

Surface Mount Resistor Kit

0402 Case Size



RoHS
Compliant



Specifications Table

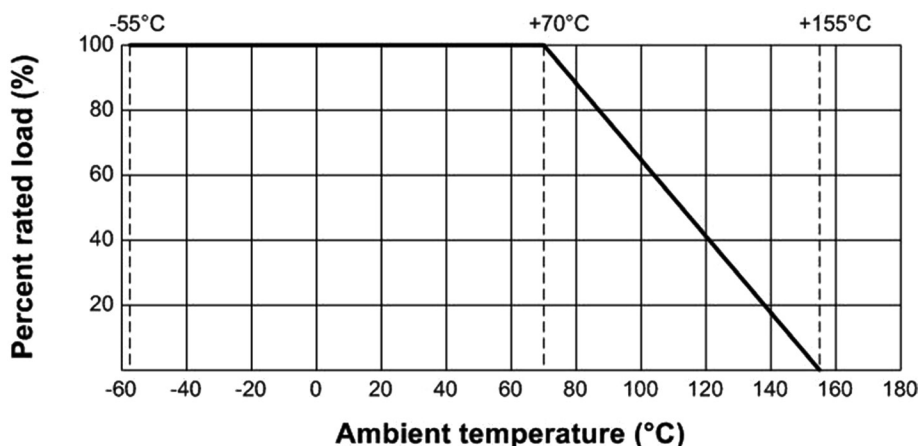
Type	Power Rating	Resistance Tolerance	Nominal Resistance
MC 0402	0.0625W (1/16W)	±1%	10Ω

Ratings:

Type	MC 0402
Power Rating	0.0625W (1/16W)
Rated Current (Jumper)	1A
Max. Overload Current (Jumper)	2A
Max. Working Voltage	50V
Max. Overload Voltage	100V
Dielectric Withstanding Voltage	100V
Temperature Range	-55°C to +155°C
Ambient Temperature	70°C
Resistance Range	10Ω to 1MΩ

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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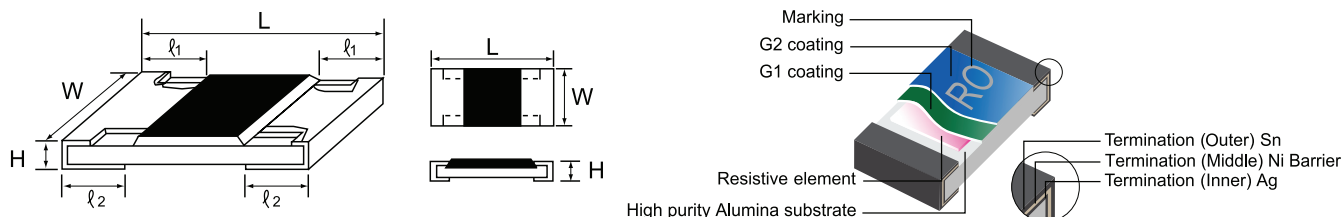
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Nominal Resistance:

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 %

Dimensions and Construction:



Dimension:

Type	Dimension (mm)				
	L ± 0.1	W ± 0.05	H ± 0.05	ℓ1 ± 0.1	ℓ2 ± 0.1
MC 0402	1	0.5	0.35	0.2	0.25

Power Rating :

Type	Power Rating at 70°C	Tolerance	Resistance	Standard Series
MC 0402	0.0625W (1/16W)	±1	10Ω ~ 1MΩ	E-24
		Jumper	<30mΩ	-

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 10.1Ω ~ 100Ω : ± 200 PPM/°C 101Ω ~ 10MΩ : ± 100 PPM/°C	Natural resistance change per temp. degree centigrade. $\frac{R2-R1}{R1(t2-t1)} \times 10^6 \text{ (PPM/°C)}$ R1: Resistance value at room temperature (t1) R2: Resistance value at room temp. plus 100°C (t2)
Short time overload	Resistance change rate is ± (1% + 0.1Ω) Max.	Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds

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Characteristics	Limits	Test Methods (JIS C 5201-1)															
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 to 120 sec. Suggestion solder temp.: 235°C to 255°C, 20 to 40 sec. Peak temp.: 260°C</p> <p style="text-align: center;">Temperature profile for avaluation</p> <p><u>Hand soldering condition:</u> The soldering iron tip temperature should be less than 300°C and maximum contact time should be 5 sec.</p>															
Soldering Heat	Resistance change rate is: ±(1% +0.05Ω) Max.	Dip the resistor into a solder bath having a temperature of 260°C ±3°C and hold it for 10 ±1 seconds.															
Temperature cycling	Resistance change rate is ± (0.5% +0.05Ω) Max.	Resistance change after continuous 5 cycles for duty cycle specified below: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55°C ± 3°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°C ± 2°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°C ± 3°C	30 mins	2	Room temp.	10 to 15 mins	3	+155°C ± 2°C	30 mins	4	Room temp.	10 to 15 mins
Step	Temperature	Time															
1	-55°C ± 3°C	30 mins															
2	Room temp.	10 to 15 mins															
3	+155°C ± 2°C	30 mins															
4	Room temp.	10 to 15 mins															
Load life in humidity	Resistance change rate is ± (1% +0.1Ω) Max.	Resistance change after 1,000 hours (1.5 hours "on", 0.5 hour "off") at RCWW in a humidity chamber controlled at 40°C ±2°C and 90 to 95 % relative humidity															

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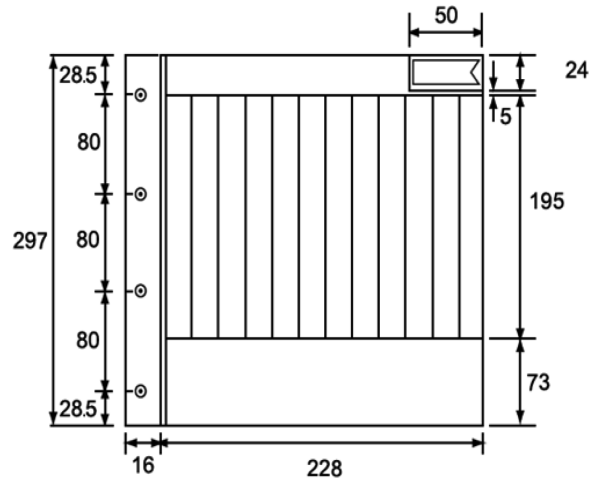


Characteristics	Limits	Test Methods (JIS C 5201-1)
Load Life	Resistance change rate is $\pm (1\% + 0.1\Omega)$ Max.	Permanent resistance change after 1,000 hours operating at RCWV, with duty cycle of (1.5 hours "on", 0.5 hour "off") at $70^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ambient
Terminal bending	Resistance change rate is $\pm (1\% + 0.05\Omega)$ Max.	Twist of Test Board : Y/X = 5/90mm for 10 seconds

The resistors of 0 Ω only can do the characteristic noted of *

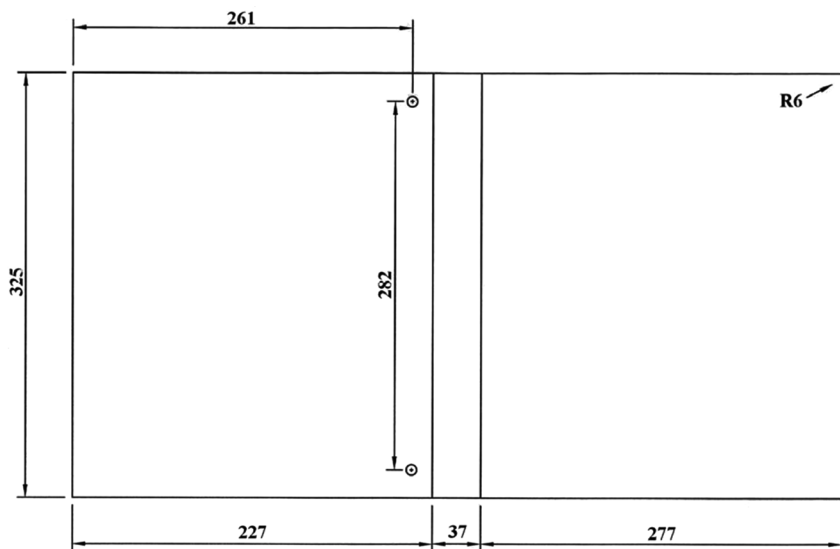
Kit resistors:

Insert for Chip Kit



Dimensions : Millimetres

Album for Chip Kit:



Dimensions : Millimetres



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Chip Kit Resistors:

Product : MC Kit (0402) ±1%
 E24 Series : 121 values (10R to 1M)
 Quantity : 100pcs per value
 Total Qty : 12,100pcs.

No.	Value
1	0R
2	10R
3	11R
4	12R
5	15R
6	16R
7	18R
8	20R
9	22R
10	24R
11	27R
12	30R
13	33R
14	36R
15	39R
16	43R
17	47R
18	51R
19	56R
20	62R
21	68R
22	75R
23	82R
24	91R

No.	Value
25	100R
26	110R
27	120R
28	130R
29	150R
30	160R
31	180R
32	200R
33	220R
34	240R
35	270R
36	300R
37	330R
38	360R
39	390R
40	430R
41	470R
42	510R
43	560R
44	620R
45	680R
46	750R
47	820R
48	910R

No.	Value
49	1K
50	1K1
51	1K2
52	1K3
53	1K5
54	1K6
55	1K8
56	2K
57	2K2
58	2K4
59	2K7
60	3K
61	3K3
62	3K6
63	3K9
64	4K3
65	4K7
66	5K1
67	5K6
68	6K2
69	6K8
70	7K5
71	8K2
72	9K1

No.	Value
73	10K
74	11K
75	12K
76	13K
77	15K
78	16K
79	18K
80	20K
81	22K
82	24K
83	27K
84	30K
85	33K
86	36K
87	39K
88	43K
89	47K
90	51K
91	56K
92	62K
93	68K
94	75K
95	82K
96	91K

No.	Value
97	100K
98	110K
99	120K
100	130K
101	150K
102	160K
103	180K
104	200K
105	220K
106	240K
107	270K
108	300K
109	330K
110	360K
111	390K
112	430K
113	470K
114	510K
115	560K
116	620K
117	680K
118	750K
119	820K
120	910K
121	1M

Part Number Table

Description	Part Number
Resistor Kit, 0402, E-24, 1%	MC0402WGFE024KIT

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