

Classification	Specification	Spec No.	KNP.APR-01
Product Name : KNP WIREWOUND NONFLAME RESISTORS		PAGE	8-1

1. General

Scope

This specification is available for Wire wound Non flame Resistors manufactured by ShenZhen TOPMAY ELECTRONIC CO., LTD.

Quality

The resistor is manufactured by highly quality-controlled process and guaranteed high reliability.

Standard measuring conditions

Temperature $20\pm 2^{\circ}\text{C}$ 、Humidity $65\pm 5\%$ 。

Temperature $20\pm 2^{\circ}\text{C}$ ，Humidity $65\pm 5\%$ 。

Being no doubt about the judgment, measurements can be made within the following Temperature $5\sim 35^{\circ}\text{C}$ ，Humidity $45\sim 85\%$ 。

The type designation shall be in the following form and as specified.

TMRW04		330	J	1	T
种类 Type		Nominal resistance value	Resistance tolerance		Packing
Normal	Small	E-24 Series	F	$\pm 1\%$	B-Bulk
		E-96 Series	J	$\pm 5\%$	T-Tape
KNP	KNPS		G	$\pm 2\%$	
			Rated power		
			1/2W	2	
			1W	1	
			1WS	1S	
			2W	X	
			3W	Y	
			5W	5	

Approved by

Drawn by

Li Guoming

Zhang Bin

Classification	Specification	Spec No.	KNP.APR-01
Product Name	KNP WIREWOUND NONFLAME RESISTORS	PAGE	8-2

Features

Super heat dissipation, small linear temperature coefficient. Instant overload Capability, low noise without annual shift on resistance value. Flameproof, light weight Paint Color Of white Noncombustible.

Rated power

Rated power is maximum power which can be continuously loaded at specified ambient temperature 70°C, however when the ambient temperature exceeds 70°C, rated power should be determined from the loss curve of Fig.1.

Rated voltage

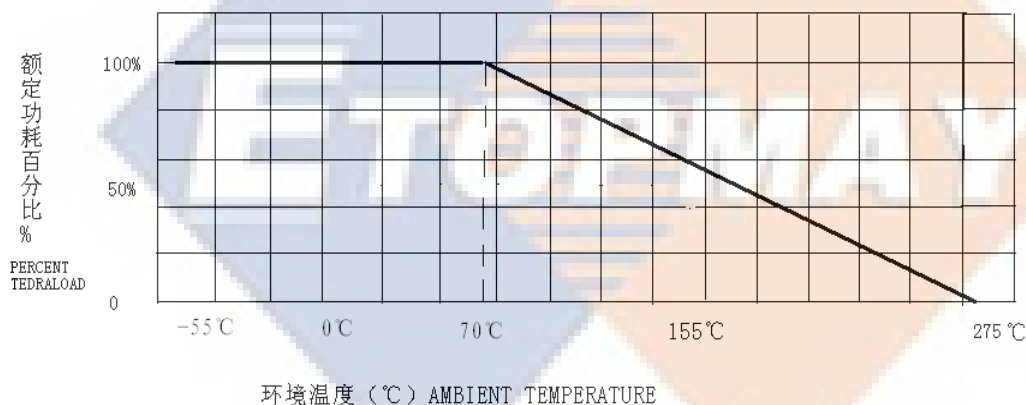
The rated voltage shall be the D.C. or A.C. (R.M.S. at power frequency) voltage which corresponds the rated power and the value of which is calculated from the formula below.

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

Where E: Rated voltage (V)

wire wound resistors power loss curve

P: Rated power (W)



Approved by

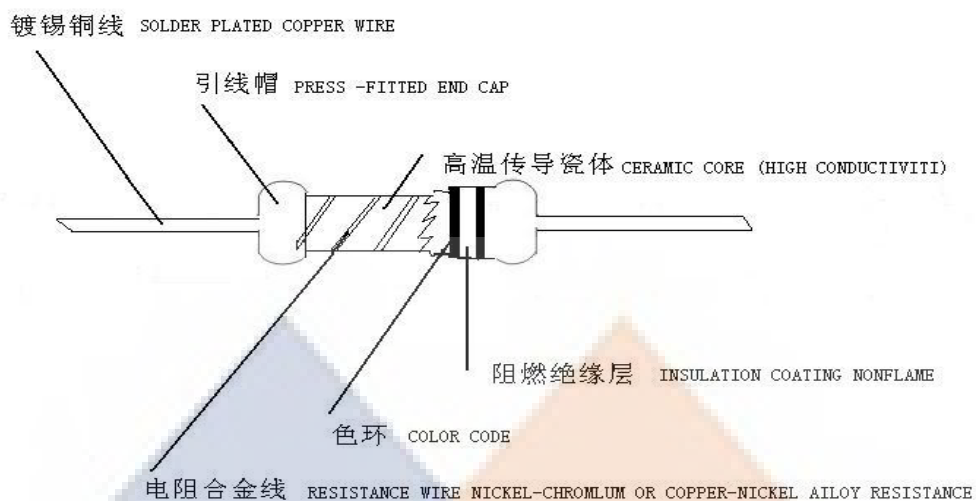
Drawn by

Li Guoming

Zhang Bin

Classification Specification	Spec No.	KNP.APR-01
Product Name: KNP WIREWOUND NONFLAME RESISTORS	PAGE	8-3

NKNP WIREWOUND NONFLAME RESISTORS CONSTRUCTION



Terminal caps

The caps shall be securely connected with the resistor element electrically and mechanically.

Painting

Coating in accordance with specification insulates the body.

Resistor body color

Type	Color	Type	Color
KNP	Grey	KNPS	Grey

Approved by

Drawn by

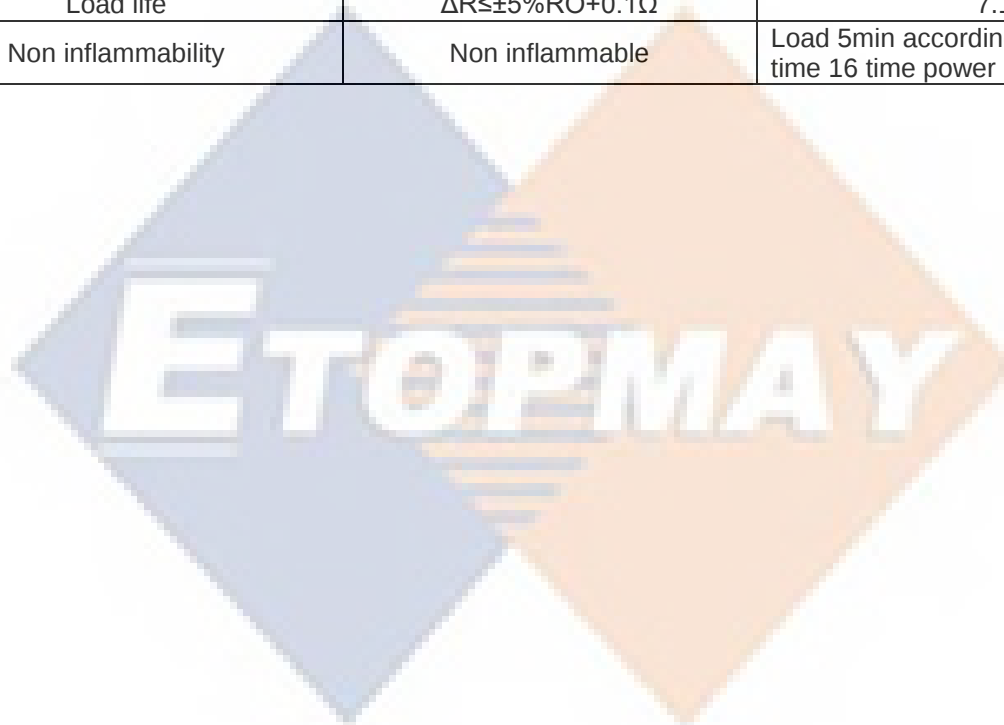
Li Guoming

Zhang Bin

Classification	Specification	Spec No.	KNP.APR-01
Product Name	KNP WIREWOUND NONFLAME RESISTORS	PAGE	8-4

2.Characteristics

Characteristics	Specifications	Test Methods
Resistors Temperature coefficient	$R \geq 10\Omega$ $\pm 350\text{PPM}/^\circ\text{C}$ $10\Omega > R > 5\Omega$ $\pm 500\text{PPM}/^\circ\text{C}$ $R < 5\Omega$ 不规定	5.2 condition B
Short time overload	$\Delta R \leq \pm 2\% R_0 + 0.05\Omega$	Power rated $\times 10$ times, 5s
Resistance soldering heat	$\Delta R \leq \pm 1\% R_0 + 0.05\Omega$	Tep: $350 \pm 5^\circ\text{C}$, Time: $3.5 \pm 0.5\text{S}$
Load life in humidity	$\Delta R \leq \pm 5\% R_0 + 0.1\Omega$	7.9
Load life	$\Delta R \leq \pm 5\% R_0 + 0.1\Omega$	7.10
Non inflammability	Non inflammable	Load 5min according to 5 time 10 time 16 time power pated and a.c



Approved by	Drawn by
Li Guoming	Zhang Bin

Classification Specification	Spec No.	KNP.APR-01
Product Name KNP WIREWOUND NONFLAME RESISTORS	PAGE	8-5

Characteristics	Specifications	Test methods
Dc Resistance JIS-C-5202 5.1	$\pm 5\%$ (J) $\pm 2\%$ (G)、 $\pm 10\%$ (K)	Ta 25℃
Temperature Coefficient JIS-C-5202 5.2	$R \geq 10\Omega$ $\pm 300\text{PPM}/^\circ\text{C}$ $10\Omega > R > 5\Omega$ $\pm 500\text{PPM}/^\circ\text{C}$ $R < 5\Omega$ not specified	$\frac{R_2 - R_1}{R_1 (T_2 - T_1)} \quad 1/^\circ\text{C}$ R1: Resistance value at room temperature (T1) R2: Resistance value at room temperature+100℃ (T2)
Dielectric Withstanding Voltage JIS-C-5202 5.7	No evidence of flashover mechanical damage, arcing of insulation breakdown	Resistors shall be clamped in the trough of A90 metallic V-block and shall be tested at specified in the above list for 60 seconds
Insulation Resistance JIS-C-5202 5.6	1000MΩ MIN	Withstanding test and shall be measured at DC 500V.reststor shall BN prepared AC same method of dielectric
Humidity JIS-C-5202 7.5	$\Delta R \leq \pm (2\%RO + 0.1\Omega)$	Temperature resistance change after a 1000hours exposure in a humidity test chamber con-trolled at $40 \pm 2^\circ\text{C}$ and 90-95%relative humidity

Approved by

Drawn by

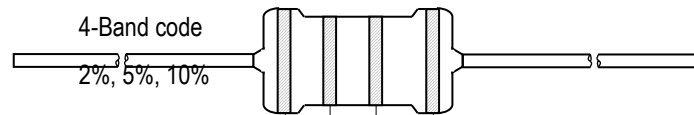
Li Guoming

Zhang Bin

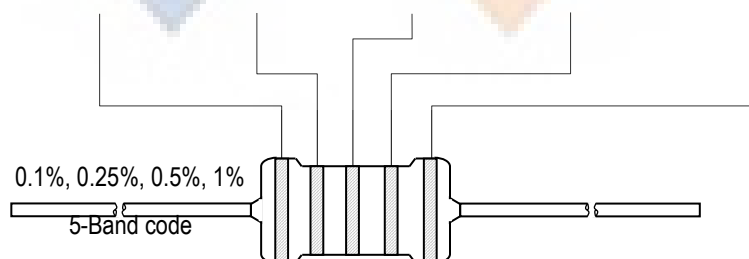
Classification Specification		Spec No.	KNP.APR-01
Product Name KNP WIREWOUND NONFLAME RESISTORS		PAGE	8-6
Characteristics	Specifications	Test methods	
Short time Overload	$\Delta R \leq \pm (2\%RO + 0.05\Omega)$	Power rated $\times 10$ times, 5S	
Temperature Coefficient JIS-C-5202 5.2	$\Delta R \leq \pm (5\%RO + 0.1\Omega)$	The temperature is $40 \pm 2^\circ\text{C}$, the relative humidity is 90-95% and the thermostatic chamber, add the rated DC voltage to test for 1.5 hours, stop for 0.5 hours and place continuously for 1000 hours	
Load life JIS-C-5202 7.10	$\Delta R \leq \pm (5\%RO + 0.1\Omega)$	Permanent resistance change after 1000 hours operating at rcwv, with duty cycle of 1.5 hours on, 0.5 hours off at $25^\circ\text{C} \pm 2^\circ\text{C}$.	
Resistance to Soldering heat JIS-C-5202 6.4	$\Delta R \leq \pm (1\%RO + 0.05\Omega)$	Dip the leads of the resistor into sn stove the depth is 3.2~4.8mm, the temperature and the time as the table temperature dip time $350^\circ\text{C} \pm 10^\circ\text{C}$ $3.0 \pm 0.5 \text{ SEC}$ $260^\circ\text{C} \pm 5^\circ\text{C}$ $10 \pm 1 \text{ SEC}$	
Solder ability JIS-C-5202 6.5	95% coverage min.	Test temperature of solder: $260 \pm 5^\circ\text{C}$ Dwell time in solder: $10 \pm 0.5 \text{ sec}$	
Non inflammability	Non inflammability	Load 5min according to 5 time 10 time 16 time power rated and A.C	
		Approved by	Drawn by
		Li Guoming	Zhang Bin

Classification	Specification	Spec No.	KNP.APR-01
Product Name	KNP WIREWOUND NONFLAME RESISTORS	PAGE	8-7

3. Indication Color Code



Color	1 st figure	2 nd figure	3 RD figure	Multiplier	Tolerance
Black	0	0	0	10^0	
Brown	1	1	1	10^1	$\pm 1\%$ (F)
Red	2	2	2	10^2	$\pm 2\%$ (G)
Orange	3	3	3	10^3	
Yellow	4	4	4	10^4	
Green	5	5	5	10^5	$\pm 0.5\%$ (D)
Blue	6	6	6	10^6	$\pm 0.25\%$ (C)
Violet	7	7	7	10^7	$\pm 0.1\%$ (B)
Gray	8	8	8		
White	9	9	9		
Gold				10^{-1}	$\pm 5\%$ (J)
Silver				10^{-2}	$\pm 10\%$ (K)
Plain					



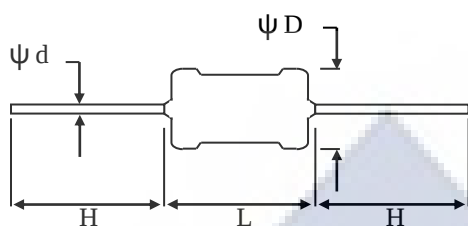
Approved by	Drawn by
Li Guoming	Zhang Bin

Classification	Specification	Spec No.	KNP.APR-01
Product Name	KNP WIREWOUND NONFLAME RESISTORS	PAGE	8-8

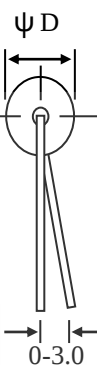
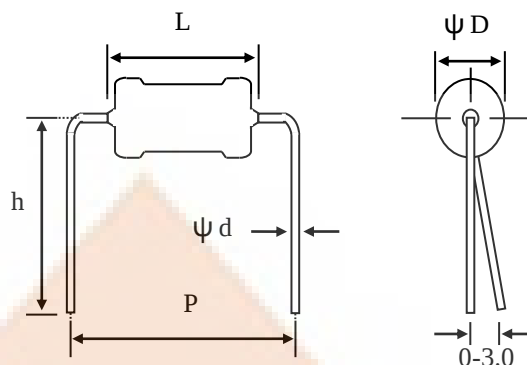
4. External dimensions
series (Horizontal Forming)

散 P type & M-Form

P Type



M Type



Unit: mm

Type		Dimensions					
Normal Size	Small Size	L	ψD	ψd	H	P	h
1/4W	1/2WS	6.0±0.5	2.3±0.3	0.40±0.05	26.5±1.0	10.0±1.0	10.0±1.0
1/2W	1WS	9.0±1.0	3.2±0.5	0.50±0.05	25±1.0	12.5±1.0	10.0±1.0
1W	2WS	11.0±1.0	4.0±0.5	0.60±0.05	24±1.0	15.0±1.0	14.0±1.0
2W	3WS	15.0±1.0	5.0±0.5	0.70±0.05	27±1.0	20.0±1.0	20.0±1.0
3W	5WS	17.0±1.0	6.0±1.0	0.75±0.05	31±1.0	25.0±1.0	25.0±1.0
5W	7WS	25.0±1.0	8.0±1.0	0.75±0.05	34.5±1.0		

Approved by	Drawn by
Li Guoming	Zhang Bin