

# Data sheet

Title: METAL-PLATE CHIP RESISTOR; LOW OHM

Style: WLP63

AEC-Q200 qualified

RoHS COMPLIANCE ITEM

Halogen and Antimony Free

- Note:
- Stock conditions  
Temperature: +5°C ~ +35°C  
Relative humidity: 25% ~ 75%  
The period of guarantee: Within 2 year from shipment by the company.  
Solderability shall be satisfied.
  - Product specification contained in this data sheet are subject to change at any time without notice
  - If you have any questions or a Purchasing Specification for any quality Agreement is necessary, please contact our sales staff.



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## 1. Scope

1.1 This data sheet covers the detail requirements for metal-plate chip resistor ; low ohm, style of WLP63.

### 1.2 Applicable documents


JIS C 5201-1: 2011, JIS C 5201-8: 2014, JIS C 5201-8-1: 2014

IEC60115-1: 2008, IEC60115-8: 2009, IEC60115-8-1: 2014

## 2. Classification

Type designation shall be the following form.

(Example)	WLP	63	3D	N	R025	F	TE
	1	2	3	4	5	6	7
	Style						

1 Metal-plate chip resistor ; low ohm  Style

2 Size

3 Rated dissipation

3D	2W
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4 Temperature coefficient of resistance

N	$\pm 70 \times 10^{-6} / ^\circ\text{C}$
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5 Rated resistance

R025	R025-->25mΩ
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6 Tolerance on rated resistance

F	±1%
G	±2%
J	±5%

7 Packaging form

TE	Plastic tape
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## 3. Rating

3.1 The ratings shall be in accordance with Table-1.

Table-1

Style	Rated dissipation (W)	Rated current (A)	Temperature coefficient of resistance ( $10^{-6} / ^\circ\text{C}$ )		Rated resistance (mΩ)	Tolerance on rated resistance
WLP63	2.0	11.5	N	±70	15	F(±1%)
		10	N	±70	20	G(±2%)
		8.9	N	±70	25	J(±5%)

Style	Max. working voltage (V)	Max. Overload voltage (V)	Isolation voltage (V)	Category temperature range ( $^\circ\text{C}$ )
WLP63	0.224	0.500	100	-55~+170

### 3.2 Derating

The derated values of dissipation at temperature in excess of 70 °C shall be as indicated by the following curve.

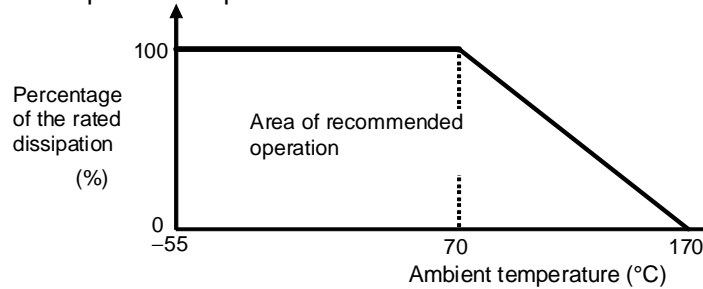


Figure-1 Derating curve

### 3.3 Rated voltage

d.c. or a.c. r.m.s. voltage calculated from the square root of the product of the rated resistance and the rated dissipation.

$$E = \sqrt{P \cdot R}$$

E: Rated voltage (V)  
P: Rated dissipation (W)  
R: Rated resistance ( $\Omega$ )

### 3.4 Rated current

The rated current calculated from the square root of the quotient of the rated resistance and the rated dissipation.

$$I = \sqrt{P / R}$$

I: Rated current (A)  
P: Rated dissipation (W)  
R: Rated resistance ( $\Omega$ )

The rated current shall be corresponding to rated voltage.

\*Power testing with total solder-pad and trace size of 300 mm<sup>2</sup>

### 4. Packaging form

The standard packaging form shall be in accordance with Table-2.

Table-2

Symbol	Packaging form		Standard packaging quantity / units
TE	Plastic tape	12mm width, 4mm pitches	4,000 pcs.

## 5. Dimensions

5.1 The resistor shall be of the design and physical dimensions in accordance with Figure-2 and Table-3.

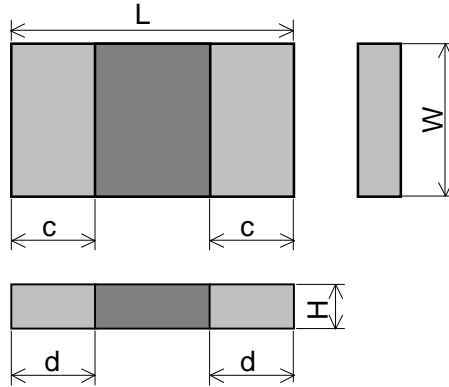


Figure-2

Table-3

Unit: mm

Style	L	W	H	c	d
WLP63	6.2±0.2	3.2±0.2	0.6±0.2	0.8±0.2	0.8±0.2

## 5.2 Net weight (Reference)

Style	Net weight (mg)
WLP63	62.5

## 6. Marking

The rated resistance shall be marked in 4 characters consisting of 3 figures and a letter and marked on over coat side.

(Example) "R025" → 0.025 [Ω] → 25 [mΩ]

## 7. Performance

7.1 The standard condition for tests shall be in accordance with Sub-clause 4.2, JIS C 5201-1: 2011.

7.2 The performance shall be satisfied in Table-4.

Table- 4(1)

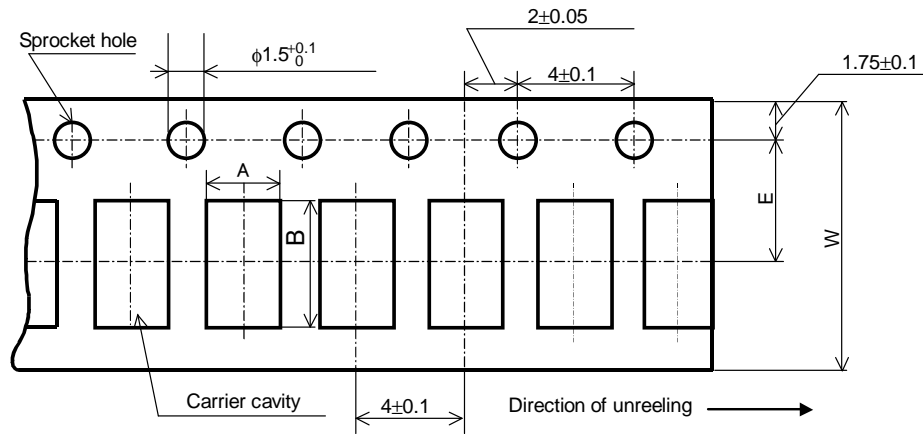
No.	Test items	Condition of test (JIS C 5201-1)	Performance requirements
1	DC Resistance	4.5 Measure the resistance value	F(±1%), G(±2%), J(±5%)
2	Short time overload	4.13 5 x Rated power for 5s. Measure resistance after 30 min.	$\Delta R \leq \pm (1\% + 0.1m\Omega)$
3	Solderability	4.17 After immersing flux, dip in the 245±2°C, molten solder bath for 3±0.5 s.	Over 95% of termination must be covered with Solder
4	Resistance to soldering heat	4.18 With 260±5°C for 10±1s	$\Delta R \leq \pm (1\% + 0.1m\Omega)$ No mechanical damage.
5	Load life in Humidity	4.24 40 °C±2 °C with relative humidity 90~95% D.C. rated voltage for 1.5 h "ON", 30min "OFF" Cycle repeated 1,000h	$\Delta R \leq \pm (1\% + 0.5m\Omega)$
6	Temperature coefficient of resistance	4.8 Test temperature: T1~T2: 25°C~55°C T1~T2: 25°C~155°C $TCR(ppm/^{\circ}C) = (R2-R1)/R1 \times 1 / (T2-T1) \times 10^6$	See Table-1.
7	Load life	4.25 Rated voltage for 1.5 h for followed by a pause 0.5 h at 70±2°C. Cycle repeated 1,000h	$\Delta R \leq \pm (1\% + 0.5m\Omega)$
8	Insulation resistance	4.6 Test voltage: 100±15Vdc	Between termination and coating must be over 1000MΩ
9	Bending strength	4.33 Resistance change after bended on the 90mm PCB. Bending: 3mm Duration: 10s	$\Delta R \leq \pm (1\% + 0.5m\Omega)$ No mechanical damage

8. Taping

8.1 Taping dimensions

Taping dimensions shall be in accordance with Figure-3 and Table-5.

Unit: mm



\*Accumulated dimensional tolerance 40±0.2mm

Figure-3

Table-5

Unit: mm

Style	A	B	W	E
WLP63	3.5±0.2	6.75±0.20	12.0±0.3	5.5±0.05

8.2 Peel strength of top cover tape

The peel speed shall be about 300 mm/min

The peel force of top cover tape shall between 0.1 to 0.7N

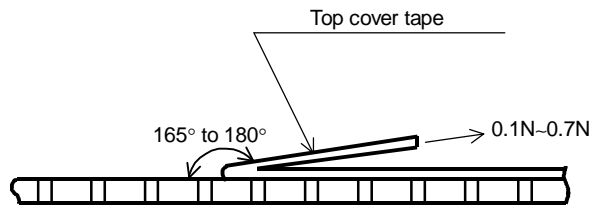


Figure-4

### 8.3 Reel dimension

Reel dimensions shall be in accordance with the following Figure-5 and Table-6.

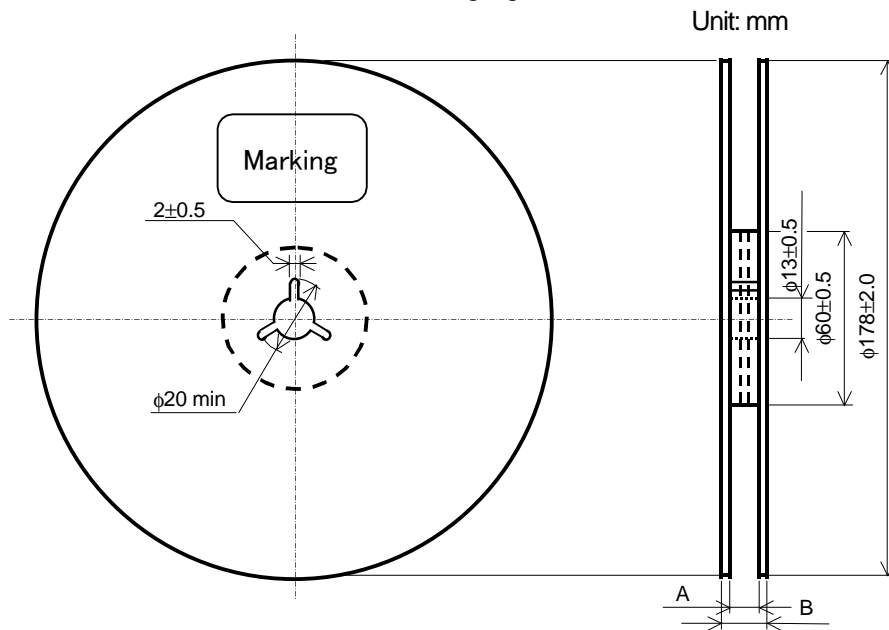


Figure-5

Table-6

Unit: mm

Style	A	B
WLP63	13.8±1.5	16.7 max.

### 9. Marking on package

The label of a minimum package shall be legibly marked with follows.

(1) Classification

(Style, Rated dissipation, Temperature coefficient of resistance, Rated resistance, Tolerance on rated resistance, Packaging form)

(2) Lot number (3) Quantity (4) Manufacturer's name or trade mark (5) Others