



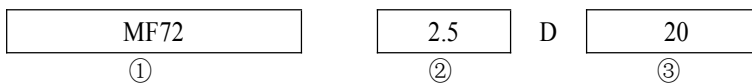
1. General

✧ Description



The MF72 series Power NTC Thermistors provide inrush current suppression for sensitive electronics. Connecting a MF72 in series with the power source will limit the current surges typically created at turn on. Once the circuit is energized the resistance of the MF72 will decrease rapidly to a very low value, power consumption can be ignored and there will be no effect on normal operating current. Using the MF72 Power NTC Thermistor is a most cost-effective way to curb surge current and protect sensitive electronics from damage.

✧ Type designation (example)



① Type : MF72 Power NTC Thermistor

② Resistance is 2.5 Ohm

③ Nominal diameter : 20mm

✧ Characteristics

- Small Size and fast response
- High Power handling capability
- Fast response to surge current
- High material constant (B value)
- Low residual resistance
- Wide operating temperature range -55 to +200C
- R25 allowable tolerance is $\pm 20\%$
- Long-term Stability and Reliability

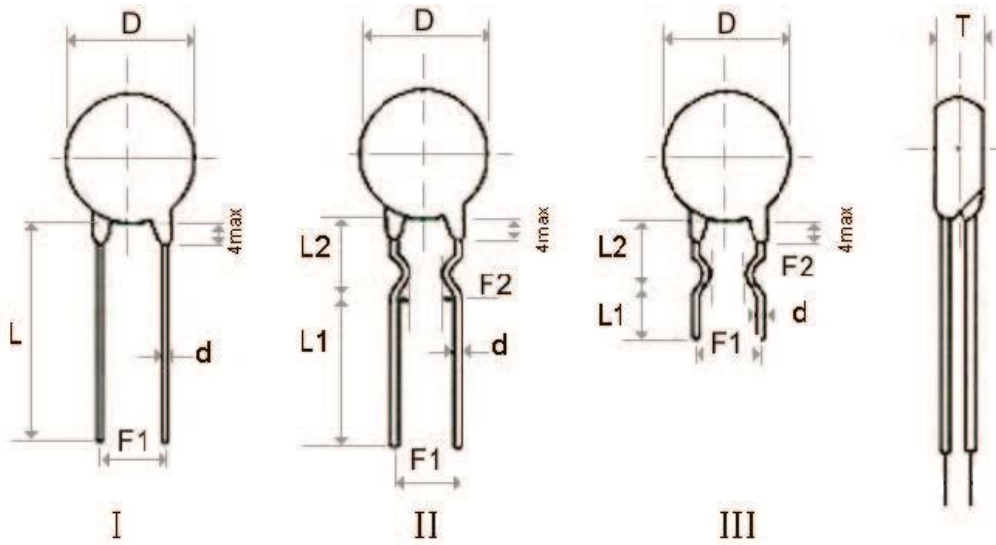
✧ Application

Can be installed into the power circuits of:

- Power supplies and inverters
- Uninterruptible Power Supplies
- Energy saving lamps
- Electronic Ballasts
- Filament Protection of various types of lamps
- Some types of heaters



➤ Dimension(Unit:mm)



Part No./Dim (mm)/Sym	Dmax	Tmax	d +/- 0.05 Fig. II/I	F ₁ +/-1 Fig. II/I	F ₂ +/-1.5 Fig. II/III	Straight Lead Wire		Curved Lead Wire	
						L1min. Fig. II/III	L ₂ +/-2	L ₁ min	L ₂ +/-2
MF72- D5	7	5	0.6/0.45	5/2.5	3	25 *	17/5	5	
MF72- D7	9	5	0.6	5	3	25	17/5	5	
MF72- D9	11	5.5	0.8/0.6	7.5/5	5/3	25	17/5	8	
MF72- D11	13	5.5	0.8	7.5/5	5/3	25	17/5	8	
MF72- D13	15.5	6	0.8	7.5	5	25	17/5	5	
MF72- D15	17.5	6	0.8	10/7.5	5	25	17/5	5	
MF72- D20	22.5	7	1.0	10/7.5	/	25 *	/	/	
MF72- D25	27.5	8	1.0	10	/	25 *	/	/	
Remark	<p>L1min., 17/5 17 indicates the long bent lead wire, 5 indicates the short bent lead wire (Fig. III)</p> <p>Illustration: In general, the long bent lead wire is used, see figure II</p> <p>Add suffix "L" + Fig. # to specify optional leads.</p>								



MF72 Power NTC Thermistor

* Straight Leads Are Standard

➤ Specifications

Part NO.	R25	Max.	Approx. R of Max.Cur	Dissi,Coef	Thermal time Constant	Max. Load		Operating
		Steady State Current				Capacitance		Temp.
	(Ω)	(A)	(Ω)	(mW/°C)	(S)	in uF		(°C)
						120 VAC	240 VAC	
MF72 5D-5	5	1	0.353	6	20	188	47	-40 to +150
MF72 10D-5	10	0.7	0.771	6	20	188	47	
MF72 60D-5	60	0.3	1.878	6	18	188	47	
MF72 200D-5	200	0.1	18.7	6	18	88	22	
MF72 5D-7	5	2	0.283	10	30	224	56	
MF72 8D-7	8	1	0.539	9	28	224	56	
MF72 10D-7	10	1	0.616	9	27	224	56	
MF72 12D-7	12	1	0.816	9	27	224	56	
MF72 16D-7	16	0.7	1.003	9	27	224	56	
MF72 22D-7	22	0.6	1.108	9	27	224	56	
MF72 33D-7	33	0.5	1.485	10	28	188	47	
MF72 200D-7	200	0.2	11.65	11	11	188	47	
MF72 3D-9	3	4	0.12	11	35	272	68	-40 to +170
MF72 4D-9	4	3	0.19	11	35	272	68	
MF72 5D-9	5	3	0.21	11	34	272	68	
MF72 6D-9	6	2	0.315	11	34	272	68	
MF72 8D-9	8	2	0.4	11	32	400	100	
MF72 10D-9	10	2	0.458	11	32	400	100	
MF72 12D-9	12	1	0.652	11	32	400	100	
MF72 16D-9	16	1	0.802	11	31	400	100	
MF72 20D-9	20	1	0.864	11	30	600	150	
MF72 22D-9	22	1	0.95	11	30	600	150	
MF72 30D-9	30	1	1.022	11	30	600	150	
MF72 33D-9	33	1	1.124	11	30	600	150	
MF72 50D-9	50	1	1.252	11	30	600	150	

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MF72 60D-9	60	0.8	1.502	11	30	600	150	
MF72 80D-9	80	0.8	2.01	11	30	272	68	
MF72 120D-9	120	0.8	3.015	11	30	272	68	
MF72 200D-9	200	0.5	5.007	11	32	188	47	
MF72 400D-9	400	0.2	30.3	11	32	188	47	
MF72 2.5D-11	2.5	5	0.095	13	43	600	150	
MF72 3D-11	3	5	0.1	13	43	600	150	
MF72 4D-11	4	4	0.15	13	44	600	150	
MF72 5D-11	5	4	0.156	13	45	600	150	
MF72 6D-11	6	3	0.24	13	45	800	220	
MF72 8D-11	8	3	0.255	14	47	800	220	
MF72 10D-11	10	3	0.275	14	47	800	220	
MF72 12D-11	12	2	0.462	14	48	800	220	
MF72 16D-11	16	2	0.47	14	50	800	220	
MF72 20D-11	20	2	0.512	15	52	800	220	
MF72 22D-11	22	2	0.563	15	52	800	220	
MF72 30D-11	30	1.5	0.667	15	52	800	220	
MF72 33D-11	33	1.5	0.734	15	52	800	220	
MF72 50D-11	50	1.5	1.021	15	52	800	220	
MF72 60D-11	60	1.5	1.215	15	52	800	220	
MF72 80D-11	80	1.2	1.656	15	52	600	150	
MF72 1.3D-13	1.3	7	0.062	13	60	880	220	
MF72 1.5D-13	1.5	7	0.073	13	60	880	220	
MF72 2.5D-13	2.5	6	0.088	13	60	880	220	
MF72 3D-13	3	6	0.092	14	60	880	220	
MF72 4D-13	4	5	0.12	15	67	880	220	
MF72 5D-13	5	5	0.125	15	68	880	220	
MF72 6D-13	6	4	0.17	15	65	880	220	
MF72 7D-13	7	4	0.188	15	65	1320	330	
MF72 8D-13	8	4	0.194	15	60	1320	330	
MF72 10D-13	10	4	0.206	15	65	1320	330	
MF72 12D-13	12	3	0.316	16	65	1320	330	
MF72 15D-13	15	3	0.335	16	60	1320	330	
MF72 16D-13	16	3	0.338	16	60	1320	330	
MF72 20D-13	20	3	0.372	16	65	1320	330	
MF72 30D-13	30	2.5	0.517	16	65	1320	330	
MF72 47D-13	47	2	0.81	17	65	880	220	
MF72	120	1.2	2.124	16	65	880	220	

-40 to
+200

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120D-13							
MF72 1.3D-15	1.3	8	0.048	18	68	1320	330
MF72 1.5D-15	1.5	8	0.052	19	69	1320	330
MF72 3D-15	3	7	0.075	18	76	1320	330
MF72 5D-15	5	6	0.112	20	76	1880	470
MF72 6D-15	6	5	0.155	20	80	1880	470
MF72 7D-15	7	5	0.173	20	80	1880	470
MF72 8D-15	8	5	0.178	20	80	1880	470
MF72 10D-15	10	5	0.18	20	75	1880	470
MF72 12D-15	12	4	0.25	20	75	1880	470
MF72 15D-15	15	4	0.268	21	85	1880	470
MF72 16D-15	16	4	0.276	21	70	1880	470
MF72 20D-15	20	4	0.288	17	86	1880	470
MF72 30D-15	30	3.5	0.438	18	75	1320	330
MF72 47D-15	47	3	0.68	21	86	1320	330
MF72 120D-15	120	1.8	1.652	22	87	1320	330
MF72 0.7D-20	0.7	11	0.018	25	89	1880	470
MF72 1.3D-20	1.3	9	0.037	24	88	1880	470
MF72 3D-20	3	8	0.055	24	88	1880	470
MF72 5D-20	5	7	0.087	23	87	2240	560
MF72 6D-20	6	6	0.113	25	103	2240	560
MF72 8D-20	8	6	0.142	25	105	2240	560
MF72 10D-20	10	6	0.162	24	102	2240	560
MF72 12D-20	12	5	0.195	24	100	2720	680
MF72 16D-20	16	5	0.212	25	100	2720	680
MF72 0.7D25	0.7	12	0.014	30	120	2240	560
MF72 1.5D25	1.5	10	0.027	30	121	2240	560
MF72 3D25	3	9	0.044	32	124	2240	560
MF72 5D25	5	8	0.07	32	125	2720	680
MF72 8D25	8	7	0.114	33	125	2720	680
MF72 10D25	10	7	0.13	32	125	2720	680
MF72 12D25	12	6	0.156	32	126	3280	820
MF72 16D25	16	6	0.16	35	126	3280	820

Note: Unless otherwise specified, the allowable tolerance of R25 is +/- 20%

Specifications may change without notice.

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MF72 Power NTC Thermistor

✧ Mechanical Requirements

Item	Requirements	Test Method
1.Solder-ability	The terminals shall be uniformly tinned, and its area \geq 95%	Dipping theNTC terminals to a depth of 15mm in a soldering bath of $245\pm 5^{\circ}\text{C}$ and to the place of 6mm far from NTC body for $3\pm 0.5\text{s}$ (See IEC68-2-20 /GB2423.28 Ta)
2.Resistance To Soldering Heat	No visible mechanical damage. $\Delta R/RN \leq 20\%$ ($\Delta R = RN-RN' $)	Dipping the NTC terminals to a depth of 15mm in a soldering bath of $260\pm 5^{\circ}\text{C}$ and to the place for 6mm below from NTC body for $3\pm 0.5\text{s}$.After recovering4-5h under $25\pm 2^{\circ}\text{C}$. The rated zero power resistance value RN' shall be measured. (See IEC68-2-20 /GB2423.28 Tb)
3.Strength of lead terminal	No break out $\Delta R/RN \leq 20\%$ ($\Delta R = RN-RN' $)	Fasten the body and apply a force gradually to each lead until 10N and then keep for 10sec, Hold body and apply a force to each lead until 90° slowly at 5N in the direction of lead axis and then keep for 10sec, and do this in the opposite direction repeat for other terminal. After recovering 4~5h under $25\pm 2^{\circ}\text{C}$, the rated zero power resistance value RN' shall be measured. (See IEC68-2-21/GB2423.29 Ua / Ub)



MF72 Power NTC Thermistor

◇ Reliability Test

Item	Requirements	Test Method
1.Temp. Cycling Testing	No visible mechanical damage. $\Delta RN / RN \leq 20\%$ ($\Delta R = RN - RN' $)	Ta:-40±3°C/ 30min→25±2°C/ 5min→ Tb:160±3°C/ 30min→25±2°C/ 5min Cycles: 5times After recovering 4~5 h under 25±2°C, the rated zero power resistance value RN' shall be measured.
2.Electrical Cycling Testing		Ambient temp. Range:25°C±2°C. Cycles: 2,000times On / Off: 5 s / 55 s Test Current: 7A After recovering 4~5h under 25±2°C, the rated zero power resistance value RN' shall be measured.
3.LoadLife (Endurance) Testing		Ambient temp. Range:25°C±2°C; 7A/ 1,000±24h After recovering 4~5 h under 25±2°C, the rated zero power resistance value RN' shall be measured.
4. Humidity Testing	No visible mechanical damage. $\Delta RN / RN \leq 20\%$ ($\Delta R = RN - RN' $)	Ambient temp. range : 40°C±2°C R.H.:93±3% , Energized time:1000±24 h After recovering 4~5 h under 25±2°C, the rated zero power resistance value RN' shall be measured.

◇ Package

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➤ **Bulk Packaging:**

Series	Quantity/poly bag
MF72- D5	1000
MF72- D7	1000
MF72- D9	1000
MF72- D11	500
MF72- D13	500
MF72- D15	500
MF72- D20	250
MF72- D25	250

✧ **STORAGE CONDITIONS:**

- Temperature: -10°C ~ +40°C
- Humidity: ≤70%RH
- Term: ≤6 months (First-in/ First-out)
- Place:

Do not exposing the components to the following conditions, otherwise, it may result in deterioration of characteristics.

- 1) Corrosive gas or deoxidizing gas.
- 2) Flammable and explosive gases.
- 3) Oil, water and chemical liquid.
- 4) Under the sunlight.

- Handling after seal open: After unpacking of the minimum package, reseal it promptly or store it inside a sealed container with a drying agent.

✧ **WARNING** 

Do not apply the components under the following conditions, otherwise, it may result in deterioration of characteristics, destruction of components or in the worst case, to catching fire.

- Exceeding I_{max} .
- Exceeding rated temperature range.
- Inferior thermal dissipation (Due to badly inferior thermal dissipation, some part of the components body will become overheated and then be damaged.)