

Version:
January 15, 2018

DIRECT

Electronics Tech.

(KNP-VE/LF)

Wirewound Resistor

Web: www.direct-token.com

Email: rfq@direct-token.com

Direct Electronics Industry Co., Ltd.

China: 12F, Zhong Xing Industry Bld., Chuang Ye Road,
Nan Shan District, Shen Zhen City,
Guang Dong, China 518054
Tel: +86 755 26055363; Fax: +86 755 26055365

Taiwan: No.137, Sec. 1, Zhongxing Rd., Wugu District,
New Taipei City, Taiwan, R.O.C. 24872
Tel: +886 2981 0109 Fax: +886 2988 7487

▶ Product Introduction**RoHS Vitreous Enamel Coated Wirewound Resistors
(KNP-VE/LF) Boost High Energy.****Features :**

- Excellent pulse load capability, Axial leads, All-welded construction
- Power ratings 1W to 30W, Resistance range 0.1Ω to 47KΩ, Tolerance ±2%, ±5%
- Products with Pb-free Terminations and RoHS compliant, rugged vitreous enamel coating withstands high humidity and temperature cycling

Applications :

- Consumer applications, Power supplies, Welders, High voltage applications
- Power tools, High-switching applications, Home entertainment, appliances

The KNP-VE/LF Series of vitreous enamel coated power resistors from Direct offers a cost-competitive alternative over the 1W-30W power range. The range is available with resistance values of 0.1Ω to 47KΩ in working voltage of 75V to 1000V, and with body sizes that match the industry standards.

Vitreous enamelled resistors were introduced at a time when alternative directly applied coatings could not withstand the thermal stresses caused by the resistors' high body temperatures.

Direct offers the durability of a lead free conformal vitreous enamel coating, permits the KNP-VE/LF Series resistors to maintain a hard coating while operating at high temperatures. Mechanical integrity is enhanced by the all-welded construction.

Power KNP-VE/LF Wirewound Series are ideal for computer, communications and industrial applications in which cost, quality, and reliability are key considerations. The KNP-VE/LF series is RoHS compliant and Ayrton Perry noninductive windings are available on request.

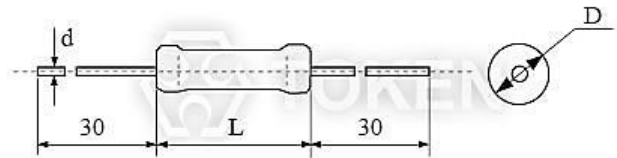
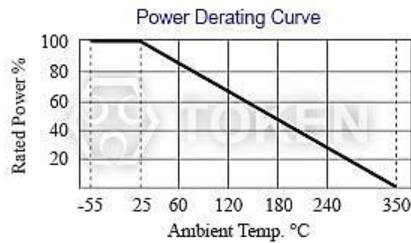
To address your need for technical and economic success in a timely manner, our custom solutions are the best choice. Contact us with your specific needs. Or link to Direct official website "[General Purpose Resistors](#)" for more information.



► **Technical Specifications**

RoHS Vitreous Enamelled Wirewound (KNP-VE/LF) Technical Specifications

Type	70°C Wattle (W)	25°C Wattle (W)	Resistance (Ω)		Working Voltage (V)	Temperature Coefficient (PPM/°C)	Surface Temperature (°C)	Dimensions (mm)		
			J (±5%)	G (±2%)				L Max.	D ±1	d ±0.2
KNP-VE/LF	0.5	1	0.1 ~ 510	1 ~ 300	75	≤ 250	≤ 450°C	10	3.5±1	0.8
	1	2	0.1 ~ 1K	1 ~ 680	100			12	4.5±1	0.8
	2.6	3	0.1 ~ 5K1	1 ~ 1K5	120			12.7	5.6±1	0.8
	4.5	5	0.1 ~ 10K	1 ~ 6K8	300			22	7±1	0.8
	6	7	0.1 ~ 12K	1 ~ 8K2	350			24	7.4±1	0.8
	7	8	0.5 ~ 20K	1 ~ 15K	500			33	8±1	0.8
	9.5	11	0.5 ~ 27K	1 ~ 20K	650			38.1	8±1	1
	15	18	0.5 ~ 36K	1 ~ 24K	700			45.8	9.5±1	1
	20	23	1 ~ 51K	10 ~ 39K	800			54	9±1	1
	25.8	30	0.5 ~ 47K	1 ~ 36K	1000			64	12±1	1



Electrical Performance

Vitreous Enamelled Wirewound (KNP-VE/LF) Performance

Test Item	Characteristics	Test Methods
		SJ1330-78
Solderability	Free flow of solder	235±5°C, 2s Groove welding
Terminal strength	$\Delta R \leq \pm (1\%R+0.05\Omega)$	$\leq 4.3W$ 10N, $\geq 6W$ 20N
Overloading	$\Delta R \leq \pm (1\%R+0.05\Omega)$	$\theta A = -55^\circ C$ $\theta B = +200^\circ C$, 5 Cycles
Temperature Change	$\Delta R \leq \pm (1\%R+0.05\Omega)$	235±5°C, 2s Groove welding
Collision Test	$\Delta R \leq \pm (1\%R+0.05\Omega)$	Acceleration 390m/s ² , 4000 times
Impact Test	$\Delta R \leq \pm (1\%R+0.05\Omega)$	Acceleration 490m/s ² , 11ms, 18 times
Vibration Test	$\Delta R \leq \pm (1\%R+0.05\Omega)$	Frequency 10-500Hz, Acceleration 98m/s ² , 6h
Temperature Rise	$\leq 245^\circ C$	Apply rated power Load
Constant Damp Heat	$\Delta R \leq \pm (5\%R+0.05\Omega)$	Temperature 40±2°C, Temperature 93+2/-3%, 56h
Room temperature Durability	$\Delta R \leq \pm (5\%R+0.05\Omega)$	Rated power load at room temperature 1000h

Order Codes

RoHs Vitreous Enamelled Resistors - (KNP-VE/LF) Order Code

KNP-VE		-	11W		10R		J		P	
Type			Rated Power (W) @25°C		Resistance (Ω)		Resistance Tolerance		Package	
KNP-VE	Vitreous Enamelled		2W	2W	1R	1Ω	G	±2%	TB	Taping Box
			5W	5W	110R	110Ω				
KNP-LF	RoHs Vitreous Enamelled		11W	11W	1K1	1.1KΩ	J	±5%	P	Bulk
			30W	30W	10K	10KΩ				



► General Information

General Purpose Resistors with Customized Service

Direct Electronics is expanding business to include a broad range of General Purpose Resistor products designed for high volume applications. This expanded range of commercial resistor presents a more comprehensive product offering for Customer Experience Management (CEM) and other high volume customers that require quality products at competitive pricing.

Backed by the same customer service, technical support and quality assurance that Direct has always provided, these new commercial products enable you the opportunity to source a wider range of resistors from a trusted supplier.

General Use

When an ambient temperature exceeds a rated ambient temperature, resistor shall be applied on the derating curve by derating the load power. General purpose resistor under overloads is not combustion resistant and is likely to emit, flame, gas, smoke, red heat, etc. Flame retardant resistor generally emits smoke and red heat in a certain power and over but do not emit fire or flame.

When resistors are shielded or coated with resin etc., stress from the storage heat and the resins are applied. So, performance and reliability should be checked well before use.

When a voltage higher than rated is applied in a short time (single pulse, repeated pulses, surge, etc.), it does not necessarily ensure safety that an effective wattage is not higher than a rated wattage. Then consult with us with your specified pulse wave shape. Resistors shall be used in a condition causing no dew condensation.

Keep temperature from rising by choosing resistor with a higher rated capacity; do not use a component having the exact load value required. For considerations of safety in extended period applications, the rating should be more than four times higher than the actual wattage involved, but never use resistors at less than 25% of its rated power.

In applications where resistors are subject to intermittent current surges and spikes, be sure in advance that the components selected are capable of withstanding brief durations of increased load.

Do not exceed the recommended rated load. Resistor must use within the rated voltage range to prevent the shortening of service life and/or failure of the wound resistance elements.

Minimum load: Resistor must be utilized at 1/10 or more of the rated voltage to prevent poor conductance due to oxidation build-up. For basic particulars for cautions, refer to EIAJ Technical Report RCR-2121 "Guidance for care note on fixed-resistors".

