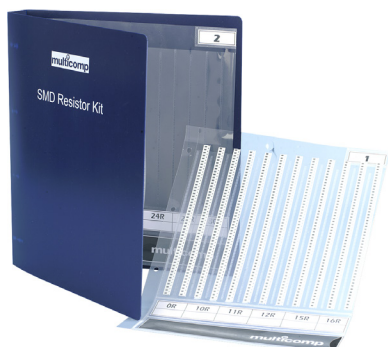


Surface Mount Resistor Kit

0603 Case Size

**RoHS
Compliant**



Specifications Table

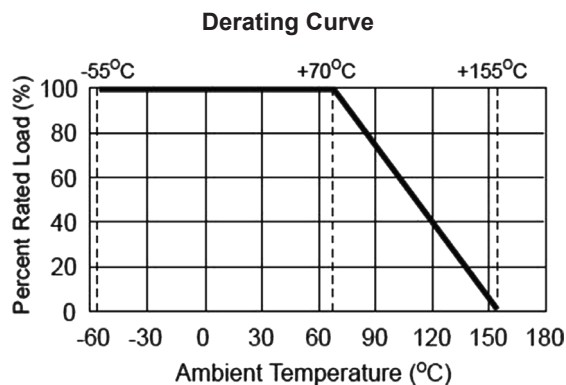
| Type | Power Rating | Resistance Tolerance | Nominal Resistance |
|---------|-----------------|----------------------|--------------------|
| MC 0603 | 0.0625W (1/16W) | ±5% | 10Ω |

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.



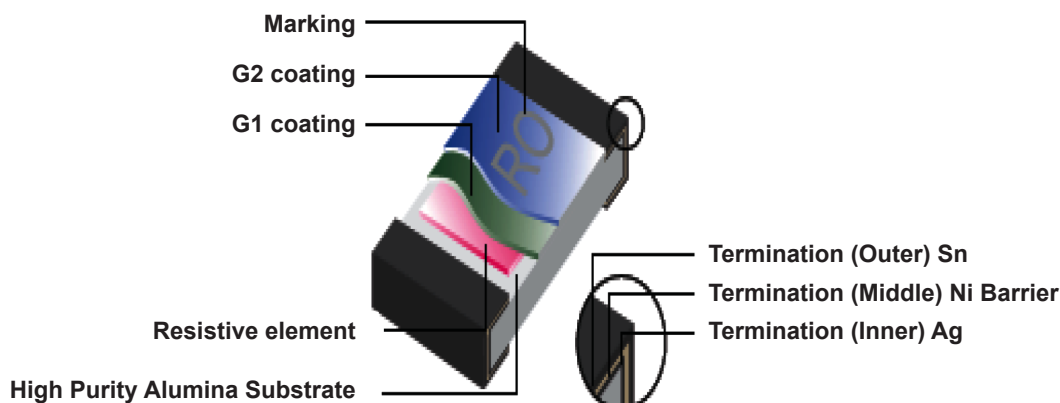
Surface Mount Resistor Kit

0603 Case Size

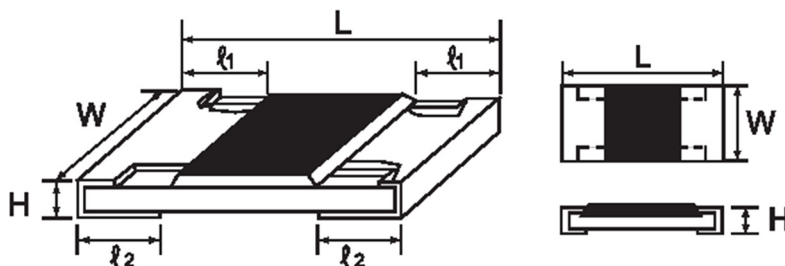
Nominal Resistance:

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 |

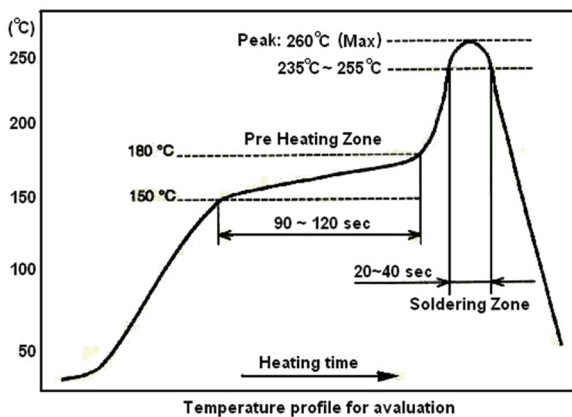
Power Rating:

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

Surface Mount Resistor Kit

0603 Case Size

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.)</p> <p>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.)</p> <p>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></p> <p>The soldering iron tip temperature should be less than 300°C and maximum contract time should be 5 sec.</p> |

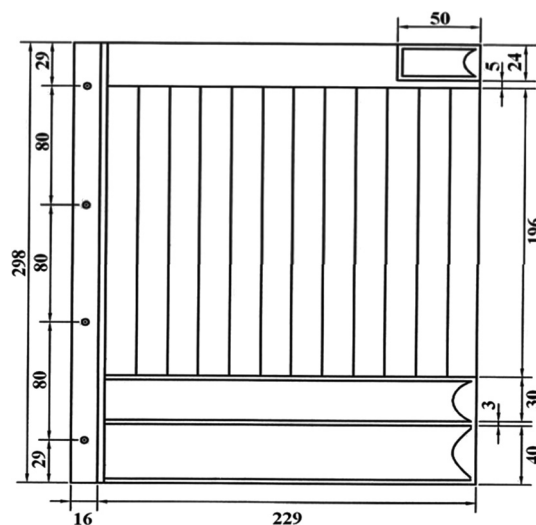
Surface Mount Resistor Kit

0603 Case Size

| Characteristics | Limits | Test Methods (JIS C 5201-1) | | |
|-----------------------|---|--|--------------|---------------|
| 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 : | | |
| | | 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 RCWV in a humidity chamber controlled at 40°C ±2°C and 90 to 95 % relative humidity | | |
| Load Life | Resistance change rate is ± (1% +0.1Ω) 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°C ±2°C ambient | | |
| Terminal bending | Resistance change rate is ± (1% +0.05Ω) Max. | Twist of Test Board : Y/X = 5/90mm for 10 seconds | | |

Kit resistors:

Insert for Chip Kit

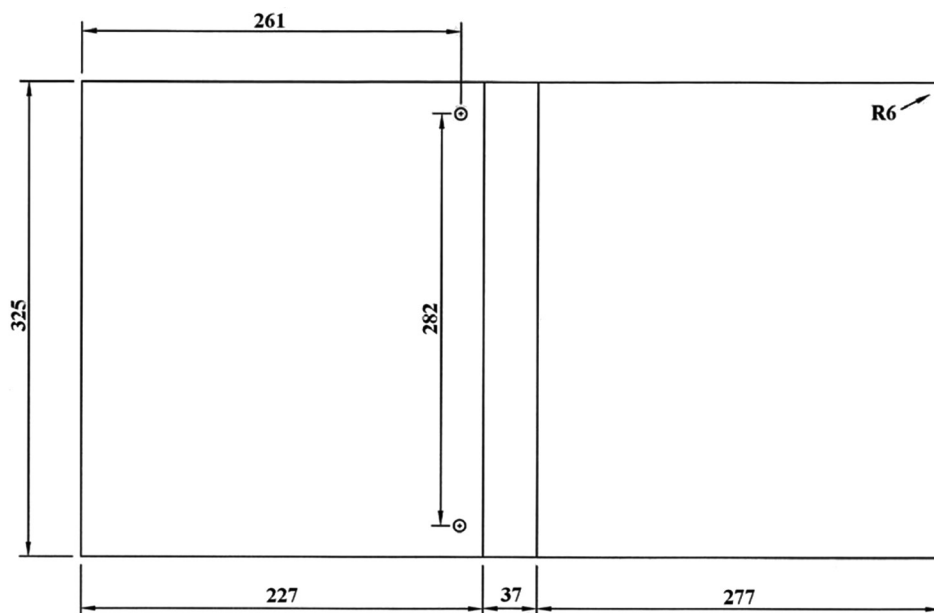


Dimensions : Millimetres

Surface Mount Resistor Kit

0603 Case Size

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 |

Surface Mount Resistor Kit

0603 Case Size



| 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 |

