

规格书

SPECIFICATION

客户名称:

CUSTOMER:

品名:

绕线电阻器-无引线系列

PARTNAME:

FHKNP-*****

规格:

SPECIFICATION:

版本号:

A02

VERSION:

日期:

2026-1-8

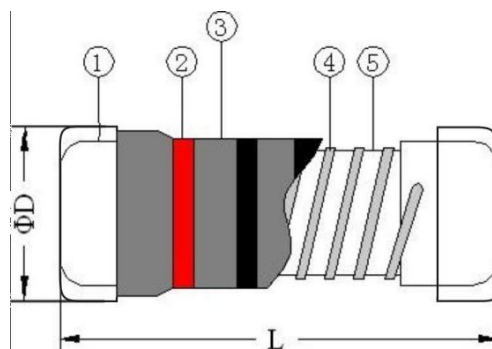
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制造			客户		
APPROVAL			APPROVAL		
拟制 Draft by	审核 Checked by	确认 Approve by	检验 Check by	审核 Checked by	批准 Approval by
张桂林	何建东	李四华			

一. 品名 TYPE NAME

FHKNP	0410	2WS	151	J
产品类别 Type	规格 Size	额定功率 Power Rating	标称电阻值 Nominal Resistance	精度 Tolerance
FHKNP	0207 0309 0410	1/2WS 1WS 2WS 1WSS 2WSS 3WSS	三位数系列：前两位表示有效数字，第三位表示有效数字后零的个数。 Three digits (E-24 series): The first two digits are significant figures and the third one denotes number of zeros. 小数点用R表示。Decimal point should be expressed by "R". 例：000=0Ω; 0R3 =0.3Ω ; 1R0 =1.0Ω ;151=150Ω; 122=1.2KΩ	J: ±5%

二. 绕线电阻器结构图 WIRE WOUND RESISTOR CONSTRUCTION



序号 NO.	材料名称 Name of the material
1	镀锡铁帽 Tin-coated cap
2	色环 The color wheel
3	阻燃性涂料 Flame retardant paint
4	合金丝 Resistance wire
5	陶瓷基体 The ceramic substrate

三. 特点 FEATURES

该产品抗浪涌性能好，体积小，便于安装，安全可靠，广泛用于电光源、开关电源、充电器及家用电器等电子设备中，获得安规认证。

It is a fusing resistor with good performance of anti-surge impact, small size for easy installation, high safety and reliability, and international certifications. The fusing resistor is widely used in electric light source, switching power supplies, chargers, home appliances, and other electronic equipment etc.

四. 主要技术指标 MAIN SPECIFICATION

规格 Type	额定功率 Rated Power W (70°C)	电阻值范围 Resistance range (Ω) ±5%	绝缘电压 (直流或交流峰) Insulation Voltage (DC /AC Peak Value) V	元件极限电压 Limiting Voltage V
207	1/2WS 1WSS	0.22 ~ 51	250	200
309	1/2WS 1 WS 2WSS	0.22 ~ 300	250	250
410	1WS 2WS 3WSS	0.22 ~ 510	350	350

一般数据 General Parameter

1、标称阻值允许偏差：±5% Standard resistance tolerance: ±5%

2、气候类别：55/155/21

Climatic category: 55/155/21

3、低气压：8.5kpa Low pressure: 8.5kpa

4、稳定度等级：5% Stability grade: 5%

5、阻值变化极限值 Limit resistance values:

5.1、长期试验 Long-run test: ±(5%R+0.1')

5.2、短期试验 Short-run test: ±(1%R+0.05')

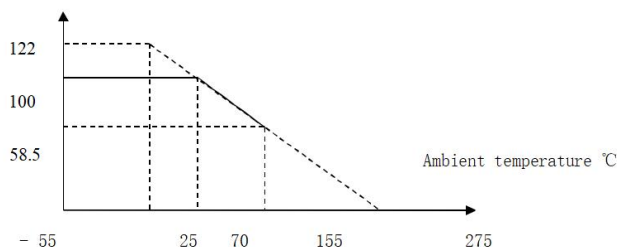
6、温度系数：≤350 ppm (特殊≤4800ppm)

Temperature coefficient: ≤1200 ppm

7、额定电流：I₂(A)=P(W)/R(Ω)

Rated current: I₂(A)=P(W)/R(Ω)

8、降功率曲线图 Power dissipation curve: Percentage of rated power dissipation %

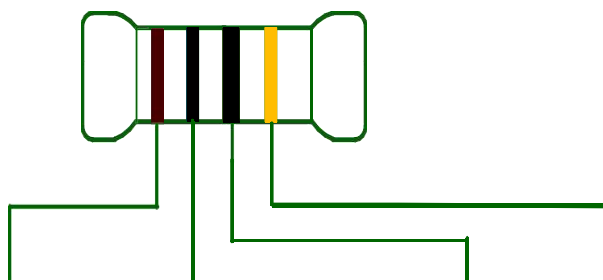


注：额定功率是在 70°C 温度下连续工作的最大值，超过 70°C 时按曲线降功耗。
Note: Rated power is the max. value at continuous operation under 70 °C. When exceeding 70°C, rated power will be as the above power dissipation curve.

9、主要试验项目、试验方法及性能要求（如无特殊说明，则均在标准试验大气条件下进行） The main test items, test methods and performance requirements (test should be carried out at standard atmosphere)

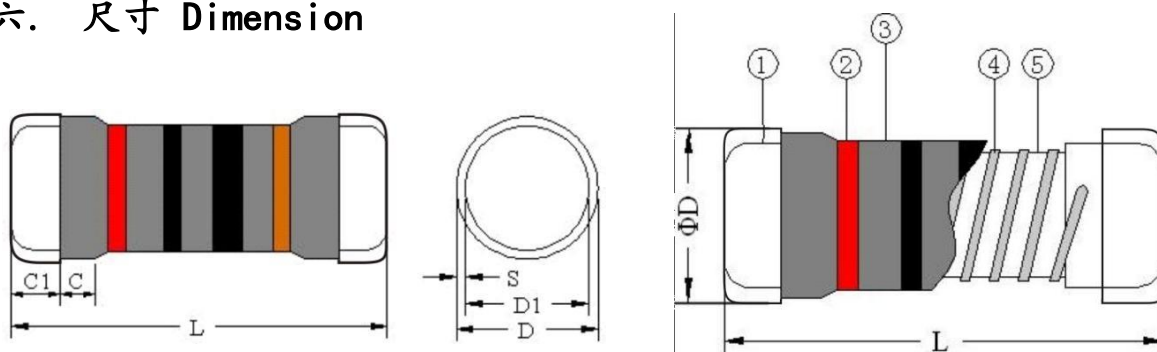
序号 NO.	试验项目 Test items	试验方法 Test methods
1	阻值 Resistance	电阻误差分选仪测量。 Tested by Resistance Tolerance Sorter
2	短时过负荷 Short-time overload	电阻器施加 2.5 倍的额定电压，持续5S，恢复 1~2h 后测量阻值，并计算阻值变化率。 Resistor is imposed 2.5 times rated voltage and lasts 5 seconds, then the voltage restores to the normal for 1-2h, and calculate the resistance change rate.
3	可焊性 Weldability	把电阻器帽子浸入(260±5)℃的焊料锅中，持续 2S 后，取出观察焊料覆盖面积 Groove welding means put the resistor terminal (260 + 5) °C to immerse in the solder pot, insert depth distance element main body lasts 2 + / - 0.5 S 2-0.5 mm, take out the observation area covered by solder.
4	耐电压 High voltage	把电阻器放在金属“V”形槽中，施加规定的绝缘电压，电压加在连在一起的两电阻引线及“V”形槽之间，持续60S。 Put resistor into a metal V-shaped groove, apply specified insulated voltage to the position between pigtailed and V-shaped groove for 60 seconds.
5	耐焊接热 Resistance to Soldering Heat	试前测量阻值，把电阻器帽盖浸入260±5℃的焊料锅中，持续 10±0.5S，恢复 1h 后测量阻值，计算阻值变化率 Before testing should be measured resistance and put the resistor cap into the solder pot to 260 + 5 °C for 10 + / - 0.5 S, restore for 1h, and to measure the rate of resistance changing.
6	耐久性 Endurance	把电阻器放在(70±3)℃的恒温箱内，输入额定直流电压，1.5h 通，0.5h 断，如此循环 1000h，取出后恢复 1—4h 后，测量阻值，计算阻值变化率。 Put resistor into a thermo tank (70±3) °C. Input rated AC voltage, work for 1.5 hours then break for 0.5 hour. By the way, cycle 1000 hours. Then take out resistor and don' t touch it for 1-4 hours, measure its resistance and calculate resistance change rate.
7	意外过载 Unexpected overload	将试验样品安装在距电阻主体25±3mm 的单层丝网圆筒内，施加 5、10、16倍额定功耗过负荷，持续 5min 或到电阻器变成开路时止。 Put sample into a single screen cylinder at 25 ±3mm to resistor body.

五. 标示 Marking



颜色 Color	第1 数字 First digit	第 2 数字 Second digit	第3 数字 Third digit	乘数 Malutiplier	误差率 Tolerance
黑 Black	0	0	0	10^0	—
棕 Brown	1	1	1	10^1	± 1
红 Red	2	2	2	10^2	± 2
橙 Orange	3	3	3	10^3	—
黄 Yellow	4	4	4	10^4	—
绿 Green	5	5	5	10^5	± 0.5
蓝 Blue	6	6	6	10^6	± 0.25
紫 Violet	7	7	7	10^7	± 0.1
灰 Gray	8	8	8	10^8	—
白 White	9	9	9	10^9	—
金 Gold	—	—	—	10^{-1}	± 5
银 Silver	—	—	—	10^{-2}	± 10
无 Plain	—	—	—	—	—

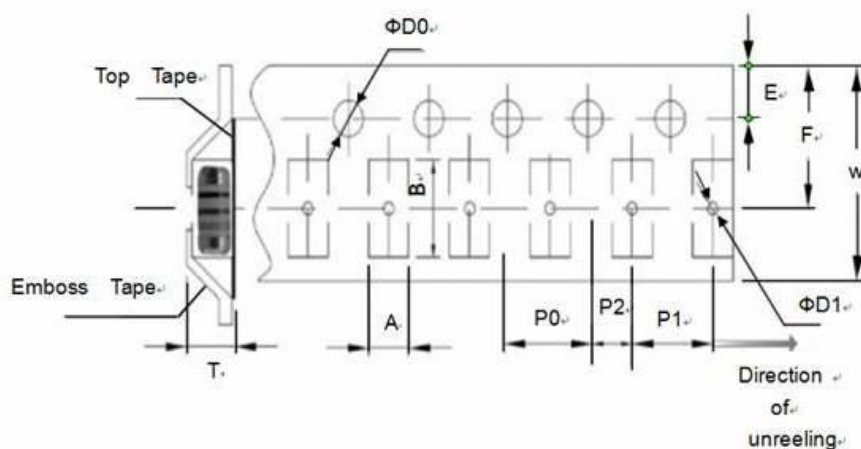
六. 尺寸 Dimension



规格 Type	额定功率 Rated Power WS	尺寸 Dimension (mm)		
		D	L	C1min
FHKNP0207	1/2WS, 1WSS	2.5 ± 0.3	6.3 ± 0.5	1.1 ± 0.3
FHKNP0309	1/2WS, 1 WS, 2WSS	3.3 ± 0.3	8.9 ± 0.5	1.4 ± 0.3
FHKNP0410	1WS, 2WS, 3WSS	4.1 ± 0.3	10.2 ± 0.5	1.6 ± 0.3

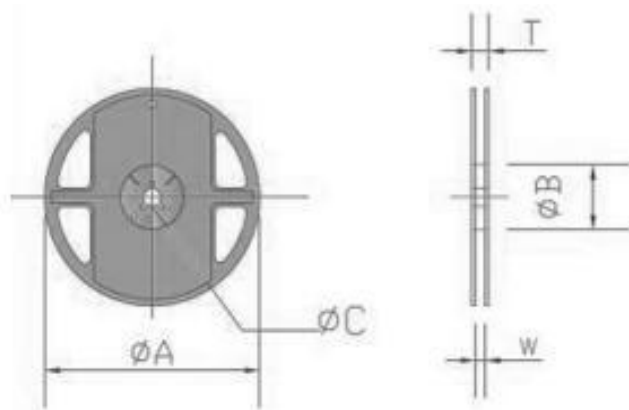
七、包装

1. 带装包装规格 (mm) Packaging specifications with contents (mm)



Tape	A	B	W	E	F	P0	P1	P2	ΦD0	T
207	2.8±0.1	6.8±0.1	12±0.3	1.75 ±0.1	5.5±0.1	4.0±0.1	4.0±0.1	2.0±0.1	1.5±0.1	0.25 ±0.05
309	3.7±0.1	9.2±0.1	16±0.3	1.75 ±0.1	7.5±0.1	4.0±0.1	4.0±0.1	2.0±0.1	1.5±0.1	0.25 ±0.05
410	4.3±0.1	10.4±0.1	16±0.3	1.75 ±0.1	7.5±0.1	4.0±0.1	4.0±0.1	2.0±0.1	1.5±0.1	0.35 ±0.05

2. 卷轴包装规格 (mm) Scroll packaging specifications (mm)



Type	ΦA	ΦB	ΦC	W	T	Bmboss Plastic Tape(EA)
207	330±1.5	100+0.1	13±0.5	13±0.5	17±0.5	2500
309	330±1.5	100+0.1	13±0.5	17±0.5	21±0.5	2500
410	330±1.5	100+0.1	13±0.5	17±0.5	21±0.5	2000

附加说明: Additional instructions:

1、产品存放条件 product storage conditions

a 电阻器应存放在干燥、通风的环境条件下，产品不得受阳光直接照射；

Resistor should be stored in dry and ventilated environment conditions, the product shall not be affected by direct sunlight ;

b 电阻器存放环境应无酸、碱、硫化等具有腐蚀气氛的环境中； Resistor to deposit environment should be no acid, alkali corrosion, sulfide, etc have atmosphere environment;

c 产品存储时间不得超过两年。Product storage time may not exceed two years .

2、产品使用补充说明 Products use added

a 产品功率负荷，遵循额定功率降功耗曲线负荷； Product power load, follow the rated power drop curve of load power consumption ;

b 工作电压按额定电压计算公式计算：Working voltage according to the rated voltage calculation formula:

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

式中：

V =额定电压（伏特） rated voltage (volt)

P =额定功率（瓦特） rated power (watts)

R =标称电阻值（欧姆） nominal resistance (ohms)