APPROVAL SHEET

Product Name	**: Metal Strip High Power Low Ohm Chip Resistor**
Part No.	**: RHL Series**
Description	**: High Power / Extra Low Ohm**

For more contact information, please refer to our website: www.rideetech.com

Metal Strip High Power Low Ohm Chip Resistor _ RHL Series

Applications

— Household Appliances.

— Power Supply

— Industrial Product Power Management.

Pb-free
RoHS COMPLIANT
HALOGEN FREE

Features

— Extra Low ohm and Low TCR .

— High Power Up to 5W

— Low Inductance

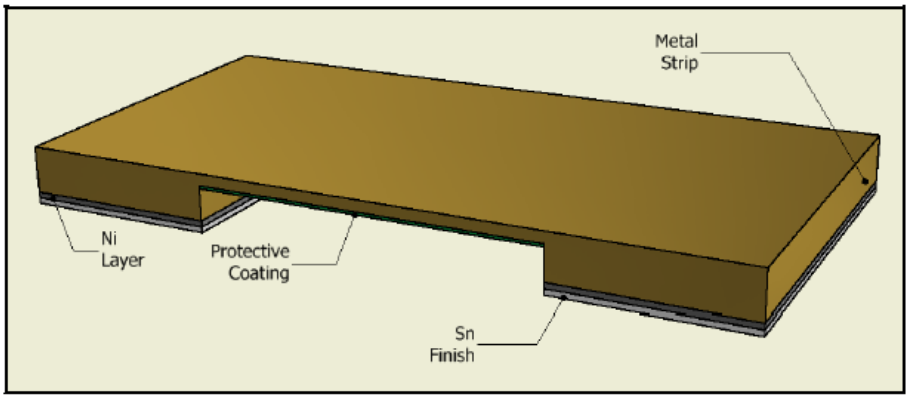
— RoHS compliant

— Meet AEC-Q200 Compliant

Part Number Explanation

RHL	2512	30	F	R005	T	S
Product	**Size (Inch)**	**Rated Power**	**Tolerance**	**Resistance**	**Packaging**	**Functional**
Metal Strip High Power Low Ohm Chip Resistor	2512	20 : 2.00W 25 : 2.50W 30 : 3.00W 50 : 5.00W	F : ±1.0% H : ±3.0% J : ±5.0%	R005=5mΩ R012=12mΩ 1M50=1.5mΩ M500=0.5mΩ	T= Tape & Reel	S= Standard

Configuration

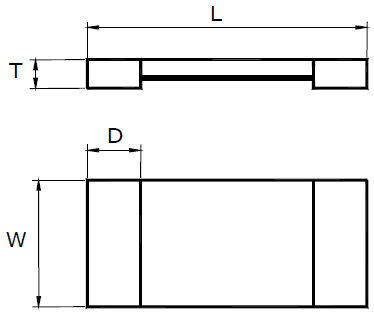


Standard Electrical Specifications

Type	Rated Power at 80℃	Max Working Current	Max Overload Current	Temperature Coefficient (TCR; ppm/℃)	Resistance Range
					F(± 1%) H(± 3%) J(± 5%)
RHL2512	3W	141A	316A	±150	0.15mΩ~0.3mΩ
	5W	100A	224A	±50	0.5mΩ~3.5mΩ
	2.5W	25A	56A	±50	4mΩ~6mΩ
	2W	18A	39A	±50	6.5mΩ~10mΩ

• Functional code: S
• Beyond the above specification also can meet the special requirements. For detail questions, please contact us freely.

Dimension

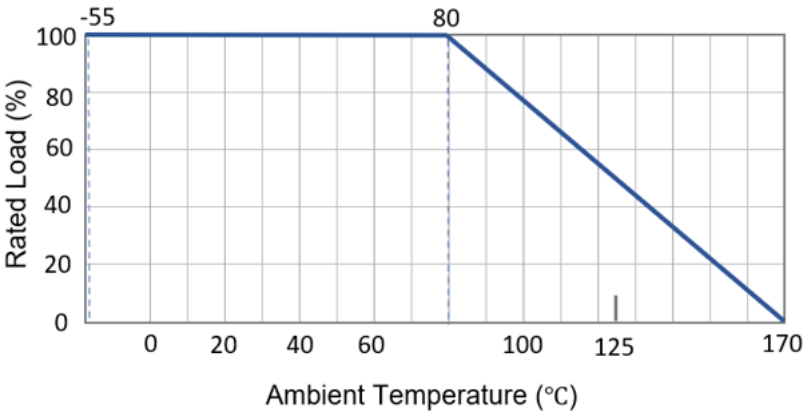


Unit: mm

Resistance	L	W	D	T
0.15mΩ	6.35±0.25	3.00±0.30	2.98±0.25	1.00±0.2
0.20mΩ	6.35±0.25	3.00±0.30	2.88±0.25	1.00±0.2
0.25mΩ ~ 0.30mΩ	6.35±0.25	3.00±0.30	2.68±0.25	1.00±0.2
0.40mΩ	6.35±0.25	3.00±0.30	2.18±0.25	1.00±0.2
0.50mΩ	6.35±0.25	3.00±0.20	2.68±0.25	0.60±0.2
0.75mΩ	6.35±0.25	3.00±0.20	2.48±0.25	0.60±0.2
1mΩ	6.35±0.25	3.00±0.20	1.93±0.25	0.60±0.2
1.5mΩ	6.35±0.25	3.00±0.20	1.43±0.25	0.60±0.2
2mΩ ~ 3.5mΩ	6.35±0.25	3.00±0.20	1.18±0.25	0.60±0.2
4mΩ ~ 4.5mΩ	6.35±0.25	3.00±0.20	2.18±0.25	0.60±0.2
5mΩ ~ 6mΩ	6.35±0.25	3.00±0.20	1.93±0.25	0.60±0.2
6.5mΩ ~ 7mΩ	6.35±0.25	3.00±0.20	1.43±0.25	0.60±0.2
8mΩ ~ 10mΩ	6.35±0.25	3.00±0.20	1.18±0.25	0.60±0.2

Derating Curve

Operating Temperature Range: -55 to +170℃



Recommended Customer Soldering Parameters

Recommended IR Reflow Soldering Conditions

Preliminary heating: 150℃~180℃, 120s max
Soldering: 220℃, 60s max
Peak temperature: 245℃, 15s max

Voltage Rating or Current Rating

The direct or alternating voltage for the rated power can be calculated from the following formula but must not exceed the maximum voltage.

$V=\sqrt{P \times R}$

V=Rated Voltage(V)
P=Rated Power(W)
R=Rated Resistance(Ω)

Reliability Test and Requirement

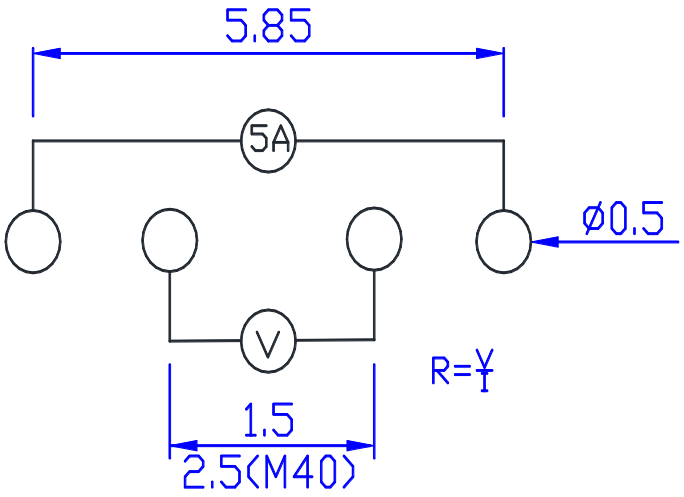
Test Item	Test Method	Procedure	Requirements
High Temperature Exposure (Storage)	AEC-Q200 7.3 MIL-STD-202 Method 108	1000hrs. T=125C. Unpowered. Measurement at 24±4hrs after test conclusion	△R≦ ±1%+0.5mΩ
Temperature Cycling	AEC-Q200 7.4 JESD22 Method JA-104	1000 cycles (-55C to +125C). Measurement at 24±4hrs after test conclusion. 30 m max., dwell time at each temp extreme, transition time 1m max.	△R≦ ±1%+0.5mΩ
Biased Humidity	AEC-Q200 7.7 MIL-STD-202 Method 103	1000hrs. 85C/85%RH. 10% of operating power. Measurement at 24±4hrs after test conclusion.	△R≦ ±1%+0.5mΩ
Operational Life	AEC-Q200 7.8 MIL-STD-202 Method 108	Condition D (1000hrs) Steady State TA=125C at rated power. Measurement at 24±4hrs after test conclusion	△R≦ ±1%+0.5mΩ
External Visual	AEC-Q200 7.9 MIL-STD-883 Method 2009	Electrical test not required. Inspect device construction, marking and workmanship	△R≦ ±1%+0.5mΩ
Physical Dimension	AEC-Q200 7.10 JESD22 Method JB-100	Verify physical dimensions to the applicable device detail specification. Electrical test not required	User spec.
Resistance to Solvents	AEC-Q200 7.12 MIL-STD-202 Method 215	Aqueous wash chemical-OKEM Clean or equivalent Do not use banned solvents.	△R≦ ±1%+0.5mΩ
Mechanical Shock	AEC-Q200 7.13 MIL-STD-202 Method 213	Figure 1 of Method 213. Condition C	△R≦ ±1%+0.5mΩ
Vibration	AEC-Q200 7.14 MIL-STD-202 Method 204	5g's for 20min., 12 cycles each of 3 orientations. Use 8"*5" PCB .031" thick 7 secure points on one long side and secure points at corners of opposite sides. Parts mounted within 2"from any secure point. Test from 10-2000Hz	△R≦ ±1%+0.5mΩ
Resistance to Soldering Heat	AEC-Q200 7.15 MIL-STD-202 Method 210	Condition B. No pre-heat of samples. Single Wave Solder-Procedure 2 for SMD	△R≦ ±1%+0.5mΩ
Solderability	AEC-Q200 7.18 J-STD-002	Electrical test not required. Magnification 50X. SMD Conditions: a) Method B, 4hrs @155C dry heat @235C b) Method B @215C category 3 c) Method D category 3@260C.	>95% coverage
Electrical Characterization	AEC-Q200 7.19 User Spec.	Parametrically test per lot and sample size requirements, summary to show min, max, mean and standard deviation at room as well as min and max operating temperatures.	User Spec.
Bending Strength	AEC-Q200 7.21 AEC Q200-005	Appendix 2 Note: 2mm (Min)	△R≦ ±1%+0.5mΩ
Terminal Strength	AEC-Q200 7.21 AEC Q200-006	Appendix 1 Note: Force of 1.8kg for 60 seconds	△R≦ ±1%+0.5mΩ

Measurements

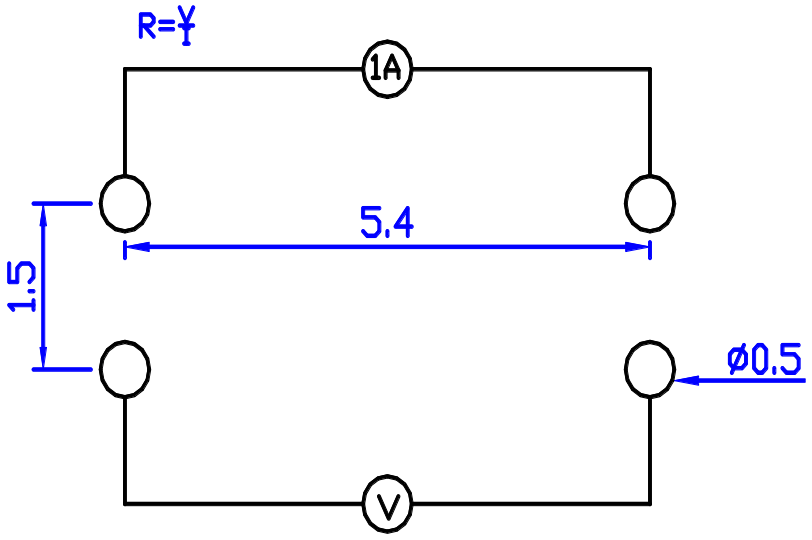
4-wire precision measurement

Equipment: ADEX AX-1152D DC Low Ohm Meter

Excitation Current: 5A for 0.15mΩ~0.4mΩ



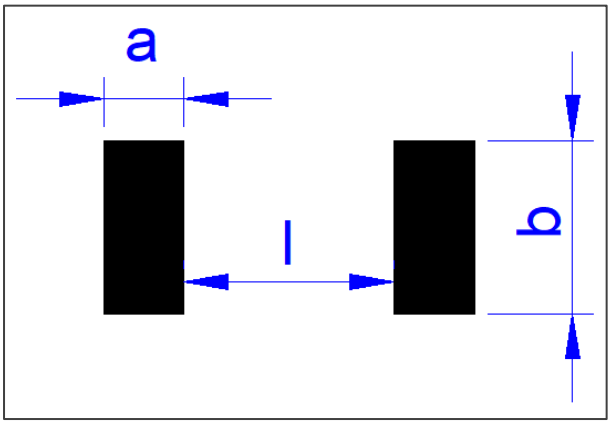
Excitation Current: 1A for 0.5mΩ~10mΩ



Unit: mm

■Recommend Land Pattern Design

■ 2-wire pad layout (For 0.5mΩ to 0.15mΩ)

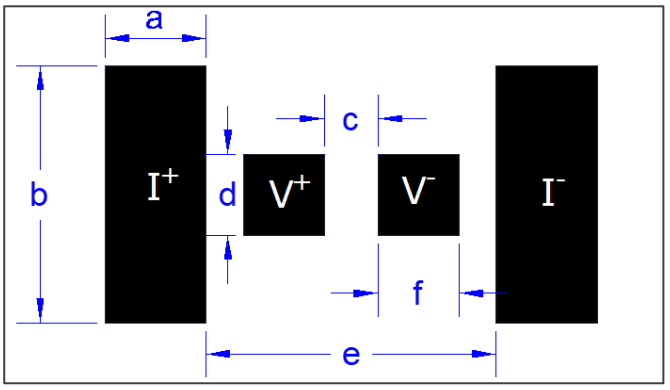


* Note: No circuits between pads to avoid short circuit

Unit: mm

Type	a	b	l
0.5mΩ	3.13	3.4	0.54
0.75mΩ	2.93	3.4	0.94
1mΩ	2.38	3.4	2.04
1.5mΩ	1.88	3.4	3.04
2mΩ~3.5mΩ	1.63	3.4	3.54
4mΩ~4.5mΩ	2.63	3.4	1.54
5mΩ~6mΩ	2.38	3.4	2.04
6.5mΩ~7.5mΩ	1.88	3.4	3.04
8mΩ~15mΩ	1.63	3.4	3.54

■ 4-wire pad layout (For 0.15mΩ to 0.40mΩ)

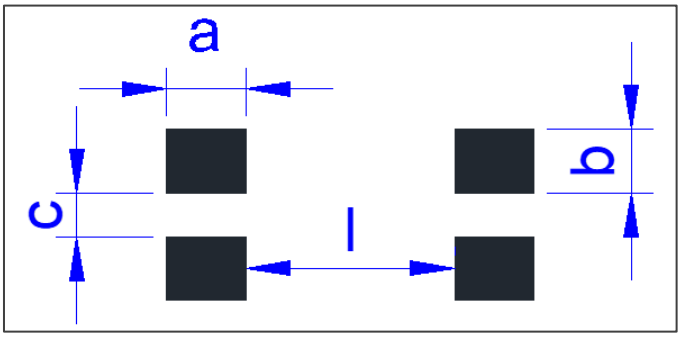


* Note: No circuits between pads to avoid short circuit

Unit: mm

Type	a	b	c	d	e	f
0.15mΩ~0.3mΩ	2	3.4	1.0	0.6	2.8	0.6
0.40mΩ	1.5	3.4	2.0	0.6	3.8	0.6

■ 4-wire pad layout (For 0.5mΩ to 10mΩ)

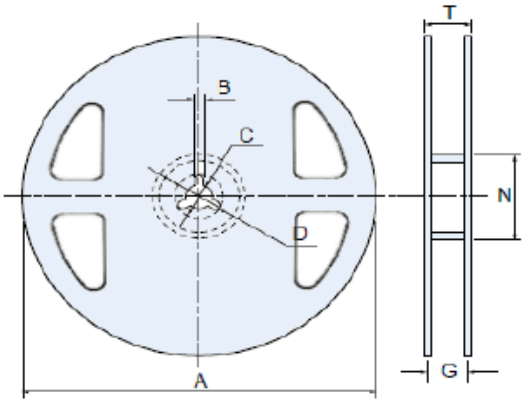


* Note: No circuits between pads to avoid short circuit

Unit: mm

Type	a	b	c	l
0.5mΩ	3.13	1.2	1.0	0.54
0.75mΩ	2.93	1.2	1.0	0.94
1mΩ	2.38	1.2	1.0	2.04
1.5mΩ	1.88	1.2	1.0	3.04
2mΩ~3.5mΩ	1.63	1.2	1.0	3.54
4mΩ~4.5mΩ	2.63	1.2	1.0	1.54
5mΩ~6mΩ	2.38	1.2	1.0	2.04
6.5mΩ~7.5mΩ	1.88	1.2	1.0	3.04
8mΩ~10mΩ	1.63	1.2	1.0	3.54

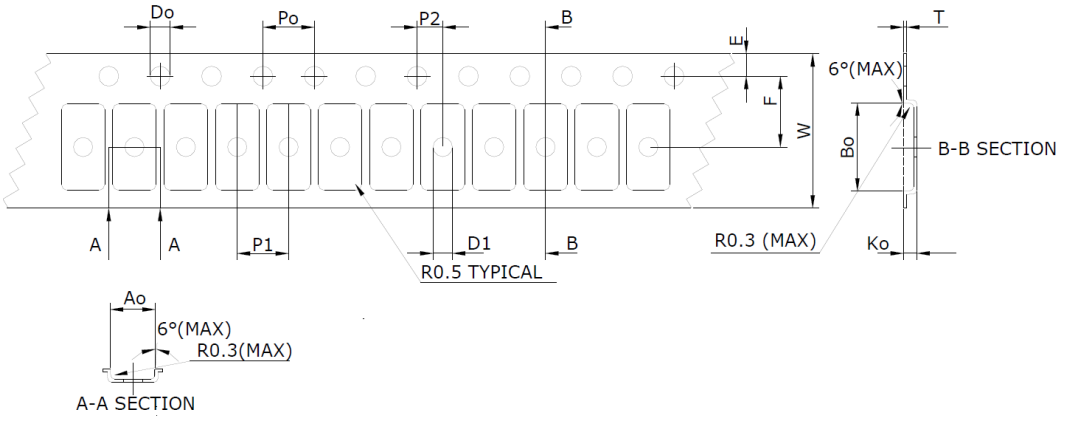
Packaging Information



Unit : mm

Size	Packaging Q'ty	A	N	C	D	B	G	T
2512	4kpcs/Reel	178.0±2.0	60.0±0.5	13.0±0.5	20(Min.)	2.0±0.5	13.8±1.5	16.7max.

Tapping Specification



Unit : mm

Size	Ao	Bo	Ko	Po	P1	P2	T
2512	3.40±0.10	6.75±0.10	0.80±0.10	4.0±0.10	4.0±0.10	2.0±0.10	0.25±0.1
	E	**F**	**Do**	**D1**	**W**	**10Po**	
	1.75±0.1	5.5±0.05	1.55±0.05	1.5 (MIN)	12.0±0.3	40.0±0.2	