

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

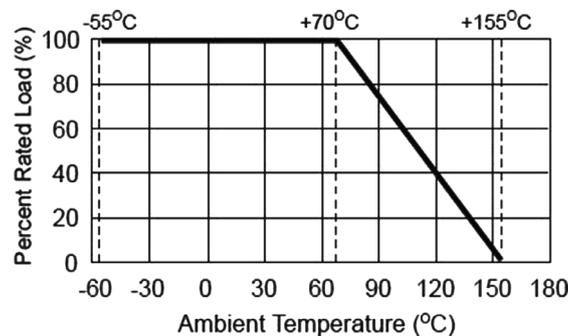
Ratings:

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.

Derating Curve



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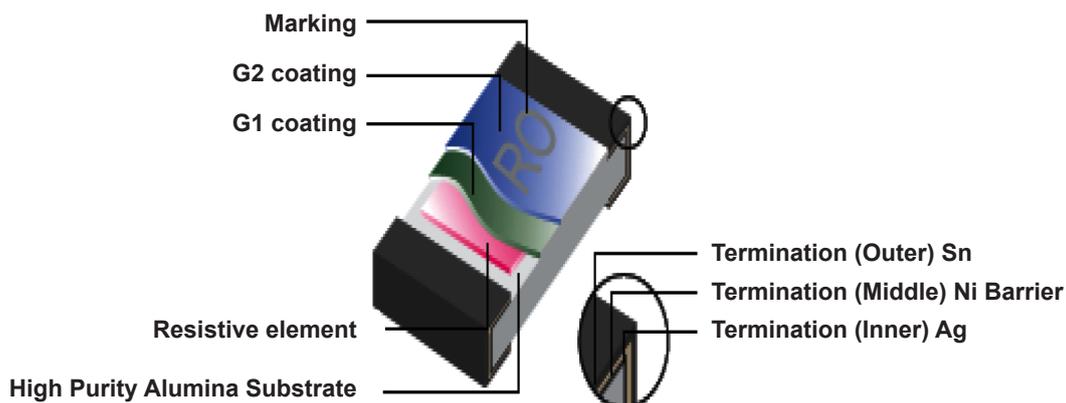
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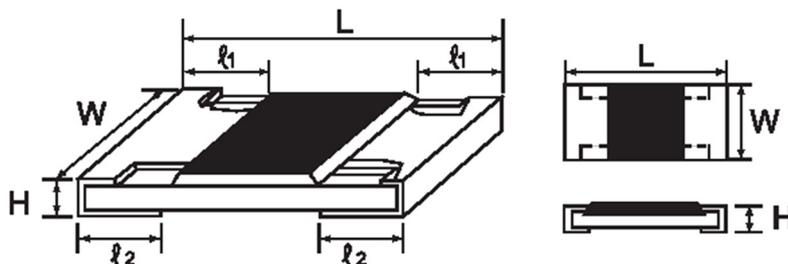
Nominal Resistance:

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-6
		± 1	10Ω ~ 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 ~ 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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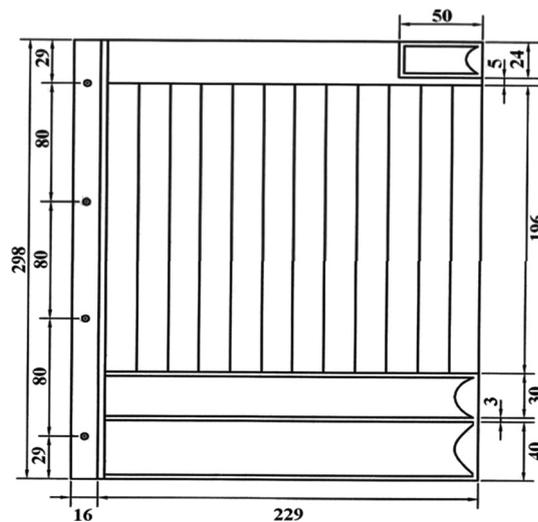
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Characteristics	Limits	Test Methods (JIS C 5201-1)															
Soldering Heat	Resistance change rate is: $\pm(1\% +0.05\Omega)$ Max.	Dip the resistor into a solder bath having a temperature of $260^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and hold 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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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

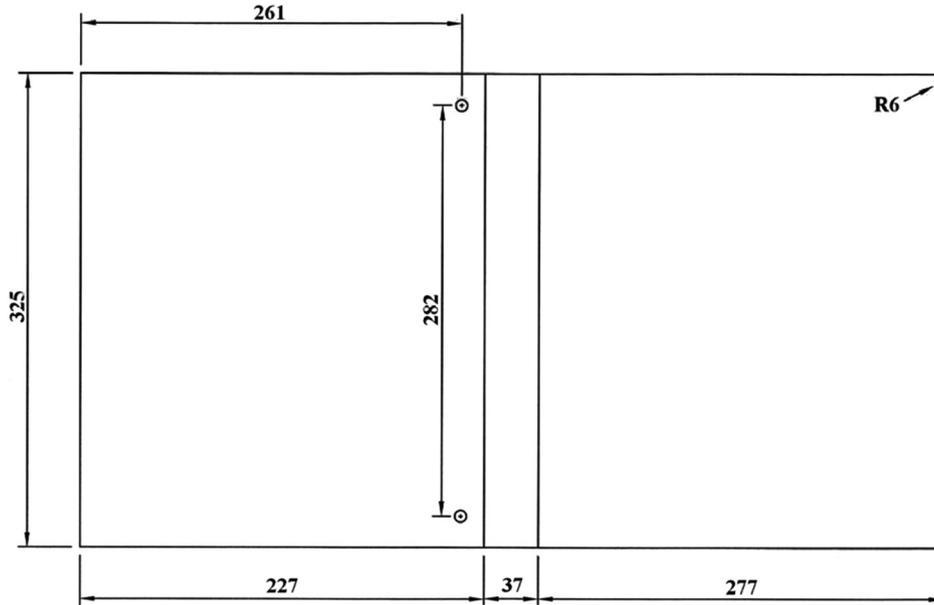


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Album for Chip Kit:



Dimensions : Millimetres

Chip Kit Resistors:

Product : MC Kit (0603) +/-5%
 E6 Series = 31 values (0R&10R to 1M)
 Quantity : 100pcs per value
 Total Qty : 3,100pcs.

NO.	Value
1	0E
2	15R
3	22R
4	33R
5	47R
6	68R
7	100R
8	150R

NO.	Value
9	220R
10	330R
11	470R
12	680R
13	1K
14	1K5
15	2K2
16	3K3

NO.	Value
17	4K7
18	6K8
19	10K
20	15K
21	22K
22	33K
23	47K
24	68K

NO.	Value
25	100K
26	150K
27	220K
28	330K
29	470K
30	680K
31	1M

Part Number Table

Description	Part Number
Resistor Kit, 0603, E6, 5%	MC0603WGJE006KIT

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