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(KNP-VE) Vitreous Enamel Coated Wire wound Resistor

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Product Introduction

Vitreous Enamel Coated Power High Energy Wire wound Resistors.

Features :

- Excellent pulse load capability
- Axial leads, All-welded construction
- A wide range of power ratings 2.5W to 12W
- A wide resistance range 1Ω to 39KΩ, Tolerance ±5%, ±10%
- Products with Pb-free Terminations and RoHS compliant
- Rugged vitreous enamel coating withstands high humidity and temperature cycling
- Durable construction, recommended for industrial applications where reliability is paramount.

Applications :

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

The KNP-VE Series of vitreous enamel coated power resistors from Token offers a cost-competitive alternative over the 2.5W-12W power range. The range is available with resistance values of 1Ω to 39KΩ in power ratings of 2.5W, 3W, 5W, 6W, 8W, 9W and 12W (at 25℃), and with body sizes that match the industry standards.

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

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

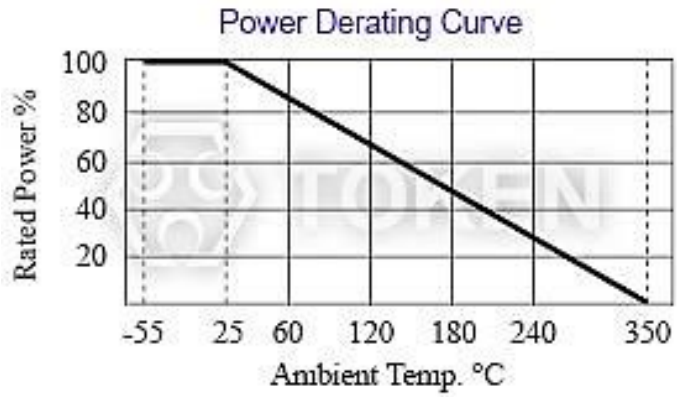
Power KNP-VE Wire wound Series are ideal for computer, communications and industrial applications in which cost, quality, and reliability are key considerations. The KNP-VE series is RoHS compliant and Ayrton Perry non-inductive windings are available on request.

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 Token official website "General Purpose Resistors" for more information.

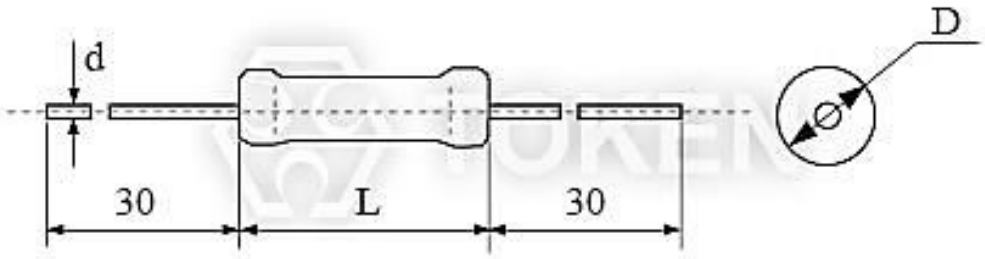
Technical Specifications

Technical Specifications (KNP-VE)

Type	Rated Watts (W)	Resistance Range (Ω)	Limiting Voltage (V)	Tolerance	Temperature Coefficient (PPM/℃)	Dimensions (mm) (Max)		
						L	ΦD	Φd
KNP-VE-2.5	2.5	1 ~ 1K	100	±5% ±10%	±250 ±400	12.7	5.6	0.8
KNP-VE-3	3	1 ~ 1K	120			14.0	7.0	
KNP-VE-5	5	1 ~ 3.6K	160			23.0	7.0	
KNP-VE-6	6	1 ~ 6.8K	200			22.2	8.0	
KNP-VE-8	8	1 ~ 20K	400			33.9	8.0	
KNP-VE-9	9	1 ~ 27K	500			38.1	8.0	1.0
KNP-VE-12	12	1 ~ 39K	750			53.5	8.0	



Power (KNP-VE) Derating Curve



Wire wound Resistors (KNP-VE) Dimensions (Unit: mm)

Electrical Performance

Electrical Performance (KNP-VE)

Test Items	Condition	Specifications
Insulation Resistance	500V	20MΩ
Short Time Overload	2.5 times of rated voltage 5 sec.	ΔR≤±(2%R+0.05Ω)
Rated Load	Rated wattage 30 min.	ΔR≤±(1%R+0.05Ω)
Dielectric Withstanding Voltage	500V AC 1 min	ΔR≤±(1%R+0.05Ω)
Temp. Cycle	-20℃ ~ 85℃ 5 cycles	ΔR≤±(1%R+0.05Ω)
Load Life	70℃ on ~ off cycle 1000 hrs.	ΔR≤±(5%R+0.05Ω)
Moisture-Proof Load Life	40℃ 95% RH on~off cycle 500 hrs.	ΔR≤±(3%R+0.05Ω)
Soldering After Resistance	350℃ for 3 sec	ΔR≤±(0.5%R+0.05Ω)
Incombustibility	16 times of rated wattage for 5 min.	Not flamed

Application Notes

Application Notes of Wire wounds (KNP-VE)

- When being used in AC circuits, some wirewound structures give inductance ingredients or parasitic capacity, so they may cause unusual phenomena such as oscillations etc. Quorum deviations of other components should be carefully taken into account for use.
- Application and Placement: Wire wound resistors use different gauges of wire as resistance elements. Sometimes the gauge is extremely thin (finer than a strand of human hair) and very susceptible to breakage in environments containing salts, ash, dust and corrosives. Avoid utilization in such environments.
- Do not install in dusty areas because the accumulation will cause shorts and poor conductance.

Order Codes

Order Codes (KNP-VE)

KNP-VE	-	3W	100R	J	P
Part Number		Rated Power (W)	Resistance Value (Ω)	Resistance Tolerance (%)	Package
KNP-VE			1R 1Ω 100R 100Ω 1K 1000Ω	J ±5% K ±10%	P Bulk TB Taping Box

General Information

General Purpose Resistors with Customized Service

Token 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 Token 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".