

WMZ12A(I / II) SERIES



PTC THERMISTORS 正温度系数热敏电阻器 - For Over Current Protection 用于过流保护

■ GENERAL 概述

WMZ12A (I/II) Series is the new generation of components for over current protection. Its safety characteristics passed the testing and meet the requirements of UL1434. It can do protection and recovery automatically and repetitively without contacting spot, noise and spark. WMZ12A (I/II) Series PTC Thermistor is designed specially for over current protection of the Ballast / CFL / Adaptor / Charger / Watt-hour Meter / Multimeter / Telecom / Micromotor etc, as show as the example of application. When the circuit protected is at normal state, current through the PTC thermistor will be lower than its Max. Non-operating Current (I_N). At this time R_t is at low-resistance state, and it won't affect the normal work of the circuit protected. While abnormal things (such as over current) happen, the current will be much higher than its Trip Current (I_T), and then R_t will change into high-resistance state very quickly. So the circuit protected will be at open state and non-damaged. After the abnormal things disappear and the temperature & the current recover to normal state, R_t will return to low-resistance state automatically and the circuit protected will recover to normal operating state.

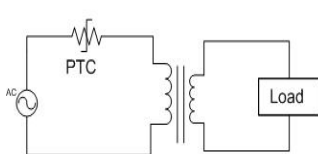
R_t 's current characteristics is the most important thing to be considered when make a choice of WMZ12A (I/II) series. Its Max. Non-operating Current shall be reasonably higher than rated operating current through the circuit protected and the criterion is that R_t can respond in time and won't trip by mistake. Furthermore, another thing must be especially noticed is: R_t 's Max. Operating / Non-operating characteristics is closely correlative with the ambient temperature. I_T & I_N will decrease while the ambient temperature increases, as show as Figure II.

WMZ12A (I/II) 系列 PTC 热敏电阻器系新一代过流保护器件，其特点是无触点、无噪音、无火花、自动保护、自动复原，可重复使用，其安全性能符合美国 UL1434 标准要求。

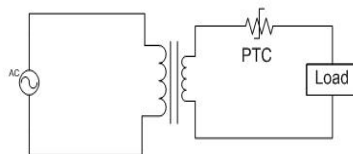
WMZ12A (I/II) 系列 PTC 热敏电阻器主要用于电子镇流器/节能灯/适配器/充电器/电能表/万用表/通讯设备/微电机等过流保护。如应用示例所示，当被保护电路处于正常状态时，流过 PTC 热敏电阻器 R_t 的电流小于其最大不动作电流 I_N ， R_t 处于低阻态，不会影响被保护电路正常工作；当被保护电路遇过流（电流大大超过其动作电流 I_T 令 R_t 急剧发热）等异常状况时， R_t 骤然跃入高阻态，使被保护电路避免受到损坏。当异常状况消失，温度、电流回复正常后， R_t 自动回复至低阻态，被保护电路亦回复至正常工作状态。

WMZ12A (I/II) 系列之选型主要考虑 R_t 的电流特性和 R_t 环境温度，其最大不动作电流 I_N 应适度大于被保护电路的额定工作电流，以能及时响应又不会误动作作为准则。与此同时，应特别注意 R_t 之动作/不动作特性与工作环境温度密切相关， I_N 和 I_T 随工作环境温度 T_A 升高而降低，如图 II 所示。

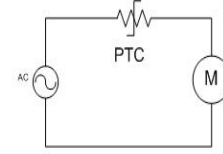
■ EXAMPLE OF APPLICATION 应用示例



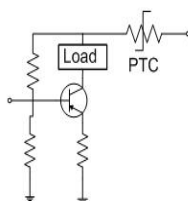
图I-1 For Primary Coil
初级线圈保护



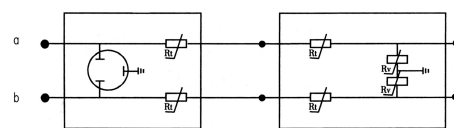
图I-2 For Secondary Coil
次级线圈保护



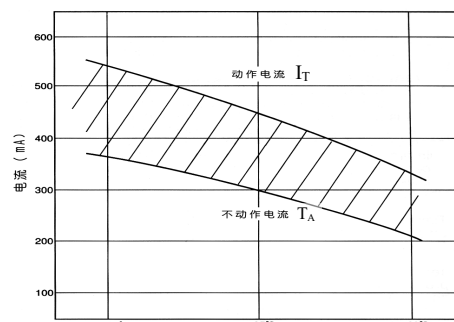
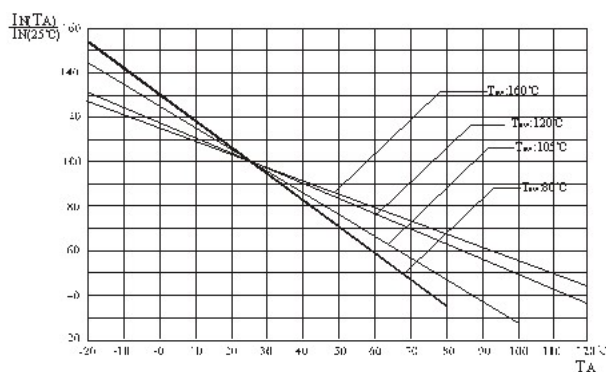
图I-3 For Micromotor
微电机保护



图I-4 For Tr.
晶体管保护



图I-5 For Telecom
通讯设备保护

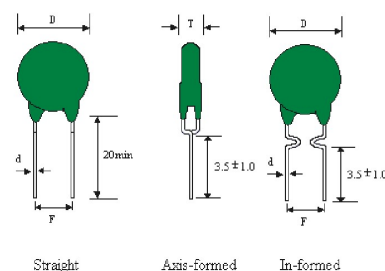


图II Current Characteristics 电流特性

■ PART NUMBERING 产品编号

WMZ12A (I / II)	-	120	SL	15R	M	U	U	200	B	5	-	G	6	B
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)		(11)	(12)	(13)

- (1) Series 系列: WMZ12A (I/II/III) 过流、过热、过压保护系列热敏电阻
 (2) Curie Temp. 居里温度: 50 - 50°C 75 - 75°C 85 - 85°C 105 - 105°C 120 - 120°C
 (3) Max Diameter 外径 D_{max} : S - $\Phi 4.5$ A - $\Phi 6.5$ B - $\Phi 8.5$ LB- $\Phi 10$ M- $\Phi 11.5$ SL- $\Phi 14.5$
 (4) Rated Zero Power Resistance 额定零功率电阻 R_N : 1R0- 1 Ω 4R7-4.7 Ω 15R-15 Ω 101-100 Ω
 (5) Tolerance of Resistance 电阻值允差: V - $\pm 25\%$ M - $\pm 20\%$ K - $\pm 10\%$
 (6) Shape of Leads 引线形状: U - In-formed 内弯 S - Straight 直线 A - Axis-formed 轴弯
 (7) Leads material 引线材质: U: Cu 铜线 (P: Cp 钢线)
 (8) Max. Non Operating Current 最大不动作电流: 200-200mA 060-60mA 008-8mA
 (9) Packing Type 包装形式: B - Bulk 散装 (A - Ammo 条带 R - Reel 盘带)
 (10) Leads Length 引线长度 5: 5mm (10: 10mm)
 (11) Coating Material 封装材料: S-Black Silicone 黑色硅树脂 G-Green Silicone 绿色硅树脂
 P-PF Resin 酚醛树脂 E-Epoxy 改良树脂 N-No Coating 不包封
 (12) Leads Diameter 引线直径: 5- $\Phi 0.5$ 6- $\Phi 0.6$ 8- $\Phi 0.8$ 1- $\Phi 1.0$
 (13) Leads Distance 引线间距: A-2.5 B-5.0 C-7.5 D-10.0



■ SPECIFICATION S TABLE 规格表

★WMZ12A (I)

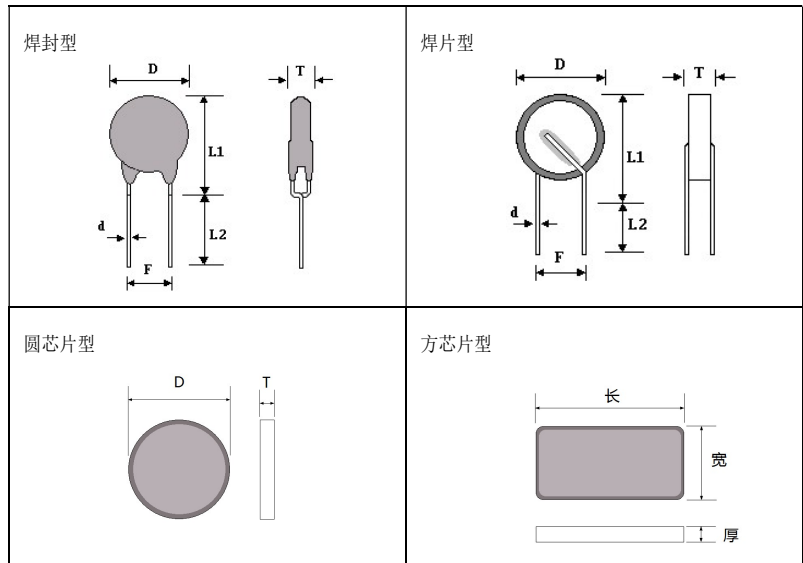
For Over Current Protection of the Adaptor (Primary Coil) / Charger / Watt-hour Meter / Multimeter / Micromotor and Transistor etc.
 主要用于变压器 (适配器) 初级线圈 / 充电器 / 电能表 / 数字万用表 / 微电机和晶体管过流保护

No. 序号	Part No. 产 品 编 号	Max. Non Operating Current at 60℃ 最大不动作电流 I _N (mA)	Trip Current at 25℃ 动作电流 I _T (mA)	Rated Zero Power Resistance 额定零功率电阻 R _N (Ω)	Max. Permissible Current at V _{Max} 最大许可电流 I _{Max} (A)	外形尺寸 Dimension (mm)			
						D _{Max}	T _{Max}	d ^{+0.05}	F ^{±1}
Max. Operating Vol. 最大工作电压 V _{Max} = 265V _{AC} ; Curie Temp. 居里温度 T _c = 80℃±7℃									
1	WMZ12A-222M002	2	8	2200±20%	0.25	4.5	4.5	0.5	5.0
2	WMZ12A-152M003	3	12	1500±20%					
3	WMZ12A-102M004	4	16	1000±20%					
4	WMZ12A-681M005	5	20	680±20%					
5	WMZ12A-471M006	6	24	470±20%					
6	WMZ12A-151M025	25	100	150±20%	1.00	8.5	4.5	0.6	5.0
7	WMZ12A-121M030	30	120	120±20%					
8	WMZ12A-101M035	35	140	100±20%					
9	WMZ12A-82RM040	40	160	82±20%					
10	WMZ12A-68RM045	45	180	68±20%					
11	WMZ12A-25RM065	65	260	25±20%					

No. 序号	Part No. 产 品 编 号	Max. Non Operating Current at 60°C 最大不动作电流 I _N (mA)	Trip Current at 25°C 动作电流 I _T (mA)	Rated Zero Power Resistance 额定零功率电阻 R _N (Ω)	Max. Permissible Current at V _{Max} 最大许可电流 I _{Max} (A)	外形尺寸 Dimension (mm)			
						D _{Max}	T _{Max}	d ^{±0.05}	F ^{±1}
Max. Operating Vol. 最大工作电压 V _{Max} = 265V _{AC} ; Curie Temp. 居里温度 T _c = 105°C±7°C									
12	WMZ12A-221M020	20	50	220±20%	0.25	4.5	4.5	0.5	5.0
13	WMZ12A-151M025	25	65	150±20%					
14	WMZ12A-101M030	30	75	100±20%					
15	WMZ12A-221M025	25	65	220±20%	0.30	5.5	4.5	0.6	5.0
16	WMZ12A-151M030	30	75	150±20%					
17	WMZ12A-121M035	35	88	120±20%					
18	WMZ12A-101M040	40	100	100±20%					
19	WMZ12A-75RM045	45	115	75±20%					
20	WMZ12A-68RM050	50	125	68±20%					
21	WMZ12A-47RM055	55	138	47±20%					
22	WMZ12A-221M025	25	65	220±20%	0.40	6.5	4.5	0.6	5.0
23	WMZ12A-151M035	35	88	150±20%					
24	WMZ12A-101M045	45	115	100±20%					
25	WMZ12A-68RM055	55	138	68±20%					
26	WMZ12A-121M050	50	125	120±20%	1.00	8.5	4.5	0.6	5.0
27	WMZ12A-101M055	55	138	100±20%					
28	WMZ12A-82RM060	60	150	82±20%					
29	WMZ12A-62RM075	75	188	62±20%					
30	WMZ12A-39RM085	85	213	39±20%					
31	WMZ12A-22RM100	100	250	22±20%					
32	WMZ12A-22RM120	120	300	22±20%	1.60	11.5	4.5	0.6	5.0/7.5
33	WMZ12A-15RM130	130	325	15±20%					
34	WMZ12A-10RM140	140	350	10±20%					
35	WMZ12A-8R2M150	150	375	8.2±20%					
36	WMZ12A-18RM150	150	375	18±20%	2.50	14.5	5.0	0.6	5.0/7.5
37	WMZ12A-15RM160	160	400	15±20%					
38	WMZ12A-12RM170	170	425	12±20%					
39	WMZ12A-10RM180	180	450	10±20%					
40	WMZ12A- 6R8M200	200	500	6.8±20%					
Max. Operating Vol. 最大工作电压 V _{Max} = 265V _{AC} ; Curie Temp. 居里温度 T _c = 120°C±7°C									
41	WMZ12A-101M040	40	80	100±20%	0.30	5.5	4.5	0.6	5.0
42	WMZ12A-75RM045	45	90	75±20%					
43	WMZ12A-62RM050	50	100	62±20%					
44	WMZ12A-151M040	40	80	150±20%	0.40	6.5	5.0	0.6	5.0
45	WMZ12A-101M050	50	100	100±20%					
46	WMZ12A-68RM060	60	120	68±20%					
47	WMZ12A-47RM090	90	180	47±20%	1.60	11.5	5.0	0.6	5.0/7.5
48	WMZ12A-39RM100	100	200	39±20%					
49	WMZ12A-33RM110	110	220	33±20%					
50	WMZ12A-22RM130	130	260	22±20%					
51	WMZ12A-15RM145	145	290	15±20%					
52	WMZ12A-10RM160	160	320	10±20%					
53	WMZ12A-8R2M170	170	340	8.2±20%	2.50	14.5	5.0	0.6	5.0/7.5
54	WMZ12A-22RM180	180	360	22±20%					
55	WMZ12A-15RM200	200	400	15±20%					
56	WMZ12A-10RM220	220	440	10±20%					
57	WMZ12A-8R2M240	240	480	8.2±20%					
58	WMZ12A-6R8M260	260	520	6.8±20%					

WMZ12A (II)

For Over Current Protection of Telecom 主要用于通信设备过流保护



No. · 序号	Part No. 产 品 编 号	Rated Zero Power Resistance 额定零功率 电阻 R _N @25°C	Max. Non Operating Current 最大不动作电流 I _N (mA)		Trip Current at 25°C 动作电流 I _T (mA)	Tripping time at max current 最大电流下 的动作时间 T(Set)	Max. Current 最大电流 I _{Max} (A)	Max. Voltage 最大电压 V _{Max} (V)	Dimension (mm) 外形尺寸			
			@25°C	@40°C					D _{Max}	T _{Max}	d ^{±0.05}	F ^{±1}
1	WMZ12A-85LB10RM150	10Ω±20%	150	120	300	0.55	3.0	250	10.0	5.0	0.6	5
2	WMZ12A-85B12RM060	12Ω±20%	90	60	160	0.2	2.0	250	9	5.0	0.6	5
3	WMZ12A-105B18RM110	18Ω±20%	135	110	270	0.18	3.0	250	8.5	5.0	0.6	5
4	*WMZ12A-70LB20RM070	20Ω±20%	110	70	200	0.3	3.0	250	10.5	5.0	0.6	5
5	WMZ12A-110B35RM070	35Ω±20%	90	70	230	0.45	3.0	250	9	5.0	0.6	5
6	*WMZ12A-108B35RM070	35Ω±20%	90	70	230	0.45	4.6	245	9	5.0	0.6	5
7	*WMZ12A-85LB50RM060	50Ω±20%	75	60	150	0.2	3.0	250	9.5	5.0	0.6	5
8	*WMZ12A-85LB50RM060	50Ω±20%	75	60	150	0.2	3.0	380	9.5	5.0	0.6	5
9	*WMZ12A-85LB55RM060	55Ω±20%	70	60	150	0.2	3.0	250	9.5	5.0	0.6	5
10	*WMZ12A-85LB55RM060	55Ω±20%	70	60	150	0.2	3.0	650	10.0	5.0	0.6	5
11	*WMZ12A-110B35RM070	35Ω±20%	100	70	230	0.2	3.0	245	7.2	3.5	0.5	4.5
12	WMZ12A-110B50RM090	50Ω±20%	90	60	180	0.15	4.5	250	7.2	3.5	0.5	4.5
13	WMZ12A-110H35RM060	35Ω±20%	90	60	180	0.2	2.5	230	6.3	3.5	0.5	4.5
14	*WMZ12A-110LB50RM060	50Ω±20%	90	60	190	0.2	2.5	250	8.4	3.5	0.6	5.5
15	*WMZ12A-115B25RM085	25Ω±20%	130	85	260	0.3	3.0	250	7.2	3.5	0.5	4.5
16	*WMZ12A-110B35RM070	35Ω±20%	110	70	230	0.2	3.0	250	7.2	2.2	/	/
17	*WMZ12A-85C10RM100	10Ω±20%	130	100	300	0.2	3.0	250	长*宽*厚=8.7*5.3*1.9			

OTHER CHARACTERISTICS 其它电性能参数:

Over Current Withstanding 耐工频电流能力: : 3Arms / 220Vrms 20 times (60s On, 300s Off)

Lighting Surges 耐冲击电流能力: : 10/310μS 1.5KV 37.5A 10 times or 10/1000μS 1.0KV 25A 30 times

Over Vol. Withstanding 耐工频电压能力: : 250Vrms / 3A / 15 min.

Inducted Vol. Withstanding 耐高压感应能力: : 650Vrms / 1.1A 20 times (1s On, 60s Off) (For only the items with * 仅适用于标有*号品种)