

DATA SHEET

NEGATIVE TEMPERATURE COEFFICIENT MONITOR/SPS/FAX

SP series

RoHS compliant & Halogen free



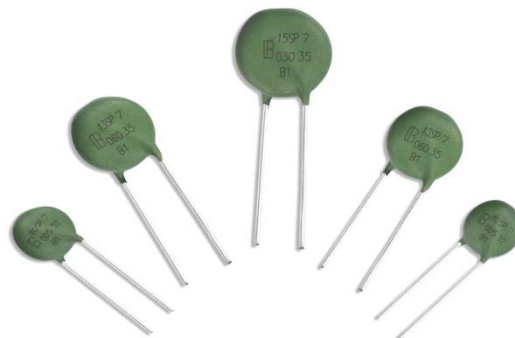
Product specification— February 27, 2019 V.0



NTC Thermistors Data Sheet

Features

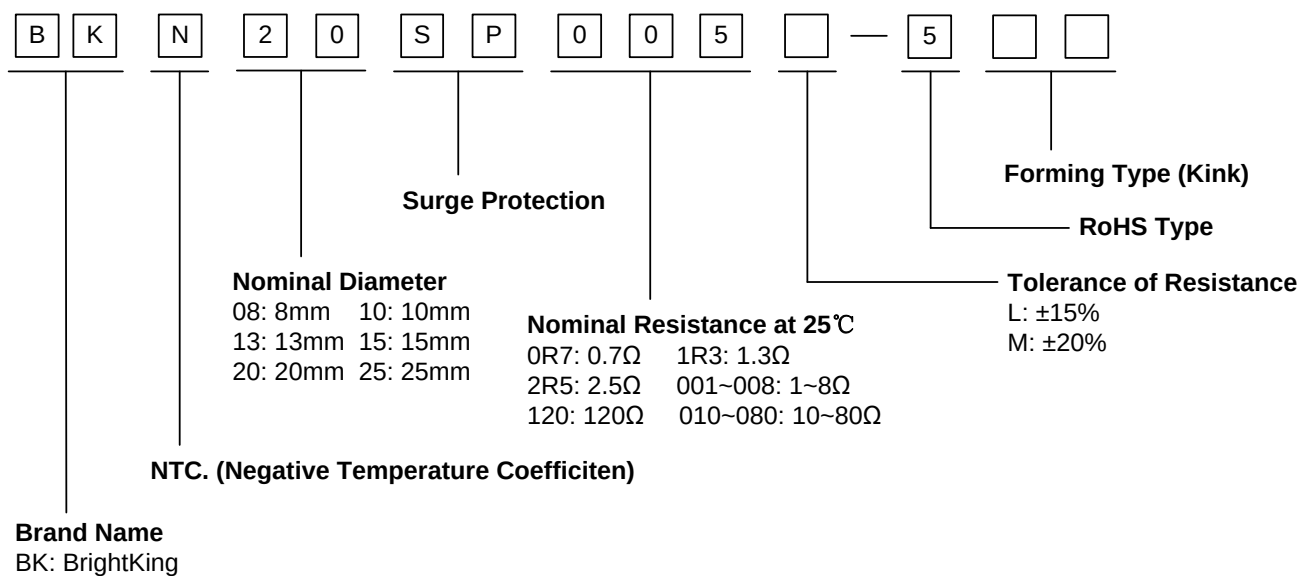
- Effectively restrain surge
- Low power loss under the stable state
- Over-current wide control range and fast response
- Thermal and electrical characteristics with high stability
- Wide range of electrical specifications
- RoHS& Halogen Free (HF) compliant
- Safety certification: UL: E133510



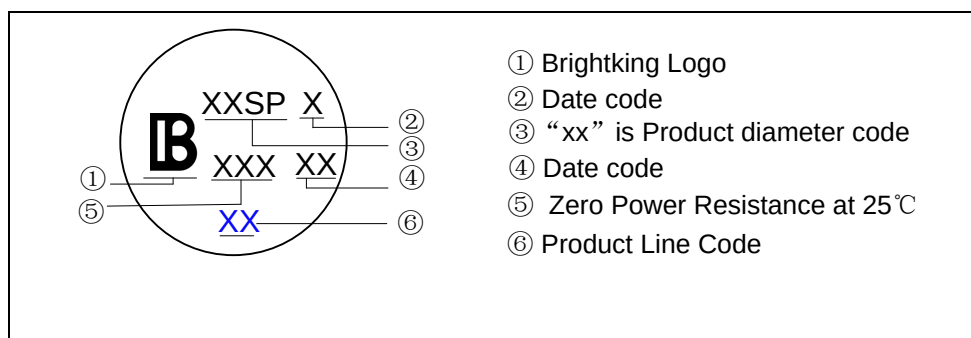
Applications

- Monitor, Sps, Fax, Telecom, Adaptor etc.
- Power supply, Communications equipment etc.

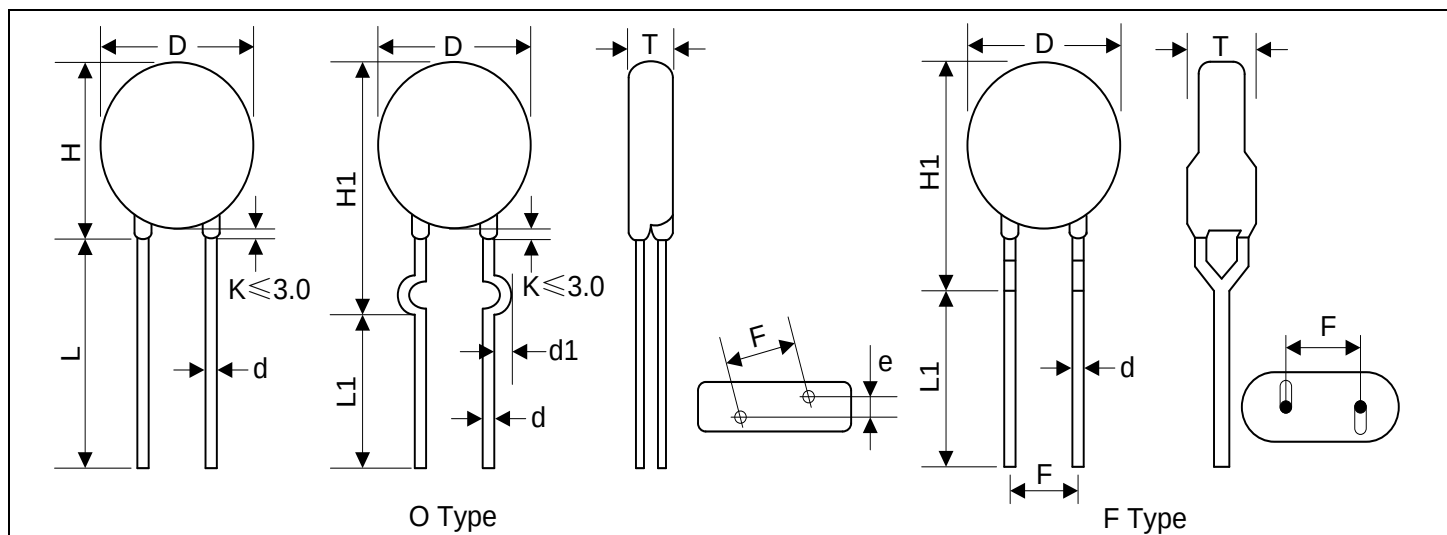
Part Number Code



Marking



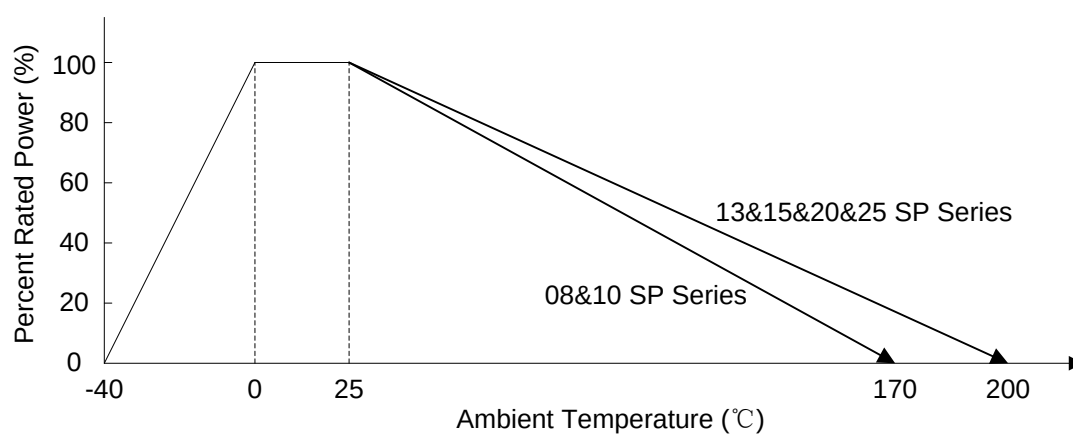
Dimensions (Unit: mm)



Disc Φ	D	H	H1	L (Min.)	L1 (Min.)	d (±0.02)	d1 (±0.4)	T	F (±0.8)	e (±0.5)
8	8.0~10.5	8.5~12.0	10.0~14.0	20.0	15	0.80	1.4	3.5~5.5	5.0	2.0
10	10.0~13.0	10.5~14.0	13.0~18.0	20.0	15	0.80	1.4	3.5~6.0	5.0	2.1
13	13.0~15.5	13.5~18.0	16.0~22.0	20.0	15	1.00	1.6	3.5~6.0	7.5	2.9
15	15.0~17.5	15.5~21.0	18.0~25.0	20.0	15	1.00	1.6	4.0~6.5	7.5	3.1
20	20.0~24.0	20.5~28.0	24.0~32.0	20.0	15	1.00	1.6	4.5~7.5	7.5	3.6
25	25.5~29.0	26.0~32.5	30.0~38.0	20.0	15	1.00	1.6	4.5~7.5	7.5	3.6

Remarks: Straight lead shape is the default lead shape for normal SP series product.

Maximum Power Rating (Pmax)



Specifications

Nominal Diameter (mm)	Part Number	Zero Power Resistance at 25°C	Max. Steady State Current	Typical value		Recommend Capacitance 240Vac	Max. Steady Power	Operating Temperature Range
				Thermal Time Constant	Thermal Dissipation Constant			
		(Ω)	(A)	(s)	(mW/°C)	(μF)	(W)	(°C)
8	BKN08SP003□-5	3	3	48	12	120	2.0	-40~+170
	BKN08SP004□-5	4	3	45	12	120	2.0	-40~+170
	BKN08SP005□-5	5	3	48	9	120	2.0	-40~+170
	BKN08SP006□-5	6	3	45	9	120	2.0	-40~+170
	BKN08SP008□-5	8	3	45	9	120	2.0	-40~+170
	BKN08SP010□-5	10	3	45	9	120	2.0	-40~+170
	BKN08SP015□-5	15	2	45	12	60	2.0	-40~+170
	BKN08SP020□-5	20	2	45	12	60	2.0	-40~+170
	BKN08SP022□-5	22	2	45	12	60	2.0	-40~+170
	BKN08SP033□-5	33	1.5	45	12	60	2.0	-40~+170
10	BKN10SP001□-5	1	5	65	17	330	2.5	-40~+170
	BKN10SP1R3□-5	1.3	5	63	17	330	2.5	-40~+170
	BKN10SP1R5□-5	1.5	5	60	15	330	2.5	-40~+170
	BKN10SP002□-5	2	5	55	12	330	2.5	-40~+170
	BKN10SP2R5□-5	2.5	5	58	11	330	2.5	-40~+170
	BKN10SP003□-5	3	5	60	11	330	2.5	-40~+170
	BKN10SP004□-5	4	4	62	10	330	2.5	-40~+170
	BKN10SP005□-5	5	4	58	10	330	2.5	-40~+170
	BKN10SP006□-5	6	3	59	10	220	2.5	-40~+170
	BKN10SP007□-5	7	3	60	13	220	2.5	-40~+170
	BKN10SP008□-5	8	3	59	12	220	2.5	-40~+170
	BKN10SP010□-5	10	3	56	12	220	2.5	-40~+170
	BKN10SP012□-5	12	2	58	11	220	2.5	-40~+170
	BKN10SP015□-5	15	2	62	11	220	2.5	-40~+170
	BKN10SP016□-5	16	2	62	11	220	2.5	-40~+170
	BKN10SP020□-5	20	2	60	12	220	2.5	-40~+170

Specifications

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				Thermal Time Constant	Thermal Dissipation Constant			
		(Ω)	(A)	(s)	(mW/°C)	(μF)	(W)	(°C)
10	BKN10SP025□-5	25	2	56	12	220	2.5	-40~+170
	BKN10SP050□-5	50	2	58	10	220	2.5	-40~+170
	BKN10SP080□-5	80	1	55	10	150	2.5	-40~+170
	BKN10SP120□-5	120	1	60	10	150	2.5	-40~+170
	BKN10SP150□-5	150	1	55	10	150	2.5	-40~+170
13	BKN13SP1R3□-5	1.3	7	91	15	430	3.0	-40~+200
	BKN13SP1R5□-5	1.5	7	90	15	430	3.0	-40~+200
	BKN13SP2R5□-5	2.5	6	85	16	430	3.0	-40~+200
	BKN13SP003□-5	3	5	93	16	430	3.0	-40~+200
	BKN13SP004□-5	4	5	91	16	430	3.0	-40~+200
	BKN13SP005□-5	5	5	93	17	430	3.0	-40~+200
	BKN13SP006□-5	6	5	92	16	430	3.0	-40~+200
	BKN13SP007□-5	7	5	91	16	430	3.0	-40~+200
	BKN13SP008□-5	8	4	91	15	430	3.0	-40~+200
	BKN13SP010□-5	10	4	87	14	430	3.0	-40~+200
	BKN13SP012□-5	12	4	82	18	330	3.0	-40~+200
	BKN13SP016□-5	16	3	87	15	330	3.0	-40~+200
	BKN13SP018□-5	18	3	90	17	330	3.0	-40~+200
	BKN13SP020□-5	20	3	93	17	330	3.0	-40~+200
	BKN13SP025□-5	25	3	93	17	330	3.0	-40~+200
15	BKN15SP1R3□-5	1.3	8	107	20	640	4.0	-40~+200
	BKN15SP1R5□-5	1.5	8	107	19	640	4.0	-40~+200
	BKN15SP2R5□-5	2.5	8	104	20	640	4.0	-40~+200
	BKN15SP003□-5	3	7	105	20	640	4.0	-40~+200
	BKN15SP004□-5	4	6	104	18	640	4.0	-40~+200
	BKN15SP005□-5	5	6	110	20	640	4.0	-40~+200
	BKN15SP006□-5	6	5	102	20	640	4.0	-40~+200
	BKN15SP007□-5	7	5	99	21	640	4.0	-40~+200

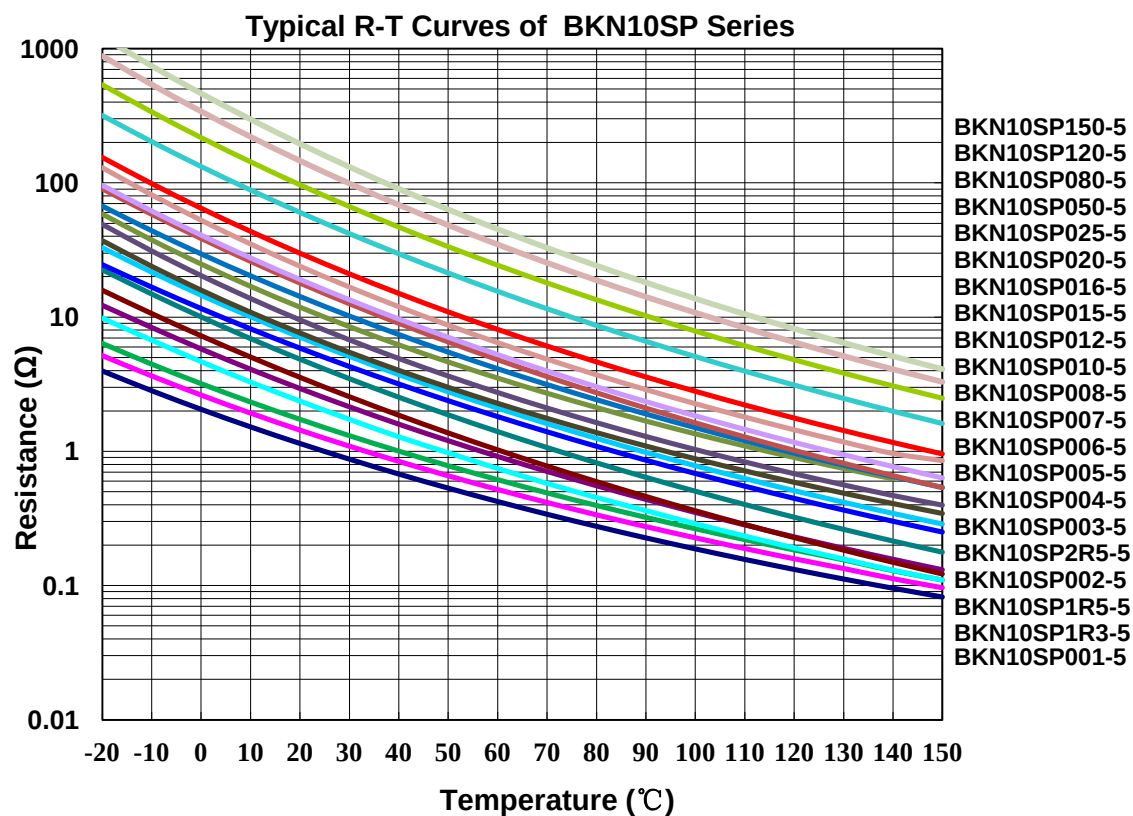
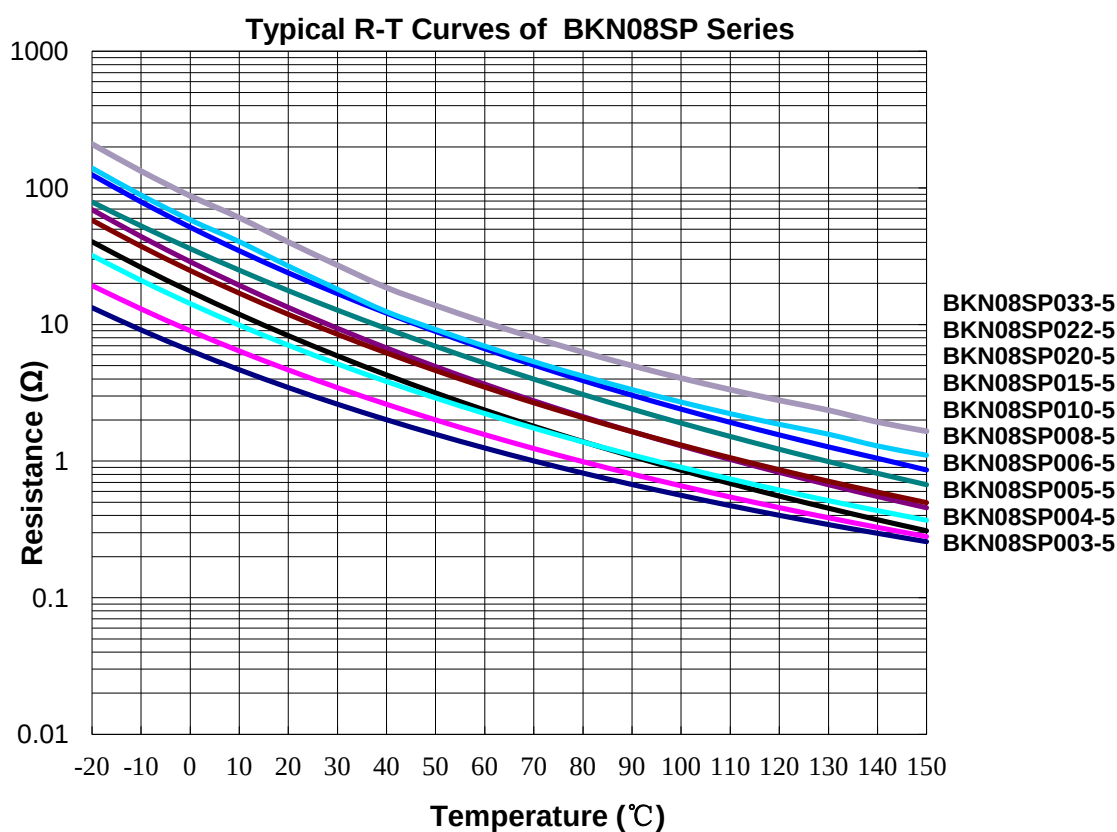
Specifications

Nominal Diameter (mm)	Part Number	Zero Power Resistance at 25°C	Max. Steady State Current	Typical value		Recommend Capacitance 240Vac	Max. Steady Power	Operating Temperature Range
		(Ω)	(A)	Thermal Time Constant	Thermal Dissipation Constant	(μF)	(W)	(°C)
		(Ω)	(A)	(s)	(mW/°C)	(μF)	(W)	(°C)
15	BKN15SP008□-5	8	5	103	15	640	4.0	-40~+200
	BKN15SP010□-5	10	5	103	19	640	4.0	-40~+200
	BKN15SP012□-5	12	4	102	21	560	4.0	-40~+200
	BKN15SP015□-5	15	4	101	17	560	4.0	-40~+200
	BKN15SP016□-5	16	4	102	22	560	4.0	-40~+200
	BKN15SP020□-5	20	4	101	20	560	4.0	-40~+200
	BKN15SP022□-5	22	4	101	20	560	4.0	-40~+200
	BKN15SP025□-5	25	3	100	21	560	4.0	-40~+200
	BKN15SP033□-5	33	3	100	21	560	4.0	-40~+200
	BKN15SP040□-5	40	3	101	20	560	4.0	-40~+200
	BKN15SP047□-5	47	3	102	21	560	4.0	-40~+200
	BKN15SP055□-5	55	3	102	21	560	4.0	-40~+200
	BKN15SP080□-5	80	2.5	102	22	560	4.0	-40~+200
	BKN15SP120□-5	120	2	104	20	560	4.0	-40~+200
20	BKN20SP0R7□-5	0.7	12	145	25	820	5.0	-40~+200
	BKN20SP001□-5	1	10	135	25	820	5.0	-40~+200
	BKN20SP1R3□-5	1.3	8	144	24	820	5.0	-40~+200
	BKN20SP002□-5	2	8	140	21	820	5.0	-40~+200
	BKN20SP2R5□-5	2.5	8	120	23	820	5.0	-40~+200
	BKN20SP004□-5	4	8	135	25	820	5.0	-40~+200
	BKN20SP005□-5	5	7	144	24	820	5.0	-40~+200
	BKN20SP006□-5	6	6	136	24	820	5.0	-40~+200
	BKN20SP007□-5	7	6	132	24	820	5.0	-40~+200
	BKN20SP008□-5	8	6	135	24	820	5	-40~+200
	BKN20SP010□-5	10	6	135	23	820	5.0	-40~+200
	BKN20SP012□-5	12	5	132	25	820	5.0	-40~+200
	BKN20SP020□-5	20	6	127	22	740	5.0	-40~+200
	BKN20SP025□-5	25	6	127	22	740	5.0	-40~+200
	BKN20SP120□-5	120	2	142	24	740	5.0	-40~+200

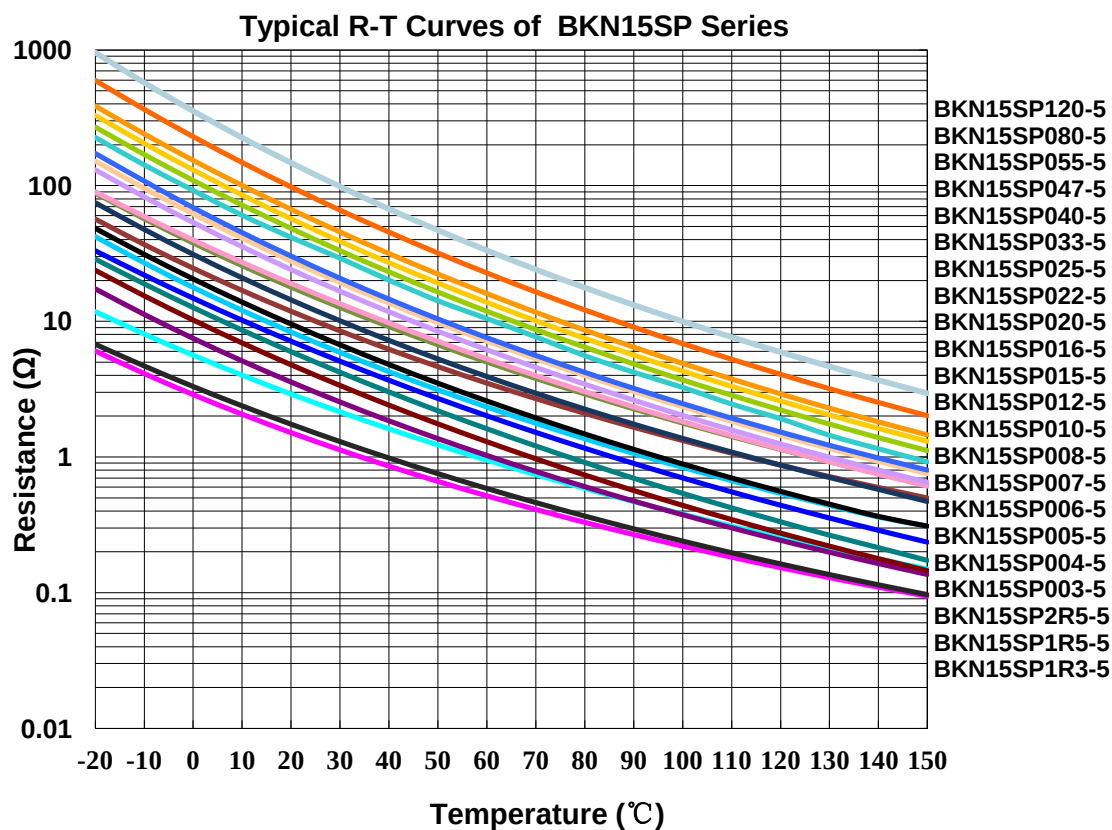
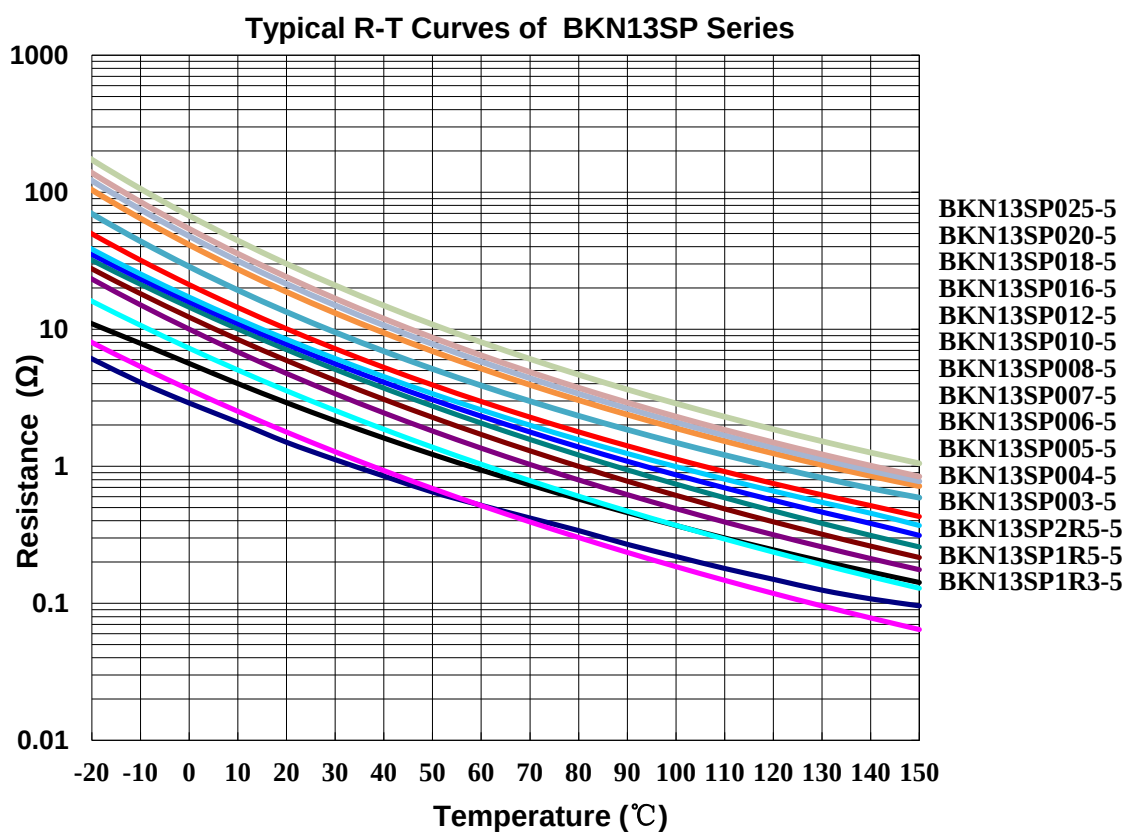
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				Thermal Time Constant	Thermal Dissipation Constant			
		(Ω)	(A)	(s)	(mW/°C)	(μF)	(W)	(°C)
25	BKN25SP001□-5	1	15	150	30	1240	6.5	-40~+200
	BKN25SP1R5□-5	1.5	15	150	30	1240	6.5	-40~+200
	BKN25SP002□-5	2	15	150	30	1240	6.5	-40~+200
	BKN25SP2R5□-5	2.5	15	150	30	1240	6.5	-40~+200
	BKN25SP003□-5	3	15	150	30	1240	6.5	-40~+200
	BKN25SP004□-5	4	14	150	30	1240	6.5	-40~+200
	BKN25SP4R7□-5	4.7	13	150	30	1240	6.5	-40~+200
	BKN25SP005□-5	5	12	150	30	1240	6.5	-40~+200
	BKN25SP6R8□-5	6.8	10.5	150	30	820	6.5	-40~+200
	BKN25SP007□-5	7	10	150	30	820	6.5	-40~+200
	BKN25SP008□-5	8	9	150	30	820	6.5	-40~+200
	BKN25SP010□-5	10	8	150	30	820	6.5	-40~+200
	BKN25SP012□-5	12	7.5	150	30	820	6.5	-40~+200
	BKN25SP015□-5	15	6.5	150	30	740	6.5	-40~+200
	BKN25SP018□-5	18	5.5	150	30	740	6.5	-40~+200
	BKN25SP020□-5	20	5	150	30	740	6.5	-40~+200

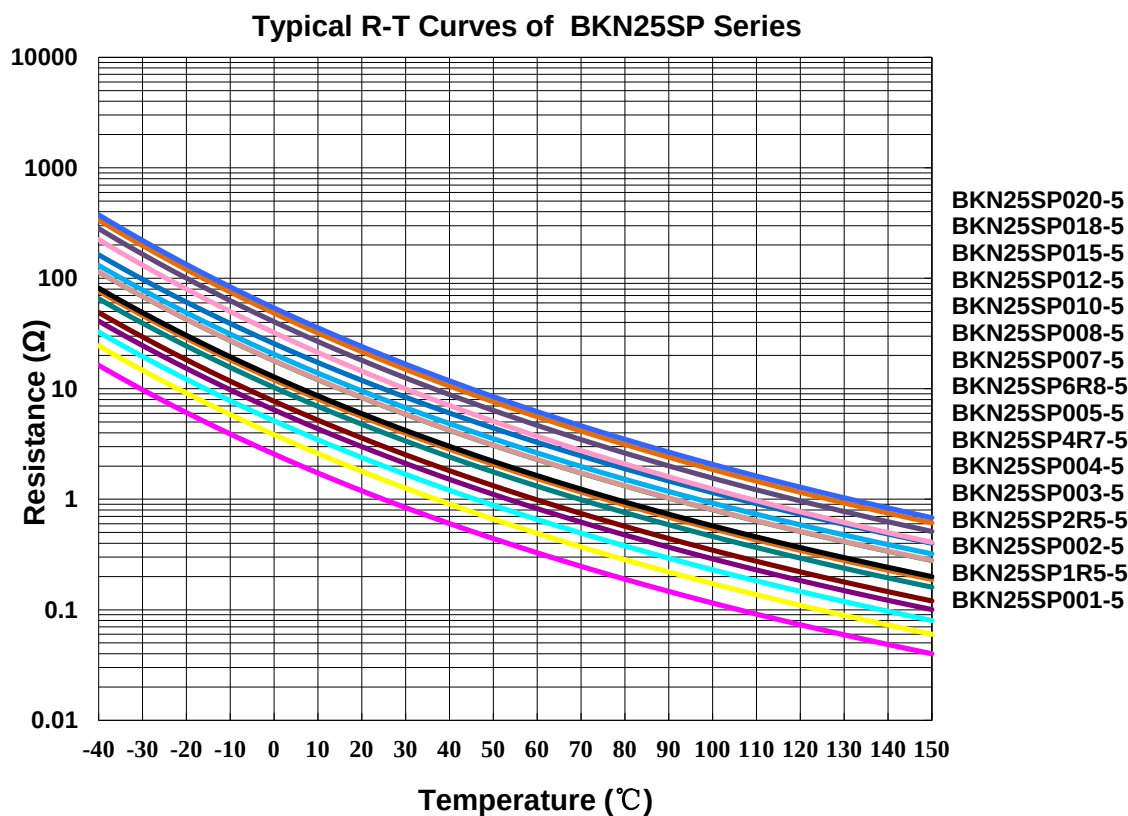
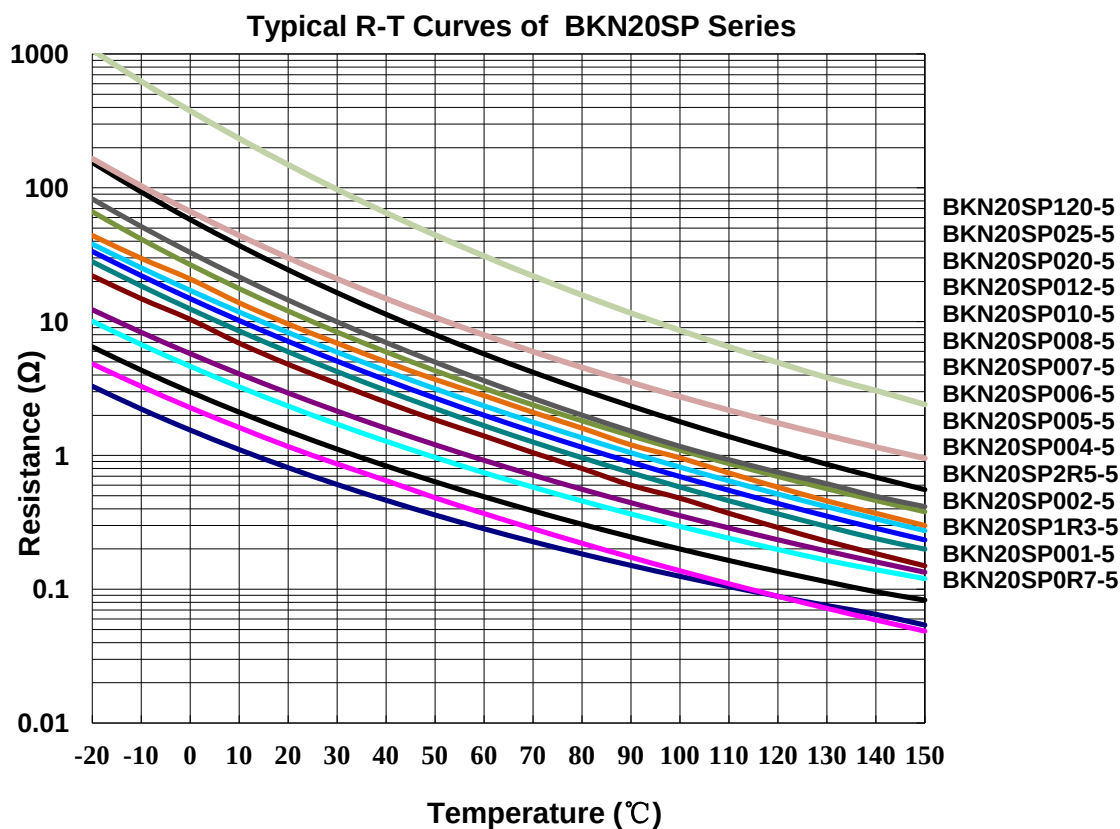
Resistance–Temperature Characteristic Curves



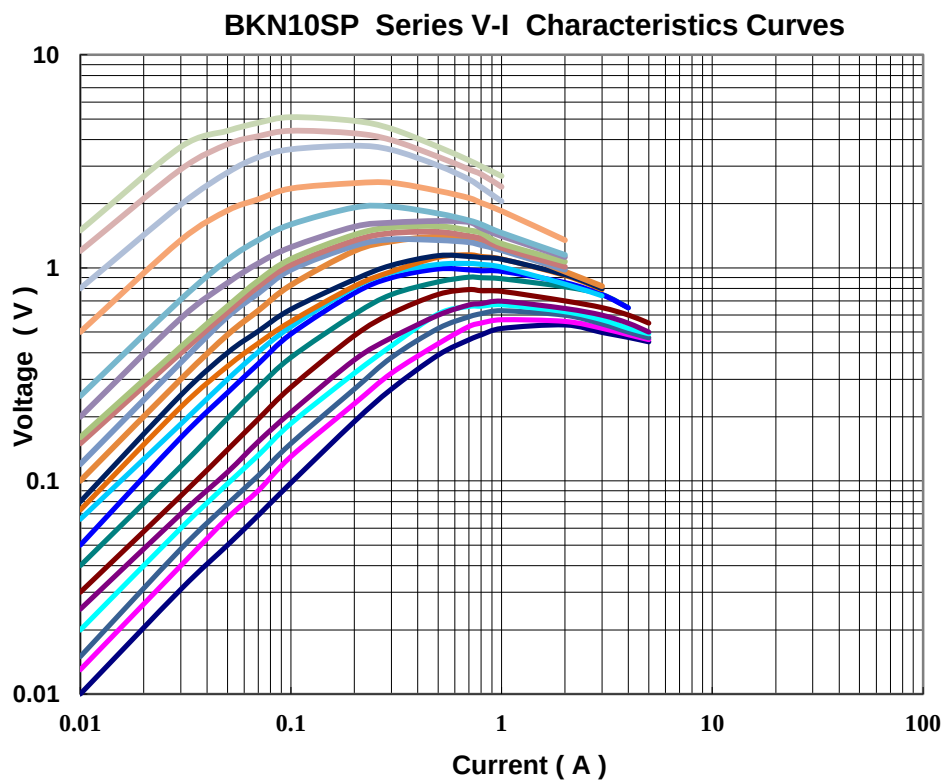
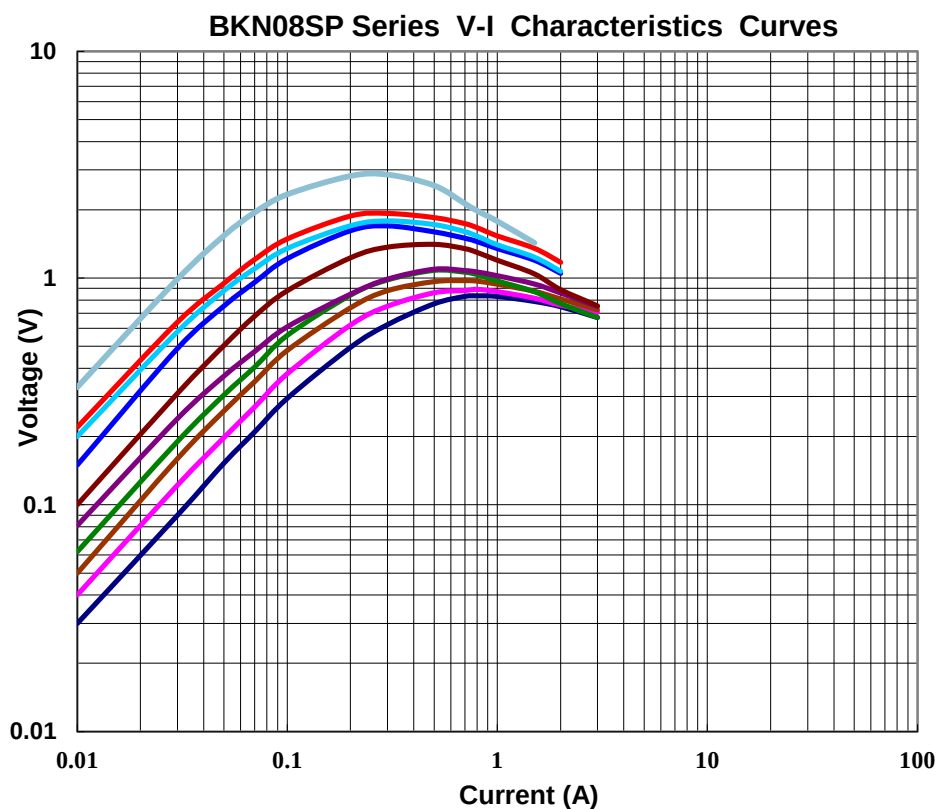
Resistance–Temperature Characteristic Curves



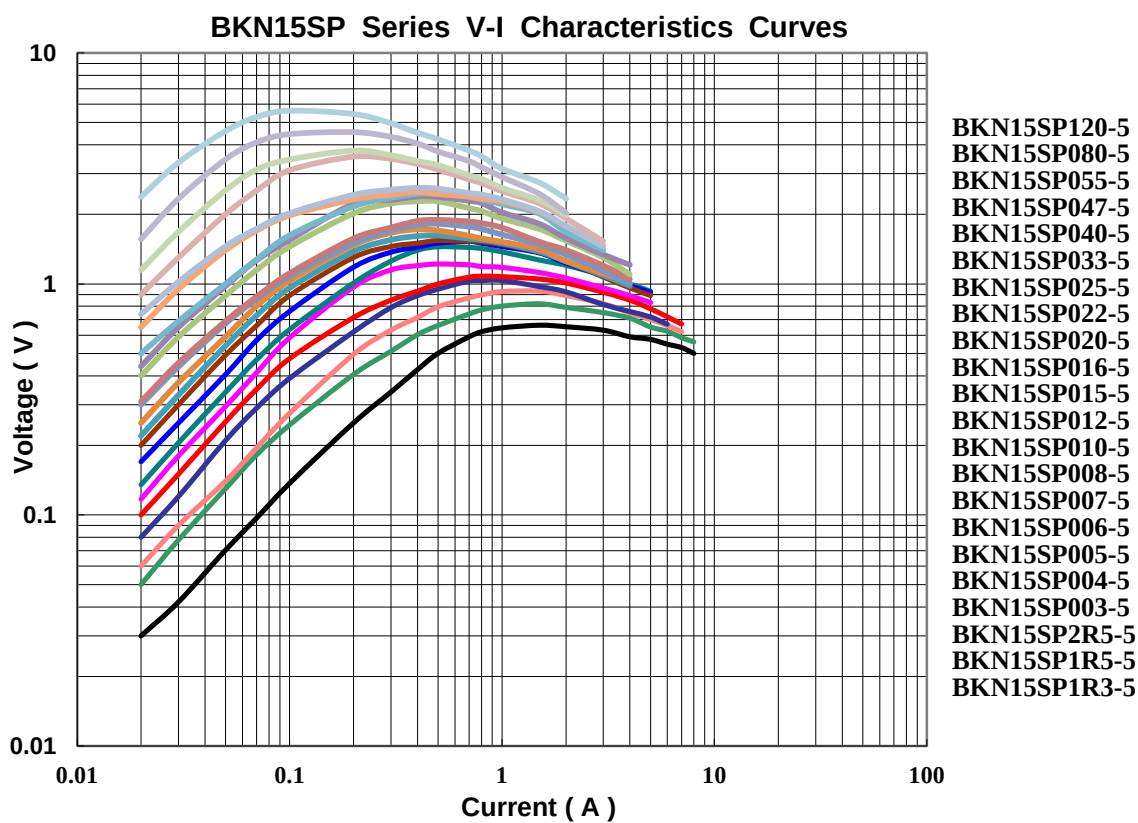
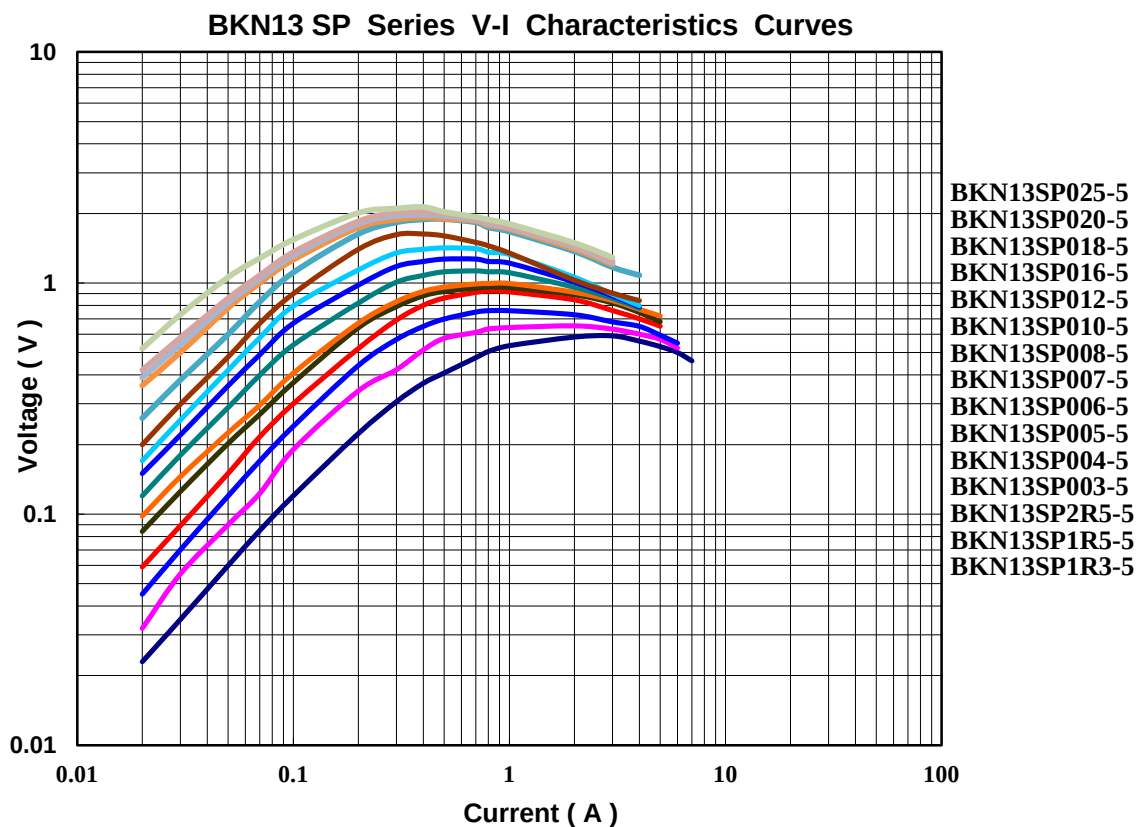
Resistance–Temperature Characteristic Curves



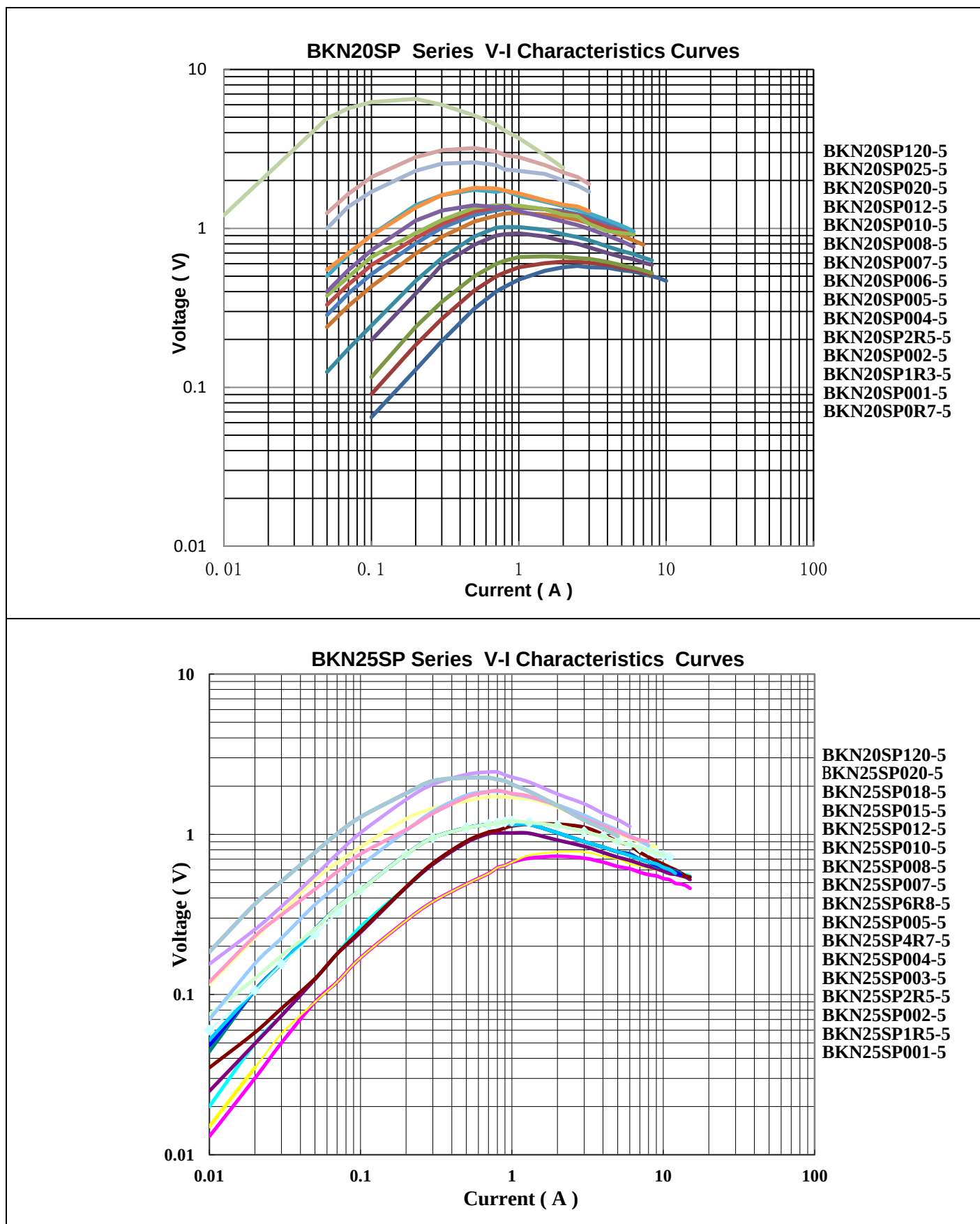
V-I Characteristic Curves



V-I Characteristic Curves

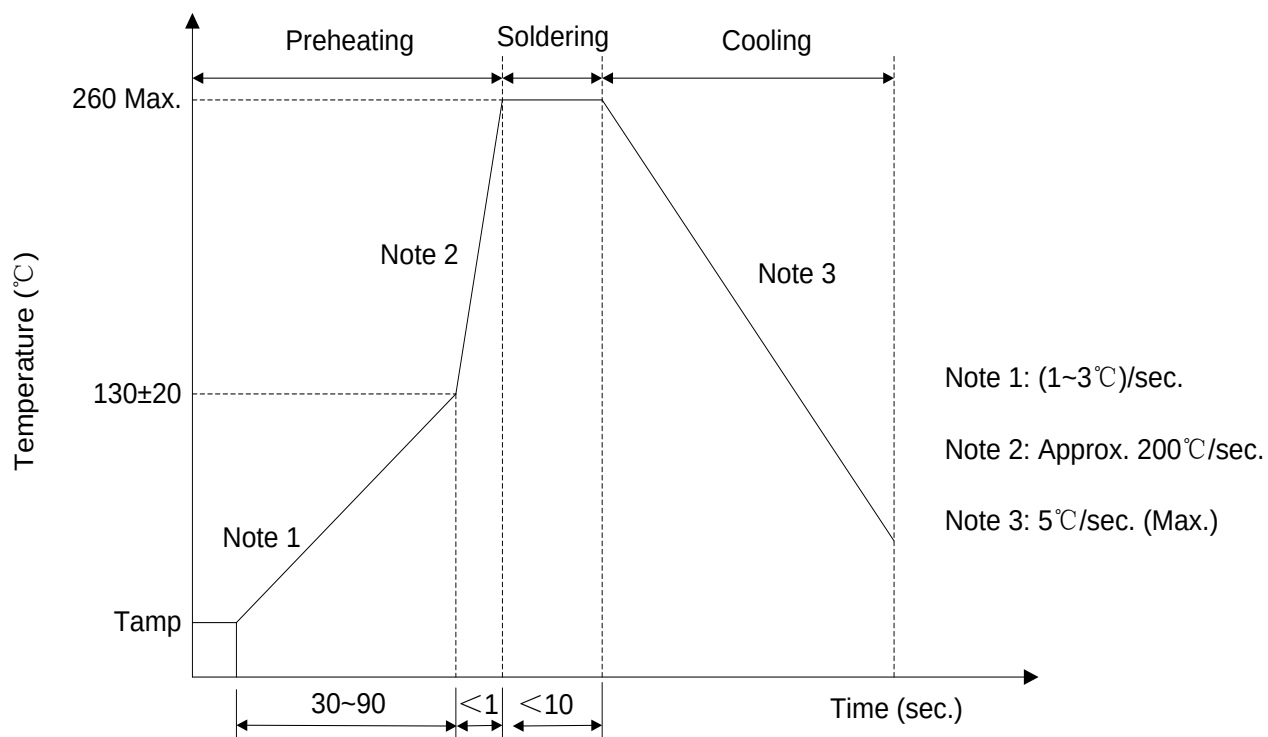


V-I Characteristic Curves



Soldering Recommendation

Wave Soldering Recommendation

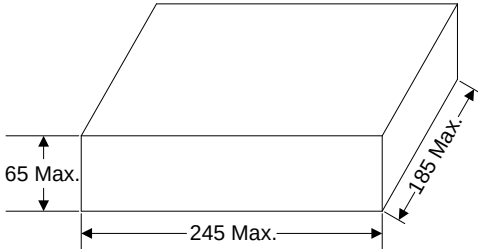


Recommended Reworking Conditions with Soldering Iron

Item	Conditions
Temperature of Soldering Iron-tip	360°C(max.)
Soldering Time	3 seconds(max.)
Distance from Thermistor	2mm (min.)

Packaging

■ Bulk Packing

Bulk (Unit: mm)	Quantity
	1000pcs/box (Φ8、Φ10)
	600pcs/box (Φ13)
	500pcs/box (Φ15)
	300pcs/box (Φ20)
	100pcs/box (Φ25)

Warehouse Storage Conditions

- Storage temperature: -10℃~+40℃.
- Relative humidity: ≤75%RH.
- Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.