

PRODUCT DATA

■ Power Thermistor

- Features
 1. Body size $\phi 5\text{mm} \sim \phi 30\text{mm}$
 2. Radial lead resin coated
 3. $-40 \sim +200^\circ\text{C}$ operating temperature range
 4. High power rating
 5. Wide resistance range
 6. Cost effective
 7. UL and cUL approved



- Recommended applications

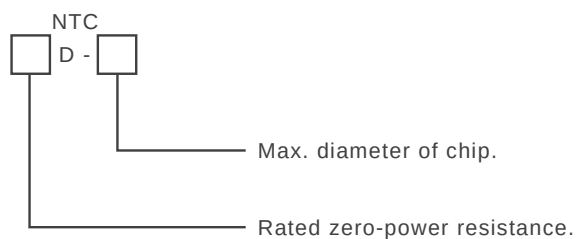
1. Switch mode power supply
2. Electric motor
3. Transformer
4. Adapter
5. Projector
6. Halogen lamp

- Part number code

$\phi 5\text{mm} \sim \phi 30\text{mm}$

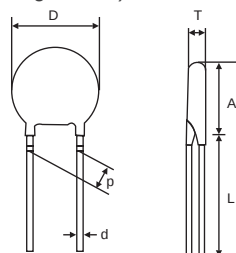
30mm												K	N	K	1	5	M	8	R	0	A	2.	0	S	B
Product Code KNK NTC Thermistor KNK Type		Body Size 05 ϕ 5mm 08 ϕ 8mm 10 ϕ 10mm 13 ϕ 13mm 15 ϕ 15mm 20 ϕ 20mm 25 ϕ 25mm 30 ϕ 30mm		Tolerance of R ₂₅ L $\pm$ 15% M $\pm$ 20% N $\pm$ 25%		Zero Power Resistance at 25 °C (R ₂₅) 0R5 0.5 Ω 2R5 2.5 Ω 8R0 8 Ω 20R 20 Ω 120 120 Ω		Max. Steady State Current at 25 °C (A) A0.3 0.3A A1.0 1.0A A2.0 2.0A $\downarrow$ A14.5 14.5A A18.5 18.5A		Appearance S Straight Lead N Inner Kink Lead F Y Kink Lead		Packing B Bulk C Lead Cutting A Ammo Taping Pitch of Holes 12.7mm E Ammo Taping Pitch of Holes 15.0mm													

- Marking



- Dimensions

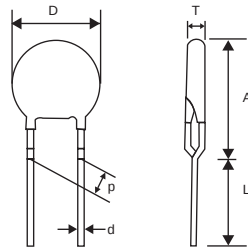
S type (straight lead)



(Unit: mm)

Disc size	Dmax.	Pnor.	dnor.	Amax.	Lmin.	Tmax.
$\phi 05$	6.5	4 ± 0.6	0.8 ± 0.02	6.5	31	5
$\phi 08$	9.5	5 ± 0.8	0.8 ± 0.02	9.5	31	5
$\phi 10$	11.5	5 ± 0.8	0.8 ± 0.02	11.5	31	5
$\phi 13$	14.5	7.5 ± 1	0.8 ± 0.02	14.5	30	6
$\phi 15$	16.5	7.5 ± 1	1 ± 0.02	16.5	29	6
$\phi 20$	21.5	7.5 ± 1	1 ± 0.02	21.5	26	6
$\phi 25$	28	7.5 ± 1	1 ± 0.02	28	25	7
$\phi 30$	33	7.5 ± 1	1 ± 0.02	33	23	8

F type (Y kink lead)



(Unit: mm)

Disc size	Dmax.	Pnor.	dnor.	Amax.	Lmin.	Tmax.
φ 08	9.5	5±0.8	0.8±0.02	13	29	5
φ 10	11.5	5±0.8	0.8±0.02	15	29	5
φ 13	14.5	7.5±1	0.8±0.02	17	27	6
φ 15	16.5	7.5±1	1±0.02	20	26	6

N type (inner kink lead)

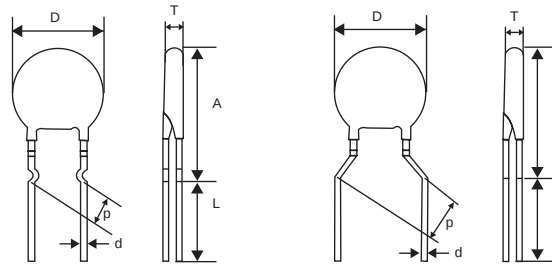


Figure A

Figure B

(Unit: mm)

Disc size	Dmax.	Pnor.	dnor.	Amax.	Lmin.	Tmax.	Figure
φ 05	6.5	5±0.8	0.8±0.02	10	29	5	B
φ 08	9.5	5±0.8	0.8±0.02	16	25	5	A
φ 10	11.5	5±0.8	0.8±0.02	17	25	5	A
φ 13	14.5	7.5±1	0.8±0.02	19	25	6	A
φ 15	16.5	7.5±1	1±0.02	23	25	6	A
φ 20	21.5	7.5±1	1±0.02	28	24	6	A

● Characteristics

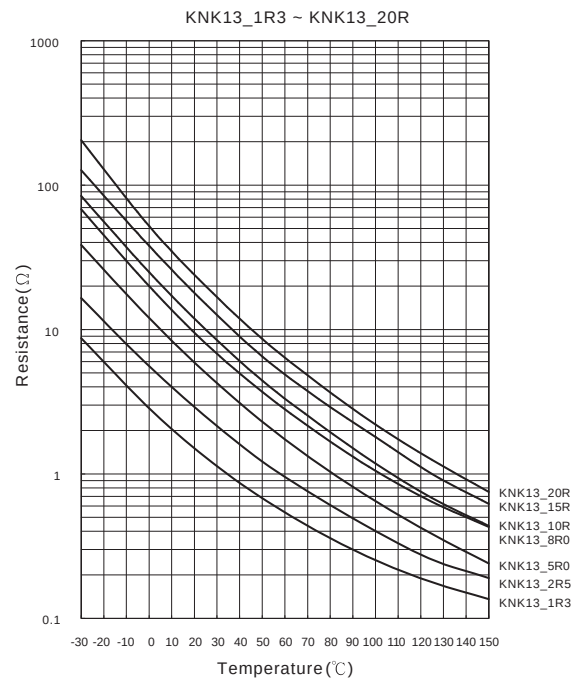
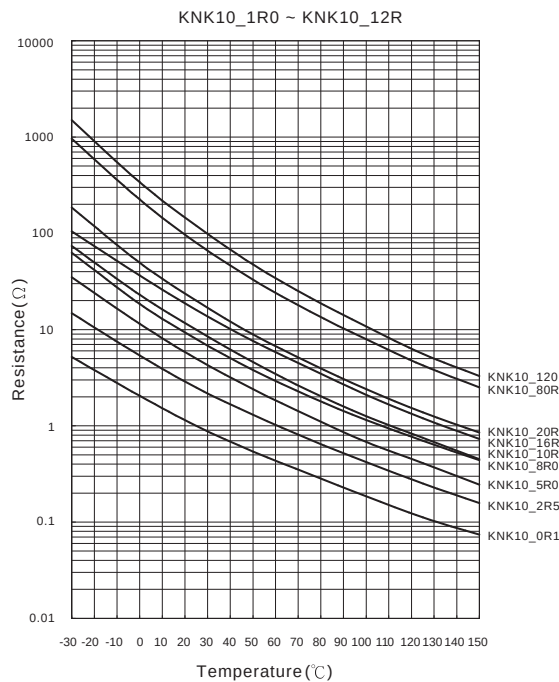
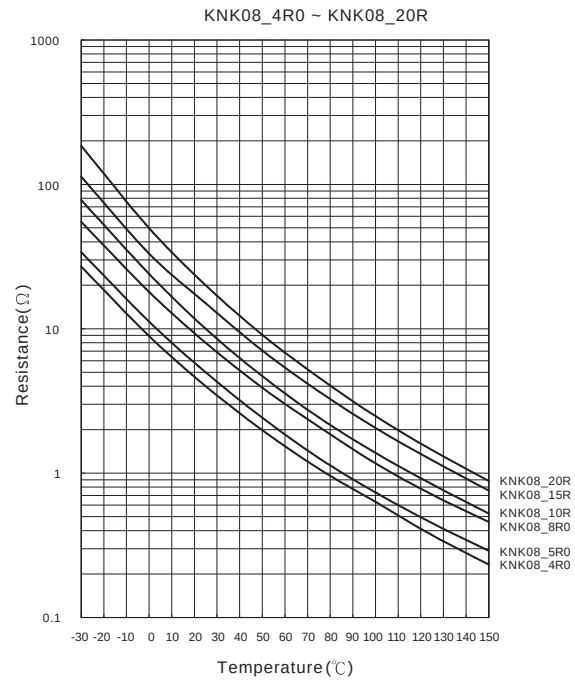
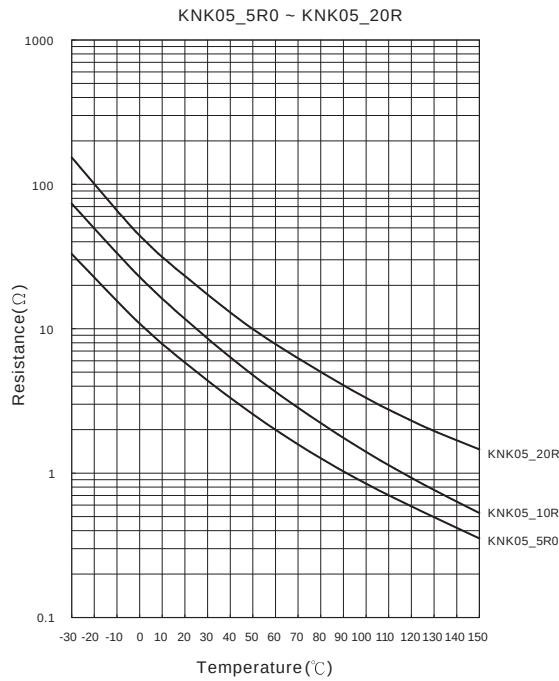
Part no.	Zero power resistance at 25 °C (Ω)	Max. steady state current at 25 °C (A)	Max. power rating at 25 °C (W)	Thermal dissipation constant (mW/°C)	Thermal time constant (Sec.)	Operating temperature range (°C)
KNK05□5R0A2.0	5	2	1.8	15	17	-40 ~ +150
KNK05□8R0A1.0	8	1				
KNK05□10RA1.0	10	1				
KNK05□12RA1.0	12	1				
KNK05□20RA0.3	20	0.3				
KNK08□4R0A2.0	4	2	2.3	16	38	-40 ~ +170
KNK08□4R7A2.0	4.7	2				
KNK08□5R0A3.0	5	3				
KNK08□6R0A3.0	6	3				
KNK08□7R0A3.0	7	3				
KNK08□8R0A2.0	8	2				
KNK08□10RA2.0	10	2				
KNK08□15RA2.0	15	2				
KNK08□20RA1.0	20	1				
KNK08□30RA0.5	30	0.5				

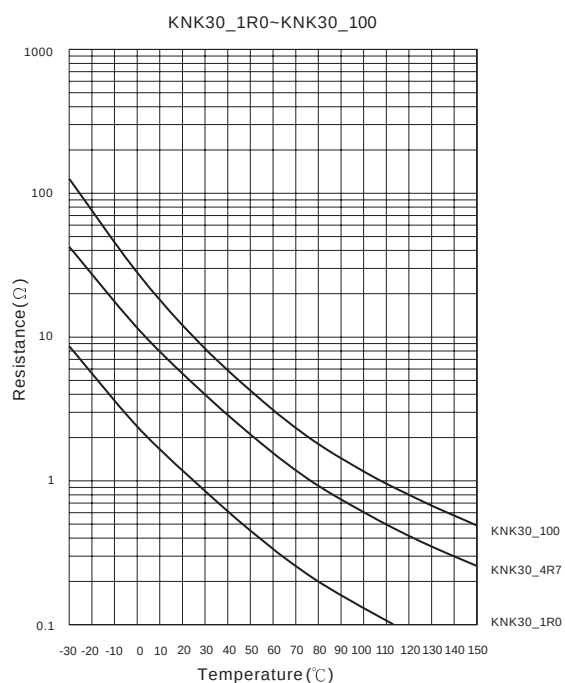
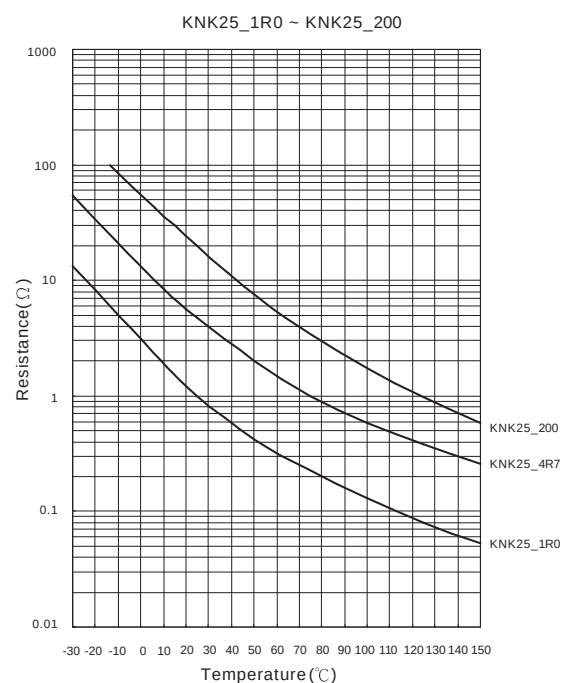
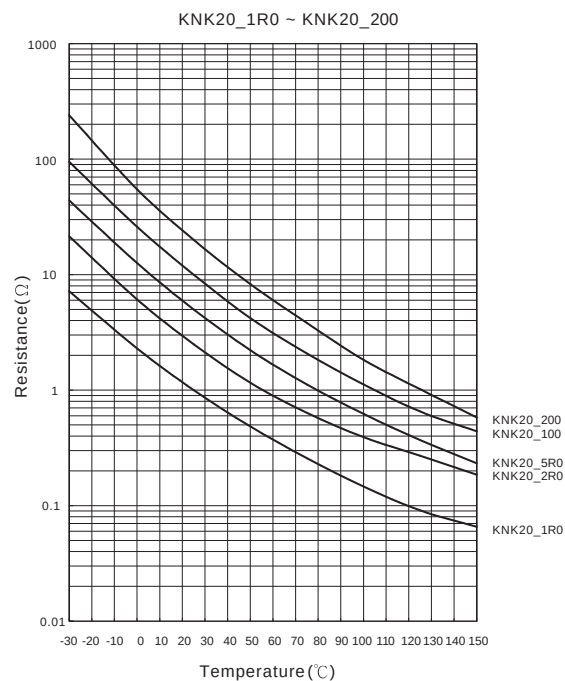
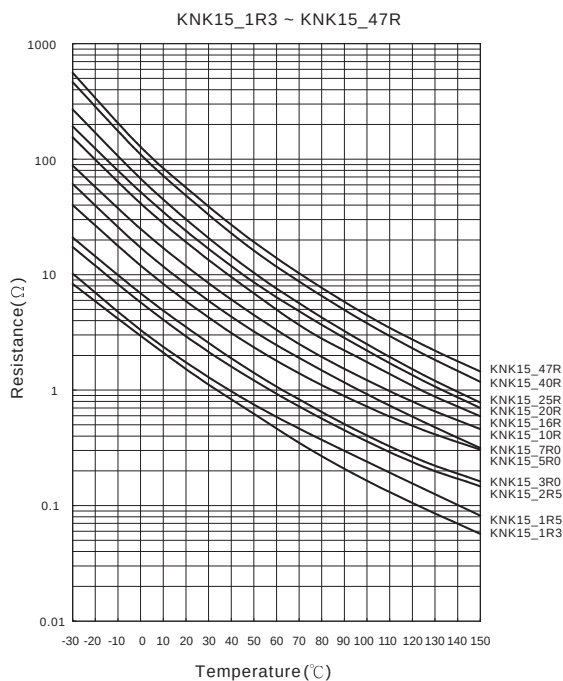
Part no.	Zero power resistance at 25 °C (Ω)	Max. steady state current at 25 °C (A)	Max power rating at 25 °C (W)	Thermal dissipation constant (mW/ °C)	Thermal time constant (Sec.)	Operating temperature range (°C)
KNK10□ 1R0A5.0	1	5	2.4	17	43	-40 ~ +170
KNK10□ 1R3A5.0	1.3	5				
KNK10□ 1R5A5.0	1.5	5				
KNK10□ 2R5A5.0	2.5	5				
KNK10□ 3R0A5.0	3	5				
KNK10□ 4R0A4.0	4	4				
KNK10□ 5R0A4.0	5	4				
KNK10□ 6R8A3.0	6.8	3				
KNK10□ 8R0A3.0	8	3				
KNK10□ 10R3A3.0	10	3				
KNK10□ 12R3A3.0	12	3				
KNK10□ 13R3A3.0	13	3				
KNK10□ 15R2.5	15	2.5	2.0	16	62	-40 ~ +170
KNK10□ 16R2.0	16	2.0				
KNK10□ 16R2.5	16	2.5				
KNK10□ 20R2.0	20	2				
KNK10□ 22R2.0	22	2				
KNK10□ 25R2.0	25	2				
KNK10□ 30R2.0	30	2				
KNK10□ 47R2.0	47	2				
KNK10□ 50R2.0	50	2				
KNK10□ 80R1.0	80	1				
KNK10□ 100A1.0	100	1				
KNK10□ 120A1.0	120	1				
KNK13□ 1R0A3.0	1	3	3.1	18	66	-40 ~ +200
KNK13□ 1R3A7.0	1.3	7				
KNK13□ 2R5A6.0	2.5	6				
KNK13□ 4R0A5.0	4	5				
KNK13□ 4R7A4.0	4.7	4				
KNK13□ 5R0A5.0	5	5				
KNK13□ 7R0A4.0	7	4				
KNK13□ 8R0A4.0	8	4				
KNK13□ 10R4.0	10	4				
KNK13□ 12R4.0	12	4				
KNK13□ 15R3.0	15	3				
KNK13□ 16R3.0	16	3				
KNK13□ 18R3.0	18	3	3.6	21	75	-40 ~ +200
KNK13□ 20R3.0	20	3				
KNK15□ 0R7A8.0	0.7	8				
KNK15□ 1R0A6.0	1	6				
KNK15□ 1R3A8.0	1.3	8				
KNK15□ 1R5A8.0	1.5	8				
KNK15□ 2R0A8.0	2	8				
KNK15□ 2R5A8.0	2.5	8				
KNK15□ 3R0A7.0	3	7				
KNK15□ 4R0A6.0	4	6				
KNK15□ 5R0A6.0	5	6				
KNK15□ 6R0A5.0	6	5				
KNK15□ 7R0A5.0	7	5	3.6	21	75	-40 ~ +200
KNK15□ 8R0A5.0	8	5				
KNK15□ 10R5.0	10	5				
KNK15□ 12R5.0	12	5				
KNK15□ 15R4.0	15	4				
KNK15□ 16R4.0	16	4				
KNK15□ 18R4.0	18	4				
KNK15□ 20R4.0	20	4				
KNK15□ 22R4.0	22	4	3.6	21	75	-40 ~ +200
KNK15□ 25R3.0	25	3				

Part no.	Zero power resistance at 25℃ (Ω)	Max. steady state current at 25℃ (A)	Max. power rating at 25℃ (W)	Thermal dissipation constant (mW/℃)	Thermal time constant (Sec.)	Operating temperature range (℃)
KNK15□30RA3.0	30	3	3.6	21	75	-40 ~ +200
KNK15□40RA3.0	40	3				
KNK15□47RA3.0	47	3				
KNK15□80RA2.5	80	2.5				
KNK15□120A2.0	120	2				
KNK20□0R7A15.0	0.7	15	4.9	28	113	-40~+200
KNK20□1R0A13.0	1	13				
KNK20□1R5A10.5	1.5	10.5				
KNK20□2R0A10.0	2	10				
KNK20□2R5A9.0	2.5	9				
KNK20□3R0A8.5	3	8.5				
KNK20□4R0A8.0	4	8				
KNK20□4R7A7.5	4.7	7.5				
KNK20□5R0A7.5	5	7.5				
KNK20□6R0A7.0	6	7				
KNK20□6R8A6.5	6.8	6.5				
KNK20□7R0A6.5	7	6.5				
KNK20□8R0A6.0	8	6				
KNK20□10RA5.5	10	5.5				
KNK20□12RA5.0	12	5				
KNK20□13RA5.0	13	5				
KNK20□15RA4.5	15	4.5				
KNK20□16RA4.5	16	4.5				
KNK20□18RA4.0	18	4				
KNK20□20RA4.0	20	4				
KNK25□1R0A20.0	1	20	5.2	30	150	-40 ~ +200
KNK25□1R5A18.5	1.5	18.5				
KNK25□2R0A18.0	2	18				
KNK25□2R5A15.0	2.5	15				
KNK25□3R0A14.5	3	14.5				
KNK25□4R0A14.0	4	14				
KNK25□4R7A13.0	4.7	13				
KNK25□5R0A12.0	5	12				
KNK25□6R8A10.5	6.8	10.5				
KNK25□7R0A10.0	7	10				
KNK25□8R0A9.0	8	9				
KNK25□10RA8.0	10	8				
KNK25□12RA7.5	12	7.5				
KNK25□15RA6.5	15	6.5				
KNK25□18RA5.5	18	5.5				
KNK25□20RA5.0	20	5				
KNK25□120A3.0	120	3				
KNK30□1R0A30.0	1	30	7.0	40	190	-40 ~ +200
KNK30□1R5A25.0	1.5	25				
KNK30□2R0A23.0	2	23				
KNK30□2R5A18.0	2.5	18				
KNK30□3R0A17.0	3	17				
KNK30□4R0A16.0	4	16				
KNK30□4R7A15.0	4.7	15				
KNK30□5R0A14.0	5	14				
KNK30□6R0A12.0	6.8	12				
KNK30□7R0A11.5	7	11.5				
KNK30□8R0A10.5	8	10.5				
KNK30□10RA10.0	10	10				
KNK30□12RA9.0	12	9				
KNK30□15RA8.0	15	8				
KNK30□18RA7.0	18	7				
KNK30□20RA6.0	20	6				

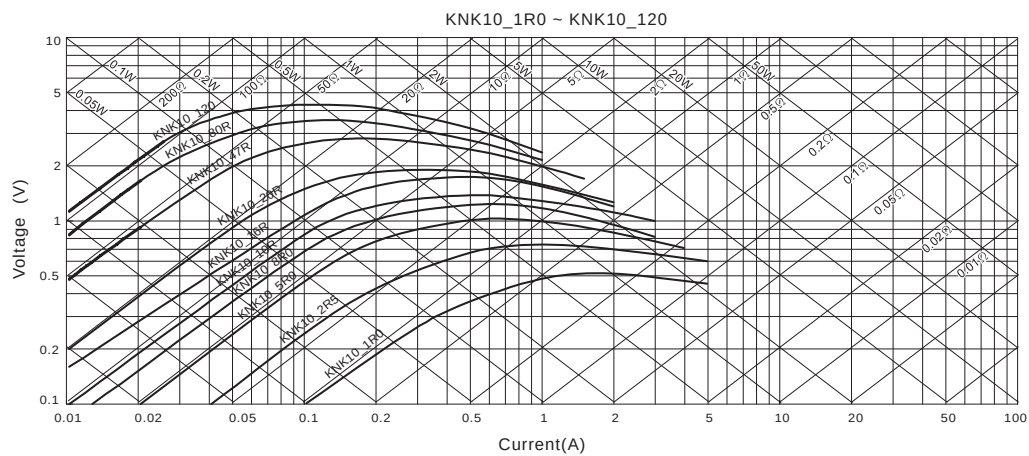
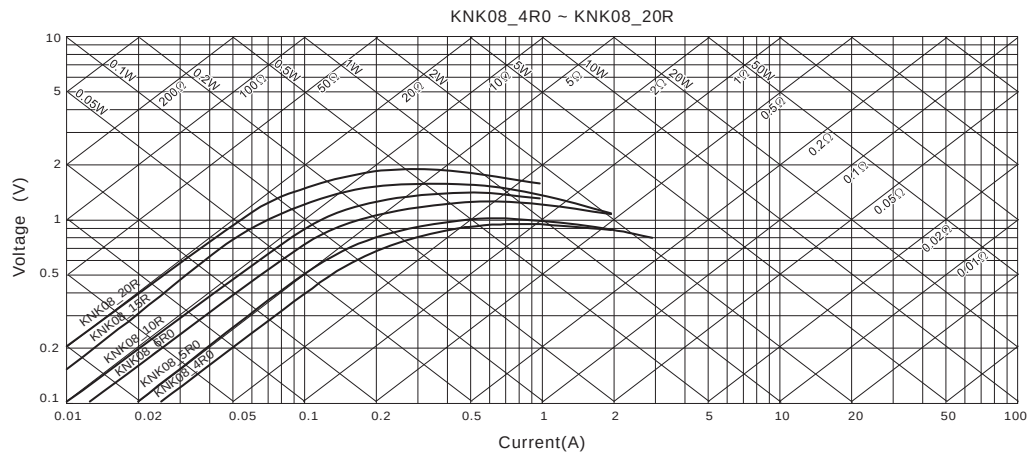
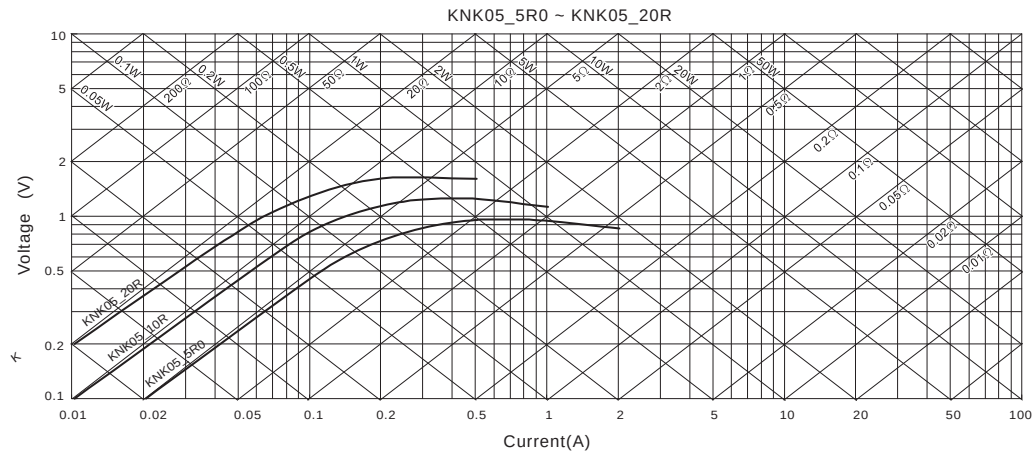
Note : □ = Tolerance of resistance

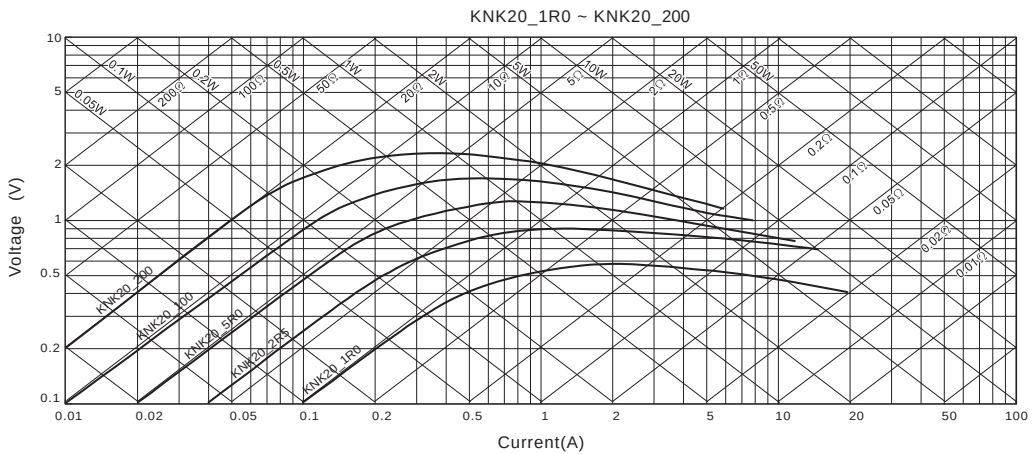
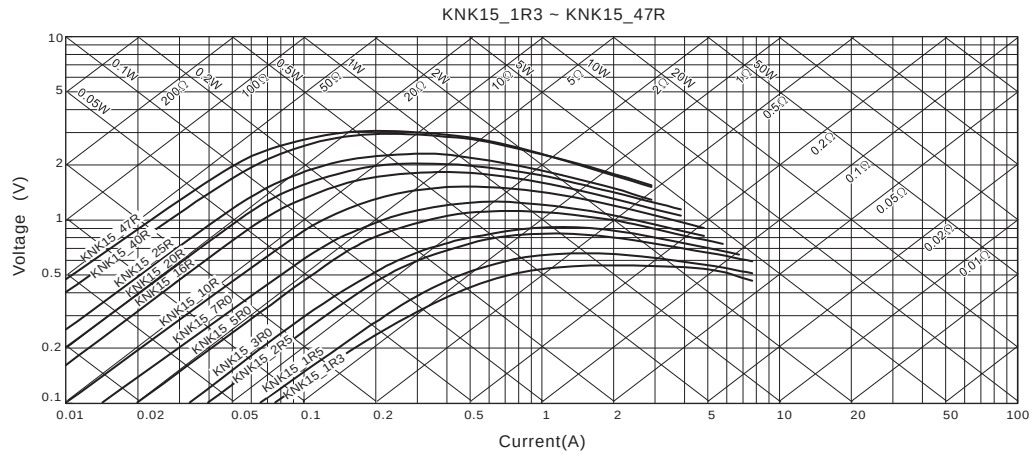
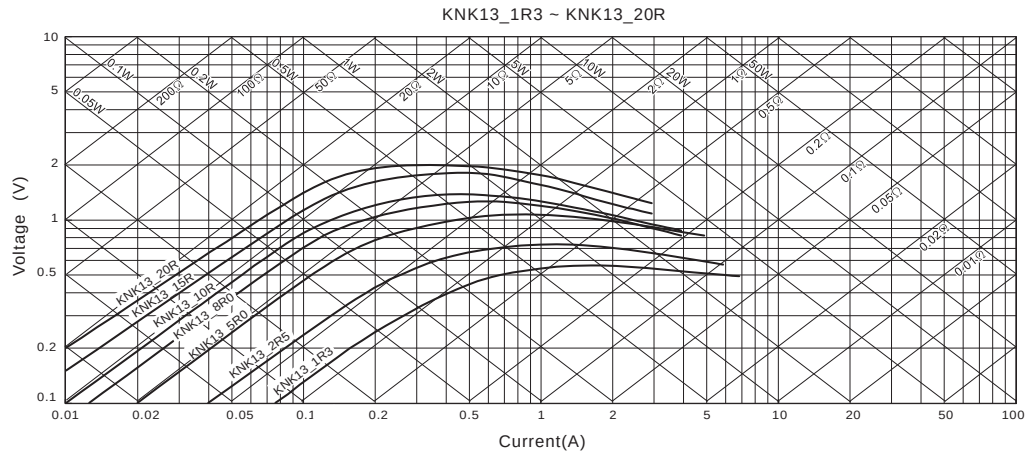
- R-T characteristic curve (representative)

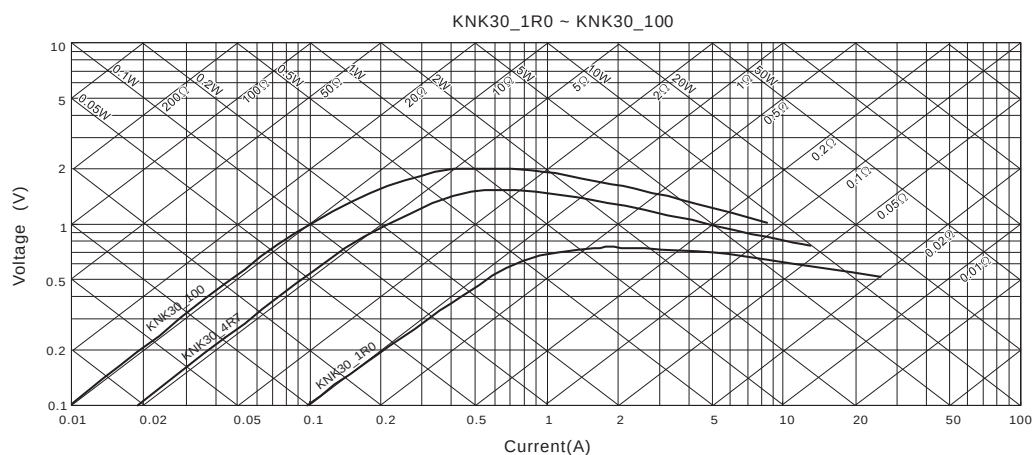
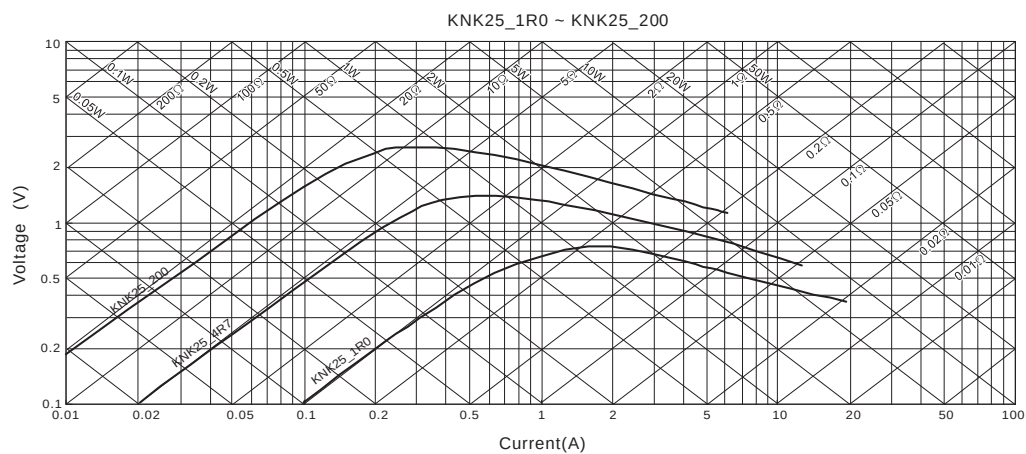




- V-I characteristic curve (representative)







● Reliability test

φ 5mm~ φ 20mm

Item	Test Conditions/Methods	Specifications															
Tensile Strength of Terminations	Gradually applying the force specified below to each terminal and keeping the unit fixed for 10±1 sec. <table><tr><th>Terminal diameter (mm)</th><th>Force (Kg)</th></tr><tr><td>0.5<d≤0.8</td><td>1.0</td></tr><tr><td>0.8<d≤1.25</td><td>2.0</td></tr></table>	Terminal diameter (mm)	Force (Kg)	0.5<d≤0.8	1.0	0.8<d≤1.25	2.0	No visible damage									
Terminal diameter (mm)	Force (Kg)																
0.5<d≤0.8	1.0																
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Bending Strength of Terminations	Hanging the force specified below to each terminal and gradually bending each terminal by 90° in one direction, then 90° in the opposite direction, and again back to the origin. <table><tr><th>Terminal diameter (mm)</th><th>Force (Kg)</th></tr><tr><td>0.5<d≤0.8</td><td>0.5</td></tr><tr><td>0.8<d≤1.25</td><td>1.0</td></tr></table>	Terminal diameter (mm)	Force (Kg)	0.5<d≤0.8	0.5	0.8<d≤1.25	1.0	No visible damage									
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Solderability	235 ±5℃ , 2 ±0.5 sec	At least 95% of terminal electrode is covered by new solder															
Resistance to Soldering Heat	350 ±5℃ , 3.5 ±0.5 sec	No visible damage ΔR/R ≤ 10 %															
Damp Heat	40 ±2℃ , 9 0 ~ 95 % RH ,1000 ±24 HRS	No visible damage ΔR/R ≤ 20 %															
Thermal Shock	The thermal shock conditions shown below shall be repeated 5 cycles <table><tr><th>Step</th><th>Temperature (℃)</th><th>Period (minutes)</th></tr><tr><td>1</td><td>Tmin±5</td><td>30±3</td></tr><tr><td>2</td><td>Room temperature</td><td>5±3</td></tr><tr><td>3</td><td>Tmax±5</td><td>30±3</td></tr><tr><td>4</td><td>Room temperature</td><td>5±3</td></tr></table>	Step	Temperature (℃)	Period (minutes)	1	Tmin±5	30±3	2	Room temperature	5±3	3	Tmax±5	30±3	4	Room temperature	5±3	No visible damage ΔR/R ≤ 20 %
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1	Tmin±5	30±3															
2	Room temperature	5±3															
3	Tmax±5	30±3															
4	Room temperature	5±3															
Life Test	25 ±5℃ , I _{max} X 1000 HRS	No visible damage ΔR/R ≤ 20 %															
Endurance	I _{max} 1min On/5 min OFF X 1000 cycles	No visible damage ΔR/R ≤ 20 %															

φ 25mm~ φ 30mm

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