CUSTOMERS：深圳长城开发科技股份有限公司

SPECIFICATION FOR APPROVAL

SHEET NO：WM-S08-012

DESCRIPTION： NTC THERMISITORS

CUSTOMER P/N:

PART NO: WTR08D050MD2BW

TYPE: WTR TYPE

DATE: 2012/04/28

ISSUE DEPARTMENT	CUSTOMERS APPROVED
厦門萬明電子有限公司 技術部 WANMING ELECTRONICS CO.,LTD	

WMEC Electronics

厦 門 萬 明 電 子 有 限 公 司

WANMING ELECTRONICS CO.,LTD

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For Inrush Current Suppression Lead Type

WTR Series

■ Features

1. Lead is not contained in the ceramic element, the terminations, the solder for inner connection and the coating resin.
2. Most suitable for power supplies of less than 100W
3. Excellent recovery characteristics due to resin coating with excellent heat characteristics
4. Wide resistance range
5. Highly reliable

■ Applications

1. Swith mode power supplies
2. Electric motors
3. Transformer.
4. Adapter
5. CRT monitors
6. Other power circuits

■ Explanation of part Number

Examples:

WTR	08D	100	M	H	2	B	
①	②	③	④	⑤	⑥	⑦	⑧

①Product ID

Product ID	Contents
WTR	Inrush Current Limiters NTC Thermistors

②Series

Code	Dimensions
05D	Φ5.0 mm
08D	Φ8.0 mm
10D	Φ10 mm
13D	Φ13 mm
15D	Φ15mm
20D	Φ20 mm
25D	Φ25 mm
30D	Φ30 mm

③Resistance

Expressed by three figures. The unit is ohm (Ω). The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two figures. If there is a decimal point, it is expressed by the capital letter "**R**". In this case, all figures are significant digits.

Ex.)

Code	Resistance
5R0	5Ω
100	10Ω

④Resistance Tolerance

Code	Resistance Tolerance
L	±15%
M	±20%

⑤Lead style

Code	Lead Style
A	Straight Lead (Long)
B	Straight Lead (Short)
G	Vertical Crimped (Short)
H	Vertical Crimped (Long)

⑥Lead Spacing

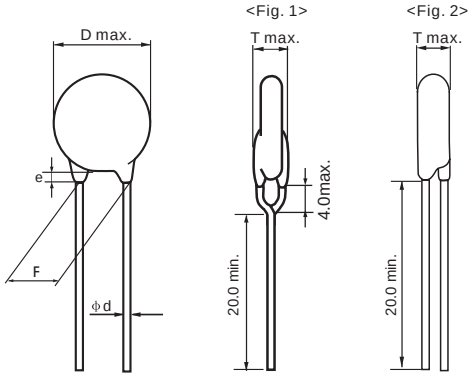
Code	Lead Spacing(±1.0)
2	5.0mm
3	7.50mm
4	10.0mm

⑦Packaging

Code	Packaging
B	Bulk
A	Taping Ammo Pack
R	Taping Reel Pack

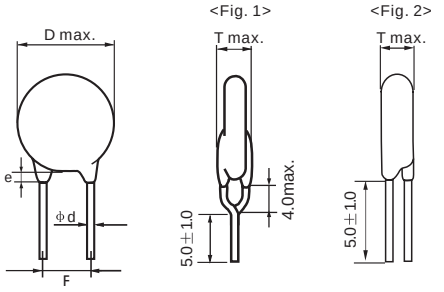
⑧Internal Code

■ Dimensions



(in mm)

Lead code	Coating Extension e	Style
G2	up to the end of crimp	Fig. 1
G3 ,G4	up to the end of crimp	Fig. 1
A2	4.0 max.	Fig. 2
A3,A4	4.0 max.	Fig. 2



(in mm)

Lead code	Coating Extension e	Style
H2	up to the end of crimp	Fig. 1
H3 ,H4	up to the end of crimp	Fig. 1
A2	4.0 max.	Fig. 2
A3,A4	4.0 max.	Fig. 2

(in mm)

Series	Disc Size	D max.	F	T max.	ϕd
05D	ϕ5.0	8.5	5.0±1.0	5.0	0.55±0.05
08D	ϕ8.0	10.5	5.0±1.0/7.5±1.0	5.0	0.55±0.05/0.8±0.05
10D	ϕ10	12.5	7.5±1.0	5.0	0.8±0.05
13D	ϕ13	15.0	7.5±1.0	5.0	0.8±0.05
15D	ϕ15	17.5	7.5±1.0	5.0	0.8±0.05
20D	ϕ20	23.0	10.0±1.0	5.0	1.0±0.05
25D	ϕ25	29.0	10±1.0	5.0	1.0±0.05
30D	ϕ30	36.0	10±1.0	5.0	1.0±0.05

■ Specification

Part Number	Zero power resistance (25℃) (ohm)	Max. Steady state current (25℃) (A)	Max. Steady power rating (25℃) (w)	Thermal dissipation constant (mw/℃)	Thermal time constant (sec.)	Operating thmperature range (℃)	Lead Package Long Bulk	Lead Package Short Bulk	Lead Package Taping
WTR05D050M□□□	5	2	1.8	14	18	-40~+150	G2B	H2B	G2A
WTR05D080M□□□	8	1							
WTR05D100M□□□	10	1							
WTR05D120M□□□	12	0.7							
WTR05D160M□□□	16	0.7							
WTR05D200M□□□	20	0.3							
WTR08D030M□□□	3	4	2.3	15	30	-40~+170	G2B	H2B	G2A
WTR08D040M□□□	4	3							
WTR08D050M□□□	5	3							
WTR08D060M□□□	6	2							
WTR08D080M□□□	8	2							
WTR08D100M□□□	10	2							

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Part Number	Zero power resistance (25℃) (ohm)	Max. Steady state current (25℃) (A)	Max. Steady power rating (25℃) (w)	Thermal dissipation constant (mw/℃)	Thermal time constant (sec.)	Operating thmperature range (℃)	Lead Package Long Bulk	Lead Package Short Bulk	Lead Package Taping
WTR08D120M□ □ □	12	2	2.3	16	38	-40 ~ +170	G2B	H2B	G2A
WTR08D160M□ □ □	16	2							
WTR08D200M□ □ □	20	1							
WTR08D220M□ □ □	22	1							
WTR08D300M□ □ □	30	0.5							
WTR08D330M□ □ □	33	0.5							
WTR08D500M□ □ □	50	0.5							
WTR10D010M□ □ □	1	5	2.4	17	43	-40 ~ +170	G2B	H2B	G2A
WTR10D1R5M□ □ □	1.5	5							
WTR10D2R5M□ □ □	2.5	5							
WTR10D030M□ □ □	3	5							
WTR10D040M□ □ □	4	4							
WTR10D050M□ □ □	5	4							
WTR10D060M□ □ □	6	3							
WTR10D070M□ □ □	7	3							
WTR10D080M□ □ □	8	3							
WTR10D100M□ □ □	10	3							
WTR10D120M□ □ □	12	2							
WTR10D160M□ □ □	16	2							
WTR10D200M□ □ □	20	2							
WTR10D250M□ □ □	25	2							
WTR10D300M□ □ □	30	2							
WTR10D500M□ □ □	50	1.5							
WTR10D600M□ □ □	60	1.5							
WTR10D800M□ □ □	80	1							
WTR10D121M□ □ □	120	1							
WTR13D1R3M□ □ □	1.3	7	3.1	18	66	-40 ~ +200	G3B	H3B	G3A
WTR13D1R5M□ □ □	1.5	7							
WTR13D2R5M□ □ □	2.5	6							
WTR13D030M□ □ □	3	6							
WTR13D040M□ □ □	4	5							
WTR13D050M□ □ □	5	5							
WTR13D060M□ □ □	6	4							
WTR13D070M□ □ □	7	4							
WTR13D080M□ □ □	8	4							
WTR13D100M□ □ □	10	4							
WTR13D120M□ □ □	12	4							
WTR13D150M□ □ □	15	3							
WTR13D160M□ □ □	16	3							
WTR13D200M□ □ □	20	3							
WTR13D300M□ □ □	30	2.5							
WTR13D470M□ □ □	47	2.0							
WTR13D121M□ □ □	120	1.5							

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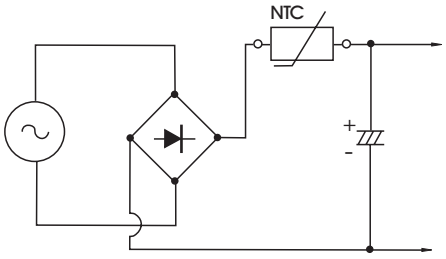
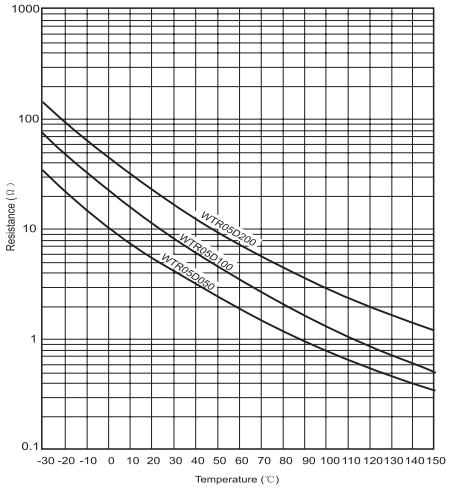
Part Number	Zero power resistance (25℃) (ohm)	Max. Steady state current (25℃) (A)	Max. Steady power rating (25℃) (w)	Thermal dissipation constant (mw/℃)	Thermal time constant (sec.)	Operating thmperature range (℃)	Lead Package Long Bulk	Lead Package Short Bulk	Lead Package Taping
WTR15D1R3M□ □ □	1.3	8	3.6	21	75	-40 ~ +200	G3B	H3B	G3A
WTR15D1R5M□ □ □	1.5	8							
WTR15D2R5M□ □ □	2.5	8							
WTR15D030M□ □ □	3	7							
WTR15D040M□ □ □	4	6							
WTR15D050M□ □ □	5	6							
WTR15D060M□ □ □	6	5							
WTR15D070M□ □ □	7	5							
WTR15D080M□ □ □	8	5							
WTR15D100M□ □ □	10	5							
WTR15D120M□ □ □	12	4							
WTR15D150M□ □ □	15	4							
WTR15D160M□ □ □	16	4							
WTR15D200M□ □ □	20	4							
WTR15D250M□ □ □	25	3							
WTR15D400M□ □ □	40	3							
WTR15D470M□ □ □	47	3							
WTR15D800M□ □ □	80	2.5							
WTR15D121M□ □ □	120	2							
WTR20D0R7M□ □ □	0.7	12	4.9	28	113	-40 ~ +200	G4B	H4B	G4A
WTR20D1R3M□ □ □	1.3	9							
WTR20D020M□ □ □	2	8							
WTR20D2R5M□ □ □	2.5	8							
WTR20D030M□ □ □	3	8							
WTR20D040M□ □ □	4	8							
WTR20D050M□ □ □	5	7							
WTR20D060M□ □ □	6	6							
WTR20D070M□ □ □	7	6							
WTR20D080M□ □ □	8	6							
WTR20D100M□ □ □	10	6							
WTR20D120M□ □ □	12	5							
WTR20D150M□ □ □	15	5							
WTR20D160M□ □ □	16	5							
WTR20D200M□ □ □	20	4							

■ Application Circuit

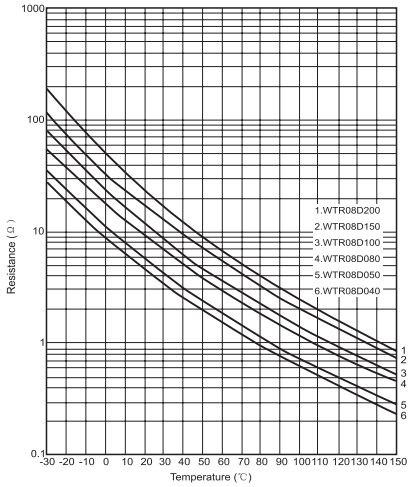


■ Resistance VS.Temperature Characteristic

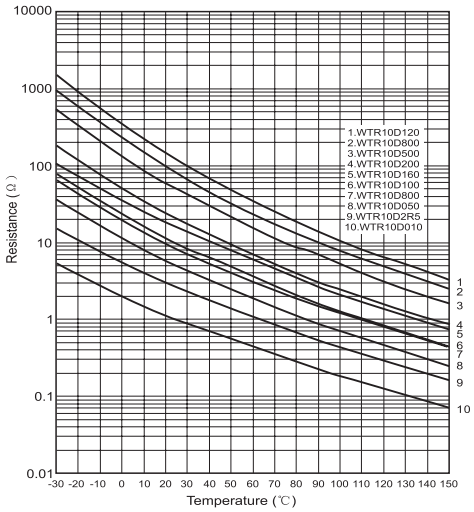
WTR05D



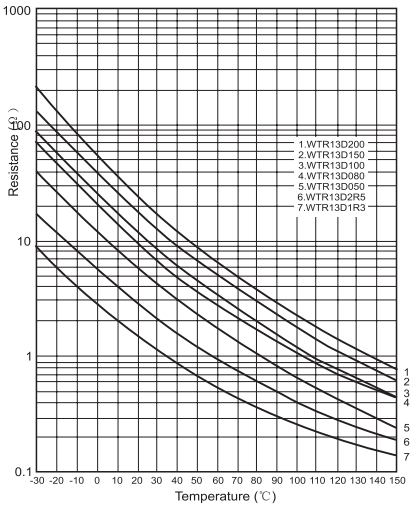
WTR08D



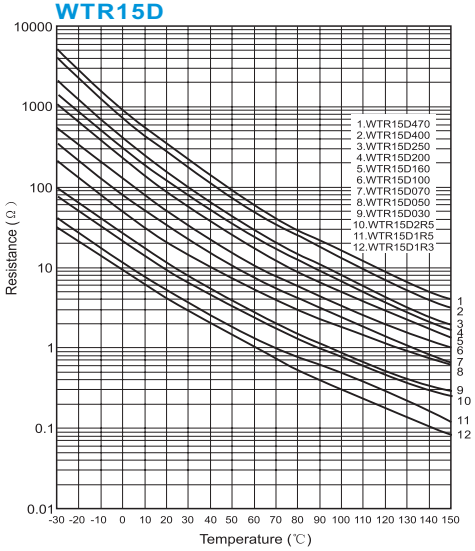
WTR10D



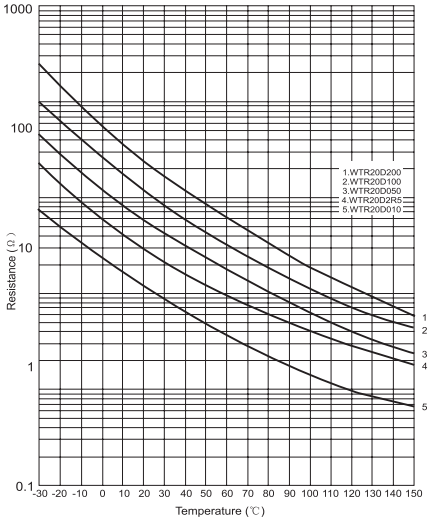
WTR13D



WTR15D

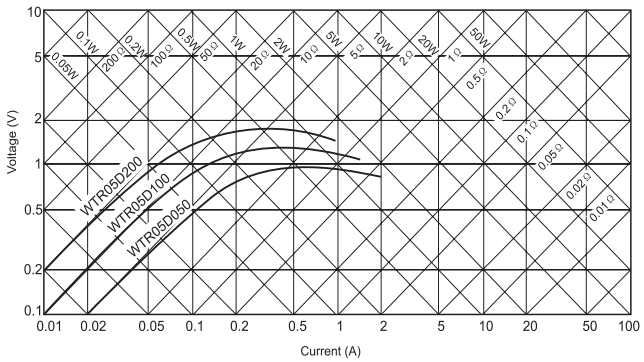


WTR20D

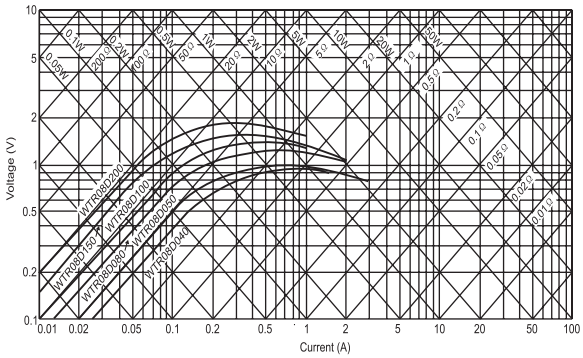


■Curent vs.Voltage Characteristic

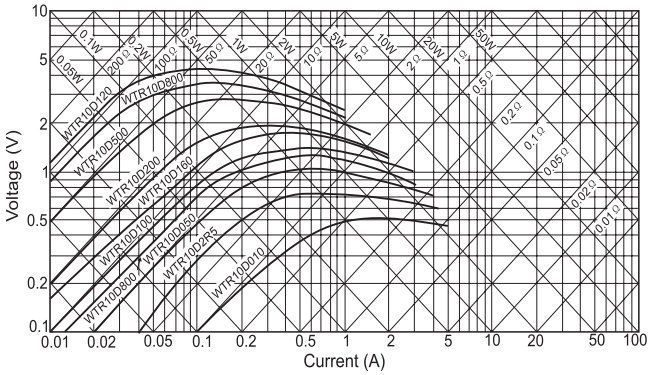
WTR05D



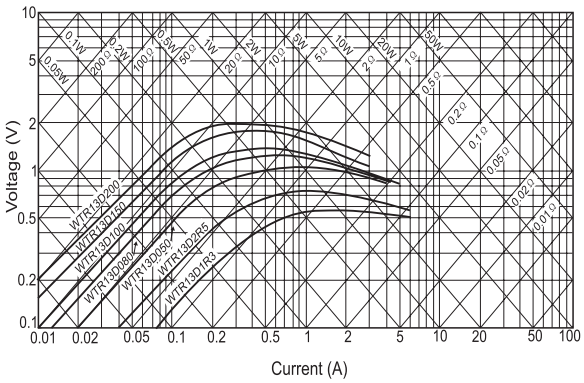
WTR08D



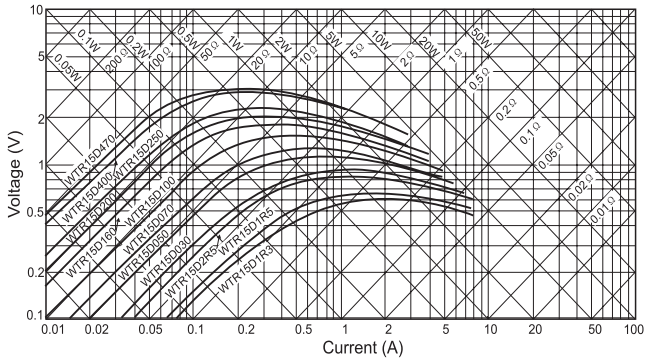
WTR10D



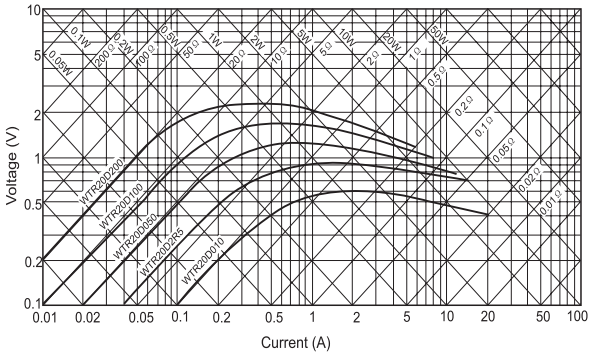
WTR13D



WTR15D



WTR20D



⚠ Caution/Notice

■ ⚠Caution (Storage and Operating Conditions)

1. This product is designed for the Switching Power Supply with smoothing capacitors. Other applications of this product may result in fire.
2. Use this product within the specified maximum current. Otherwise it may catch fire in the worst case.
3. Use this product with smoothing capacitor within the specified maximum capacitance value. Otherwise it may catch fire in the worst case.
4. This product is designed for application in an ordinary environment (normal room temperature, humidity and atmospheric pressure). Do not use under the following conditions because all these factors can deteriorate the product characteristics cause failure and burn-out.
   (1) Corrosive gas or deoxidizing gas. (Chlorine gas, Hydrogen sulfide gas, Ammonia gas, Sulfuric acid gas, Nitric oxide gas, etc.)
   (2) Volatile or flammable gas
   (3) Dusty conditions
   (4) Under high or low pressure
   (5) Wet or humid conditions
   (6) Near with salt water, oils, chemical liquids or organic solvents
   (7) Strong vibrations
   (8) Other places where similar hazardous conditions exist.

■ ⚠Caution (Others)

Be sure to provide an appropriate fail-safe function on your product to prevent secondary damages that may be caused by the abnormal function or the failure of our product.

■ Notice (Storage and Operating Conditions)

To keep solderability of product from declining, the following storage condition is recommended.

1. Storage condition:
   Temperature -10 to +40 degree C
   Humidity less than 75%RH (not dewing condition)
2. Storage term:
   Use this product within 6 months after delivery by first-in and first-out stocking system.
3. Handling after unpacking:
   After unpacking, reseal product promptly or store it in a sealed container with a drying agent.
4. Storage place:
   Do not store this product in corrosive gas (sulfuric acid gas, chlorine gas, etc.) or in direct sunlight.

■ Notice (Rating)

Use this product within the specified temperature range. Higher temperature may cause deterioration of the characteristics or the material quality of this product.

■ Notice (Soldering and Mounting)

1. Be sure that the preheat-up does not melt the soldering of this product. Excessive heat may cause failure to open, short or insulation break down.
2. Do not touch the body with soldering iron. The soldering point should be min. 5mm away from the root of lead wire.

■ Notice (Handling)

1. When this product is operated, temperature of some area may be about 160 (degree C). Use proper surrounding parts and material which with stand such temperature. If they are inadequate and kept at high temperature for long time, they may be deteriorated or may produce harmful gas. And, such harmful gas may deteriorate the element of this product.
2. This product does not have waterproof construction. Splashed water may cause failure mode such as deterioration of characteristics or current leak. So, do not apply cleaning to immerse it into water or any solvent.
3. The ceramic element of this product is fragile, and care must be taken not to load an excessive press-force or not to give a shock at handling. Such forces may cause cracking or chipping to the element.
4. Do not apply an excessive force to the lead wire. Otherwise, it may cause break off junction between lead wire and element, or may crack element. So, fix lead wire of element side when lead wire is bent or cut.

■ Notice (Others)

1. This products need sufficient cool off time to recover high resistance. Repeated ON-OFF may cause over specified current rating. Make sure inrush current do not exceed the specified ratings even at the worst condition. (maximum ambient temperature and the shortest off time.)
2. The resin coating of this product does not guarantee insulating. Keep an adequate insulating distance to surrounding parts.