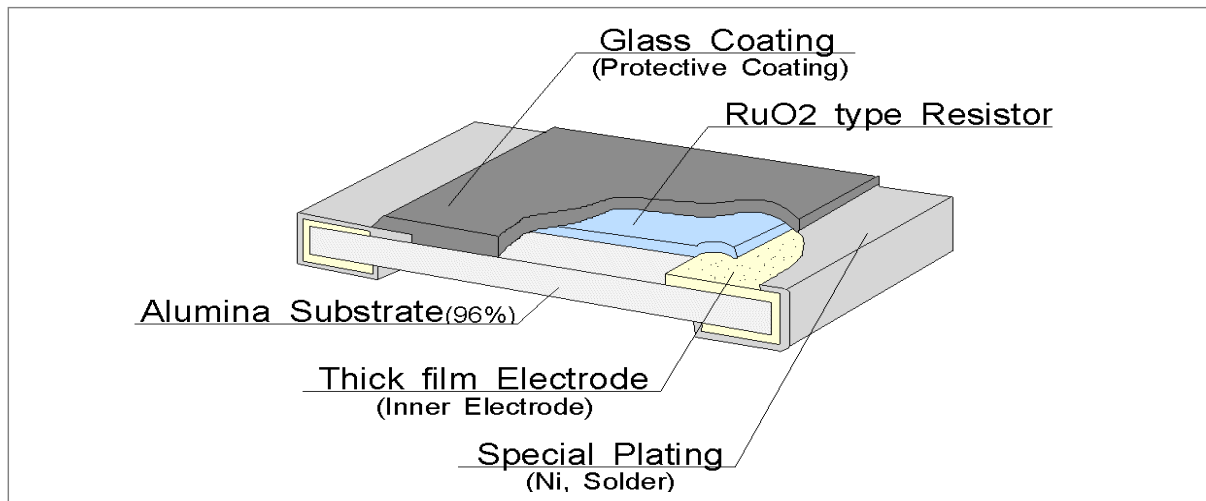
■ PICTURE

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# Chip Resistor

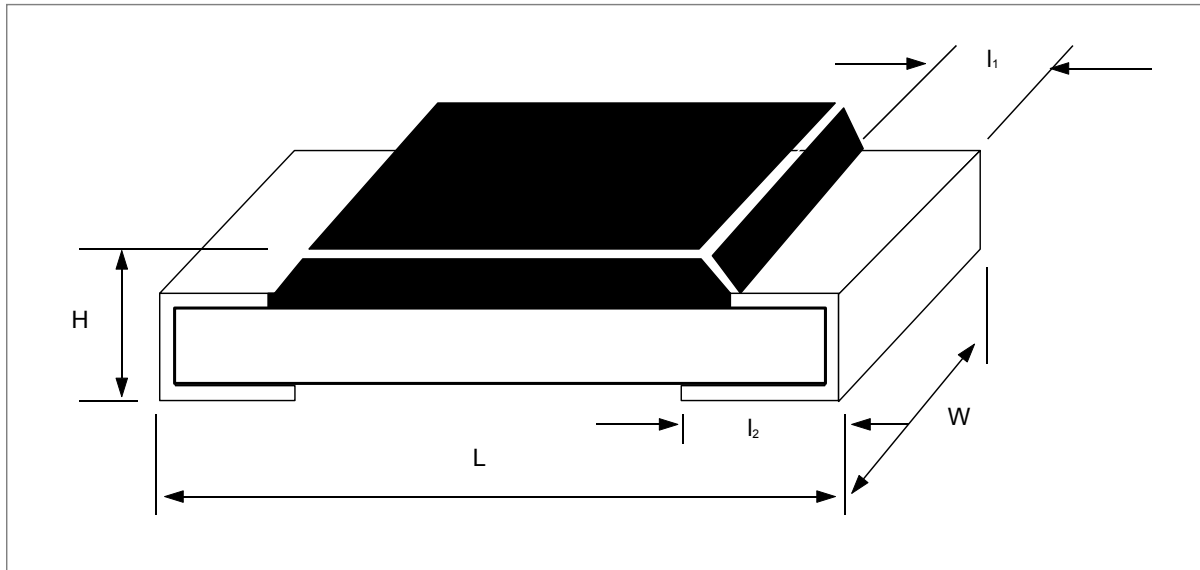
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## ■ STRUCTURE



# Chip Resistor

## ■ APPEARANCE AND DIMENSION



[ Unit : mm ]

TYPE	inch	Power (W)	L	W	H	l <sub>1</sub>	l <sub>2</sub>	Average Weight
0603	0201	1/20	0.60±0.03	0.30±0.03	0.25±0.05	0.15±0.05	0.15±0.05	0.16mg
1005	0402	1/16	1.00±0.05	0.50±0.05	0.35±0.05	0.20±0.10	0.25±0.10	0.6mg
1608	0603	1/10	1.60±0.10	0.80±0.15	0.45±0.10	0.30±0.20	0.35±0.20	2.1mg
2012	0805	1/8	2.00±0.20	1.25±0.15	0.50±0.10	0.40±0.20	0.35±0.20	4.9mg
3216	1206	1/4	3.20±0.20	1.60±0.15	0.55±0.10	0.45±0.20	0.40±0.20	9.5mg
3225	1210	1/3	3.20±0.20	2.55±0.20	0.55±0.10	0.45±0.20	0.40±0.20	16mg
5025	2010	2/3	5.00±0.20	2.50±0.15	0.55±0.15	0.60±0.20	0.60±0.20	26mg
6432	2512	1	6.30±0.20	3.20±0.15	0.55±0.15	0.60±0.20	0.60±0.20	41mg

# Chip Resistor

## ■ PART NUMBERING

<b>RC</b>	<b>1005</b>	<b>J</b>	<b>101</b>	<b>CS</b>
<b>①</b>	<b>②</b>	<b>③</b>	<b>④</b>	<b>⑤</b>

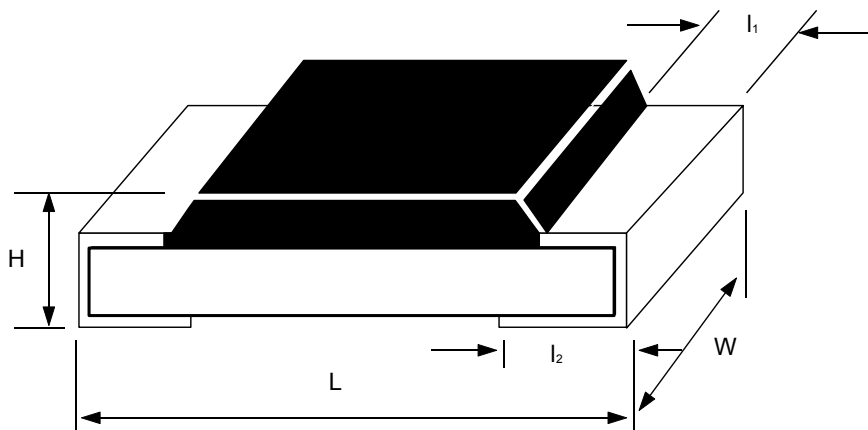
### ① CODE DESIGNATION

RC : This code expresses the Resistor that is produced by Samsung Electro-Mechanics CO.LTD. (with the exception of Trimmable Chip Resistor(RT))

### ② DIMENSION

The dimension is expressed as 4 digits number by SI unit (mm). <Table 1>  
Left 2 digits are length of resistor, and the other 2 digits are width. <Fig 1>

<Fig 1>



<Table 1>

[ Unit : mm ]

Dimension (inch)	0603 (0201)	1005 (0402)	1608 (0603)	2012 (0805)	3216 (1206)	3225 (1210)	5025 (2010)	6432 (2512)
L	0.60±0.03	1.00±0.05	1.60 ± 0.10	2.00 ± 0.20	3.20 ± 0.20	3.20 ± 0.20	5.00 ± 0.20	6.30 ± 0.20
W	0.30±0.03	0.50±0.05	0.80 ± 0.15	1.25 ± 0.15	1.60 ± 0.15	2.55 ± 0.20	2.50 ± 0.20	3.20 ± 0.20
H	0.25±0.05	0.35±0.05	0.45 ± 0.10	0.50 ± 0.10	0.55 ± 0.10	0.55 ± 0.10	0.55 ± 0.10	0.55 ± 0.10
l <sub>1</sub>	0.15±0.05	0.20±0.10	0.30 ± 0.20	0.40 ± 0.20	0.45 ± 0.20	0.45 ± 0.20	0.60 ± 0.20	0.60 ± 0.20
l <sub>2</sub>	0.15±0.05	0.25±0.10	0.35 ± 0.10	0.35 ± 0.20	0.40 ± 0.20	0.40 ± 0.20	0.60 ± 0.20	0.60 ± 0.20

# Chip Resistor

## ③ RESISTANCE TOLERANCE

The Resistance Tolerance is expressed as 1 digit alphabet by EIAJ standard. <Table 2>

<Table 2>

Item	F	G	J	K	M
Tolerance (%)	± 1	± 2	± 5	± 10	± 20
Producing Series	E-24, E-96	E-48	E-24	E-12	E-6
Type	P, L	G, L	G, L	G, L, T	T

Type Representation : G(General), P(Precision), L(Low ohms), T(Trimmable)

## ④ NOMINAL RESISTANCE VALUE

The Nominal Resistance Value is expressed as 3 or 4 digits by EIAJ standard. <Table 3>

<Table 3>

Item	3 Digits mark	4 Digits mark
Resistance Tolerance	F, G, J, K, M	F, G
Only number	Left 2 digits : Resistance value Right 1 digit : Exponential number of 10.	Left 3 digits : Resistance value Right 1 digit : Exponential number of 10.
Number & alphabet "R"	Read alphabet "R" as decimal point.	Read alphabet "R" as decimal point.
Example	1) 101 : $10 \times 10^1 = 10 \times 10 = 100 \Omega$ 2) 7R5 : $7 . 5 = 7.5 \Omega$ 3) R75 : $0.75 \Omega$	1) 1001 : $100 \times 10^1 = 100 \times 10 = 1 \text{ k}\Omega$ 2) 9R09 : $9.09 = 9.09 \Omega$

If resistance value in E-96 is same resistance value in E-24, we mark 3 or 4 digits on the resistor.

In case of JUMPER(0 ohm), '000' is marked on that resistor.

※ 0603, 1005, 1608 (4 digits mark) : No Marking on the resistor.

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# Chip Resistor

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## ⑤ PACKAGING CODE

The Packaging Code is expressed as 2 digits alphabet. <Table 4>

Packaging Code	Description	Dimension	Packaging Q'ty
C S	7" REEL PACKAGING	0603, 1005	10,000 PCS
		1608, 2012, 3216, 3225	5,000 PCS
		5025, 6432	4,000 PCS
E S	10" REEL PACKAGING	1608, 2012, 3216	10,000 PCS
A S	13" REEL PACKAGING	0603, 1005	40,000 PCS
		1608, 2012, 3216, 3225	20,000 PCS
		5025, 6432	15,000 PCS
G S	BULK CASE PACKAGING	1608	25,000 PCS
		2012	10,000 PCS
		3216	5,000 PCS

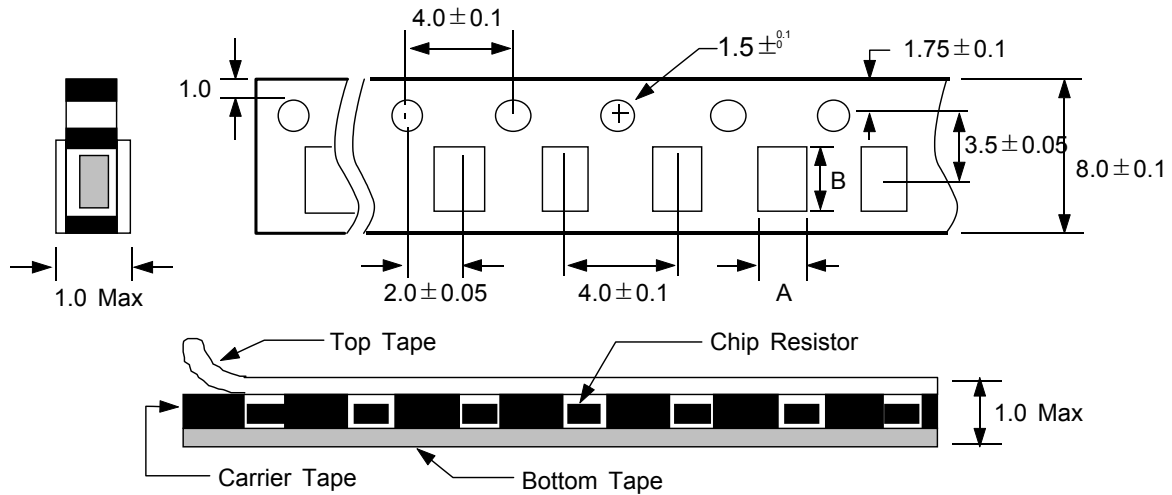
<Table 4>



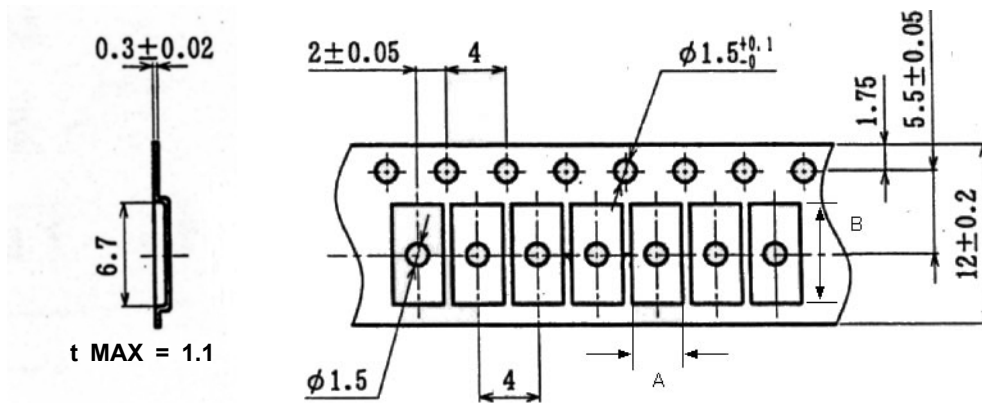
# Chip Resistor

<Fig 3> is tape dimension For 1608, 2012, 3216, 3225 type. <Table 5> is for pocket sizes, A and B.

<Fig 3>



<Fig 4> is tape dimension For 5025, 6432 type. <Table 5> is for pocket sizes, A and B.  
<Fig 4>



<Table 5>

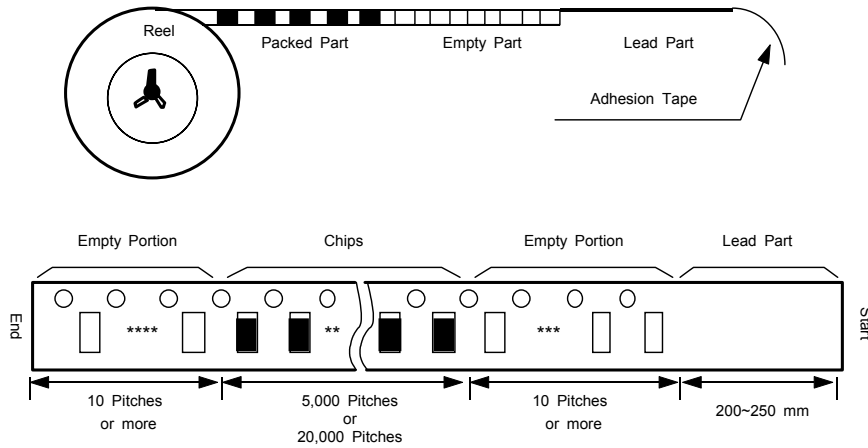
Dimension Symbol	0603 (0201)	1005 (0402)	1608 (0603)	2012 (0805)	3216 (1206)	3225 (1210)	5025 (2010)	6432 (2512)
A	0.65 ± 0.10	0.70 ± 0.10	1.10 ± 0.20	1.65 ± 0.20	2.00 ± 0.20	2.90 ± 0.20	2.80 ± 0.10	3.50 ± 0.10
B	1.15 ± 0.10	1.20 ± 0.10	1.90 ± 0.20	2.40 ± 0.20	3.60 ± 0.20	3.60 ± 0.20	5.30 ± 0.20	6.75 ± 0.10

# Chip Resistor

## ● TAPING METHOD

There are empty holes at both start part and end part of carrier tape. <Fig 5>

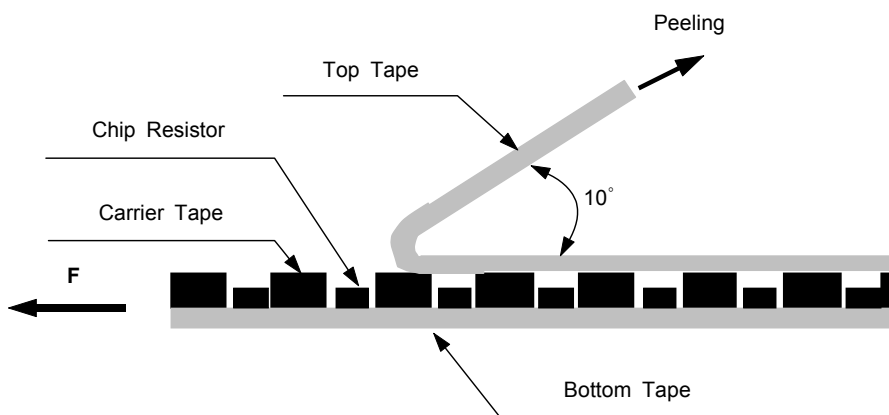
<Fig 5>



### Note

- ① The resistor should move in the pocket freely.
- ② The resistor should not adhere to the top or bottom tape.
- ③ There should be no vacant pocket.
- ④ Peeling strength of the top tape should be within 5g and 80g. <Fig 6>

<Fig 6>



# Chip Resistor

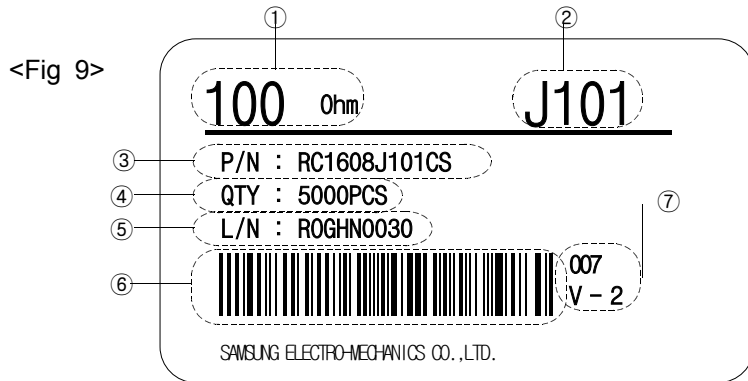
## ● LABELING

### ▶ Reel type Label

The reel type label includes following contents as <Fig 9>.

- Following -

- ① Resistance Value
- ② Tolerance, Marking
- ③ Part Number
- ④ Quantity
- ⑤ LOT Number
- ⑥ Bar - Code
- ⑦ Serial Number



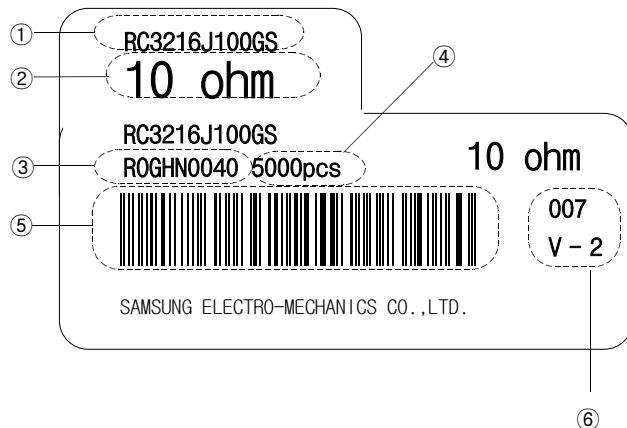
### ▶ Bulk type Label

The bulk type label includes following contents as <Fig 10>.

- Following -

- ① Part Number
- ② Resistance Value
- ③ LOT Number
- ④ Quantity
- ⑤ Bar - Code
- ⑥ Serial Number

<Fig 10>



## ● BOX PACKAGING METHOD

- ① The bulk or reel type packaging is packaged twice by paper box, inner box and outer box.
- ② The packaging should protect the resistor from damaging during shipping by vehicle, ship, airplane and etc.
- ③ The information of contents is marked on both inner and outer box.

※ For other packaging methods, please contact us.

# Chip Resistor

## RELIABILITY TEST DATA

Jumper's reliability test data are only applied to General type resistor.

### ELECTRICAL CHARACTERISTIC

The electrical characteristic test should satisfy the test method, procedure, and standard.  
If there is no special comment, Each test performs in standard state.  
(temperature 20°C, humidity 65%RH, pressure 1023mbar)

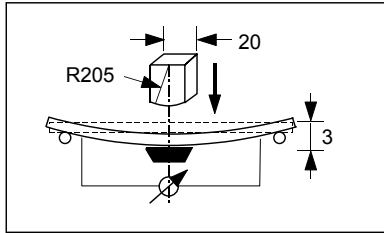
item	Permissible deviation		Test method																																
	Resistor	Jumper																																	
DC resistance	DC resistance value should be within the specified resistance tolerance.	50mΩ Maximum	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.5</li> <li>Test voltage : &lt;Table 8&gt;</li> <li>Applying time : within 5 seconds.</li> <li>Test board : &lt;Fig 11&gt;</li> </ul> <table border="1"> <thead> <tr> <th>Range (Ω)</th> <th>Voltage (V)</th> </tr> </thead> <tbody> <tr> <td>R &lt; 1</td> <td>0.1</td> </tr> <tr> <td>R &lt; 10</td> <td>0.1</td> </tr> <tr> <td>10 ≤ R &lt; 100</td> <td>0.3</td> </tr> <tr> <td>100 ≤ R &lt; 1K</td> <td>1.0</td> </tr> <tr> <td>1K ≤ R &lt; 10K</td> <td>3.0</td> </tr> <tr> <td>10K ≤ R &lt; 100K</td> <td>10</td> </tr> <tr> <td>100K ≤ R &lt; 1M</td> <td>25</td> </tr> <tr> <td>1M ≤ R</td> <td>50</td> </tr> </tbody> </table>	Range (Ω)	Voltage (V)	R < 1	0.1	R < 10	0.1	10 ≤ R < 100	0.3	100 ≤ R < 1K	1.0	1K ≤ R < 10K	3.0	10K ≤ R < 100K	10	100K ≤ R < 1M	25	1M ≤ R	50														
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Temperature Coefficient of Resistance	<table border="1"> <thead> <tr> <th>Tolerance</th> <th>ppm/°C</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td rowspan="2">F</td> <td>100</td> <td>P</td> </tr> <tr> <td>200</td> <td>L</td> </tr> <tr> <td>G</td> <td>Table 9</td> <td>G, P, L</td> </tr> <tr> <td>J</td> <td>Table 9</td> <td>G, L</td> </tr> <tr> <td>K</td> <td>Table 9</td> <td>G, L</td> </tr> <tr> <td>M</td> <td>Table 9</td> <td>G, L, T</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">&lt;Table 9&gt;</th> </tr> <tr> <th>Range(Ω)</th> <th>ppm/°C</th> </tr> </thead> <tbody> <tr> <td>0.1 ≤ R &lt; 1</td> <td>+600, -300</td> </tr> <tr> <td>1 ≤ R &lt; 10</td> <td>±500</td> </tr> <tr> <td>10 ≤ R &lt; 1M</td> <td>±200</td> </tr> <tr> <td>1M ≤ R &lt; 10M</td> <td>±300</td> </tr> </tbody> </table>	Tolerance	ppm/°C	Type	F	100	P	200	L	G	Table 9	G, P, L	J	Table 9	G, L	K	Table 9	G, L	M	Table 9	G, L, T	<Table 9>		Range(Ω)	ppm/°C	0.1 ≤ R < 1	+600, -300	1 ≤ R < 10	±500	10 ≤ R < 1M	±200	1M ≤ R < 10M	±300	-	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.8</li> <li>Temp. : 20°C → -55°C → 20°C → 125°C → 20°C</li> <li>Test board : &lt;Fig 11&gt;</li> <li>Calculation : <math display="block">TCR(ppm/°C) = \frac{R-R_0}{R_0} \times \frac{1}{T-T_0} \times 10^6</math></li> <li>T<sub>0</sub> : 20 ± 2°C</li> <li>R<sub>0</sub> : Resistance at T<sub>0</sub> (Ω)</li> <li>T : Test temperature ( -55, 125°C)</li> <li>R : Resistance at T (Ω)</li> </ul>
Tolerance	ppm/°C	Type																																	
F	100	P																																	
	200	L																																	
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Short time overload (STOL)	<ol style="list-style-type: none"> <li>No mechanical damage</li> <li>ΔR should be within ±(1%+0.1Ω)</li> </ol>	50mΩ Maximum	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.13</li> <li>Test voltage : 2.5 times of rated voltage Max. surge current at the Jumper.</li> <li>Applying time : 5 seconds</li> <li>Test board : &lt;Fig 11&gt;</li> </ul>																																
Intermittent overload (IOL)	<ol style="list-style-type: none"> <li>No mechanical damage</li> <li>ΔR should be within ±(3%+0.1Ω)</li> </ol>	50mΩ Maximum	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.13</li> <li>Test voltage : 2.5 times of rated voltage Max. surge current at the Jumper.</li> <li>Test method : 1 sec ON, 25 sec OFF 10,000<sup>+400</sup>cycles</li> <li>Test board : &lt;Fig 11&gt;</li> </ul>																																

# Chip Resistor

item	Permissible deviation		Test method	
	Resistor	Jumper		
Withstanding voltage	<ul style="list-style-type: none"> <li>No mechanical damage, short circuit, or disconnection.</li> </ul>	Same as left	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.7</li> <li>Test voltage : 0603,1005,1608 AC 100V, others AC 500V</li> <li>Applying time : 60 +10/-0 seconds</li> <li>Test board : &lt;Fig 13&gt;</li> </ul>	
Insulation resistance	<ul style="list-style-type: none"> <li>Should have more than 1,000M<math>\Omega</math></li> </ul>	Same as left	<ul style="list-style-type: none"> <li>Standard : JIS C 5201- 4.7</li> <li>Test voltage : 0603,1005,1608 DC 100V, others DC 500V</li> <li>Applying time : 60 seconds</li> <li>Test pressure : 1.0<math>\pm</math>0.2 N</li> <li>Test board : &lt;Fig 13&gt;</li> </ul>	
Noise	<ul style="list-style-type: none"> <li>Noise standard &lt;Table 10&gt;</li> </ul>	-	<ul style="list-style-type: none"> <li>Measure equipment : QUAN-TECH NOISE METER (MODEL 315C)</li> </ul>	
	Range ( $\Omega$ )			dB Max.
	0.1 $\leq$ R < 1			-10(L-Type)
	1 $\leq$ R < 100			-10
	100 $\leq$ R < 1K			0
1K $\leq$ R < 100K	15			
100K $\leq$ R < 1M	20			
1M $\leq$ R < 10M	30			

## ● MECHANICAL CHARACTERISTIC

The mechanical characteristic test should satisfy the test method, procedure, and standard. If there is no special comment, Each test performs in standard state. (temperature 20 $^{\circ}$ C, humidity 65%RH, pressure 1023mbar)

item	Permissible deviation		Test method
	Resistor	Jumper	
Solderability	<ul style="list-style-type: none"> <li>New solder coated more than 95% of termination</li> </ul>	Same as left	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.17</li> <li>Test temperature : 240 <math>\pm</math> 5<math>^{\circ}</math>C</li> <li>Test time : 2 <math>\pm</math> 0.5 sec (dipping both side)</li> </ul>
Bending strength	<ol style="list-style-type: none"> <li>No mechanical damage</li> <li><math>\Delta R</math> should be within <math>\pm(0.5\%+0.05\Omega)</math></li> </ol>	Same as left	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.33</li> <li>Test board : &lt;Fig 12&gt;</li> <li>Test speed : 100mm/min</li> <li>Test procedure : press until 3mm, then keep 5 seconds &lt;Fig 14&gt;</li> </ul> <div style="text-align: center;">  <p>&lt;Fig 14&gt;</p> </div>

# Chip Resistor

item	Permissible deviation		Test method
	Resistor	Jumper	
Termination strength	<ul style="list-style-type: none"> <li>No mechanical damage, or sign of disconnection</li> </ul>	Same as left	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.16</li> <li>Test time : applying pressure for 10 seconds</li> <li>Test tension : 0603,1005,1608 - 3N (300g · f) Others (500g · f)</li> </ul>
Withstanding soldering heat	<ol style="list-style-type: none"> <li>No mechanical damage</li> <li><math>\Delta R</math> should be within <math>\pm(1\%+0.05\Omega)</math></li> </ol>	50m $\Omega$ Maximum	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.18</li> <li>Temperature : <math>260 \pm 3^\circ\text{C}</math></li> <li>Test time : <math>10 \pm 1</math>second (both side dipping)</li> <li>Test procedure : measures after 24 hours</li> </ul>
Vibration	<ol style="list-style-type: none"> <li>No mechanical damage</li> <li><math>\Delta R</math> should be within <math>\pm(1\%+0.05\Omega)</math></li> </ol>	50m $\Omega$ Maximum	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.22</li> <li>Test amplitude : 1.5mm</li> <li>Test procedure : frequency 10Hz - 55Hz - 10Hz each 2 hours in x, y, z direction.</li> </ul>

## ● ENVIRONMENTAL CHARACTERISTIC

The Environmental characteristic test should satisfy the test method, procedure, and standard. If there is no special comment, Each test performs in standard state.  
(temperature 20°C, humidity 65%RH, pressure 1023mbar)

item	Permissible deviation		Test method															
	Resistor	Jumper																
Temperature cycle	<ol style="list-style-type: none"> <li>No mechanical damage</li> <li><math>\Delta R</math> should be within <math>\pm(1\%+0.1\Omega)</math></li> </ol>	50m $\Omega$ Maximum	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.19</li> <li>Test procedure : &lt;Table 11&gt;</li> <li>Measure : after 5 cycles of procedure</li> <li>Test board : &lt;Fig 11&gt;</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>item</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>temp(°C)</td> <td>-55±2</td> <td>5~35</td> <td>125±2</td> <td>5~35</td> </tr> <tr> <td>time(min)</td> <td>30</td> <td>15</td> <td>30</td> <td>15</td> </tr> </tbody> </table>	item	1	2	3	4	temp(°C)	-55±2	5~35	125±2	5~35	time(min)	30	15	30	15
item	1	2	3	4														
temp(°C)	-55±2	5~35	125±2	5~35														
time(min)	30	15	30	15														
Moisture resistance life	<ol style="list-style-type: none"> <li>No mechanical damage</li> <li><math>\Delta R</math> should be within &lt;Table 12&gt;</li> </ol> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Range(<math>\Omega</math>)</th> <th><math>\Delta R</math> MAX</th> </tr> </thead> <tbody> <tr> <td><math>0.1 \leq R &lt; 1</math></td> <td><math>\pm 5\%</math>(L-Type)</td> </tr> <tr> <td><math>1 \leq R &lt; 10</math></td> <td><math>\pm 5\%</math></td> </tr> <tr> <td><math>10 \leq R &lt; 1M</math></td> <td><math>\pm(3\%+0.1\Omega)</math></td> </tr> <tr> <td><math>1M \leq R &lt; 10M</math></td> <td><math>\pm 5\%</math></td> </tr> </tbody> </table>	Range( $\Omega$ )	$\Delta R$ MAX	$0.1 \leq R < 1$	$\pm 5\%$ (L-Type)	$1 \leq R < 10$	$\pm 5\%$	$10 \leq R < 1M$	$\pm(3\%+0.1\Omega)$	$1M \leq R < 10M$	$\pm 5\%$	100m $\Omega$ Maximum	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.14</li> <li>Test condition : temp <math>40 \pm 3^\circ\text{C}</math>, humid 90 ~ 95%RH</li> <li>Test voltage : rated voltage</li> <li>Test time : repeat 90min ON, 30min OFF during 1000<sup>+48</sup> hours</li> <li>Test board : &lt;Fig 11&gt;</li> </ul>					
Range( $\Omega$ )	$\Delta R$ MAX																	
$0.1 \leq R < 1$	$\pm 5\%$ (L-Type)																	
$1 \leq R < 10$	$\pm 5\%$																	
$10 \leq R < 1M$	$\pm(3\%+0.1\Omega)$																	
$1M \leq R < 10M$	$\pm 5\%$																	

# Chip Resistor

item	Permissible deviation		Test method	
	Resistor	Jumper		
Low temperature exposure	1. No mechanical damage 2. $\Delta R$ should be within $\pm(3\%+0.1\Omega)$	50m $\Omega$ Maximum	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.23</li> <li>Test temperature : <math>-55 \pm 2^\circ\text{C}</math></li> <li>Test time : 1000<sup>+48</sup> hours (without load)</li> <li>Measure : after 1 hour</li> <li>Test board : &lt;Fig 11&gt;</li> </ul>	
High temperature exposure	1. No mechanical damage 2. $\Delta R$ should be within $\pm(3\%+0.1\Omega)$	50m $\Omega$ Maximum	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.23</li> <li>Test temperature : 1608,2012,3216 <math>155 \pm 2^\circ\text{C}</math>, Others <math>125 \pm 2^\circ\text{C}</math></li> <li>Test time : 1000<sup>+48</sup> hours (without load)</li> <li>Measure : after 1 hour</li> <li>Test board : &lt;Fig 11&gt;</li> </ul>	
Load life	1. No mechanical damage 2. $\Delta R$ should be within <Table 13>	100m $\Omega$ Maximum	<ul style="list-style-type: none"> <li>Standard : JIS C 5201-1 4.25</li> <li>Test temperature : <math>70 \pm 2^\circ\text{C}</math></li> <li>Test voltage : rated voltage</li> <li>Test time : repeat 90min ON, 30min OFF during 1000<sup>+48</sup> hours</li> <li>Test board : &lt;Fig 11&gt;.</li> </ul>	
	<Table 13>			
	Range( $\Omega$ )			$\Delta R$ MAX
	$0.1 \leq R < 1$			$\pm 5\%$ (L-Type)
	$1 \leq R < 10$			$\pm 5\%$
$10 \leq R < 1\text{M}$	$\pm(3\%+0.1\Omega)$			
$1\text{M} \leq R < 10\text{M}$	$\pm 5\%$			

## ● TEST BOARD AND SPECIFICATION

### ▶ Soldering

▷ The resistor should be fixed on PCB(printed circuit board) for testing.

- Soldering specification : JIS C 5201-1 4.18

\* Soldering method : Flow type(Dipping type), Reflow type

\* Solder : H63A (JIS Z 3282)

\* FLUX : ROSIN 25WT% (JIS K 5902), IPA 75WT% (JIS K 5901)

- Flow soldering condition

\* FLUX dipping time : 5~10 sec

\* Pre-treatment : None

\* Soldering temp. :  $260^\circ\text{C} \pm 3^\circ\text{C}$

\* Soldering time :  $10 \pm 1$  sec