

## HoCG2817 Series Automotive Grade Metal Alloy Resistors Datasheet

### ■ Features

- ① The first manufacturer of alloy resistors using high thermal conductivity epoxy resin in China.
- ② Eco-friendly laser-etched markings for a premium look.
- ③ Alloy chip, encapsulated for superior solderability, reliability, and overload ability.
- ④ Consistent performance, high precision, high reliability, high stability.
- ⑤ Low resistance temperature coefficient, ultra-low parasitic inductance, can be used for high-frequency AC current detection.
- ⑥ Compliant with ROHS and halogen-free requirements, automotive AEC-Q200 testing.



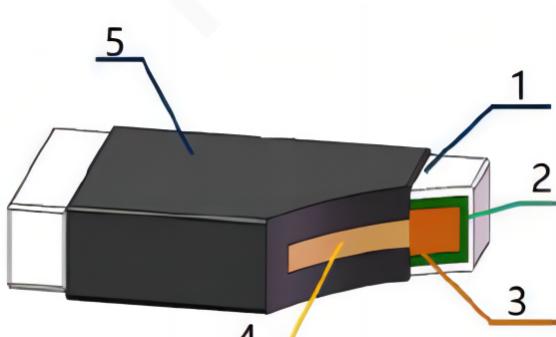
### ■ Application

- ① Power Module ② Aerospace and military industry ③ BMS Management System ④ Automatic Control System
- ⑤ Control unit for automotive modules ⑥ Variable frequency drive ⑦ Servo drive system ⑧ Industrial equipment

### ■ Product electrical parameters

Part No.	Power	Resistance Range	TCR	Operating temperature range	Tolerance	Max. Rated Current	Max. Overload Current	Inductance
2817	5W	0	/	-55°C~+170°C	±0.1% ±0.2% ±0.5% ±1% ±5%	/	/	< 3nH
		R 1m	±75pm			158.11A	353.55A	
		1m < R 3m	±50pm			70.71A	158.11A	
		3m < R 100mΩ	±25ppm~±50ppm			40.82A	91.28A	

### ■ Product Structure

	<table border="1"> <thead> <tr> <th>No.</th><th>Layer Name</th></tr> </thead> <tbody> <tr> <td>1</td><td>Tin</td></tr> <tr> <td>2</td><td>Nickel</td></tr> <tr> <td>3</td><td>Copper</td></tr> <tr> <td>4</td><td>Alloy body</td></tr> <tr> <td>5</td><td>Plastic</td></tr> </tbody> </table>	No.	Layer Name	1	Tin	2	Nickel	3	Copper	4	Alloy body	5	Plastic
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**REACH**
**AEC-Q200**


## ■ Product Selection

Selection Example: <b>HoCG2817 5 R003 F2</b>							Enclosure Alloy Resistors 2817 5 W 3 mΩ 1%							
H	o	C	G	2	8	1	7	5	R	0	0	3	F	2
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Manufacturer	Product Catagory	Package	power	Resistance	Tolearance	Packing Q'ty								
Shenzhen Milliohm Electronic Ltd	Enclosure Alloy	2817	5=5W	R001=1mR R003=3mR R100=100mR 1m50=1.5mR	A=0.1% C=0.2% D=0.5% F=1% J=5%	2=2000pcs								

For the detail parameters , please check the following page

## ■ Dimension( Unit : mm)

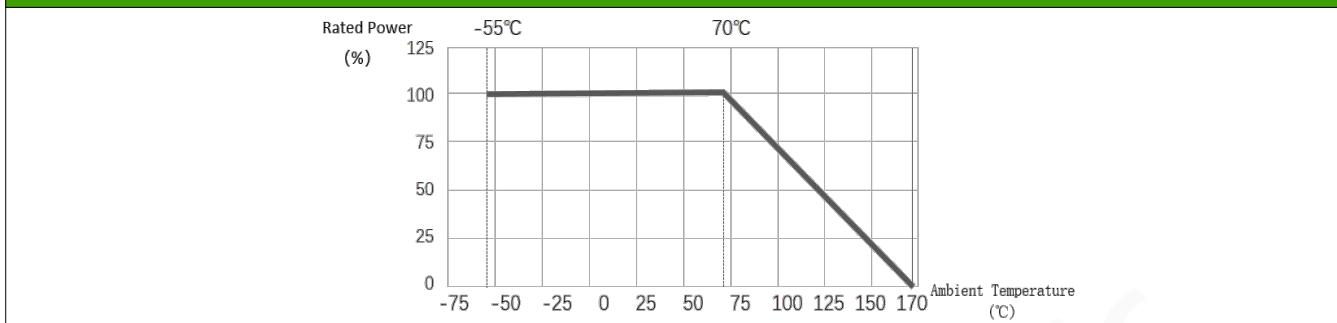
Package	Resistance	L	W	C	T	H
2817	0Ω~100mΩ	7.4±0.25	4.6±0.35	1.3±0.25	0.8±0.25	1.1±0.25

## ■ Recommended Pad Size

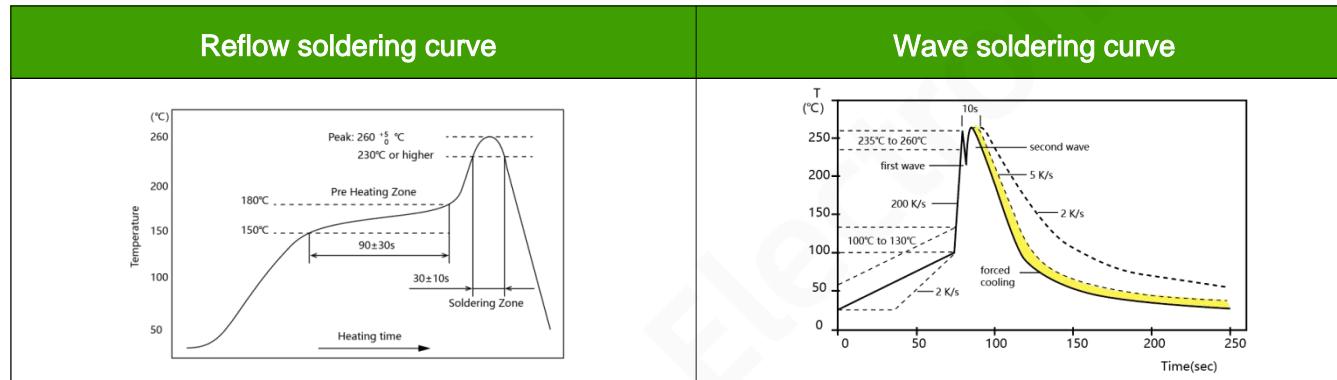
Resistance	A	L	B
0Ω~100mΩ	5.1	3.51	2.5

## ■ Power Curve

Power reduction diagram: Operating temperature range -55 ~ +170 Resistance temperature reaches 70°C



## ■ Recommended welding parameters



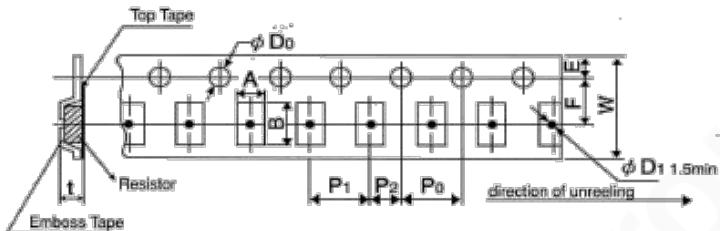
## ■ Reliability Test

Item	Standard	Testing Conditions	Testing Limit
Temperature coefficient	IEC60115-1-4.8 JIS-C5201-4.8	Test temperature +25 ~ 125°C Reference temperature +25°C	Within specified value
Load Life	IEC60115-1-4.25.1 JIS-C5201-4.25.1	At rated power: 1000 hours, 70°C, "on" 1.5 hours, "off" 0.5 hours	No visible damage $\Delta R \pm 1\%$
Short-term overload	IEC60115-1-4.13 JIS-C5201-4.13	5 times rated power, 5 seconds	No visible damage $\Delta R \pm 1\%$
High temperature and High humidity	IEC60115-1-4.24.2.1a) JIS-C5201-4.24.2.1a)	85°C, 85% relative humidity, 1000 hours, load 10% rated power	No visible damage $\Delta R \pm 1\%$
Temperature Cycle	IEC60115-1-4.19 JIS-C5201-4.19	-55@30min ~ +155@30min, 1000 cycles	No visible damage $\Delta R \pm 0.5\%$
Withstand welding heat	IEC60115-1-4.18 JIS-C5201-4.18	260±5, 10±1sec	No visible damage $\Delta R \pm 0.5\%$
Solderability	IEC60115-1-4.17 JIS-C5201-4.17	45±5, 2±0.5s	At least 95% of the electrode surface should be covered with new solder
High temperature storage	IEC60115-1-4.23.2 JIS-C5201-4.23.2	1000 hours @170, no load	No visible damage $\Delta R \pm 1\%$
Low temperature storage	IEC60115-1-4.23.4 JIS-C5201-4.23.4	1000 hours @-55, no load	No visible damage $\Delta R \pm 1\%$
Substrate bending	IEC60115-1-4.33 JIS-C5201-4.33	2mm, holding time 60+5 seconds	Within specified value
Withstand voltage	IEC60115-1 4.7 JIS C 5201-1 4.7	Apply an AC voltage with an effective value of the maximum load voltage between the electrode and the substrate at a rate of about 100V/S for 60+5 seconds	No breakdown or arcing
Solvent resistance	IEC60115-1 4.29 JIS C 5201-1 4.29	Isopropyl alcohol (IPA), solvent temperature: 23±5, duration 5±0.5min	Clear markings No visible damage

## ■ Rated current calculation formula

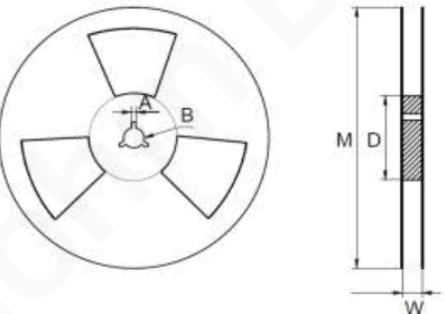
Rated current calculation formula			
$I = \sqrt{P/R}$	I	P	R
	Rated Current(A)	Rated Power (W)	Resistance ( $\Omega$ )

## ■ Carrier tape size



A	B	W	F	E	P1	P2	P0	D0	T
5.0±0.2	7.5±0.2	16±0.2	7.5±0.05	1.75±0.1	8.0±0.1	2±0.05	4±0.05	1.5+0.1	1.1±0.15

## ■ Reel Specifications



W	M	A	B	D	Quantity
17.4±0.5	178±1	2.5±1	13.2±1	60.2±2	2000PCS

## ■ Peel strength of upper tape

Peeling speed: 300 mm/min; peeling force between 0.1N and 0.7N			
carrier tape	top cover tape	pull 300mm/min	standard:0.1~0.7N

## ■ Recommendations for product use

- ◆ During the use of the product, pay attention to surface protection: prevent defects such as bumps and scratches on the product surface.
- ◆ When installing and using the product, avoid mechanical stress on the product.
- ◆ The long-term use power of the product should be less than or equal to the rated power to avoid resistance drift caused by long-term use overload.
- ◆ When using the product under high temperature or poor heat dissipation conditions, refer to the power consumption reduction curve for derating applications.

## ■ Storage Instructions

- ◆ The product storage environment temperature is 5~35, humidity is <65%RH, and the humidity should be kept as low as possible.
- ◆ The product should be stored in a clean, dry environment without harmful gases.
- ◆ Avoid removing the product from the taping package before use.
- ◆ Under the above storage conditions, the product can be kept for 1 year.
- ◆ For products more than 1 year old, check the surface for oxidation and solder test is required.

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**■ Specification Revision Record:**

Version	Revised Date	Revised Content	Reason of Revised	Revised by	Approved by
A1	2025-03-15	Resistancerange, sizeand applicationrangeupdated	Product Optimization	Yongkang Huang	Wenyi Leng