

熱敏電阻器 PTC THERMISTOR

■ 熱敏電阻器 PTC THERMISTOR

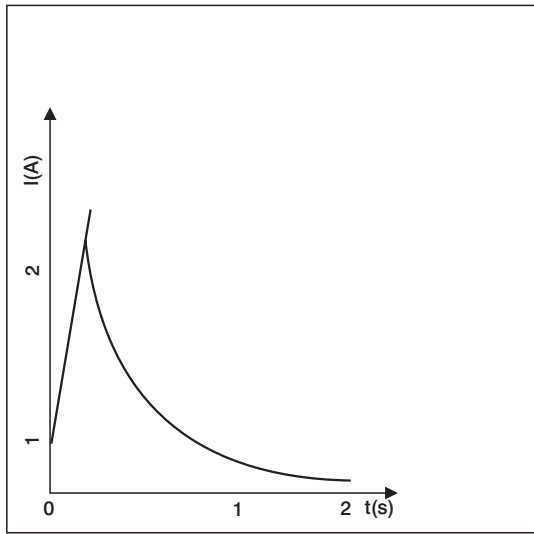
● 特性

- * a係數高
- * 耐電壓強度及抗氧化性高

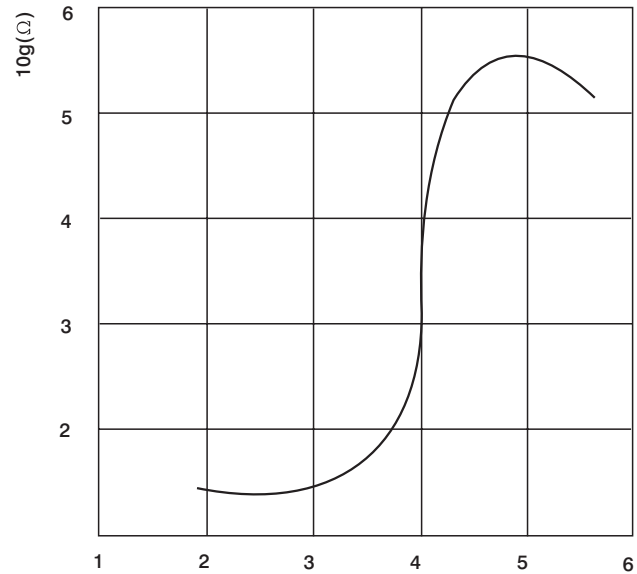
FEATURES

- * High ageing coefficient
- * Superior withstanding voltage oxidation-resistance.

● 特性曲綫 CHARACTERISTICS



電流—時間曲綫
Current-Time Curve



電阻—溫度曲綫
Resistance-Temperature Curve.

● 訂貨方式 HOW TO ORDER

MZ	2	1	L	201	R	M
熱敏電阻器 PTC Thermistor	產品類型 Product style	產品類型 順序號 Sequence No.	開關溫度(可缺省) switch Temperature	阻值(Ω) Resistance Value	歐姆 OHM	誤差 Tolerance
	7 消磁類 Degaussing	MZ7 數字代表脚數 The number expresses No. of pin	L 40°C	201 = 20 × 10 ¹		K ± 10%
	9 啓動類 Starter		K 60°C	8R0 = 8.0		M ± 20%
	2 限流類 Current-Limited		M 80°C			N ± 30%
	3 延時起動 Delay-Time	MZ2, MZ9 1. 包封型 Coating type 2. 塑膠套型 Plastic type 3. 光片型 Empty body	N 100°C			
	4 自控加熱 Auto-Control-heat	MZ3 無標記 No mark	P 120°C			
		MZ4 1. 圓片型 Round 2. 長方型 Queue	R 135°C			

■ MZ9 型馬達啓動熱敏電阻器 MZ9 TYPE THERMISTOR

● 特性

- * A可作為無觸點開關用于制冷設備的壓縮機及大功率馬達中
可靠性高，壽命長等

FEATURES

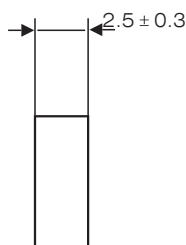
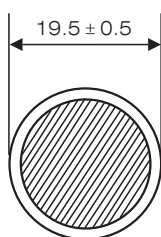
- * As a non-touched switch in cold compressor and motor.
- * High reliability life etc.

● 使用環境條件 APPLICATON ENVIROMENTAL CONDITIONS

- * 環境溫度：-20℃ - +85℃
- * 相對濕度：98%(+40℃ ± 2℃)
- * 振動：10-55Hz
- * 加速度：98m/s²

- * Environmental tepmerature: -20℃ - +85℃
- * Relative humidity:98%(+40℃ ± 2℃)
- * Vibration frequency:10-55Hz
- * Acceleration:98m/s²

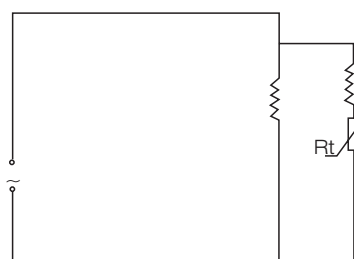
● 外形尺寸 DIMENSIONS



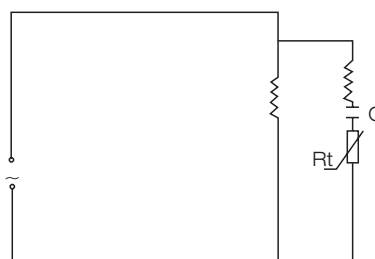
● 主要技術參數 MAIN TECHNICAL PARAMETER

型號 Part No.	開關溫度 (℃) Switch Temperature(℃)	標稱阻值 (Ω) Resistance Value(Ω)	阻值允許偏差 Resistance Tolerance	最大電壓 AC(V) Max Voltage(v)	最大功率 (W) Max Power(W)	最大電流 AC(A) Mzx Current(A)	啓動時間 (S) Time to Tip(S)	恢復時間 (S) Recover Time(S)
MZ92-P220RM	120	22	±20%	300	3.5	7.0	0.35-20	≤120
MZ92-P330RM	120	33	±20%	300	3.5	7.0	0.35-2.0	≤120
MZ92-P470RM	120	47	±20%	300	3.5	7.0	0.35-2.0	≤120
MZ92-R220RM	135	22	±20%	355	3.3	6.0	0.4-2.0	≤85
MZ92-R330RM	135	33	±20%	355	3.3	6.0	0.4-2.0	≤85
MZ92-N101RM	100	100	±20%	270	2.0	2.5	1.2-3.0	≤180
MZ93-P220RM	120	22	±20%	300	3.0	7.0	0.4-1.2	≤90
MZ93-P330RM	120	33	±20%	355	3.5	6.0	0.45-1.35	≤65
MZ93-P470RM	120	47	±20%	400	4.0	5.0	0.5-1.4	≤65
MZ93-R220RM	135	22	±20%	300	3.0	7.0	0.4-1.2	≤90
MZ93-R330RM	135	33	±20%	355	3.5	6.0	0.45-1.35	≤65
MZ93-R470RM	135	47	±20%	400	4.0	5.0	0.5-1.4	≤65

● 應用電路 APPLICATION CIRCUIT



用于分相電路



用于電容式電機電路

熱敏電阻器 PTC THERMISTOR

■ MZ3 型熱敏電阻器

MZ3 TYPE THERMISTOR

● 特性 FEATURES

具有處長燈絲壽命及節約能源而用于電子節能燈及電子鎮流器
用于數字式萬用表中作過流保護元件

Delay life and energy-saving is available for electronic light and ballast.

One of restricting current unite in digital multimeter

● 使用環境條件 APPLICATION ENVIROMENTAL CONDITIONS

環境溫度: $-10^{\circ}\text{C} - +125^{\circ}\text{C}$

相對濕度: $93\%(+40^{\circ}\text{C} \pm 2^{\circ}\text{C})$

振動: $10 - 55\text{Hz}$

加速度: 98m/s^2

Environmental temperature: $-10^{\circ}\text{C} - +125^{\circ}\text{C}$

Relative humidity: $93\%(+40^{\circ}\text{C} \pm 2^{\circ}\text{C})$

Vibration frequency: $10 - 55\text{Hz}$

Acceleration: 98m/s^2



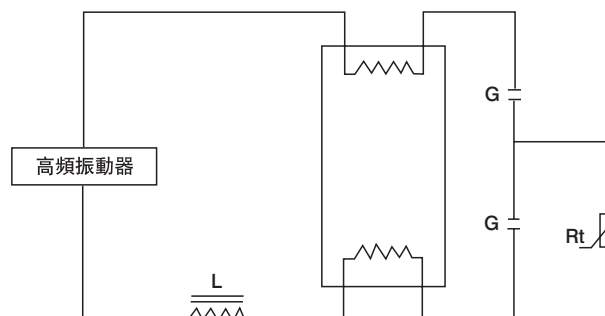
● 外形尺寸 DIMENSIONS

	型號	D	T	L	W	d
	Part No.	Max	Max	Max	± 0.5	± 0.1
	MZ3-L100RN	8	4.5	35	5	0.55
	MZ3-K100RN	8	4.5	35	5	0.55
	MZ3-M100RN	10	5.5	35	5	0.55
	MZ3-N100RN	10	5.5	35	5	0.55
	MZ3-P100RN	10	5.5	35	5	0.55

● 主要技術參數 MAIN TECHNICAL PARAMETER

型號 Part No.	開關溫度 ($^{\circ}\text{C}$) Switch Temperature	標稱電阻 (Ω) Resistance Value	額定電壓 (V) Rated Voltage	耐電壓 (V) Break down Voltage
MZ3-L100RN	40 ± 5	100-2000	270	400~1000
MZ3-K100RN	60 ± 5	100-2500		
MZ3-M100RN	80 ± 5	100-4000		
MZ3-N100RN	100 ± 5	100-2000		
MZ3-P100RN	120 ± 5	100-2000		

● 應用電路 APPLICATION CIRCUIT



■ MZ2 型熱敏電阻器

MZ2 TYPE THERMISTOR

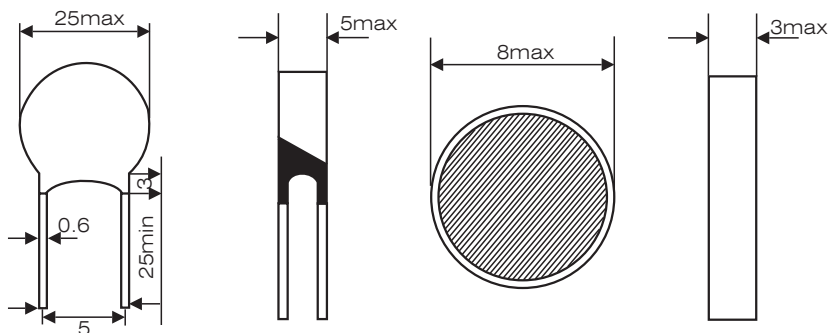
● 特性 FEATURES

* 由于過流保護作用而通訊及交流電路中
Compact for telecommunication and AC circuit.

● 使用環境條件 APPLICATION ENVIRONMENTAL CONDITIONS

* 環境溫度: $-10^{\circ}\text{C} - +60^{\circ}\text{C}$ Environmental temperature: $-10^{\circ}\text{C} - +60^{\circ}\text{C}$
 * 相對溫度: $40 - 75\% (+40^{\circ}\text{C} \pm 2^{\circ}\text{C})$ Relative humidity: $40 - 75\% (+40^{\circ}\text{C} \pm 2^{\circ}\text{C})$
 * 大氣壓力: $86 - 106\text{KPa}$ Atmosphere pressure: $86 - 106\text{KPa}$

● 外形尺寸 DIMENSIONS(mm)



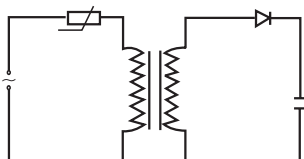
● 應用于變壓器保護產品的技術參數 THE PARAMETER OF TRANSFORMER

型號 Part No.	不動作電流 Non-operating Current (mA)	動作電流 Tip current (mA)	額定阻值 Rated Resistance (Ω)	最大阻值 Max Voltage (V)	外形尺寸 Max Dimensions (mm)	典型功率 Matched Transformer (W)
MZ21P4R7RM	390	900	$4.7 \pm 20\%$	140	$\Phi 19.0 \times 6.0$	35
MZ21P5R6RM	240	780	$5.6 \pm 20\%$		$\Phi 17.0 \times 6.0$	30
MZ21P5R8RM	290	670	$6.8 \pm 20\%$		$\Phi 14.0 \times 6.0$	25
MZ21P100RM	220	510	$10 \pm 20\%$		$\Phi 13.0 \times 6.0$	20
MZ21P150RM	170	400	$15 \pm 20\%$		$\Phi 11.6 \times 6.0$	15
MZ21P220RM	140	330	$22 \pm 20\%$		$\Phi 9.6 \times 6.0$	10
MZ21P33ORM	100	230	$33 \pm 20\%$		$\Phi 7.4 \times 6.0$	5
MZ21P120RM	150	610	$12 \pm 20\%$	270	$\Phi 19.5 \times 6.0$	35
MZ21P270RM	150	360	$27 \pm 20\%$		$\Phi 14.0 \times 6.0$	20
MZ21P390RM	100	240	$39 \pm 20\%$		$\Phi 10.0 \times 6.0$	15
MZ21P56ORM	80	190	$56 \pm 20\%$		$\Phi 8.0 \times 6.0$	10
MZ21P82ORM	60	150	$82 \pm 20\%$		$\Phi 8.0 \times 6.0$	10
MZ21P121RM	35	85	$120 \pm 20\%$		$\Phi 6.5 \times 6.0$	5
MZ21P181RM	29	70	$180 \pm 20\%$		$\Phi 6.5 \times 6.0$	3

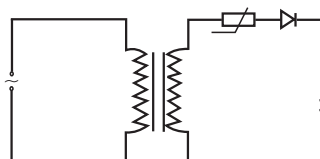
工作溫度範圍: Operating temperature range $-10^{\circ}\text{C} - +60^{\circ}\text{C}$

表明變壓器可工作容量 It means typical capacitance of the transformer which can be used.

● 應用電路 APPLICATION CIRCUIT



(a) 用于電源變壓器初級保護



(b) 用于電源變壓器次級保護

熱敏電阻器 PTC THERMISTOR

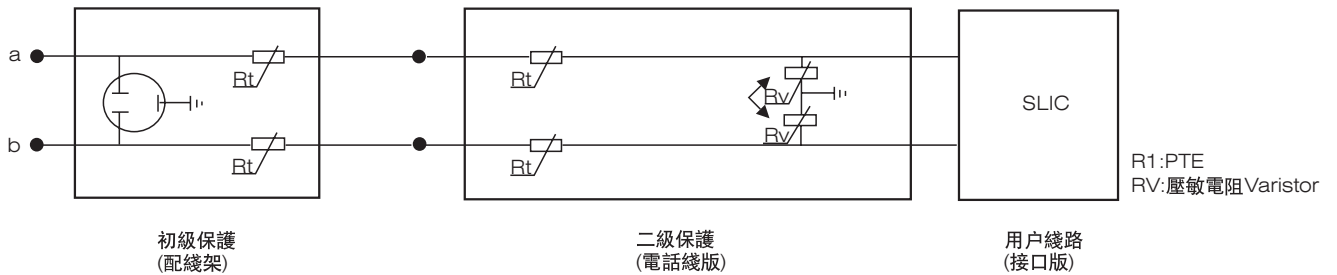
• 應用于通訊設備保護產品的技術參數

THE PARAMETER OF TELECOMMUNICATION FACILITIES

型號 Part No.	標稱阻值 Nominal Resistance 25°C ()	不動作電流 Non-operating Current (mA)	響應時間 Responding Time						耐電壓 Breakdown Voltage (VAC)	耐叫流(次數) Current(time)		外形尺寸 Dimensions (Max)
			3A	2A	1A	0.75A	0.5A	0.35A		工作電流 Power Frequency current 3A	衝擊電流 Shock Current	
			0.5A	0.5A	0.5A	0.15A	0.15A	0.15A				
MZ21-8RORM	8	150	0.4	0.8	3	10	25	70	250	20	10	Φ9×3.5
MZ21-120RM	12	110	0.3	0.45	1.5	5	15	20	250	20	10	Φ9×3.5
MZ21-180RM	18	110	0.2	0.35	1.2	5	15	20	250	20	10	Φ8×3.5
MZ21-400RM	40	50	0.1	0.2	0.6	1	3	20	360	20	10	Φ7.5×5
MZ21-500RM	50	50	0.1	0.3	0.6	1	3	20	420	20	10	Φ7.5×5
MZ21-820RM	82	50	0.1	0.3	0.6	1	3	20	420	20	10	Φ7.5×5
MZ21-101RM	100	50	0.15	0.25	0.6	1	2	3	420	20	10	Φ9.0×4.5
MZ22-8RORM	8	150	0.4	0.8	3	10	25	70	250	20	10	10×9.0×5
MZ22-120RM	12	80	0.2	0.3	1.5	5	20	50	250	20	30	10×9.6×5
MZ22-180RM	18	110	0.2	0.35	1.2	5	15	20	250	20	30	10×9.6×5
MZ22-220RM	22	110	0.2	0.35	1.2	5	15	20	250	20	30	10×9.6×5
MZ22-270RM	27	90	0.1	0.2	0.5	0.8	2	4	420	20	30	10×9.6×5
MZ22-500RM	50	50	0.2	0.3	0.6	1	3	20	420	20	30	10×9.6×5
MZ23-80RM	8	150	0.4	0.8	3	10	25	70	250	20	30	Φ(7-9)×(1.6-2.5)
MZ23-120RM	12	130	0.3	0.5	2.5	7	20	50	250	20	30	Φ(7-9)×(1.6-2.5)
MZ23-180RM	18	110	0.2	0.35	1.2	5	15	20	250	20	30	Φ(6-9)×(1.6-2.5)
MZ23-220RM	22	110	0.2	0.35	1.2	5	15	20	250	20	30	Φ(6-8)×(1.6-2.5)
MZ23-270RM	27	90	0.1	0.2	0.5	0.8	2	4	250	20	30	Φ(6-8)×(1.6-2.5)

* 注: MZ21 MZ22系列衝擊電流試驗參數: 10/1000μs、1KV、25A;
MZ23系列衝擊電流試驗參數: 10/310μs、1.5KV、37.5A.

• 應用電路 APPLICATION CIRCUIT



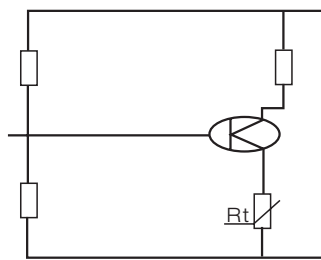
• 應用于變壓器保護產品的技術參數 THE PARAMETER OF TRANSFORMER

型號 Part No.	不動作電流 Non-operating Current (mA)	動作電流 Tip Current (mA)	額定阻值 Rated resistance (Ω)	額定阻值 Rated Temperature ($^{\circ}\text{C}$)	外形尺寸 Mzx Dimensions (mm)	最大電壓 Max Valtage (V)
MZ21-M201RM	10	20	200	80	$\Phi 4 \times 5$	360
MZ21-M151RM	15	30	150		$\Phi 6.5 \times 5$	360
MZ21-M101RM	40	80	100		$\Phi 8.5 \times 5$	360
MZ21-M500RM	50	100	50		$\Phi 8 \times 5$	270
MZ21-M100RM	130	260	10		$\Phi 8.5 \times 5$	270
MZ21-M150RM	150	300	15		$\Phi 10 \times 5$	270
MZ21-M100RM	180	360	10		$\Phi 15 \times 5$	270
MZ21-N210RM	15	30	200	100	$\Phi 4 \times 5$	270
MZ21-N151RM	30	60	150		$\Phi 6.5 \times 5$	270
MZ21-N101RM	50	100	100		$\Phi 5.5 \times 5$	270
MZ21-N820RM	80	160	82		$\Phi 8 \times 5$	270
MZ21-N150RM	150	300	15		$\Phi 13 \times 5$	270
MZ21-N100RM	180	360	10		$\Phi 15 \times 5$	270
MZ21-N8R0RM	200	400	8		$\Phi 15 \times 5$	270
MZ21-N5R0RM	250	500	5		$\Phi 18 \times 5$	270
MZ21-N3R0RM	400	800	3		$\Phi 25 \times 5$	270

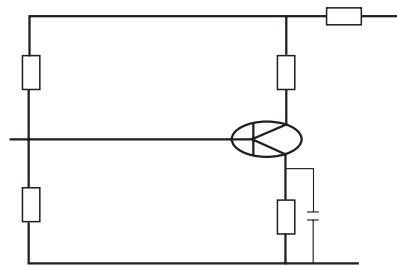
* 工作溫度範圍：Operating temperature range $-10^{\circ}\text{C} - +60^{\circ}\text{C}$

• 應用電路 APPLICATION CIRCUIT

(1) 晶體管電路

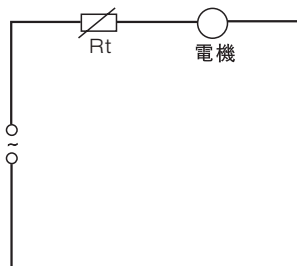


(A) 接在發射極電路

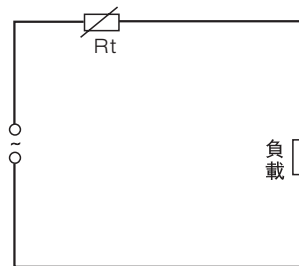


(b) 接在電源回路

(2) 電機保護



(3) 一般電器回路



■ MZ7型消磁電路用熱敏電阻器
MZ7 TYPE THERMISTOR

● 特性 FEATURES

彩色電視機和彩色顯示器作自動消磁元件
交流電路中的限流元件

Superior degaussing component of colour TV set and monitor
Current-Limited unite in AC circuit.

● 使用環境條件 APPLICATION ENVIROMENTAL CONDITIONS

環境溫度: $-10^{\circ}\text{C} - +85^{\circ}\text{C}$

相對濕度: $93 \pm 2\% (+40^{\circ}\text{C} \pm 2^{\circ}\text{C})$

振動: 10-55Hz

加速度: 98m/s^2

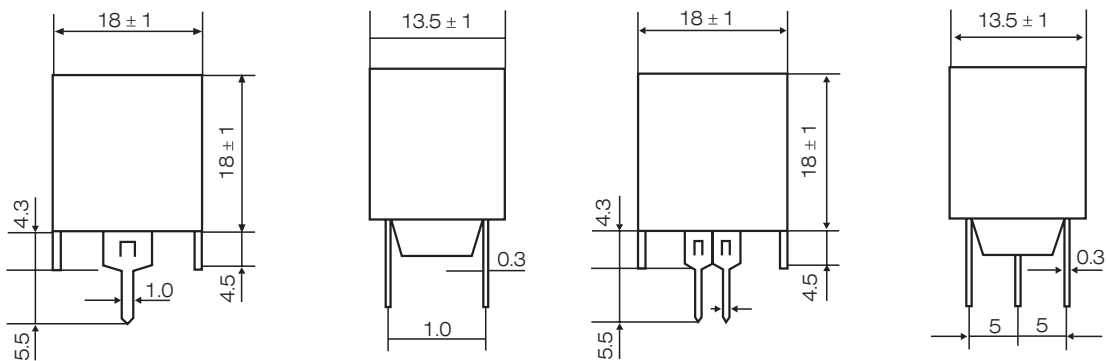
Environmental temperature: $-10^{\circ}\text{C} - +85^{\circ}\text{C}$

Relative humidity: $93 \pm 2\% (+40^{\circ}\text{C} \pm 2^{\circ}\text{C})$

Vibration frequency: 10-55Hz

Acceleration: 98m/s^2

● 外形尺寸 DIMENSIONS



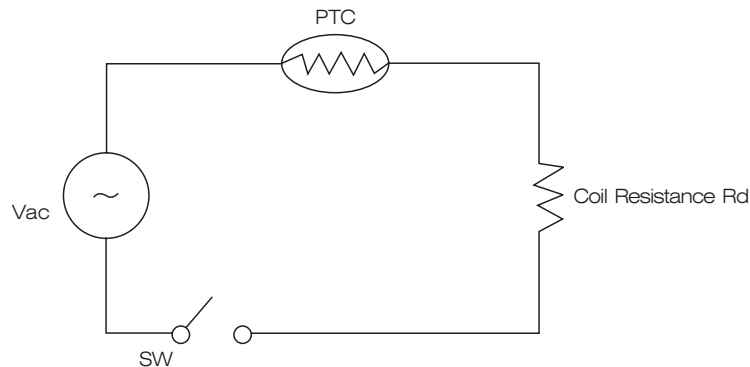
● 主要技術參數 MAIN TECHNICAL PARAMETER

型號 Part No.	標稱電阻 Resistance Value	工作電壓 Working Voltage	最大電壓 Max Valtage	電流衰减特性(25°C) Current Attenuation Characteristic		
				I_0 P-P(A)	I_1 P-P(mA)3'	I_2 rms(mA)60'
MZ72-7RM	$7 \pm 20\%$	220	270	> 18	≤ 300	≤ 10
MZ72-9RM	$9 \pm 20\%$	220	270	> 18	≤ 300	≤ 10
MZ72-12RM	$12 \pm 20\%$	220	270	> 18	≤ 300	≤ 10
MZ72-14RM	$14 \pm 20\%$	220	270	> 18	≤ 300	≤ 10
MZ72-18RM	$18 \pm 20\%$	220	270	> 18	≤ 300	≤ 8
MZ72-20RM	$20 \pm 20\%$	220	270	> 18	≤ 300	≤ 8
MZ73-7RM	$7 \pm 20\%$	220	270	> 18	≤ 300	≤ 7
MZ73-9RM	$9 \pm 20\%$	220	270	> 18	≤ 300	≤ 7
MZ73-12RM	$12 \pm 20\%$	220	270	> 18	≤ 300	≤ 6
MZ73-14RM	$14 \pm 20\%$	220	270	> 18	≤ 300	≤ 4
MZ73-18RM	$18 \pm 20\%$	220	270	> 18	≤ 300	≤ 3
MZ73-27RM	$27 \pm 20\%$	220	270	> 18	≤ 300	≤ 3
MZ73-36RM	$36 \pm 20\%$	220	270	> 18	≤ 300	≤ 3

• 應用電路 APPLICATION CIRCUIT

這是最常用的消磁電路，如果要求殘余電流為零，通常要求消磁電路裝有開關，在要求消磁時接通，平時中斷。

This is a basic degaussing circuit, if residual current's requested zero. this circuit usually a switch When necessary the switch is turned on turned off.



電流—時間特性(動態特性)

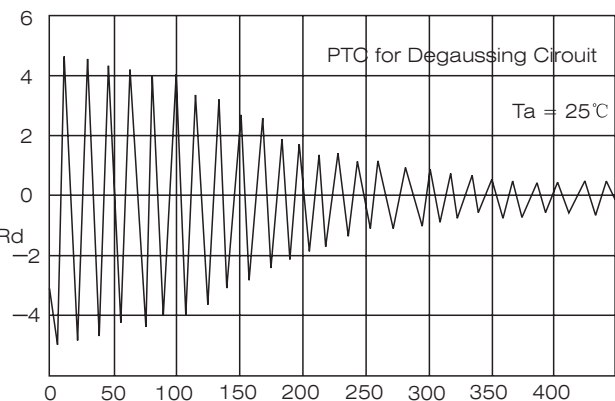
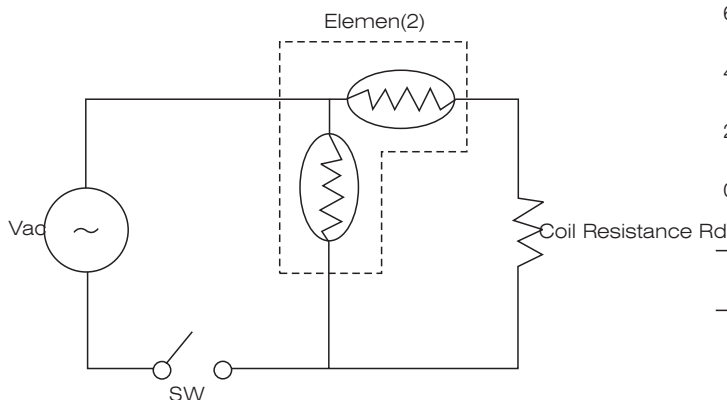
Current-Time Characteristic(Dynamic Characteristic)

旁路電阻(1)加熱電阻(2)使(2)的阻值增加，殘余電流減小，通常這種電路與電源開關直接相連，打開電源，即自動完成消磁工作。

Heating element (1) causes the resistance value of Element (2) to increase and make the stable current extremely small, Thus in many case. The circuit is designed to be linked to the power switch so that degaussing is performed automatically when the power is turned on.

當一高電壓加在消磁電阻上時，瞬時產生大的衝擊電流，同時熱敏電阻本身溫度迅速升高，阻值增加，電流迅速減小，起到消磁作用。

When excessing power is applied to the themistor, a large current flow momentarily, then the self-heating feature of the themistor causes the resistance value to increase and the current value to decrease. Thus, the themistor controls degaussing function ideally.



熱敏電阻器 PTC THERMISTOR

■ MZ4型自控加熱用PTCR熱敏電阻器 MZ4 TYPE THERMISTOR

● 特性 FEATURES

- * 作用空調、暖風機及各種加熱器自控元件。
- * 用作卷發器、驅蚊器等小型加熱器自控元件。
- * Used as Auto Control Component on air conditioner, hot wind machine and Various of heater.
- * Used as Auto Control Component on small heater, rolling hair machine, driving mosquito machine.

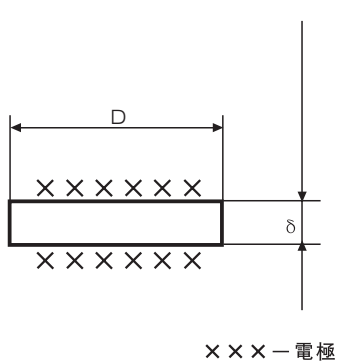
● 使用環境條件 APPLICATION ENVIRONMENTAL CONDITIONS

- * 環境溫度: $-10^{\circ}\text{C} - +85^{\circ}\text{C}$
- * 相對濕度: $93 \pm 2\% (+40^{\circ}\text{C} \pm 2^{\circ}\text{C})$
- * 振動: 10-55Hz
- * 加速度: 98m/s^2
- * Environmental temperature: $-10^{\circ}\text{C} - +85^{\circ}\text{C}$
- * Relative humidity: $93 \pm 2\% (+40^{\circ}\text{C} \pm 2^{\circ}\text{C})$
- * Vibration frequency: 10-55Hz
- * Acceleration: 98m/s^2

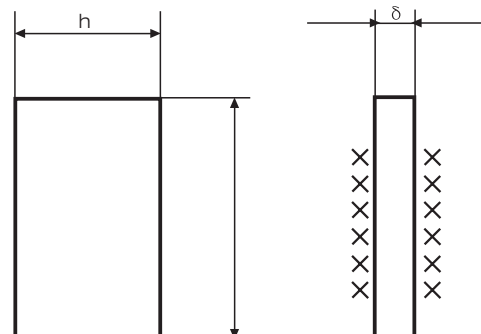
● 主要技術參數 MAIN TECHNICAL PARAMETER

型號 Model	規格 Specification(mm)	性能(properties)			
		室溫電阻率 $\rho(\text{cm} \cdot \Omega)$	居裏點 $\text{TC}(^{\circ}\text{C})$	電阻溫度系數 $a(\%/^{\circ}\text{C})$	耐電壓 $V_b \text{ VAC/mm}$
MZ42-260	$24 \times 15 \times 2.5$	$>1.0 \times 10^2$	260	≥ 16	≥ 250
MZ41-260	$\phi 21 \times 2.5$	$>1.0 \times 10^2$	260	≥ 16	≥ 250
MZ41-220	$\phi 13 \times 2.5$	$>4.0 \times 10$	220	≥ 16	≥ 250
MZ41-215	$\phi 13 \times 2.5$	$>4.0 \times 10$	215	≥ 16	≥ 250
MZ41-210	$\phi 13 \times 2.5$	$>4.0 \times 10$	210	≥ 16	≥ 250

● 外形尺寸 DIMENSIONS



MZ41型



MZ42型