

Surface Mount Resistor Kit

0603 Case Size



RoHS
Compliant



Specifications Table

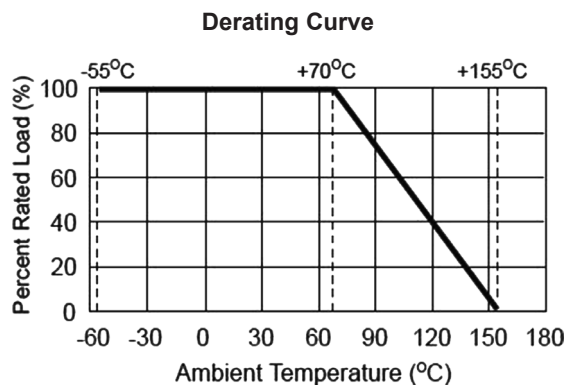
Type	Power Rating	Resistance Tolerance	Nominal Resistance
MC 0603	0.0625W (1/16W)	±5%	10Ω

Ratings:

Type	MC 0603
Power Rating	0.0625W (1/16W)
Rated Current(Jumper)	1A
Max. Overload Current(Jumper)	2A
Max. Working Voltage	75V
Max. Overload Voltage	150V
Dielectric Withstanding Voltage	300V
Temperature Range	-55°C to +155°C
Ambient Temperature	70°C

Power Rating:

Resistors shall have a power rating based on continuous load operation at an ambient temperature of 70°C . For temperature in excess of 70°C , The load shall be derate as shown in figure.



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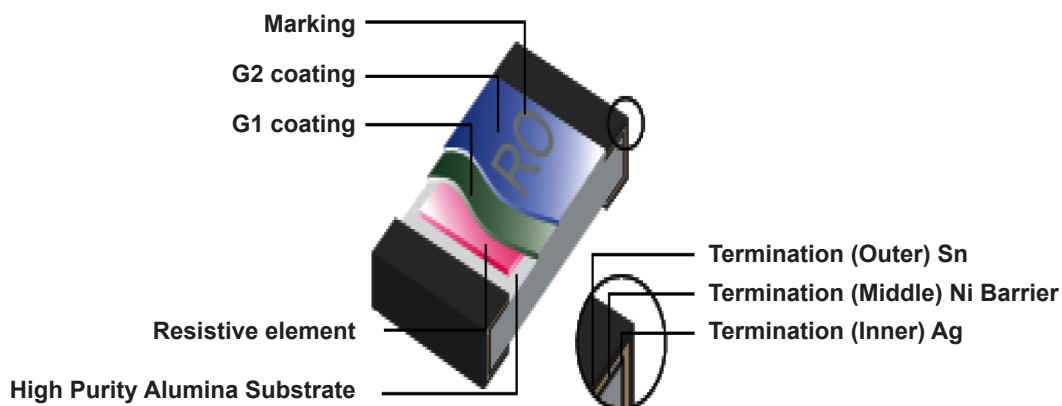
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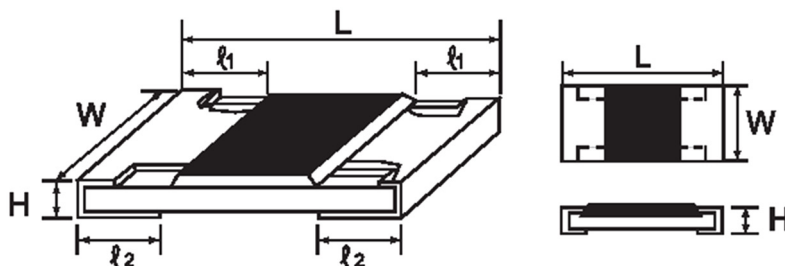
Nominal Resistance:

Effective figures of nominal resistance shall be in accordance with E-24 and E-96 series
E-96 series for 1 % and E-24 series for 2 % and 5 %

Construction:



Power Rating and Dimensions:



Dimension:

Type	Dimension (mm)				
	$L \pm 0.1$	$W +0.15 / 0.1$	$H \pm 0.1$	$l1 \pm 0.2$	$l2 \pm 0.2$
MC 0603	1.6	0.8	0.45	0.3	0.3

Power Rating:

Type	Power Rating	Tolerance	Resistance	Standard Series
MC 0603	0.0625W (1/16W)	Jumper	<50mΩ	E-12
		±5	10Ω to 1MΩ	

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Performance Specification :

Characteristics	Limits	Test Methods (JIS C 5201-1)
Insulation resistance	1,000 MΩ or more	Apply 500V DC between protective coating and termination for 1 min, then measure
Dielectric withstanding voltage	No evidence of flashover mechanical damage, arcing or insulation break down	Apply 500V AC between protective coating and termination for 1 minute
Temperature coefficient	1Ω - 10Ω : ± 400 PPM/°C 11Ω - 100Ω : ± 200 PPM/°C >100Ω : ± 100 PPM/°C	Natural resistance change per temp. degree centigrade. $\frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^6 \text{ (PPM/°C)}$ R ₁ : Resistance value at room temperature (t ₁) R ₂ : Resistance value at room temp. plus 100°C (t ₂)
Short time overload	Resistance change rate is ± (1.0% + 0.1Ω) Max.	Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds
Solderability	95 % coverage Min.	Test temperature of solder : 245 ± 3°C Dwell time in solder : 2 to 3 seconds
Soldering temp. Reference	Electrical characteristics shall be satisfied. Without distinct deformation in appearance. (95 % coverage Min.)	<p><u>Wave soldering condition:</u> (2 cycles Max.) Pre-heat : 100°C to 120°C, 30 ± 5 sec. Suggestion solder temp.: 235°C to 255°C, 10 sec. (Max.) Peak temp.: 260°C</p> <p><u>Reflow soldering condition:</u> (2 cycles Max.) Pre-heat : 150°C to 180°C, 90°C to 120 sec. Suggestion solder temp.: 235°C to 255°C, 20 to 40 sec. Peak temp.: 260°C</p> <p><u>Hand soldering condition:</u> The soldering iron tip temperature should be less than 300°C and maximum contract time should be 5 sec.</p>



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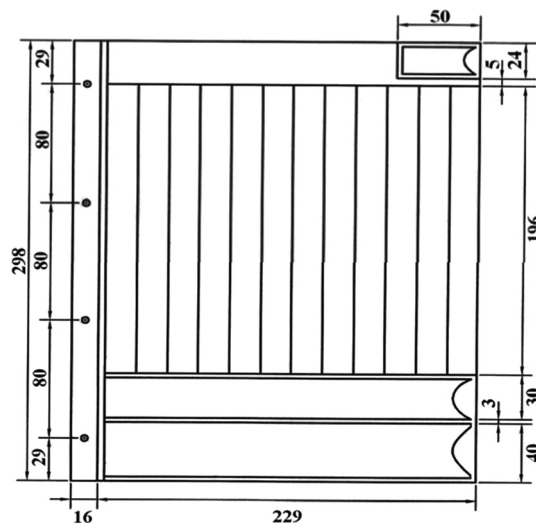
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Characteristics	Limits	Test Methods (JIS C 5201-1)															
Soldering Heat	Resistance change rate is: $\pm(1\% +0.05\Omega)$ Max.	Dip the resistor into a solder bath having a temperature of $260^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and hold it for 10 ± 1 seconds.															
Temperature cycling	Resistance change rate is $\pm(0.5\% +0.05\Omega)$ Max.	Resistance change after continuous 5 cycles for duty cycle specified below :															
		<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>$-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$</td> <td>30 mins</td> </tr> <tr> <td>2</td> <td>Room temp.</td> <td>10 to 15 mins</td> </tr> <tr> <td>3</td> <td>$+155^{\circ}\text{C} \pm 2^{\circ}\text{C}$</td> <td>30 mins</td> </tr> <tr> <td>4</td> <td>Room temp.</td> <td>10 to 15 mins</td> </tr> </tbody> </table>	Step	Temperature	Time	1	$-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$	30 mins	2	Room temp.	10 to 15 mins	3	$+155^{\circ}\text{C} \pm 2^{\circ}\text{C}$	30 mins	4	Room temp.	10 to 15 mins
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3	$+155^{\circ}\text{C} \pm 2^{\circ}\text{C}$	30 mins															
4	Room temp.	10 to 15 mins															
Load life in humidity	Resistance change rate is $\pm(1\% +0.1\Omega)$ Max.	Resistance change after 1,000 hours (1.5 hours "on", 0.5 hour "off") at RCWV in a humidity chamber controlled at $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and 90 to 95 % relative humidity															
Load Life	Resistance change rate is $\pm(1\% +0.1\Omega)$ Max.	Permanent resistance change after 1,000 hours operating at RCWV, with duty cycle of (1.5 hours"on", 0.5 hour"off") at $70^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ambient															
Terminal bending	Resistance change rate is $\pm(1\% +0.05\Omega)$ Max.	Twist of Test Board : Y/X = 5/90mm for 10 seconds															

Kit resistors:

Insert for Chip Kit



Dimensions : Millimetres

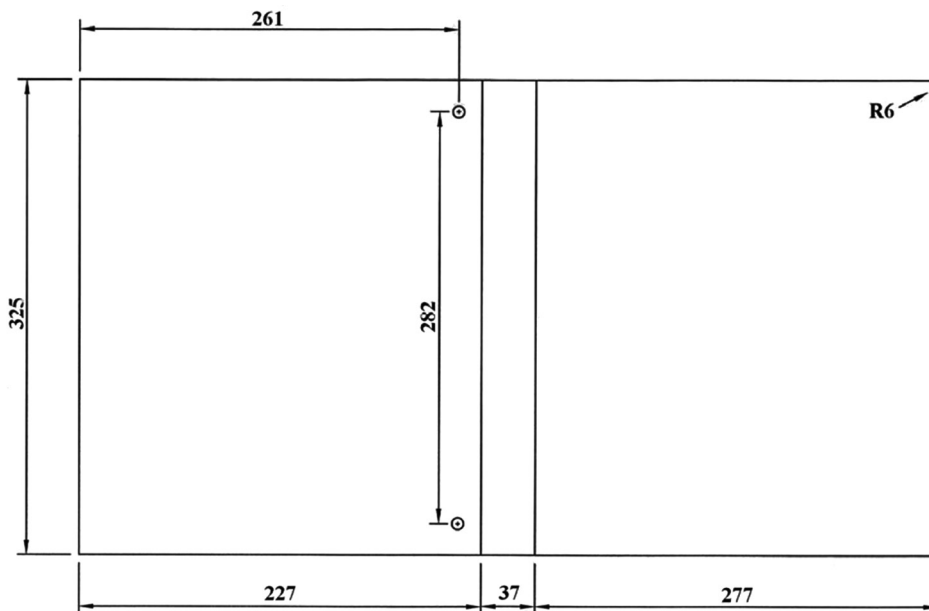


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Album for Chip Kit:



Dimensions : Millimetres

Chip Kit Resistors:

Product : MC Kit (0603) +/-5%
 E12 Series = 75 values (0R&10R to 1M)
 Quantity : 100pcs per value
 Total Qty : 7,500pcs.

NO.	Value
1	0E
2	1R0
3	1R2
4	1R5
5	1R8
6	2R2
7	2R7
8	3R3
9	3R9
10	4R7

NO.	Value
11	5R6
12	6R8
13	8R2
14	10R
15	12R
16	15R
17	18R
18	22R
19	27R
20	33R

NO.	Value
21	39R
22	47R
23	56R
24	68R
25	75R
26	82R
27	100R
28	120R
29	150R
30	180R

NO.	Value
31	220R
32	270R
33	330R
34	390R
35	470R
36	560R
37	680R
38	820R
39	1K
40	1K2



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NO.	Value
41	1K5
42	1K8
43	2K2
44	2K7
45	3K3
46	3K9
47	4K7
48	5K6
49	6K8
50	8K2
51	10K

NO.	Value
52	12K
53	15K
54	18K
55	22K
56	27K
57	33K
58	39K
59	47K
60	56K
61	68K
62	82K

NO.	Value
63	100K
64	120K
65	150K
66	180K
67	220K
68	270K
69	330K
70	390K
71	470K
72	560K
73	680K
74	820K
75	1M

Part Number Table

Description	Part Number
Resistor Kit, 0603, E12, 5%	MC0603WGJE012KIT

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