

# Power Precision Wirewound Resistors

## Wirewound Resistors Boast Consistent Precision Power Operation

### ▶ Preview

Token's highest quality conformal axial terminal ceramic-silicone coated KNP-R power resistors for applications requiring high stability and precision. The KNP-R wire-wound has a low temperature coefficient and maintain a high degree of stability under demanding conditions.

The power precision KNP-R series meeting MIL-R-26E (U and V characteristics) and surface temperature (hot spot) 375°C max. Resistors with a wide range of 0.01Ω ~ 82kΩ, covering applications from precision to power. Products with lead-free terminations meet EU RoHS and China RoHS requirements.

#### Characteristics U :

275°C Maximum hot spot temperature. 1% Maximum ΔR in 1000 hours load life.

#### Characteristics V :

375°C Maximum hot spot temperature. 3% Maximum ΔR in 1000 hours load life.

Operating temperature range is -55°C ~ +375°C and derated power at high ambient temperatures as according to the chart below. Token is equipped to design and produce custom components to meet many design and reliability demands. In addition to standard military-grade resistor products, we also have many resistive products designed to meet various source-controlled drawings.

Contact us with your specific needs.

### ▶ Features

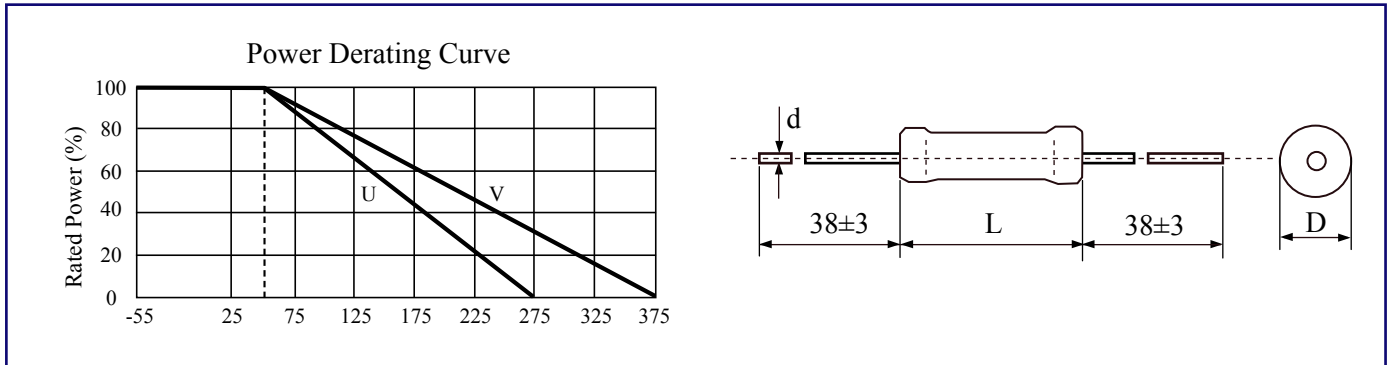
- Excellent load life stability
- High Precision and reliability
- Axial ceramic-silicone coated
- Meets the Standards of MIL-R-26E
- RoHS compliant with 100% lead free

### ▶ Applications

- Radar, Ground Vehicles
- Communications systems
- Bias supply, Current shunts, Voltage dropping
- Motor speed controls, Voltage divider networks
- Medical instrumentation and Medical implantables



## Technical Specifications



Type	MIL - R-26E	Power Rating (W)		Max. Working Voltage (V)		Resistance Range (Ω)					Dimensions (mm)			
		U	V	U	V	0.1%	0.25%	0.5%	1%	2%	3%	5%	L±0.81	D±0.81
KNP-R1/4	-	0.40	-	20	-	10~950	1~3.4K					6.35	1.98	0.51
KNP-R1/2	RW70	0.75	-	29	-	10~1.3K	1~4.9K					7.92	1.98	0.51
KNP-R1A	-	1.00	-	53	-	1~2.7K	0.1~10.4K					10.31	2.36	0.64
KNP-R1	RW69	1.10	-	62	-	1~4.0K	0.1~15K					13.49	2.36	0.64
KNP-R2A	-	2.50	3.25	138	157	1~8.6K	0.01~32.3K					12.70	5.33	0.81
KNP-R2	RW79	3.00	3.75	135	148	1~5K	0.01~2K					13.49	4.06	0.81
KNP-R3A	-	3.00	3.75	135	148	1~6.5K	0.01~34.5K					14.27	5.33	0.81
KNP-R3	-	3.25	4.75	185	220	1~11.4K	0.01~42.1K					20.62	5.33	1.02
KNP-R4	RW67	4.00	5.50	210	250	1~12.7K	0.01~47.1K					15.88	7.62	1.02
KNP-R5	RW74	5.00	6.50	330	376	0.5~24.5K	0.01~51K					22.22	7.62	1.02
KNP-R7	RW68	7.00	9.00	504	576	0.5~41.4K	0.01~75K					30.94	9.52	1.02
KNP-R10	RW78	10.00		799	911	0.5~71.3K	0.01~82K					45.21	9.52	1.02

Temperature Coefficient: 1 Ω and below ± 150 ppm/°C, 1 Ω to 9.9 Ω ± 100 ppm/°C, 10 Ω and above ± 100 ppm/°C, (50 ppm/°C on request)

## Electrical Performance

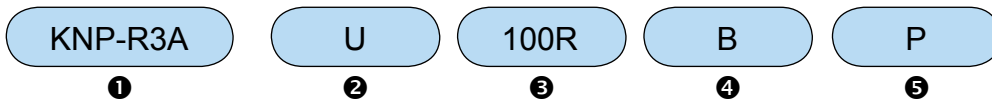
Test Items	Test Method	Specifications
Short Time Overload	2.5 times of rated voltage 5 sec.	$\Delta R \pm (2\% + 0.05\Omega)$
Rated Load	Rated wattage 30 minutes.	$\Delta R \pm (1\% + 0.05\Omega)$
Voltage Withstanding	500VAC 1 minute.	$\Delta R \pm (1\% + 0.05\Omega)$
Insulation Resistance	500V	20MΩ
Temp. Cycle	-20°C ~ 85°C 5 cycles	$\Delta R \pm (1\% + 0.05\Omega)$
Soldering After Resistance	235°C for 3 sec	$\Delta R \pm (0.5\% + 0.05\Omega)$
Incombustibility	16 times of rated wattage for 5 min.	Not flamed
Load Life	+25°C, 1.5Hrs on ~ 0.5Hrs off cycle, 1000 Hrs.	U: $\Delta R \pm (1\% + 0.05\Omega)$ V: $\Delta R \pm (3\% + 0.05\Omega)$

## ▶ Application Notes

### Wire-wound Resistors Application Notes:

- 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.

## ▶ How to Order



❶ Part Number: KNP-R

❷ Characteristic (°C)

Code	Resistance Value (Ω)
U	275°C
V	375°C

❸ Resistance Value (Ω)

Code	Resistance Value
0R1	1.0Ω
1R	1Ω
100R	100Ω
1K	1000Ω

❹ Resistance Tolerance (%)

Code	Resistance Tolerance
B	±0.1%
C	±0.25%
D	±0.5%
F	±1%
G	±2%
H	±3%
J	±5%

❺ Package

Code	Package
TB	Taping Box
P	Bulk

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