NTC Thermistors Data Sheet

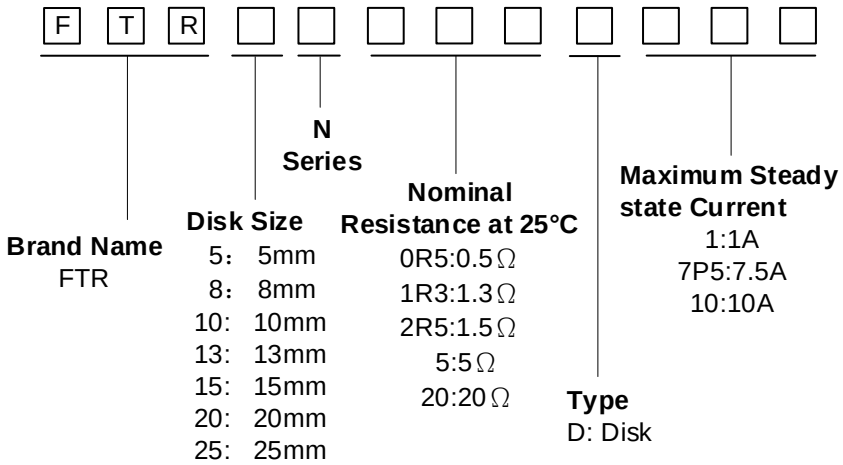
Features

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

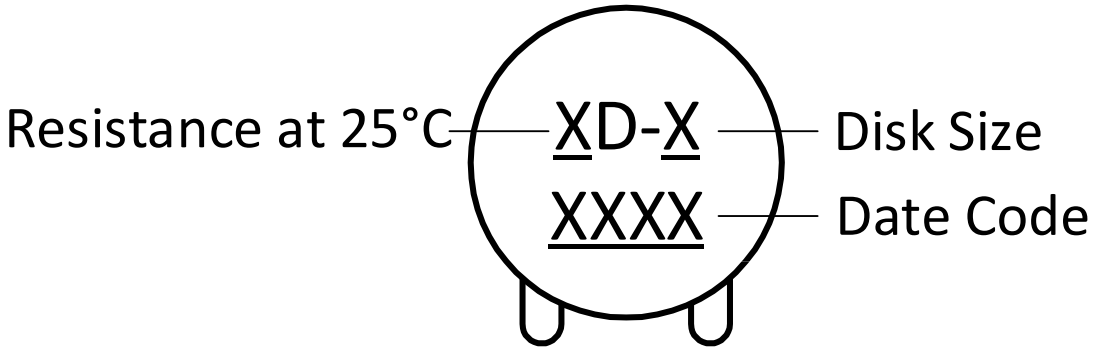
Applications

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

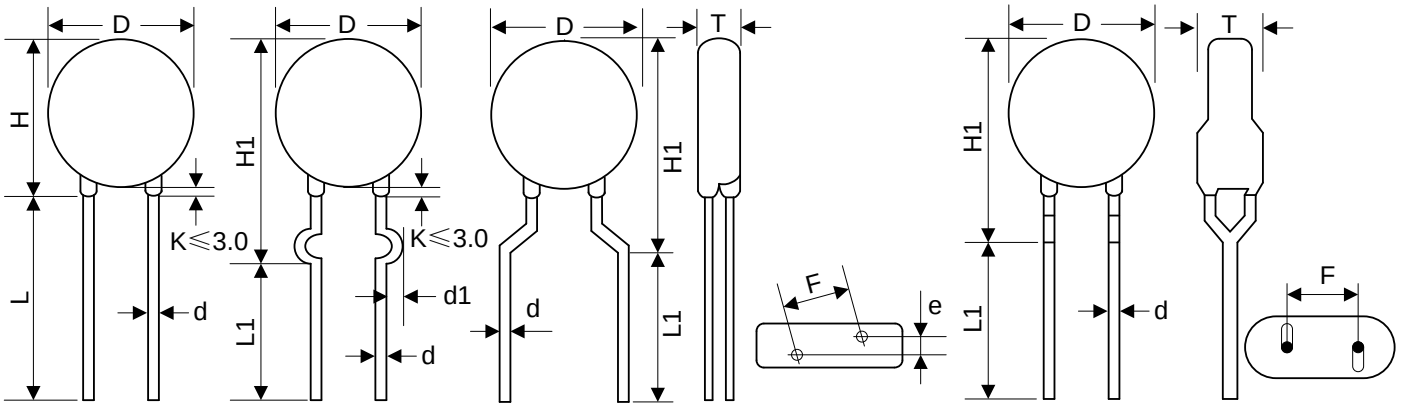
Part Number Code



Marking



Dimensions (Unit: mm)



O Type V Type F Type

Disc Φ	D	H	H1	L (Min.)	L1 (Min.)	d (±0.02)	d1 (±0.4)	T	F (±0.8)	e (±0.5)
5	5.0～7.0	/	5.5～10.0	/	15	0.60	1.4	3.5～5.5	5.0	1.6
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: "V" type lead is the default lead shape of 5D products, normal straight lead shape for others.

Electrical Characteristics

Nominal Diameter (mm)	Part Number	Zero Power Resistance at 25℃	Maximum Steady State Current at 25℃	Thermal Time Constant	Thermal Dissipation Constant	Recommend Capacitance 240Vac	Maximum Steady Power	Operating Temperature Range
		(Ω)	(A)	(s)	(mW/℃)	(μF)	(W)	(℃)
5	FTR5N5D2	5	2	35	7	30	1.5	-40~+170
	FTR5N10D1	10	1	35	7	30	1.5	-40~+170
	FTR5N6D2	6	2	35	7	30	1.5	-40~+170
	FTR5N7D2	7	2	35	7	30	1.5	-40~+170
	FTR5N8D2	8	2	35	7	30	1.5	-40~+170
	FTR5N9D2	9	2	35	7	30	1.5	-40~+170
	FTR5N10D2	10	2	35	7	30	1.5	-40~+170
	FTR5N12D1	12	1	35	7	30	1.5	-40~+170
	FTR5N12D2	12	2	35	7	30	1.5	-40~+170
	FTR5N45DP25	45	0.25	35	7	30	1.5	-40~+170
8	FTR8N3D4	3	4	48	12	120	2.3	-40~+170
	FTR8N4D4	4	4	48	12	120	2.3	-40~+170
	FTR8N5D4	5	4	48	9	120	2.3	-40~+170
	FTR8N6D4	6	4	48	9	120	2.3	-40~+170
	FTR8N7D4	7	4	48	9	120	2.3	-40~+170
	FTR8N8D3	8	3	45	12	120	2.3	-40~+170
	FTR8N9D3	9	3	45	12	120	2.3	-40~+170
	FTR8N10D3	10	3	45	12	120	2.3	-40~+170
	FTR8N15D2	15	2	45	12	60	2.0	-40~+170
	FTR8N20D2	20	2	45	12	60	2.0	-40~+170
	FTR8N22D2	22	2	45	12	60	2.0	-40~+170
	FTR8N33D1P5	33	1.5	45	12	60	2.0	-40~+170
10	FTR10N1D5	1	5	59	12	330	2.5	-40~+170
	FTR10N1R3D5	1.3	5	63	17	330	2.5	-40~+170
	FTR10N1R5D5	1.5	5	60	15	330	2.5	-40~+170
	FTR10N2D5	2	5	59	12	330	2.5	-40~+170
	FTR10N2R5D5	2.5	5	58	11	330	2.5	-40~+170
	FTR10N3D5	3	5	59	12	330	2.5	-40~+170
	FTR10N5D4	5	4	59	12	330	2.5	-40~+170
	FTR10N6D4	6	4	59	12	330	2.5	-40~+170
	FTR10N7D4	7	4	59	12	330	2.5	-40~+170
	FTR10N8D4	8	4	59	12	330	2.5	-40~+170

Notes: Tolerance of Resistance is ±20%

Electrical Characteristics

Nominal Diameter (mm)	Part Number	Zero Power Resistance at 25℃	Maximum Steady State Current at 25℃	Thermal Time Constant	Thermal Dissipation Constant	Recommend Capacitance 240Vac	Maximum Steady Power	Operating Temperature Range
		(Ω)	(A)	(s)	(mW/℃)	(μF)	(W)	(℃)
10	FTR10N9D4	9	4	59	12	330	2.5	-40~+170
	FTR10N10D4	10	4	59	12	330	2.5	-40~+170
	FTR10N11D3	11	3	58	11	230	2.5	-40~+170
	FTR10N12D3	12	3	58	11	230	2.5	-40~+170
	FTR10N13D3	13	3	58	11	230	2.5	-40~+170
	FTR10N14D3	14	3	58	11	230	2.5	-40~+170
	FTR10N15D3	15	3	62	11	230	2.5	-40~+170
	FTR10N16D3	16	3	62	11	230	2.5	-40~+170
	FTR10N17D3	17	3	62	11	230	2.5	-40~+170
	FTR10N18D3	18	3	62	11	230	2.5	-40~+170
	FTR10N19D3	19	3	62	11	230	2.5	-40~+170
	FTR10N20D3	20	3	62	11	230	2.5	-40~+170
	FTR10N21D3	21	3	62	11	230	2.5	-40~+170
	FTR10N22D3	22	3	62	11	230	2.5	-40~+170
	FTR10N25D2	25	2	56	12	220	2.5	-40~+170
	FTR10N50D2	50	2	58	10	220	2.5	-40~+170
	FTR10N80D1	80	1	55	10	150	2.5	-40~+170
	FTR10N120D1	120	1	60	10	150	2.5	-40~+170
	FTR10N150D1	150	1	55	10	150	2.5	-40~+170
13	FTR13N1D7	1	7	85	18	430	3	-40~+200
	FTR13N1R3D7	1.3	7	91	15	430	3.0	-40~+200
	FTR13N1R5D7	1.5	7	90	15	430	3.0	-40~+200
	FTR13N2D7	2	7	85	18	430	3	-40~+200
	FTR13N2R5D6	2.5	6	85	16	430	3.0	-40~+200
	FTR13N3D7	3	7	85	18	430	3	-40~+200
	FTR13N4D5	4	5	91	16	430	3.0	-40~+200
	FTR13N5D7	5	6	93	17	430	3	-40~+200
	FTR13N6D5	6	5	90	17	430	3	-40~+200
	FTR13N7D5	7	5	80	19	430	3	-40~+200
	FTR13N8D5	8	5	91	15	430	3	-40~+200
	FTR13N9D5	9	5	89	15	430	3	-40~+200

Notes: Tolerance of Resistance is ±20%

Electrical Characteristics

Nominal Diameter (mm)	Part Number	Zero Power Resistance at 25℃	Maximum Steady State Current at 25℃	Thermal Time Constant	Thermal Dissipation Constant	Recommend Capacitance 240Vac	Maximum Steady Power	Operating Temperature Range
		(Ω)	(A)	(s)	(mW/℃)	(μF)	(W)	(℃)
13	FTR13N10D5	10	5	87	14	430	3	-40~+200
	FTR13N11D4	11	4	87	14	330	3	-40~+200
	FTR13N12D4	12	4	87	14	330	3	-40~+200
	FTR13N13D4	13	4	87	14	330	3	-40~+200
	FTR13N14D4	14	4	87	14	330	3	-40~+200
	FTR13N15D4	15	4	87	14	330	3	-40~+200
	FTR13N16D4	16	4	87	15	330	3	-40~+200
	FTR13N17D4	17	4	87	15	330	3	-40~+200
	FTR13N18D4	18	4	87	15	330	3	-40~+200
	FTR13N19D4	19	4	87	15	330	3	-40~+200
	FTR13N20D4	20	4	87	15	330	3	-40~+200
	FTR13N25D3	25	3	93	17	330	3.0	-40~+200
15	FTR15N1D9	1	9	104	20	640	4	-40~+200
	FTR15N1R3D8	1.3	8	107	20	640	4.0	-40~+200
	FTR15N1R5D8	1.5	8	107	19	640	4.0	-40~+200
	FTR15N2D9	2	9	104	20	640	4	-40~+200
	FTR15N2R5D9	2.5	9	104	20	640	4	-40~+200
	FTR15N3D9	3	9	106	20	640	4	-40~+200
	FTR15N4D6	4	6	104	18	640	4.0	-40~+200
	FTR15N5D8	5	8	110	20	640	4	-40~+200
	FTR15N6D5	6	5	102	20	640	4.0	-40~+200
	FTR15N7D5	7	5	99	21	640	4.0	-40~+200
	FTR15N8D6	8	6	99	15	640	4	-40~+200
	FTR15N9D6	9	6	99	16	640	4	-40~+200
	FTR15N10D6	10	6	99	19	640	4	-40~+200
	FTR15N11D6	11	6	99	19	560	4	-40~+200
	FTR15N12D6	12	6	99	21	560	4	-40~+200
	FTR15N13D6	13	6	99	19	560	4	-40~+200
	FTR15N14D6	14	6	99	19	560	4	-40~+200
	FTR15N15D6	15	6	99	17	560	4	-40~+200
	FTR15N16D4	16	4	102	22	560	4.0	-40~+200

Notes: Tolerance of Resistance is ±20%

Electrical Characteristics

Nominal Diameter (mm)	Part Number	Zero Power Resistance at 25℃	Maximum Steady State Current at 25℃	Thermal Time Constant	Thermal Dissipation Constant	Recommend Capacitance 240Vac	Maximum Steady Power	Operating Temperature Range
		(Ω)	(A)	(s)	(mW/℃)	(μF)	(W)	(℃)
15	FTR15N20D4	20	4	101	20	560	4.0	-40~+200
	FTR15N22D4	22	4	101	20	560	4.0	-40~+200
	FTR15N25D3	25	3	100	21	560	4.0	-40~+200
	FTR15N33D3	33	3	100	21	560	4.0	-40~+200
	FTR15N40D4	40	4	101	20	560	4	-40~+200
	FTR15N47D3	47	3	102	21	560	4.0	-40~+200
	FTR15N55D3	55	3	102	21	560	4.0	-40~+200
	FTR15N80D2P5	80	2.5	102	22	560	4.0	-40~+200
	FTR15N120D2	120	2	104	20	560	4.0	-40~+200
20	FTR20N0R7D12	0.7	12	160	28	820	5	-40~+200
	FTR20N1D12	1	12	160	28	820	5	-40~+200
	FTR20N1R3D8	1.3	8	144	24	820	5.0	-40~+200
	FTR20N2D12	2	12	160	28	820	5	-40~+200
	FTR20N2R5D12	2.5	12	120	24	820	5	-40~+200
	FTR20N3D12	3	12	130	24	820	5	-40~+200
	FTR20N4D8	4	8	135	25	820	5.0	-40~+200
	FTR20N5D10	5	10	144	24	820	5	-40~+200
	FTR20N6D10	6	10	144	24	820	5	-40~+200
	FTR20N7D6	7	6	132	24	820	5.0	-40~+200
	FTR20N8D6	8	6	135	24	820	5	-40~+200
	FTR20N10D6	10	6	135	23	820	5.0	-40~+200
	FTR20N12D5	12	5	132	25	820	5.0	-40~+200
	FTR20N20D6	20	6	127	22	740	5.0	-40~+200
	FTR20N25D6	25	6	127	22	740	5.0	-40~+200
	FTR20N120D2	120	2	142	24	740	5.0	-40~+200
25	FTR25N1D15	1	15	150	30	1240	6.5	-40~+200
	FTR25N1R5D15	1.5	15	150	30	1240	6.5	-40~+200

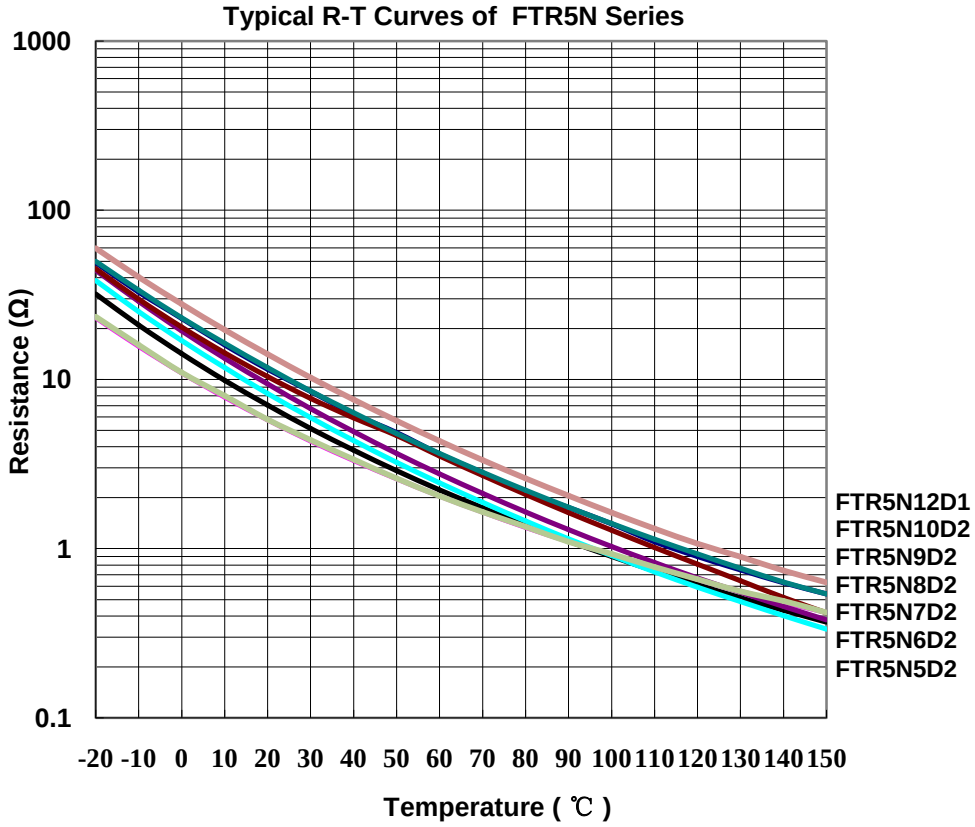
Notes: Tolerance of Resistance is ±20%

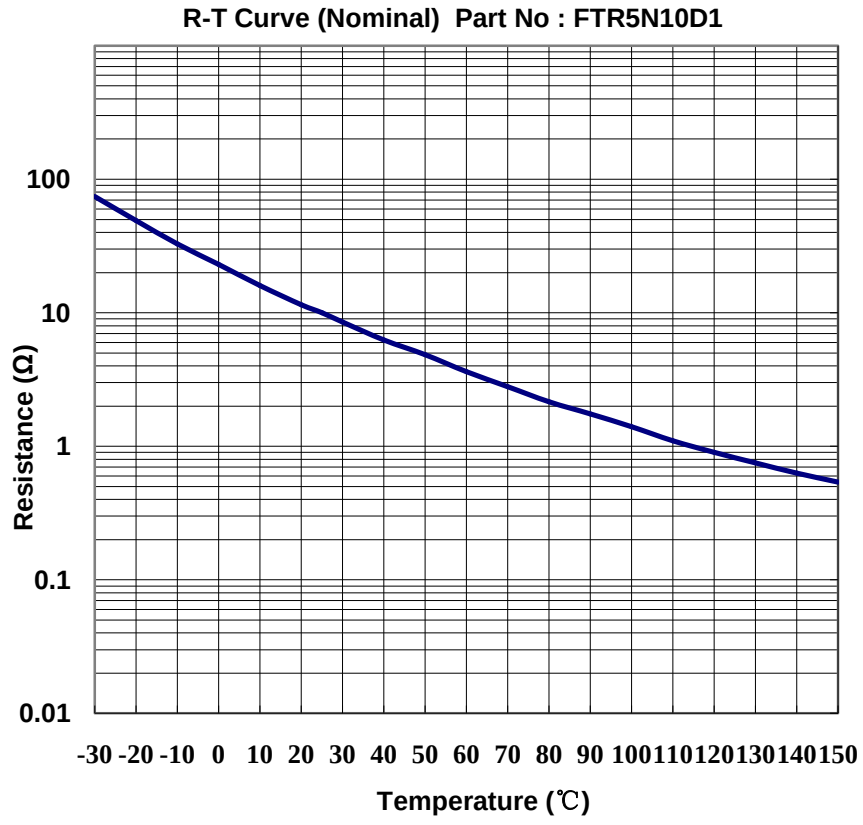
Electrical Characteristics

Nominal Diameter (mm)	Part Number	Zero Power Resistance at 25℃	Maximum Steady State Current at 25℃	Thermal Time Constant	Thermal Dissipation Constant	Recommend Capacitance 240Vac	Maximum Steady Power	Operating Temperature Range
		(Ω)	(A)	(s)	(mW/℃)	(μF)	(W)	(℃)
25	FTR25N2D15	2	15	150	30	1240	6.5	-40~+200
	FTR25N2R5D15	2.5	15	150	30	1240	6.5	-40~+200
	FTR25N3D15	3	15	150	30	1240	6.5	-40~+200
	FTR25N4D14	4	14	150	30	1240	6.5	-40~+200
	FTR25N4R7D13	4.7	13	150	30	1240	6.5	-40~+200
	FTR25N5D12	5	12	150	30	1240	6.5	-40~+200
	FTR25N6R8D10P5	6.8	10.5	150	30	820	6.5	-40~+200
	FTR25N7D10	7	10	150	30	820	6.5	-40~+200
	FTR25N8D9	8	9	150	30	820	6.5	-40~+200
	FTR25N10D8	10	8	150	30	820	6.5	-40~+200
	FTR25N12D7P5	12	7.5	150	30	820	6.5	-40~+200
	FTR25N15D6P5	15	6.5	150	30	740	6.5	-40~+200
	FTR25N18D5P5	18	5.5	150	30	740	6.5	-40~+200
	FTR25N20D5	20	5	150	30	740	6.5	-40~+200

Notes: Tolerance of Resistance is ±20%

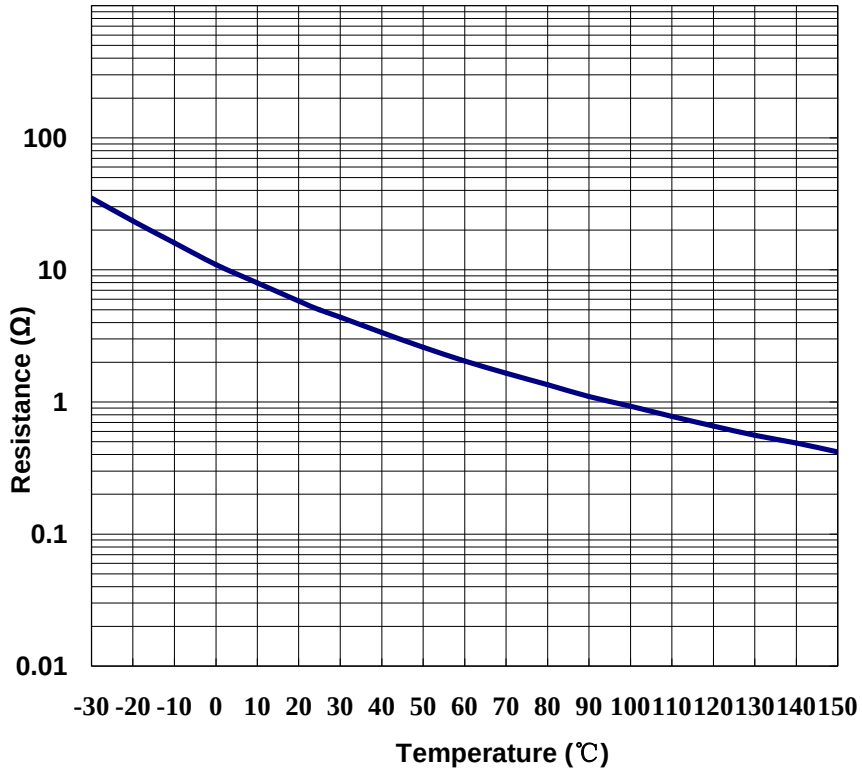
Resistance–Temperature Characteristic Curves



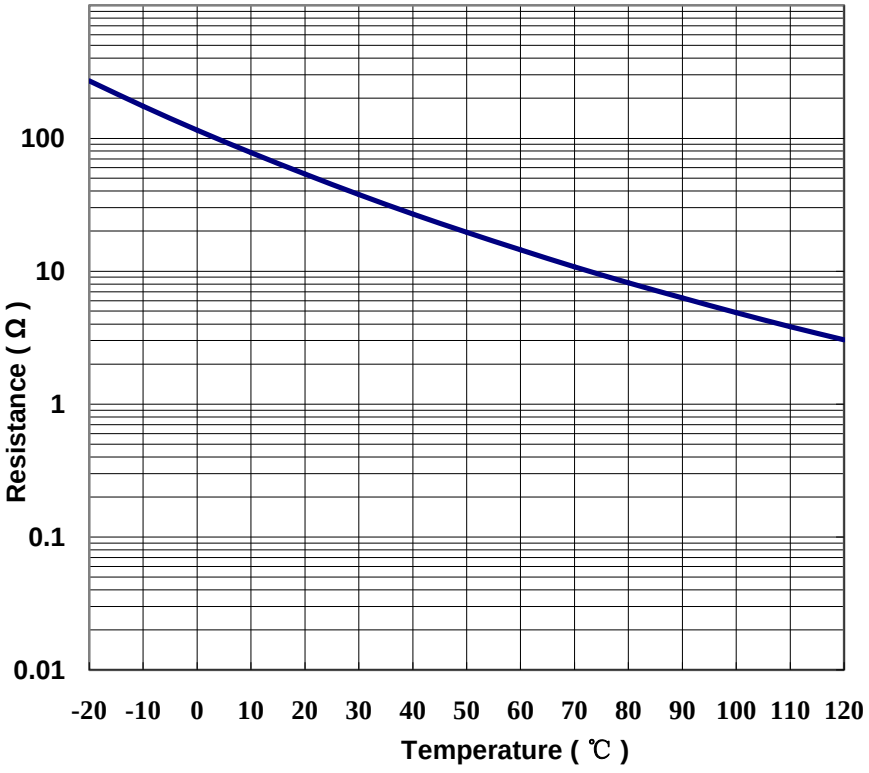


Resistance–Temperature Characteristic Curves

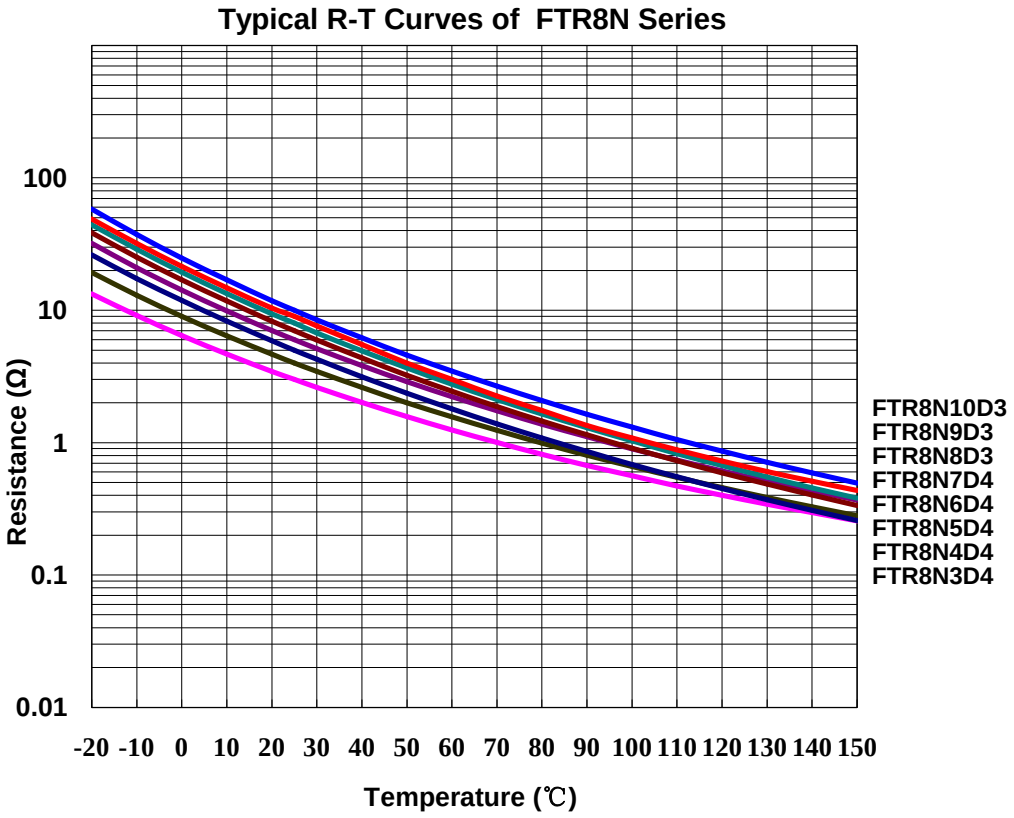
R-T Curve (Nominal) Part No : FTR5N12D2

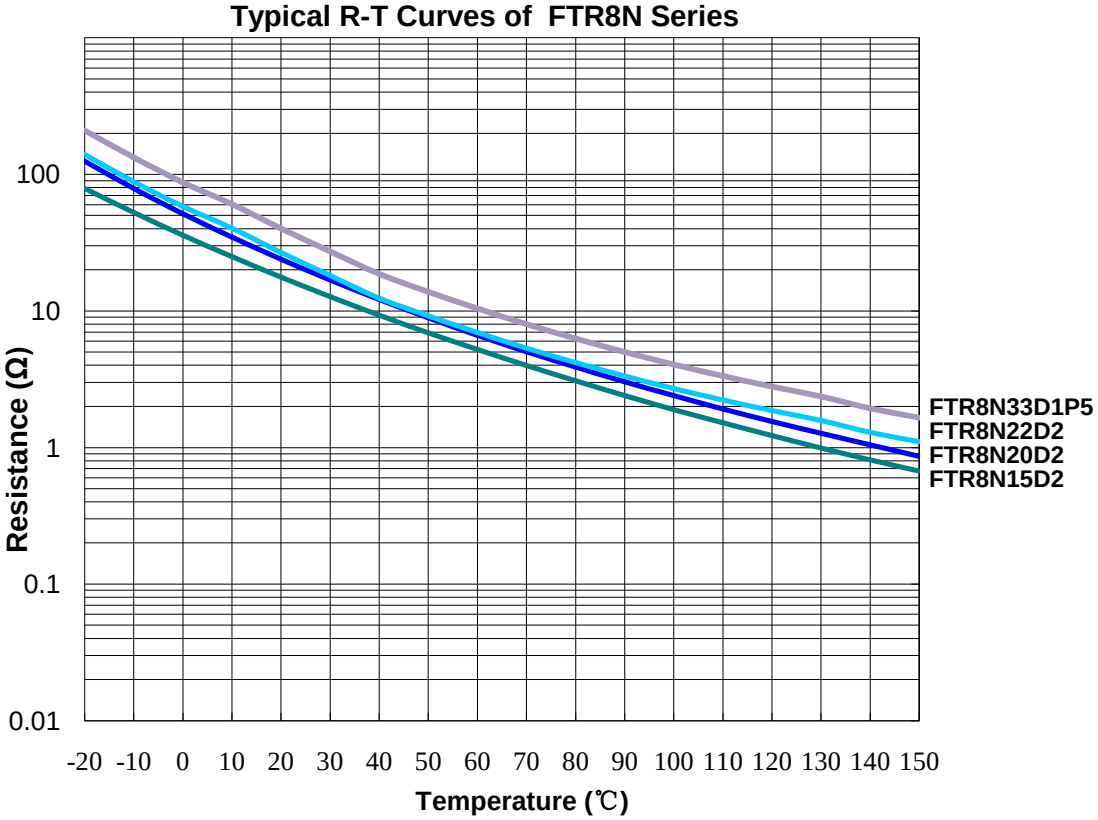


R-T Curve (Nominal) Part No : FTR5N45DP25

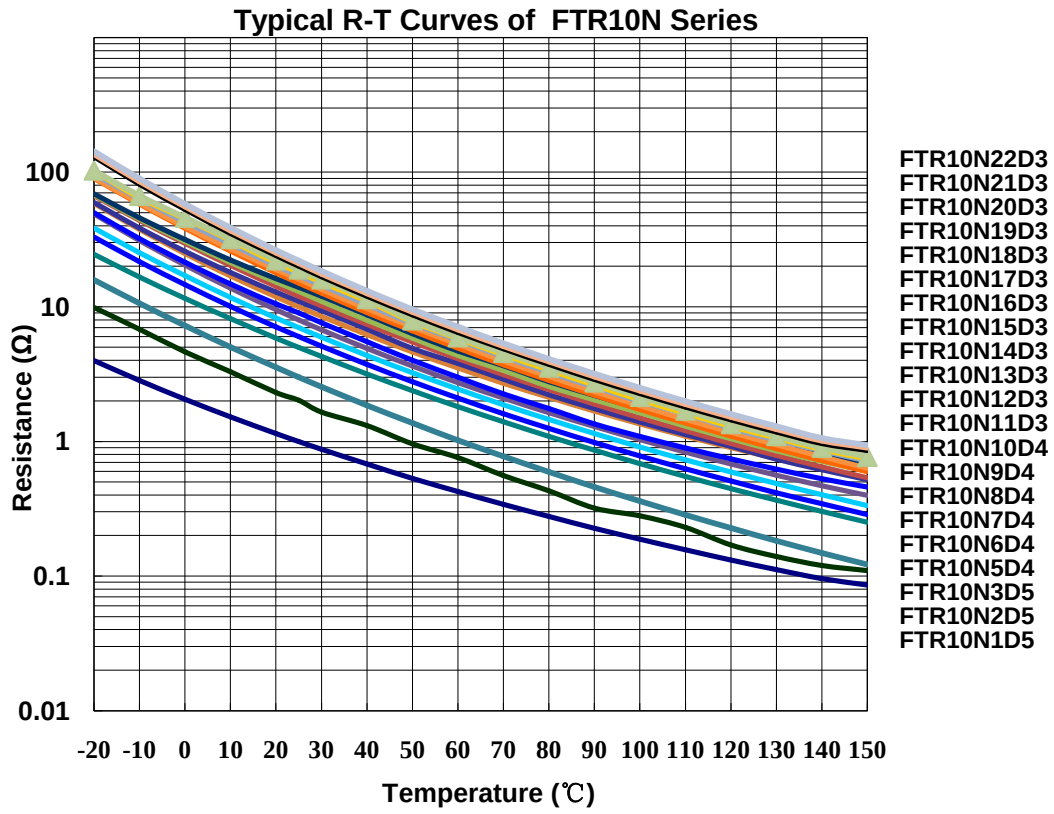


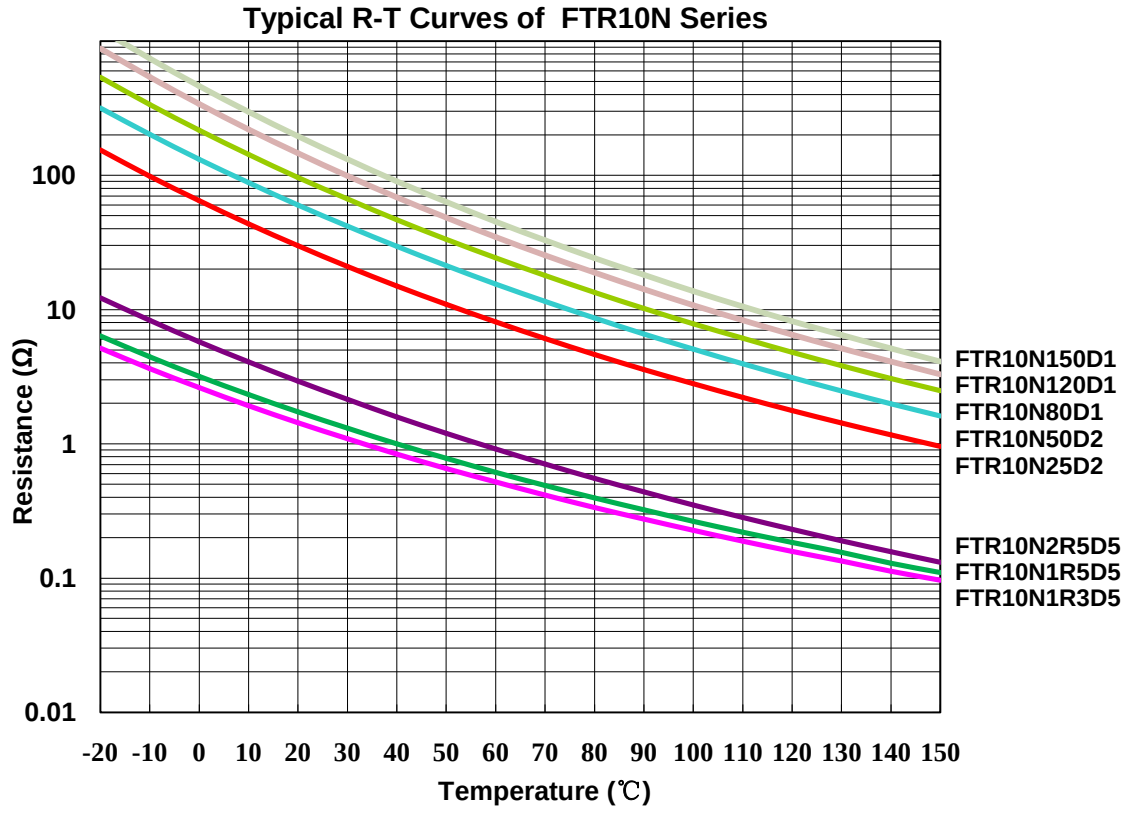
Resistance–Temperature Characteristic Curves



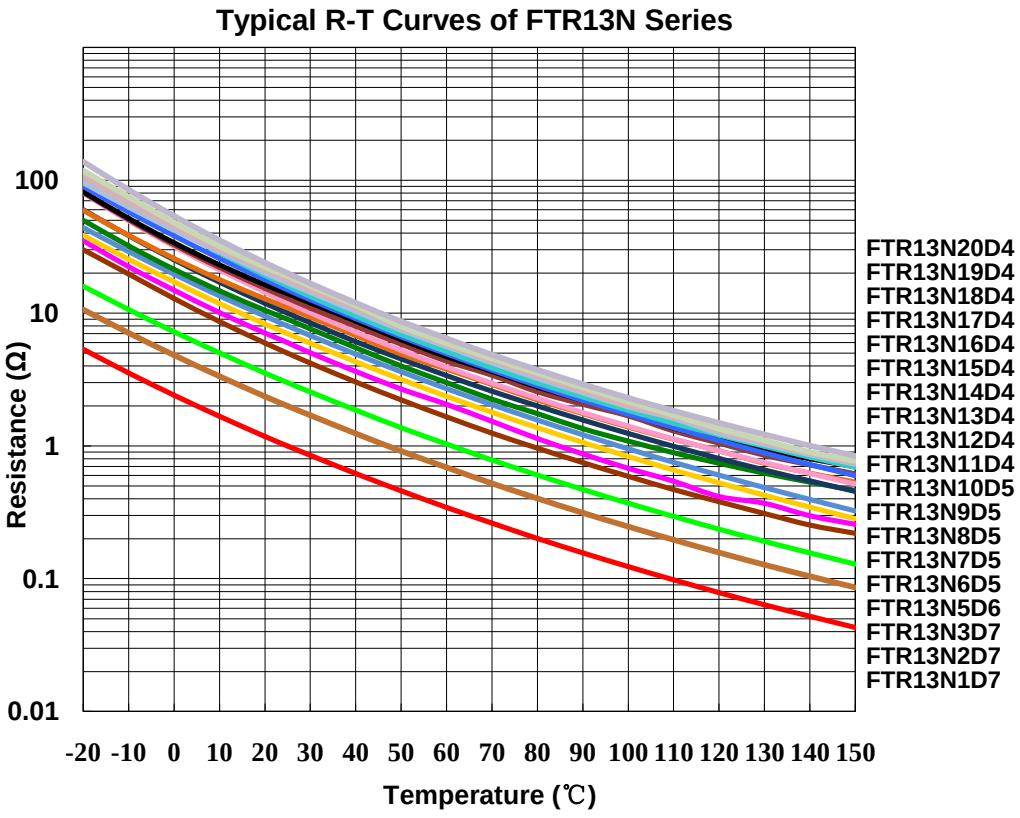


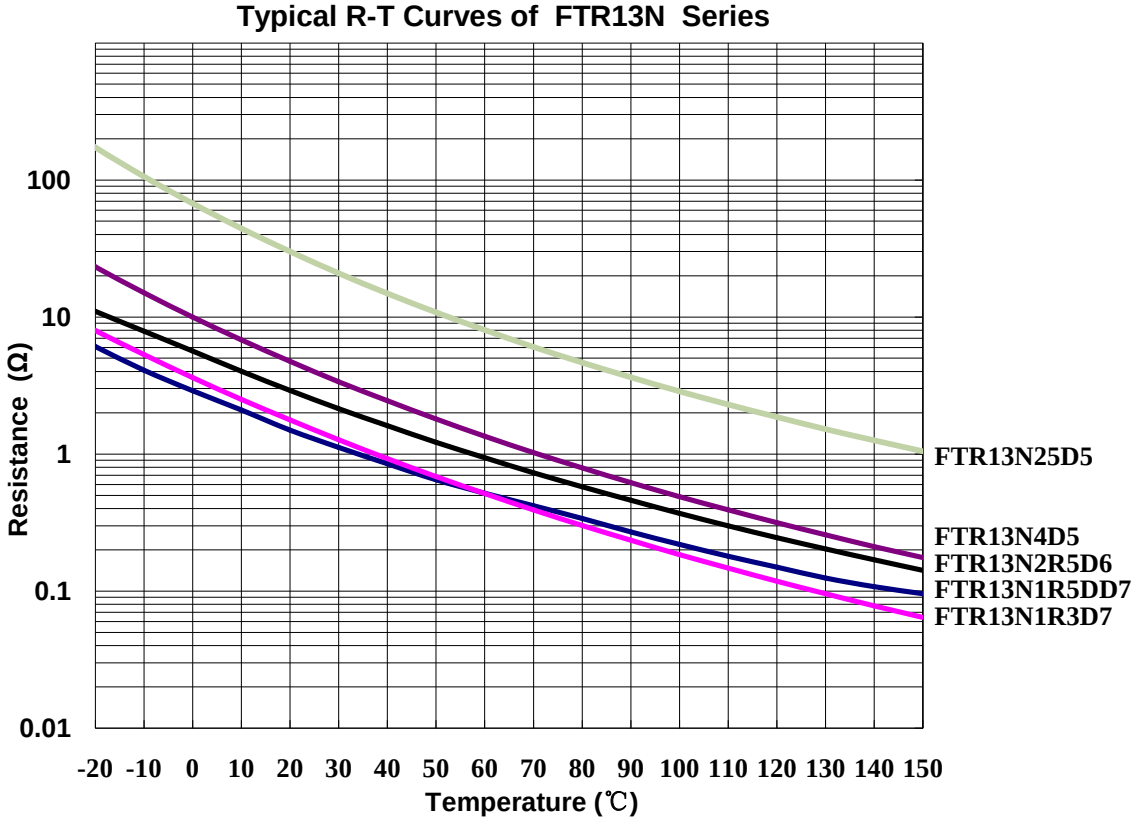
Resistance–Temperature Characteristic Curves



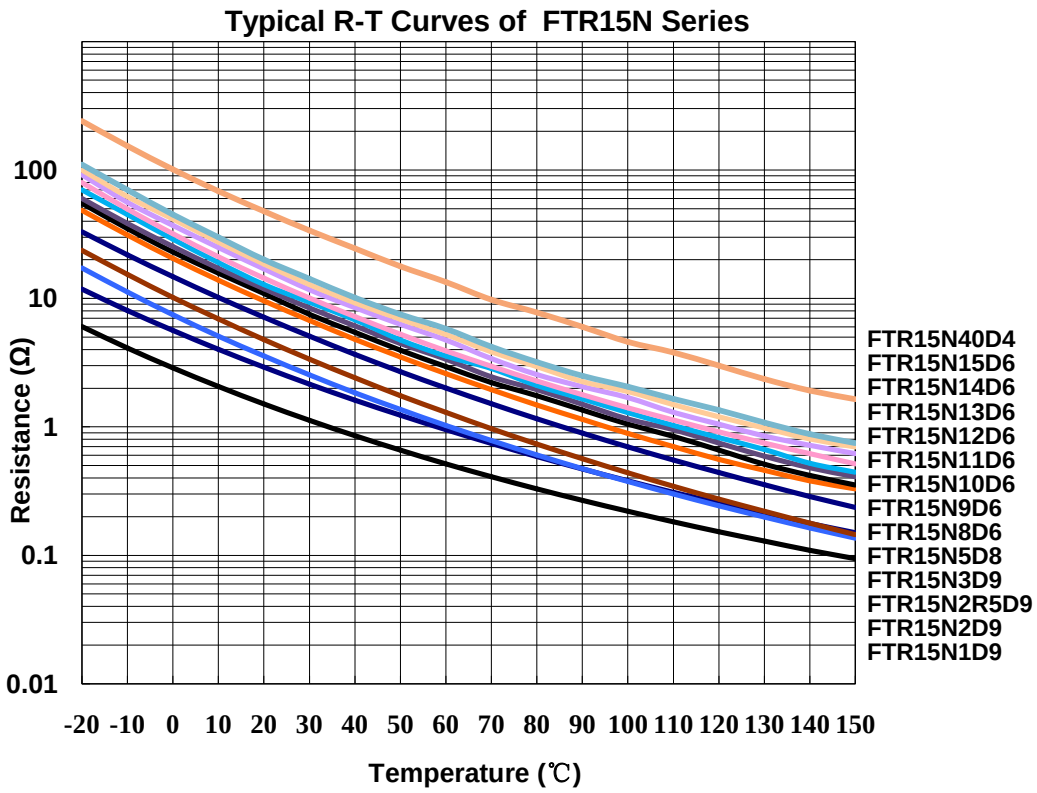


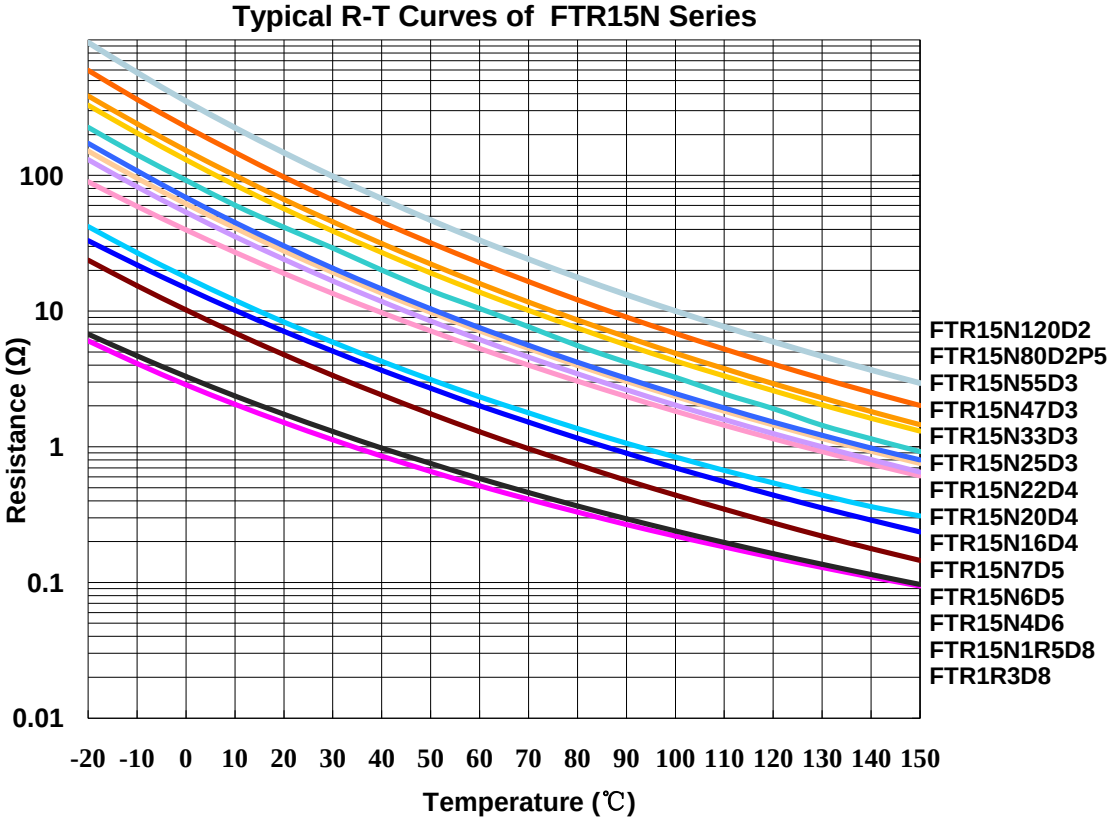
Resistance–Temperature Characteristic Curves



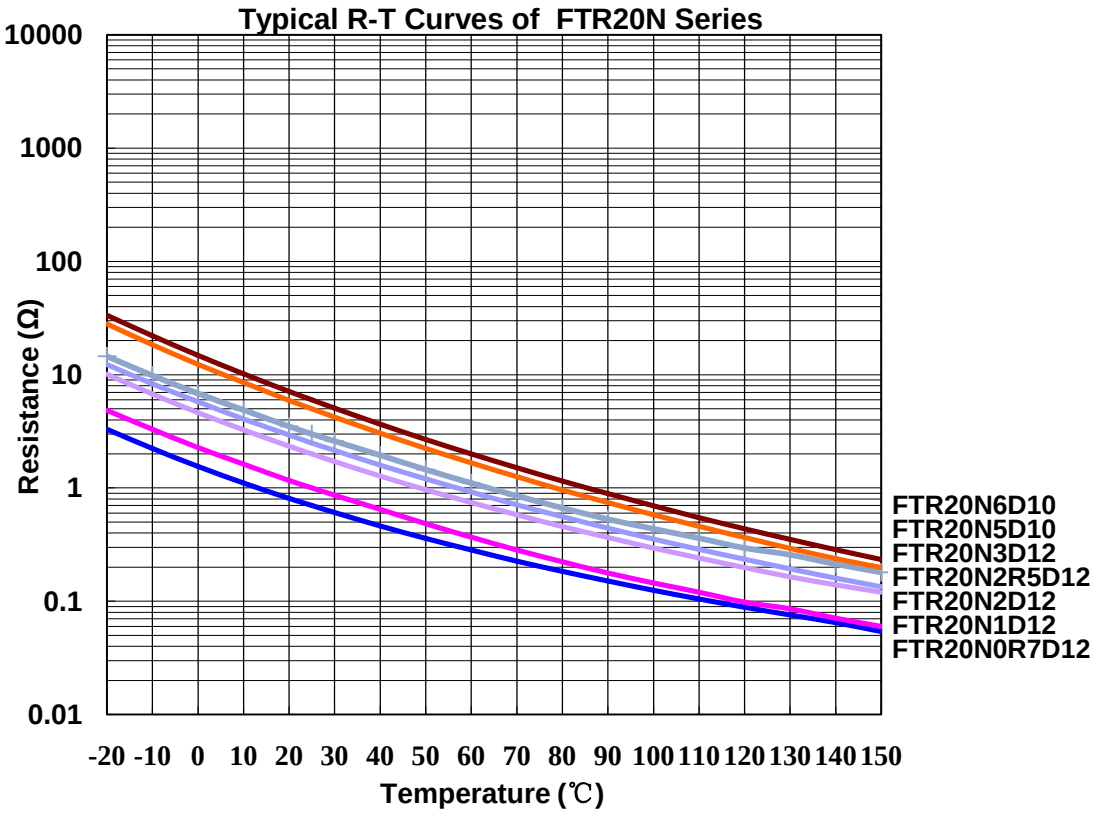


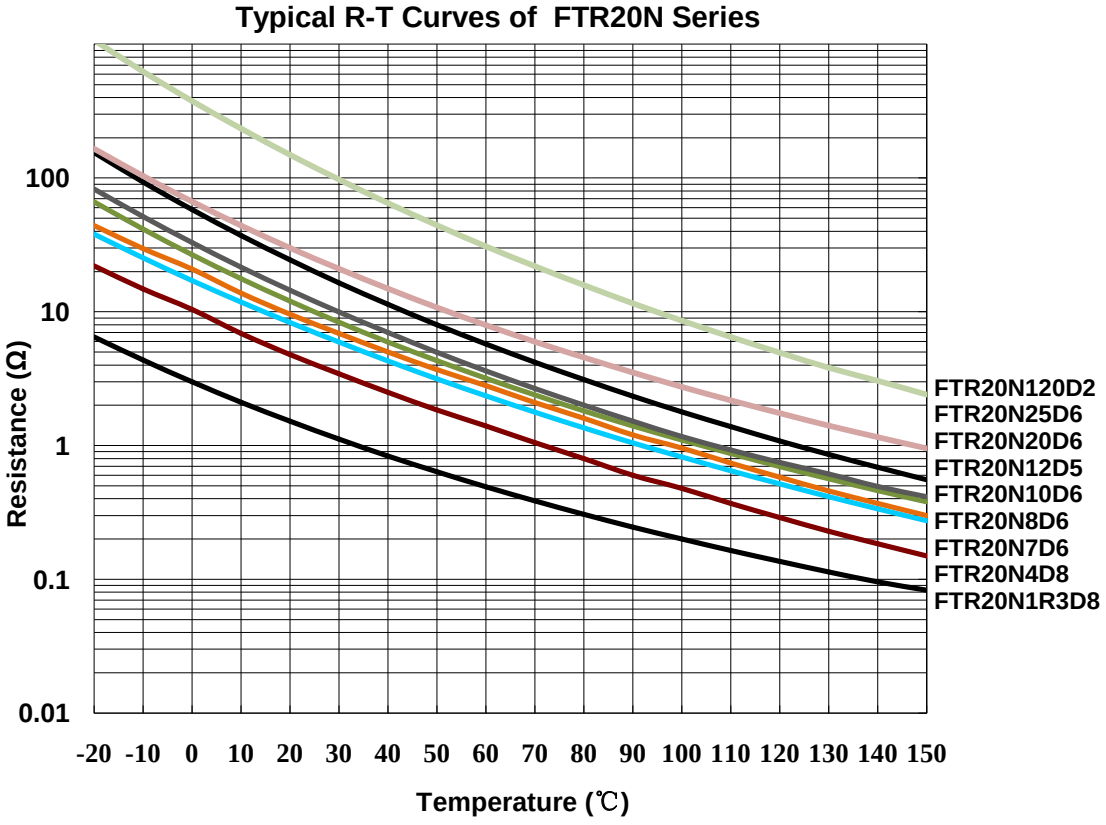
Resistance–Temperature Characteristic Curves



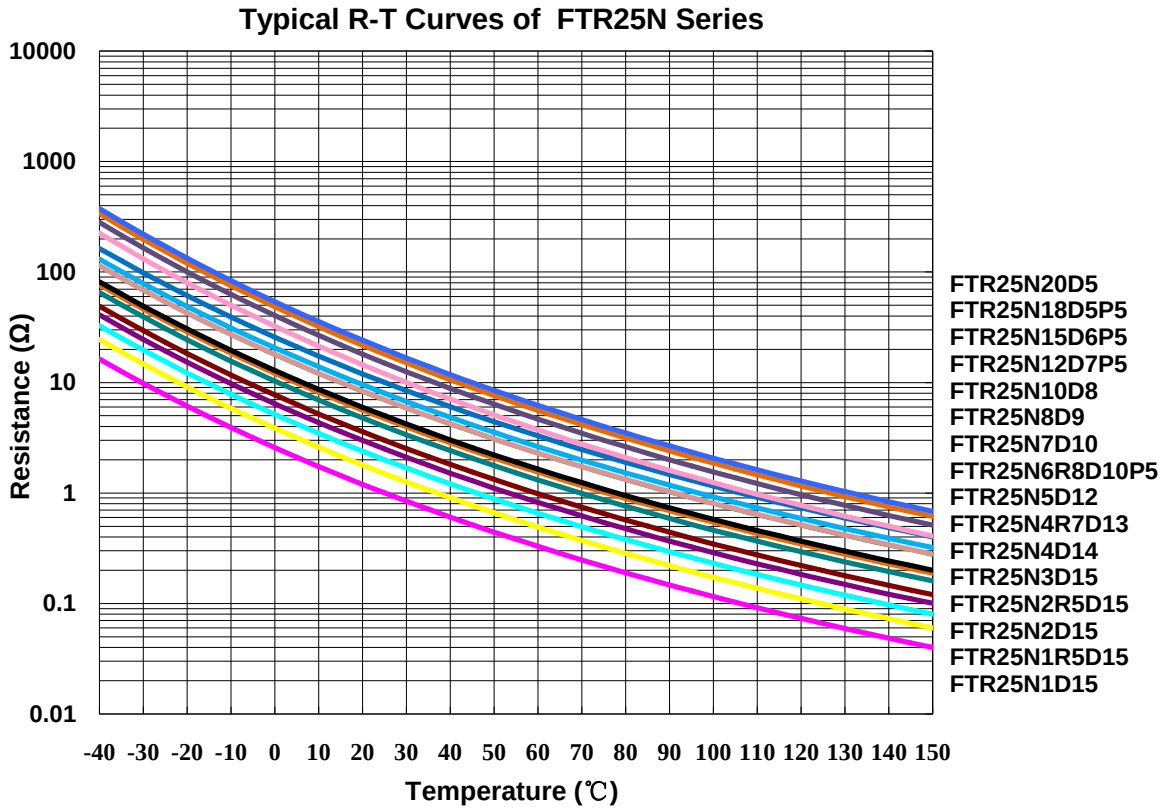


Resistance–Temperature Characteristic Curves

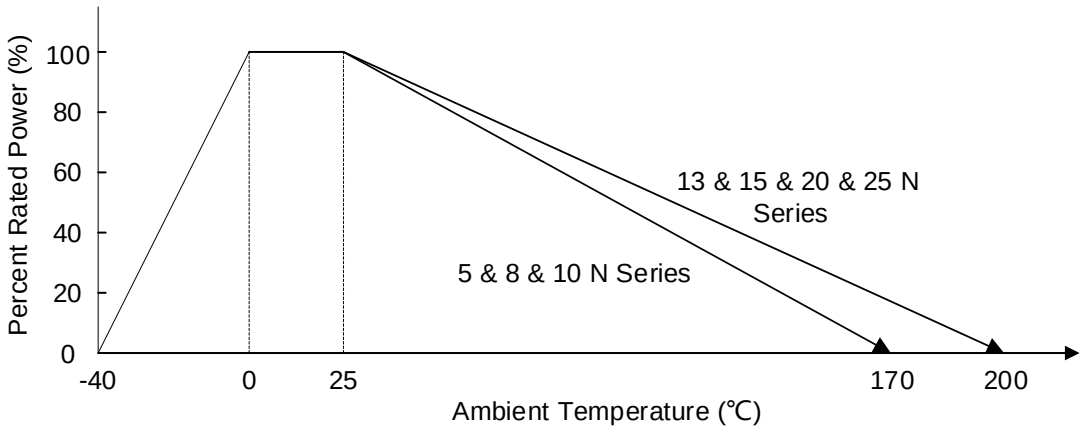




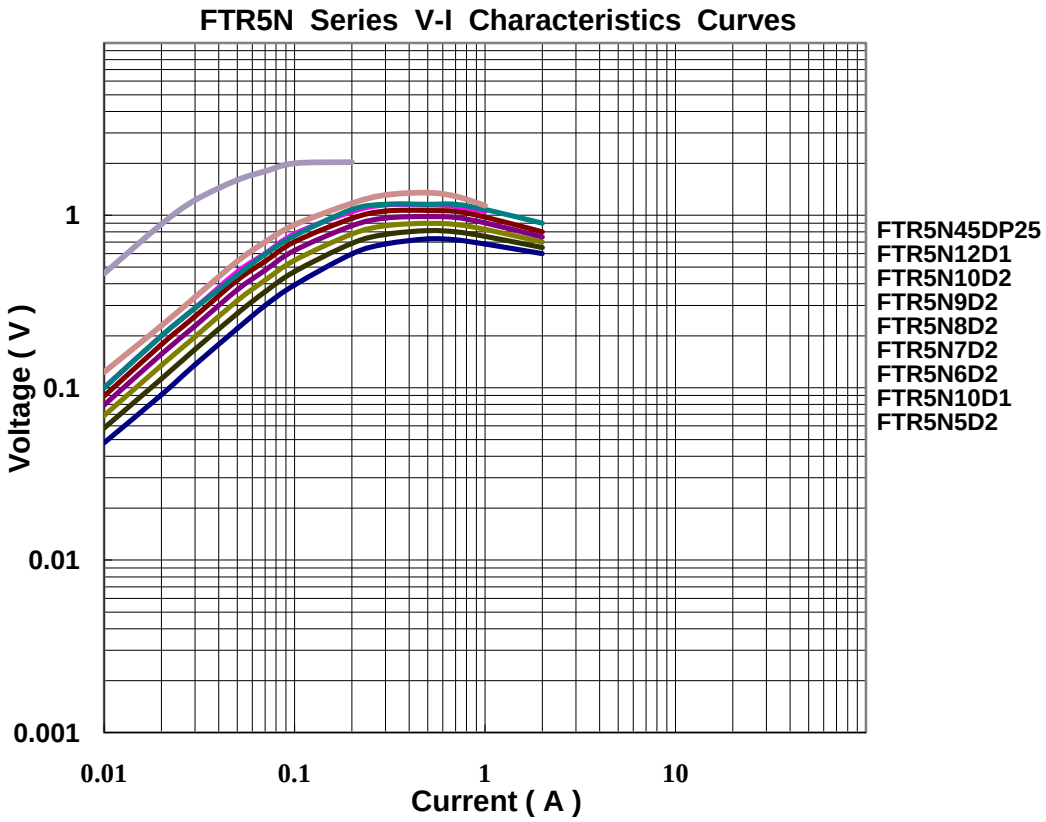
Resistance–Temperature Characteristic Curves

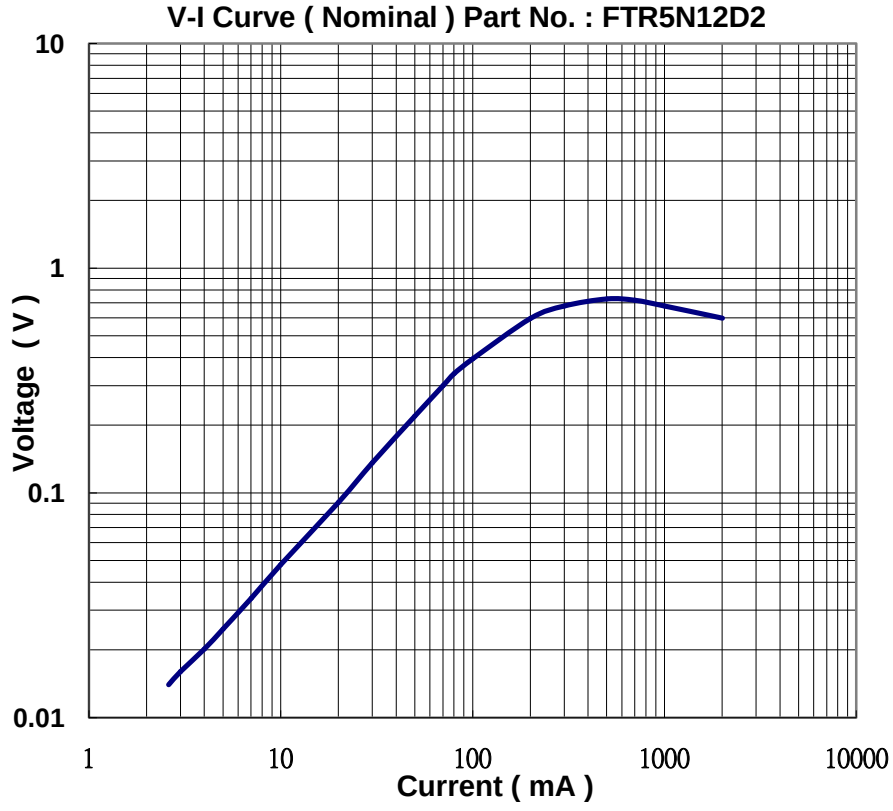


Maximum Power Rating

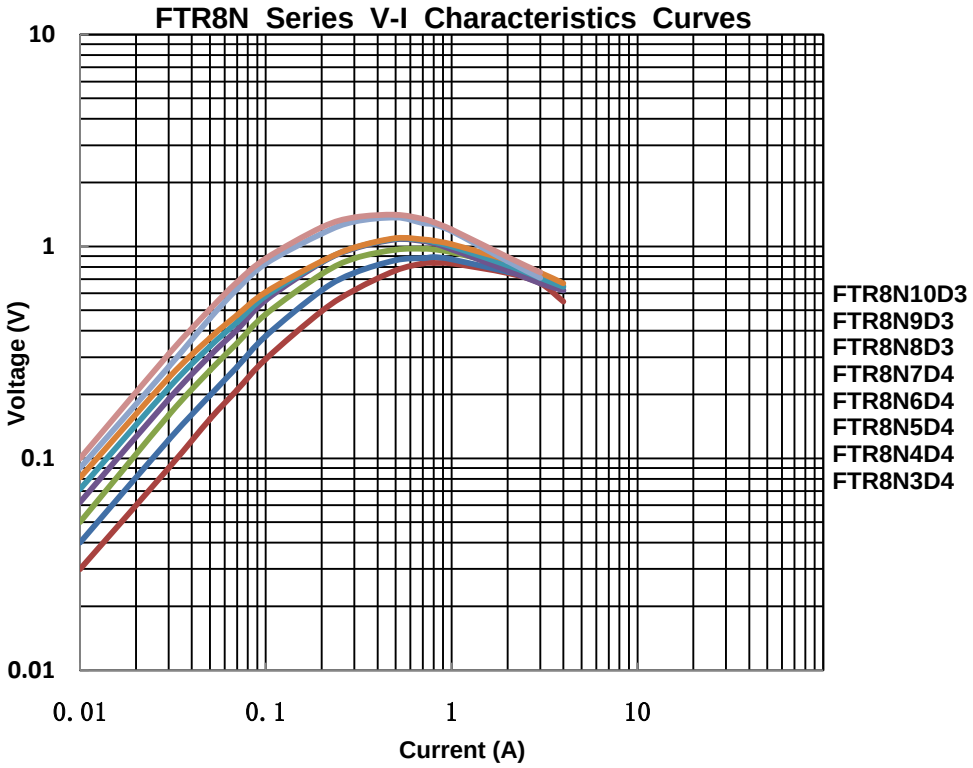


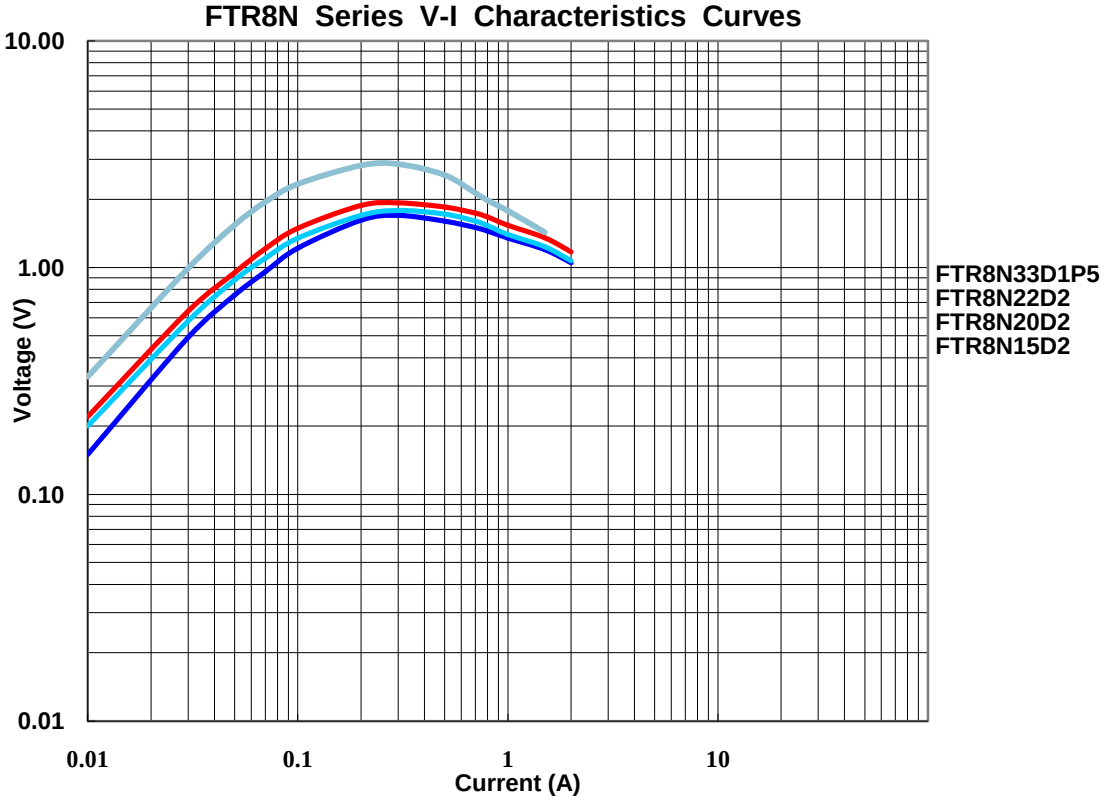
V–I Characteristic Curves



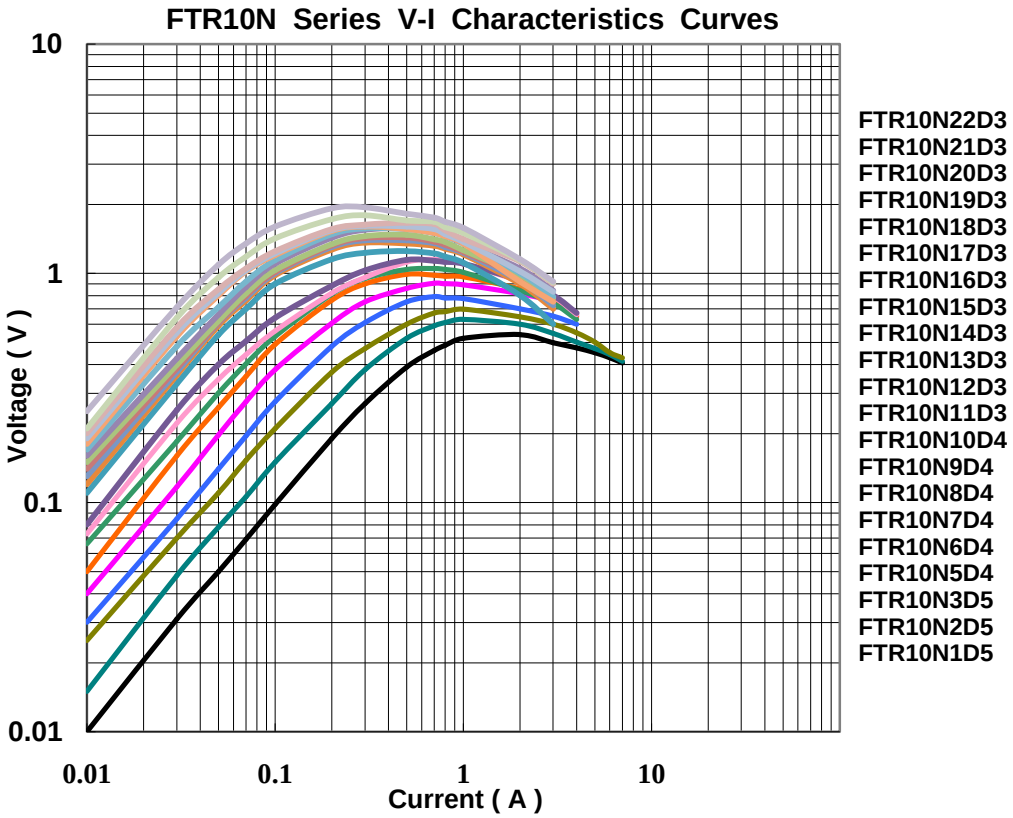


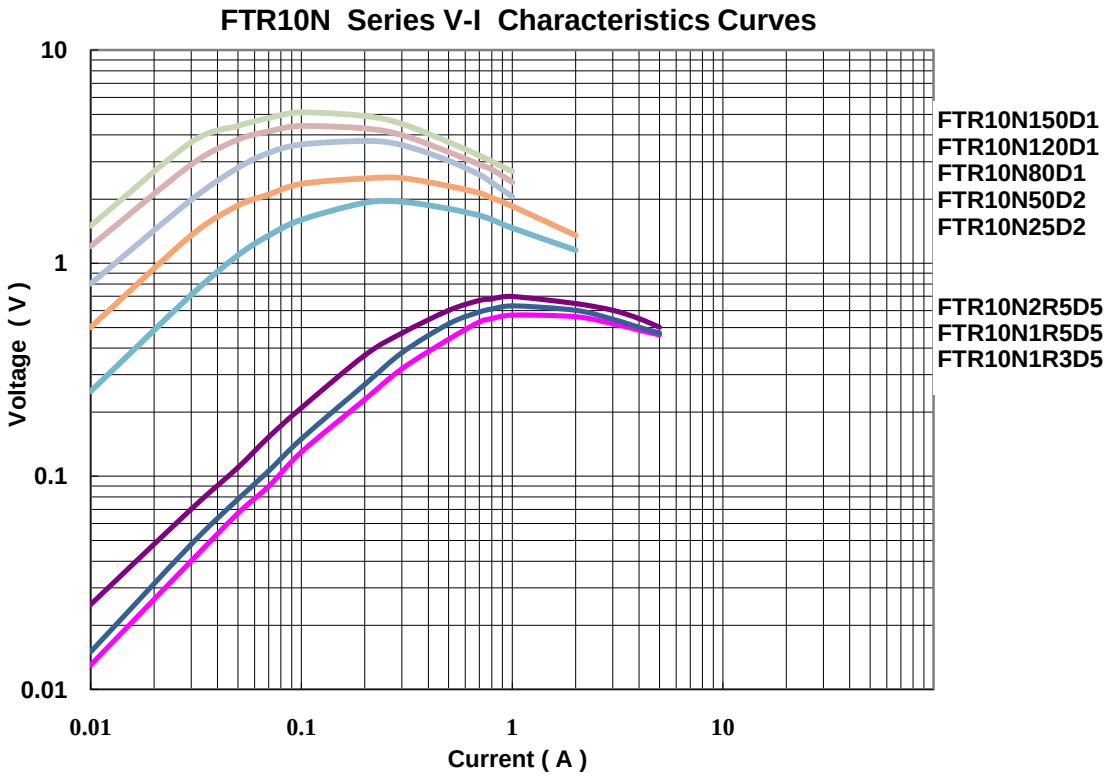
V–I Characteristic Curves





V–I Characteristic Curves





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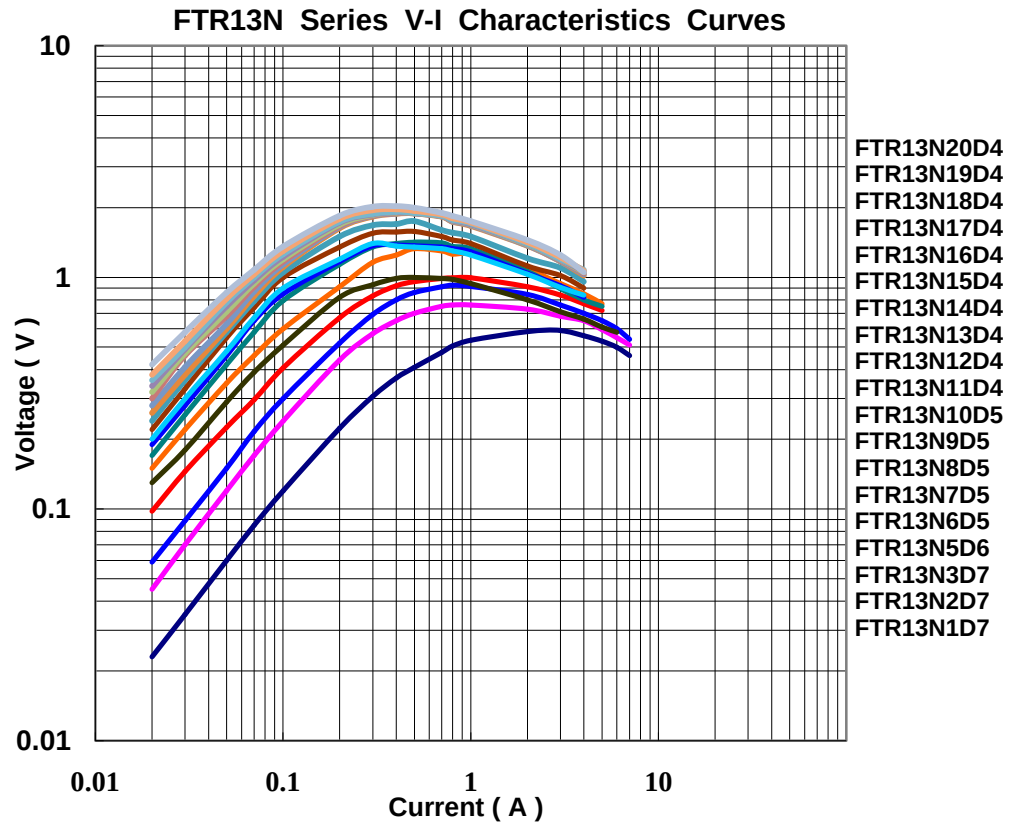

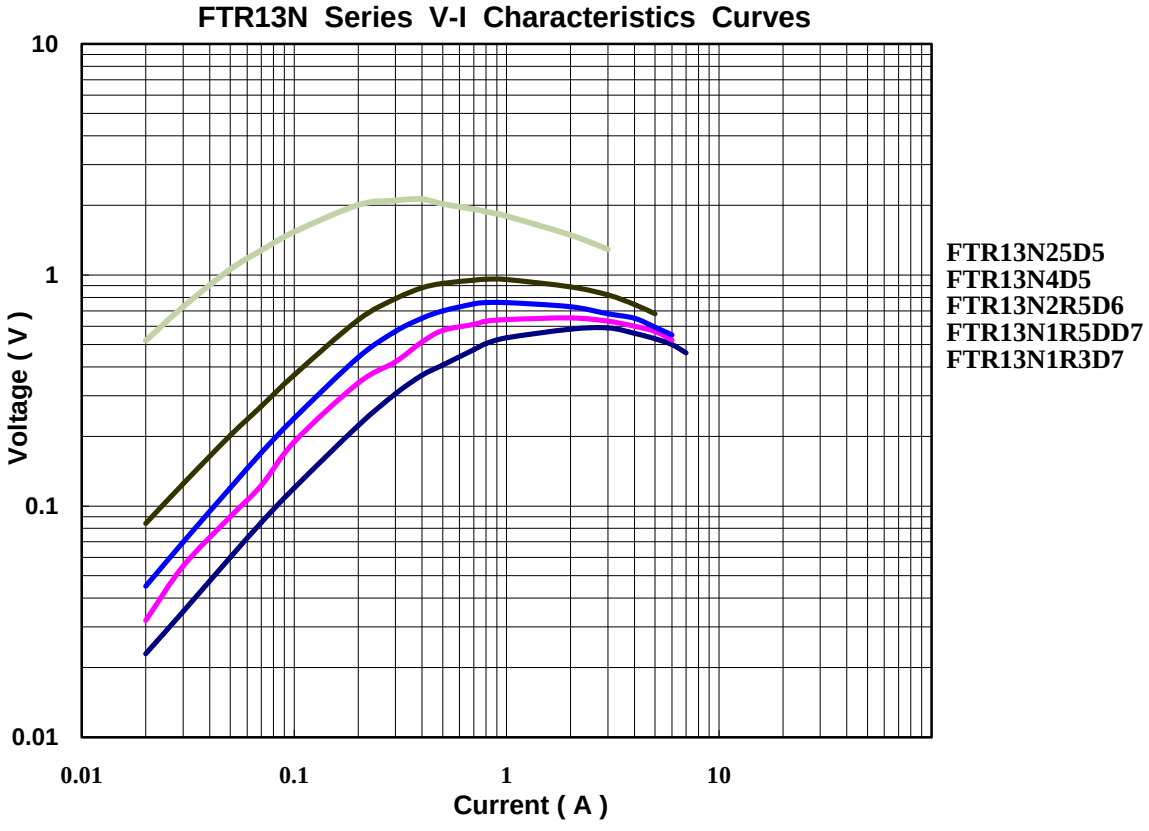

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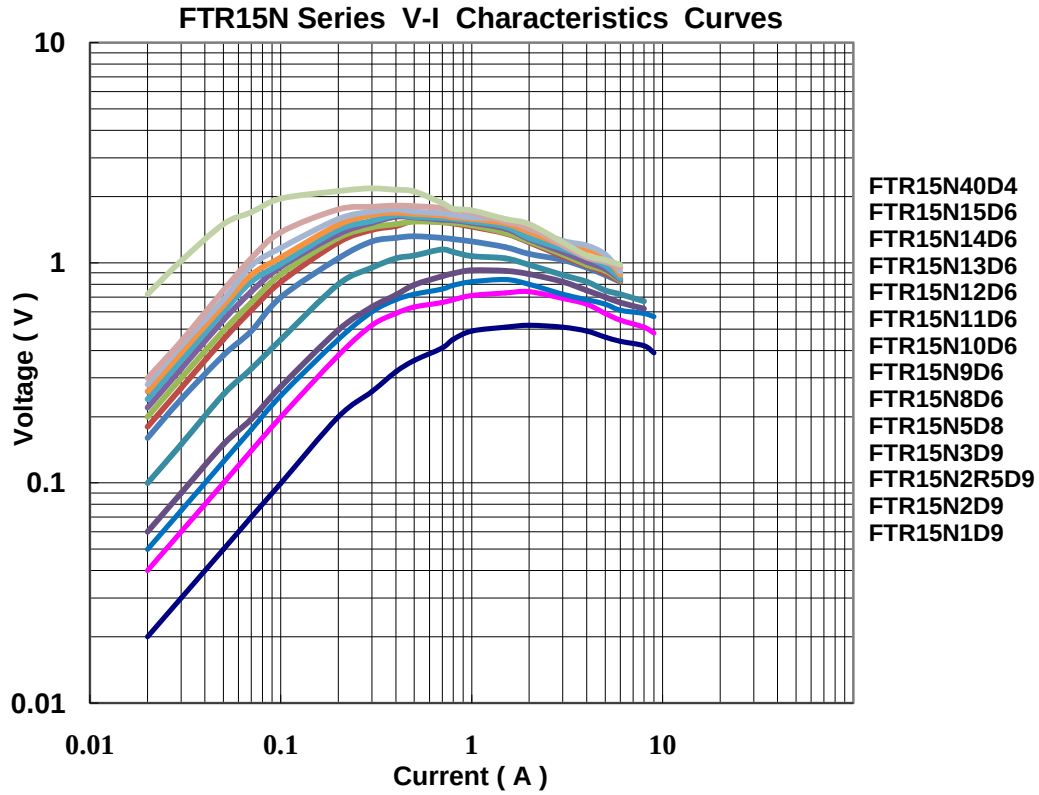

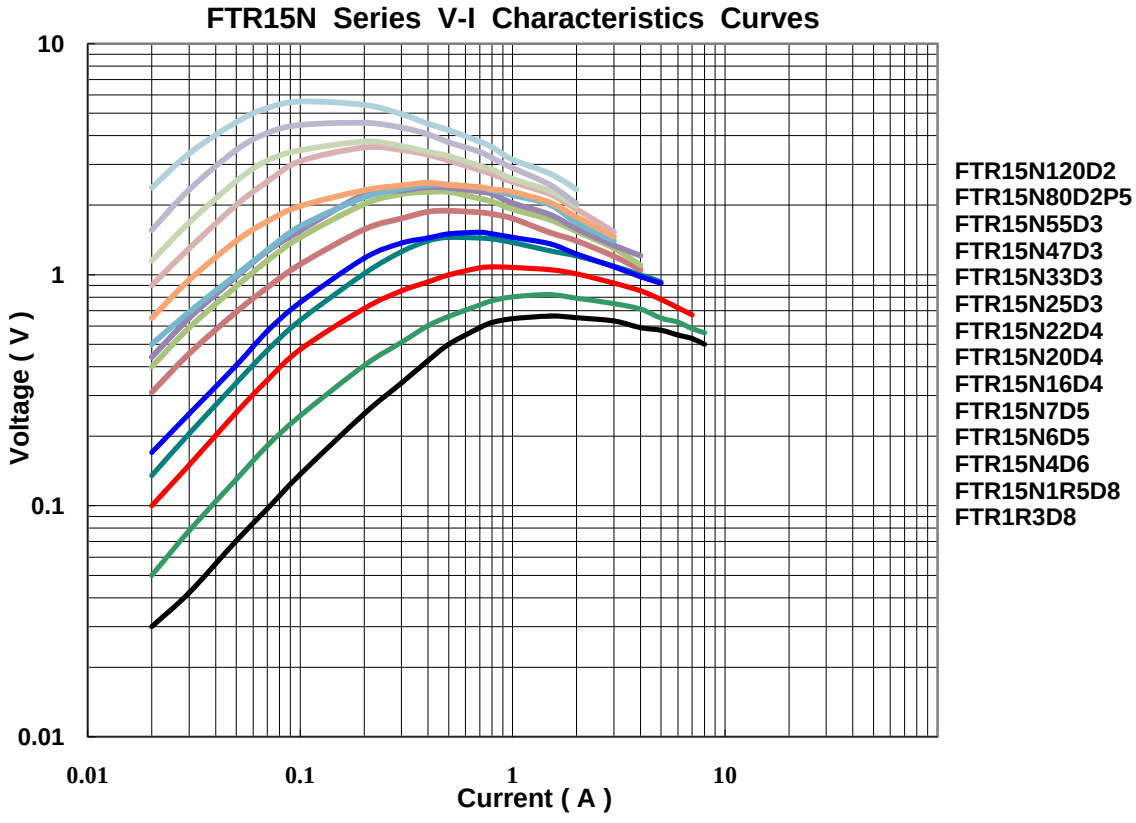

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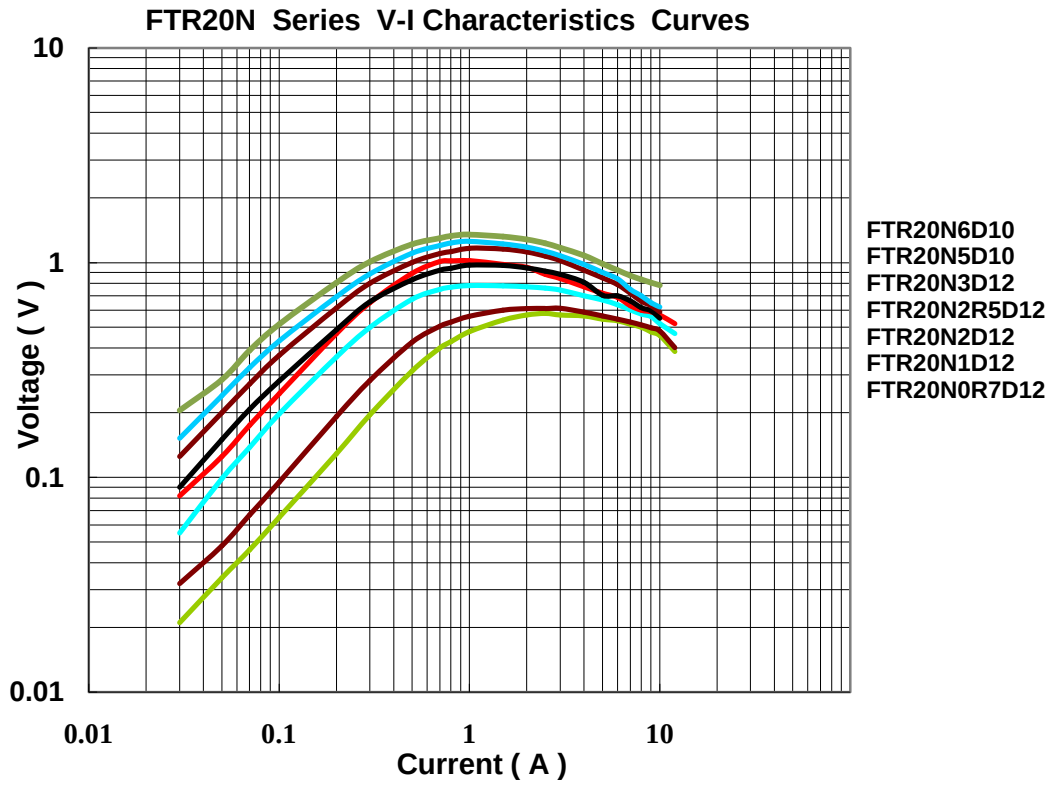
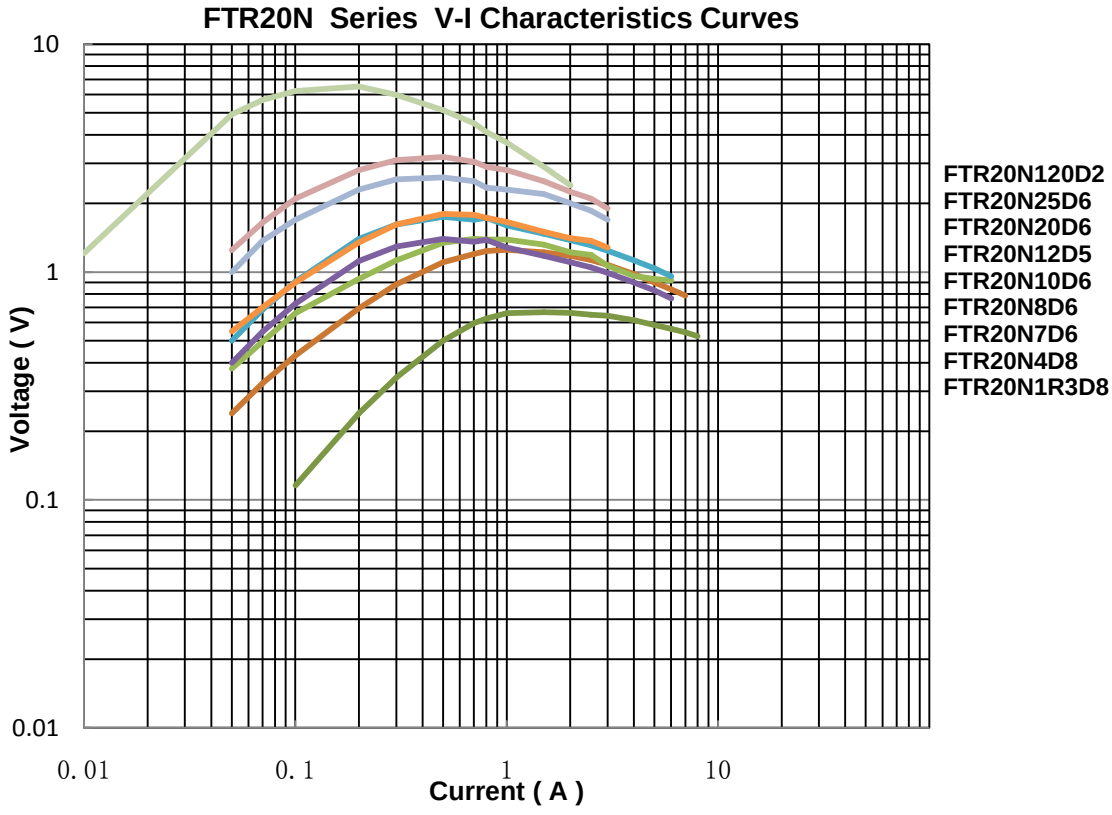
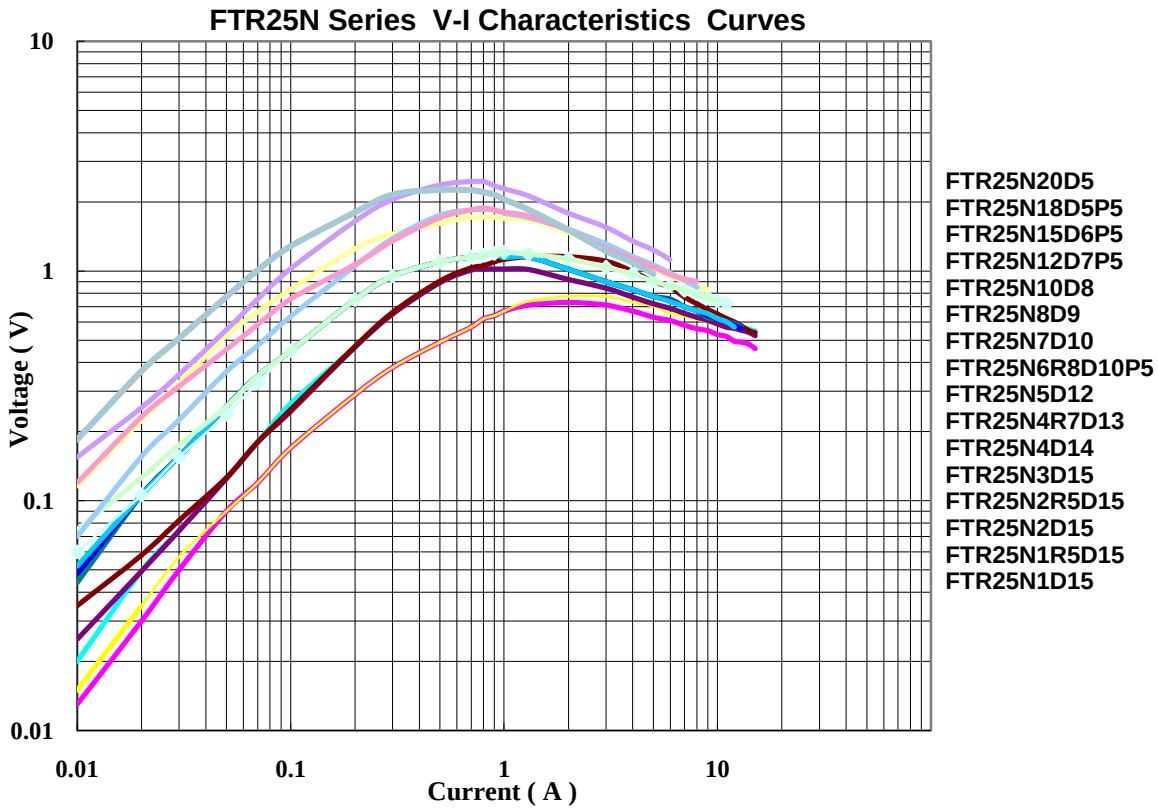


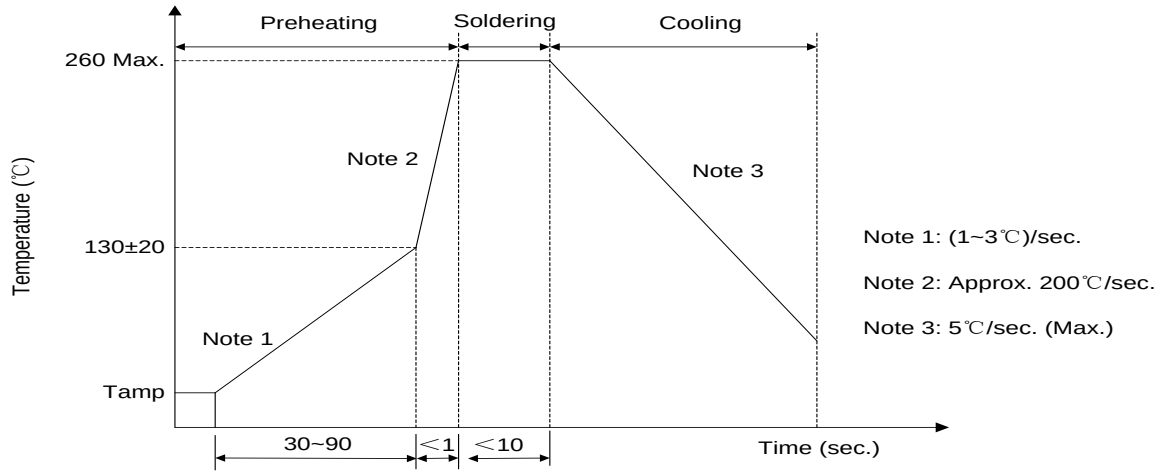


V–I Characteristic Curves



Soldering Recommendation

Wave Soldering Recommendation



Recommendation Reworking Conditions with Soldering Iron

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

Packaging

■Bulk Packing

Bulk	Quantity (pcs/bag)
	700pcs/bag,2bags/box (Φ5)
	500pcs/bag,2bags/box (Φ8、Φ10)
	300pcs/bag,2bags/box (Φ13)
	250pcs/bag,2bags/box (Φ15)
	150pcs/bag,2bags/box (Φ20)
	50pcs/bag,2bags/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.