THUNDER PRECISION RESISTORS

APPROVAL SHEET

YLRY-0805 SERIES

Low Resistance Metal Strip Chip Resistors

Version	Date	Description of amendment	Draft	Checked
A1.0	06-Jun-2025	First edition release	黄文强	王磊

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1.Product Description

Product name:YLRY-0805 series

Description:YLRY-0805 series alloy chip resistors provide precise current sensing with low TCR and high power, ideal for automotive and industrial applications.

1.1 Part Number Explanation

The part number of the high power precision resistor is identified by the type name, power, tolerance, size and resistance value.

Example: YLRY05-W2-10F

Type	Size	Power	Resistance	Tolerance
YLRY	05=0805	W2=0.5W	10=10mΩ 0= 0mΩ	D=±0.5% F=±1% G=±2% J=±5% Z=0mΩ

(1) **Type name:** YLRY series

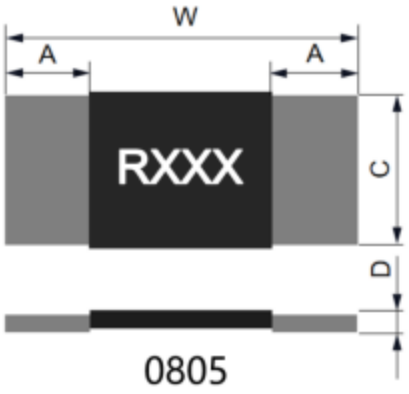
(2) **Size:**05=0805;

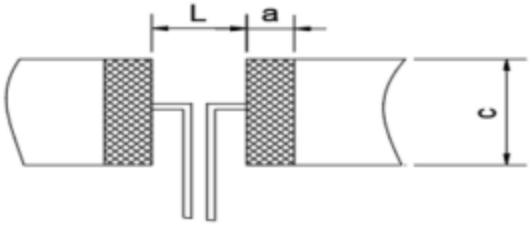
(3) **Power Rating:**W2=0.5W;

(4) **Resistance：**10=10mΩ;0= 0mΩ

(5) **Tolerance：**D=±0.5%;F=±1%;G=±2%;J=±5%;Z=0mΩ

1.2 Products & Recommend Pad Dimension



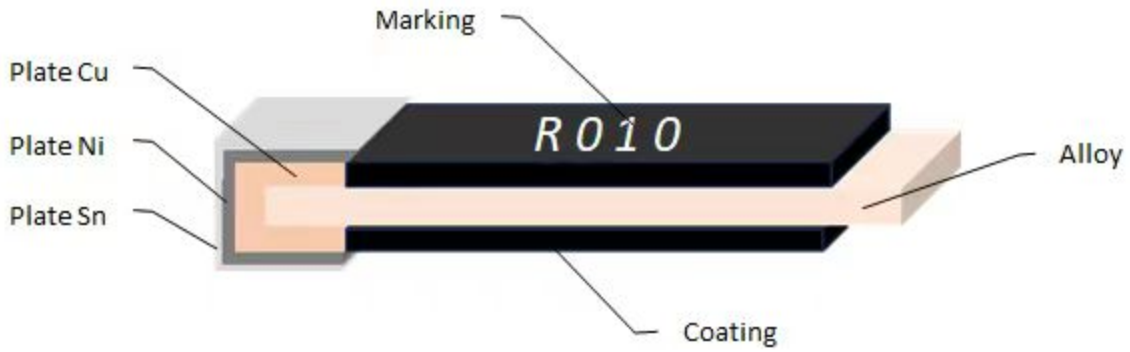


Unit/mm

Type	Resistance	W±0.2	C±0.2	A±0.2	D±0.2	L	a	c
YLRY05	0 & 3~40mΩ	2.0	1.25	0.35	0.5	1	1	1.5

1.3 Item Construction

Electron-beam welded constructions



2. Standard Electrical Specifications

Type	Rated Power (W) P70℃	Resistance /mΩ	Resistance Tolerance (%)	TCR① (ppm/℃)	Operating Temperature (℃)
YLRY05	0.5	3~40	D: ±0.5% F：±1% G：±2% J：±5%	±50	-55℃~170℃

Jumper	Rated Power (W) P70℃	Resistance /mΩ	Resistance Tolerance (%)	Max Rated Current (A)	Operating Temperature (℃)
YLRY05	0.5	≤0.2mΩ	Z：0mΩ Jumper	35	-55℃~170℃

① TCR（ppm/℃）：Test was conducted from 20℃ to 120℃ while 20℃ worked as the reference.

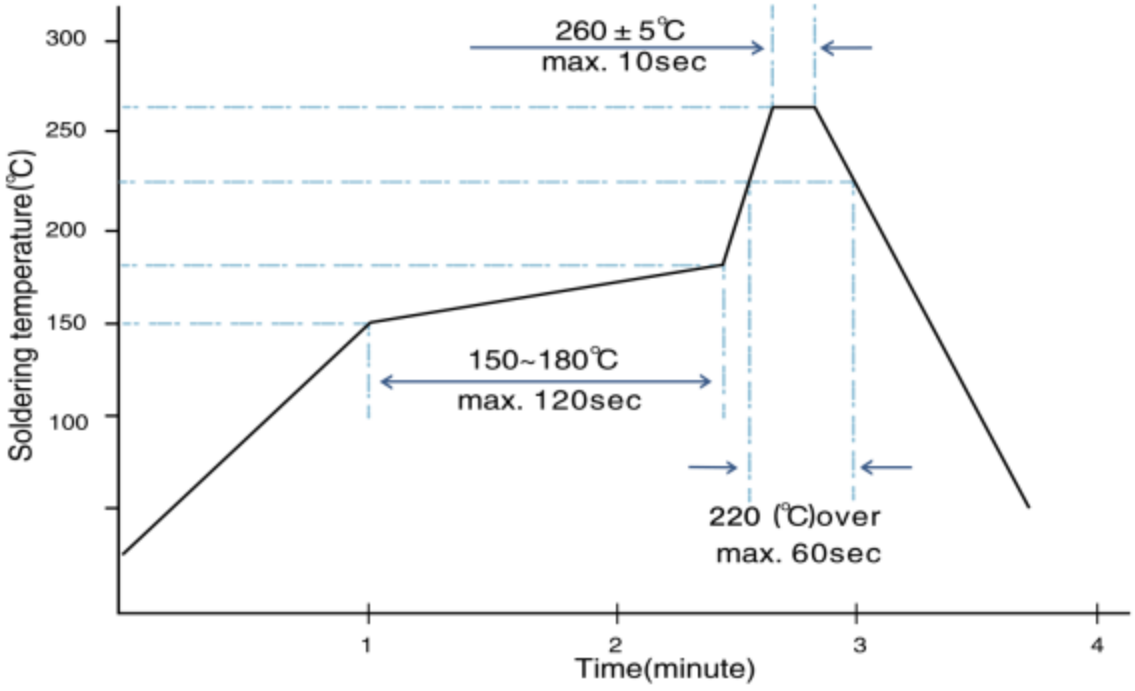
3. Endurance Test

Items	Test Method (Refer to IEC 60115,60068；JIS-C 5201-1)	Specifications and Requirements
Temperature coefficient (TCR)	Resistance values were measured at 25℃(T1, R1) and 125℃(T2, R2), and TCR was calculated as (R2-R1)/ (R1 (T2-T1)) *10^6	Refer to TCR specifications for physical features

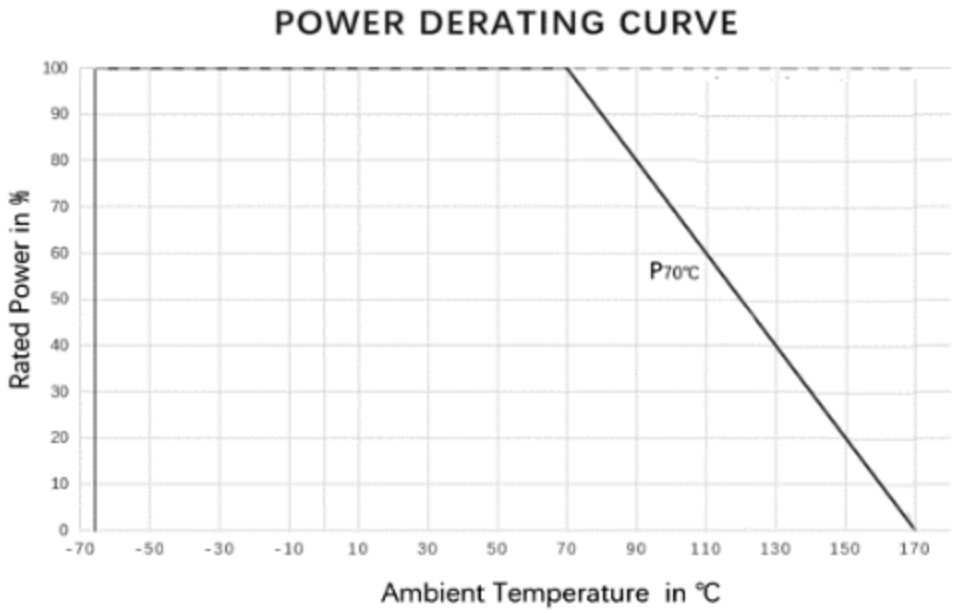
Items	Test Method (Refer to IEC 60115,60068；JIS-C 5201-1)	Specifications and Requirements
Short Time Overload	5 times rated power, maintain 5s	△R≤ ±（1%+0.05mΩ）
Insulation resistance	Apply 100V±15V DC voltage between electrode and substrate, hold for 60 seconds, then measure insulation resistance	> 100 MΩ
Withstand voltage	An alternating current with an effective value of the maximum overload voltage is applied between the electrode and the substrate at a rate of approximately 100V/S, maintaining 60±5s	No breakdown or arc
solderability	245℃±5℃ tin tank, hold 2s±0.5s	At least 95% of surface area of electrode shall be covered with new solder
Resistance to Soldering Heat	270℃±5℃ tin tank, hold for 10s±1s	△R≤±(0.5%+0.05mΩ)，no visible damage
Bending test	Bending distance 2mm, hold time 60s±5s	△R≤±（0.5%+0.05mΩ）no mechanical damage
Solvent resistance	Isopropanol (IPA) at 23℃±5℃ for 10 hours	No obvious damage to appearance
High Temperature Exposure	170℃±2℃, 1000H, stand for 1H, test the resistance value	△R ≤±(1.0%+0.05mΩ)

Items	Test Method (Refer to IEC 60115,60068；JIS-C 5201-1)	Specifications and Requirements
Low Temperature Exposure	-55℃±2℃, 1000H, stand for 1H, test the resistance value	△R ≤± (0.5%+0.05mΩ)
Rapid change of Temperature	-55℃ 30 minutes ~ normal temperature 5 minutes ~155℃ 30 minutes, 1000 cycles	△ R ≤± (0.5%+0.05mΩ)
Load Life	70℃±2℃, 1000 hours, rated power， 1.5 hours on / 0.5 hours off	△R ≤± (1.0%+0.05mΩ)
Moisture with Load	85℃±2℃, 85%±3%RH, 1000 hours, rated power, 1.5 hours on / 0.5 hours off	△R≤± (1.0%+0.05mΩ)

4.Solder Reflow Temperature Condition



5.Power Derating Curve



6.Marking

White Printed Marking:

- All the products marking are 3 or 4 digits. 'R' designates the decimal location in ohms

  E.g., :

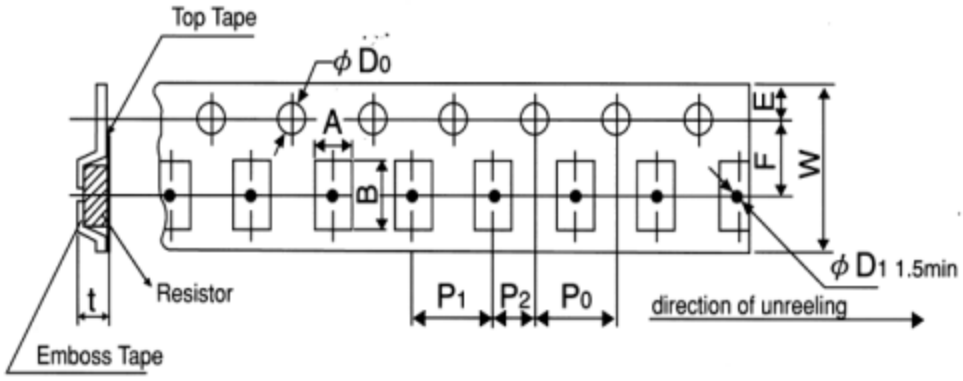
- 0= 0mΩ jumper; 5mΩ=R005； 50mΩ=R050

7.Packing

Storage Conditions: Storage Conditions: Temperature:5℃~35℃, Humidity:40%~75%

Storage life: 1 year;

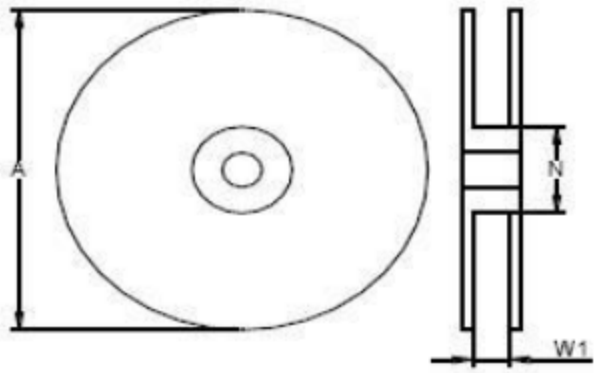
Packing Type: Embossed Plastic Tape



Unit/mm

Type	A± 0.05	B± 0.1	W± 0.2	F± 0.05	E± 0.1	P1± 0.1	P2± 0.05	P0± 0.05	D0± 0.1	t± 0.1	Qty /reel
YLRY 05	1.65	2.4	8.0	3.5	1.75	4	2	4	Φ1.5	0.8	5000

8.Reel & Tape Specifications



Unit/mm

Type	A	N	W1
YLRY05	178±2	60±1	9±0.3

This document is a product specification. Contents are subject to change without notice.

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