



## MELF Resistors / 晶圆电阻器

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Notice: Specification Changed or Version Updated will be posted at irregular intervals.  
All Updated and Final Specifications, Please Confirm with TOKEN ELECTRONICS REPRESENTIVES.



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# MELF Resistors

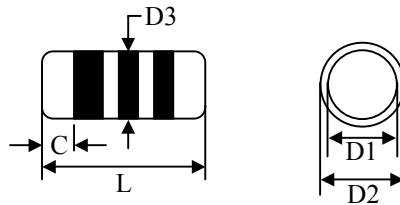
## Carbon Film RDM series - MELF Resistor

### RDM Resistor Features

- Coating color : Yellow.
- Marking : Color code (3 color band).
- Free direction for mounting due to cylindrical design.
- High solderability due to specially plated electrodes.
- Electrodes strength is higher than flat chip resistors.
- Lower current noise than thick film flat chip resistors.
- Suitable for reflow, flow and iron soldering.



### Carbon Film MELF Resistor Quick Reference Data



Type	RDM73S	RDM73P	RDM74S	RDM74P	RDM16M	RDM17S	RDM17P	
DIN-44061 type	0204	0204	0207	0207	0207	0309	0309	
Power Rating (W)	1/8	1/4	1/4	1/2	1	1/2	1	
Resistance Range ( $\Omega$ ) E24	1 ~ 1M							
Resistance Tolerance	G: $\pm 2\%$ J: $\pm 5\%$							
Max. Working Voltage (V)	200	250	300	300	350	350	350	
Max. Overload Voltage (V)	400	500	600	600	700	700	700	
Packaging & Qty (pcs)	Case	60000	60000	24000	24000	12000	12000	24000
	Reel	3000	3000	1500	1500	1000	1000	1500
Dimensions (mm)	L	3.5 $\pm$ 0.2	3.5 $\pm$ 0.2	5.9 $\pm$ 0.2	5.9 $\pm$ 0.2	5.9 $\pm$ 0.2	8.5 $\pm$ 0.2	8.5 $\pm$ 0.2
	C (Min.)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	D1	1.40 $\pm$ 0.15	1.40 $\pm$ 0.15	2.2 $\pm$ 0.1	2.2 $\pm$ 0.1	2.2 $\pm$ 0.1	3.2 $\pm$ 0.2	3.2 $\pm$ 0.2
	D2 (Max.)	1.55	1.55	2.4	2.4	2.4	3.4	3.4
	D3 (Max.)	1.25	1.25	2.1	2.1	2.1	3.0	3.0

### Carbon Film MELF Resistor Characteristics

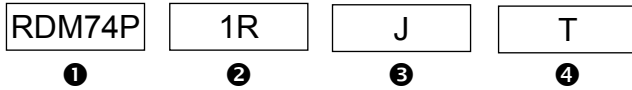
Item	Characteristics					Test Method	
	Type	TCR	0 ~ -350	0 ~ -600	0 ~ -1000		0 ~ -1500
Temp. Coefficient (PPM/ $^{\circ}$ C)	>1/4W		<10K	11K~115K	160K~2M2	-	JIS-C(5202-5.2)
	1/8W		<1K	1K1~47K	51K~470K	510K~1M	
Short Time Overload	$\pm (1.0\% + 0.05\Omega)$					JIS-C(5202-5.5)	
Intermittent	$\pm (1.0\% + 0.05\Omega)$					JIS-C(5202-5.8)	
Resistance to Soldering	$\pm (1.0\% + 0.05\Omega)$					JIS-C(5202-6.4)	
Solderability	95% Coverage min					JIS-C(5202-6.5)	
Moisture Resistance	$\pm (5.0\% + 0.1\Omega)$					JIS-C(5202-7.9)	
Load Life	$\pm (3.0\% + 0.1\Omega)$					JIS-C(5202-7.10)	





# MELF Resistors

## ► How to Order



❶ Product type: RDM73S, RDM73P, RDM74S, RDM74P, RDM16M, RDM17S, RDM17P

❷ Resistance Value( $\Omega$ ): 1 $\Omega$  ~ 1M $\Omega$

❸ Resistance Tolerance (%)

Code	Resistance Tolerance
G	$\pm 2\%$
J	$\pm 5\%$

❹ Packaging

Code	Packaging
T	Taping Reel
P	Bulk



# MELF Resistors

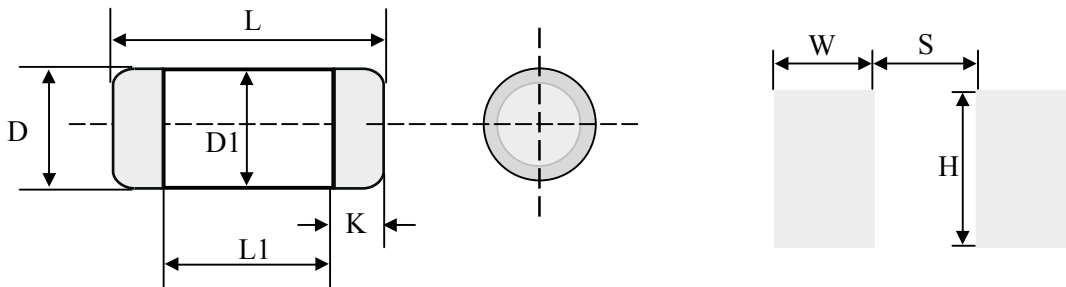
## Metal Glaze Film RGM series - Pulse Melf Resistors

### ► Metal Glaze Film Resistor Features

- Advanced metal glaze film technology.
- High pulse loading capability.
- Wide resistance range: 50kΩ to 1GΩ.
- Tolerance up to ±0.5%.
- Power dissipation rating at 70°C up to 3W.
- Larger power dissipation under request.
- Maximum working voltage over 10000V.
- Small size.



### ► RGM Resistors Quick Reference Data



Type	RGM72	RGM73	RGM74	RGM16M	RGM17M	RGM18M	
Resistance range (Ω)	50k ~ 200M	50k ~ 200M	50k ~ 1G	50k ~ 1G	100k ~ 2G	50k ~ 2G	
Resistance Tolerance	D(±0.5%); F(±1%); J(±5.0%); K(±10%)						
Temperature coefficient	±100ppm/°C; ±200ppm/°C						
Rated dissipation (W) $P_{70}$	0.125	0.25	0.50	1.0	2.0	3.0	
Operating voltage (V) $U_{max}$	400	800	1500	3000	6000	10000	
Short time over load voltage (V)	800	1500	3000	6000	10000	20000	
Operating Temperature range	-55°C ~ 155°C						
Endurance, Max, resistance change at $P_{70}$ $\Delta R/R$ max., after 1000h	50k Ω ~ 10M Ω	50k Ω ~ 10M Ω	50k Ω ~ 22M Ω	50k Ω ~ 22M Ω	50k Ω ~ 22M Ω	50k Ω ~ 22M Ω	
	≤1.50%						
Insulation voltage	>500V						
Insulation resistance	>1GΩ						
Dimension Max.(mm)	L	2.2	3.5	5.5	5.9	8.6	11.6
	L1	1.0	1.6	3.5	3.9	6.2	8.8
	D	1.3	1.3	2.1	2.1	3.1	3.6
	K	0.4	0.8	1.0	1.2	1.5	1.6
	D1	D+0/D-0.15	D+0/D-0.25	D+0/D-0.5	D+0/D-0.5	D+0/D-0.5	D+0/D-0.5
Soldering bath (recommended) (mm)	S	1.0	1.6	2.6	2.8	5.6	8.2
	W	2.0	2.5	2.5	2.8	3.2	4.0
	H	2.0	2.5	2.5	2.8	3.8	4.5



# MELF Resistors

## ► How to Order

RGM16M

❶

1MR

❷

J

❸

T

❹

❶ Product type: RGM72, RGM73, RGM74, RGM16M, RGM17M, RGM18M

❷ Resistance Value: 50kΩ ~ 200MΩ, 50kΩ ~ 200MΩ, 50kΩ~ 1GΩ, 50kΩ~ 1GΩ, 100kΩ~ 2GΩ, 50kΩ~ 2GΩ

❸ Resistance Tolerance (%)

Code	Resistance Tolerance
D	±0.5%
F	±1%
J	±5.0%
K	±10%

❹ Packaging

Code	Packaging
T	Taping Reel
P	Bulk



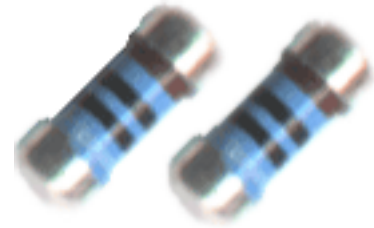


# MELF Resistors

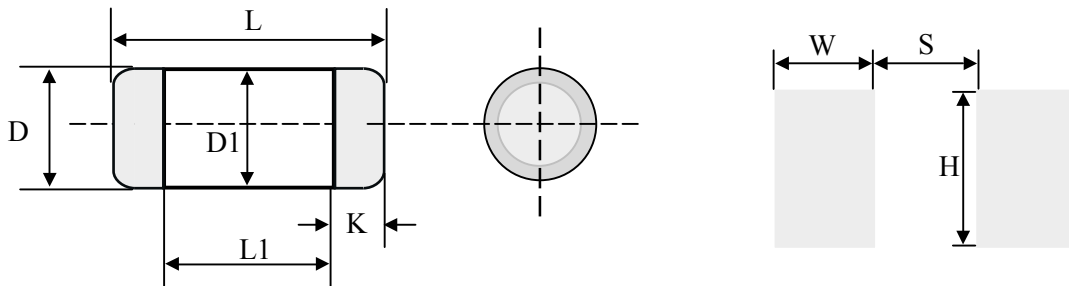
## Metal Film RJM series - Melf Resistor

### ► Metal Film Melf Resistor Features

- Advanced thin film technology.
- Low TCR: lower than  $\pm 5\text{ppm}/^\circ\text{C}$ .
- Tolerance up to  $\pm 0.05\%$ .
- Power dissipation rating up to 5W.
- Excellent overall stability: Class 0.10.
- Wide resistance range:  $0.1\Omega$  to  $22\text{M}\Omega$ .
- Very high ratio of performance to price.



### ► RJM Resistor Quick Reference Data



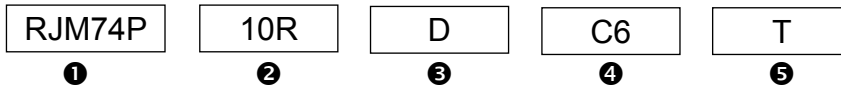
Type	RJM72P	RJM73S	RJM73P	RJM74S	RJM74P	RJM16M	RJM17M	RJM18M
Metric type	DIN: 0102	DIN: 0204		DIN: 0207			DIN: 0411	
Rated dissipation $P_{70}$	0.125W	0.125W	0.25W	0.25W	0.50W	1.0W	2.0W	3.0W
Resistance range ( $\Omega$ )	10 ~ 1M	0.1 ~ 10M		0.1 ~ 22M			0.1 ~ 22M	
Resistance tolerance (%)	J ( $\pm 5$ ); F ( $\pm 1$ ); D ( $\pm 0.5$ ); C ( $\pm 0.25$ ); B ( $\pm 0.10$ ); A5 ( $\pm 0.05$ )							
Temperature coefficient (ppm/ $^\circ\text{C}$ )	C2 ( $\pm 50$ ); C3 ( $\pm 25$ ); C5 ( $\pm 15$ ); C6 ( $\pm 10$ ); C7 ( $\pm 5$ )							
Climatic category (LCT/UCT/days)	55 / 125 / 56							
Operating voltage $U_{max}$	200V	200V	250V	250V	300V	350V	400V	450V
Temperature range	-55 $^\circ\text{C}$ to 125 $^\circ\text{C}$							
Insulation voltage (V)	300	300	300	300	600	700	800	900
Insulation resistance	>1G $\Omega$							
Dimension (mm)	L( $\pm 0.3$ )	2.2	3.5	5.7	6.0	8.7	11.8	
	L1( $\pm 0.3$ )	1.0	1.6	2.9	3.3	4.9	8.1	
	D( $\pm 0.3$ )	1.3	1.3	2.1	2.1	3.1	3.6	
	K( $\pm 0.2$ )	0.4	0.8	1.3	1.3	1.8	1.8	
	D1( $\pm 0.1$ )	D+0/D-0.15	D+0/D-0.25	D+0/D-0.5	D+0/D-0.5	D+0/D-0.5	D+0/D-0.5	D+0/D-0.5
Soldering bath (recommended) (mm)	S	1.0	1.6	2.6	2.8	5.6	8.2	
	W	2.0	2.5	2.5	2.8	3.2	4.0	
	H	2.0	2.5	2.5	2.8	3.8	4.5	

Notice • Resistance out of range, tolerance and temperature coefficient match are under request.  
 • RJM72 is still in trial production.



# MELF Resistors

## ► How to Order



❶ Product type: RJM72P, RJM73S, RJM73P, RJM74S, RJM74P, RJM16M, RJM17M, RJM18M

❷ Resistance Value : 10Ω ~ 1MΩ, 0.1Ω ~ 10MΩ, 0.1Ω~ 22MΩ, 0.1Ω~ 22MΩ

❸ Resistance Tolerance (%)

Code	Resistance Tolerance
J	±5%
F	±1%
D	±0.5%
C	±0.25%
B	±0.10%
A5	±0.05%

❹ Temperature coefficient (ppm/°C)

Code	Temperature coefficient
C2	±50 ppm/°C
C3	±25 ppm/°C
C5	±15 ppm/°C
C6	±10 ppm/°C
C7	±5 ppm/°C

❺ Packaging

Code	Packaging
T	Taping Reel
P	Bulk





# MELF Resistors

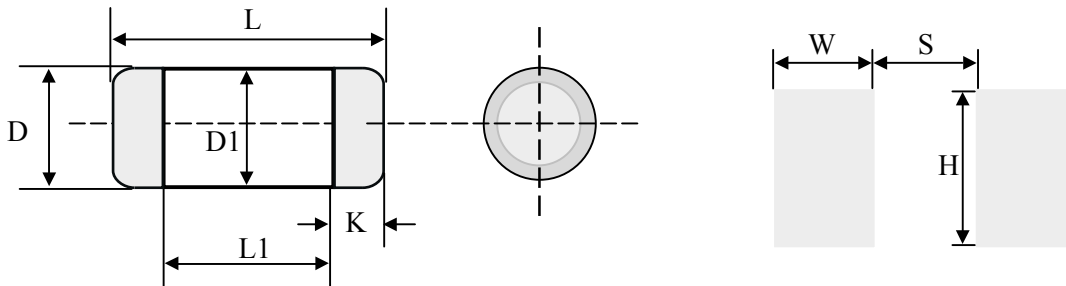
## RFM series - MELF non-inductance High frequency Resistors

### ► Features

- Non-inductance.
- High frequency.
- Resistance range: 25Ω to 200Ω.
- Tolerance range: ±0.5% to ±5.0%.
- Power dissipation rating at 70°C up to 0.75W.
- Small size.



### ► Quick Reference Data

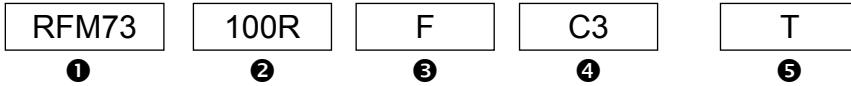


Type	RFM72	RFM73	RFM74	RFM75	
Metric sizes	DIN: 0102	DIN: 0204	DIN: 0207	DIN: 0207	
Resistance range	25Ω ~ 200Ω				
Operating Temperature range	-55°C ~ 125°C				
Resistance Tolerance (%)	D(±0.5); F(±1.0); J(±5.0)				
Temperature coefficient (PPM/°C)	C2(±50); C3(±25); C5(±15); C6(±10)				
Rated dissipation (W) P <sub>70</sub>	0.125	0.25	0.5	0.75	
Operating mode	standard	standard	standard	power	
Climatic category (LCT/UCT/days)	55/125/56	55/125/56	55/155/56	55/155/56	
Dimension (mm)	L±0.2	2.2	3.45	5.7	6.0
	L1±0.2	1.2	1.6	3.0	3.3
	D±0.2	1.3	1.3	2.1	2.1
	K±0.1	0.4	0.8 min	1.2 min	1.2 min
	D1±0.1	D+0/D-0.15	D+0/D-0.25	D+0/D-0.3	D+0/D-0.3
Soldering bath (recommended) (mm)	S	1.0	1.6	2.6	2.8
	W	2.0	2.0	2.5	2.5
	H	2.0	2.5	2.5	2.5
Endurance, Max, resistance change at P70, ΔR/R max., after 1000h	≤0.5% for Tol.=±1% & ≤1% for Tol.=±5%				
Derating	standard type linear from 70°C to 125°C				
Insulation voltage	500V				
Insulation resistance	>1GΩ				



# MELF Resistors

## ► How to Order



① Product type: RFM72, RFM73, RFM74, RFM75

② Resistance Value ( $\Omega$ ): 25 ~ 200

③ Resistance Tolerance (%)

Code	Resistance Tolerance (%)
D	$\pm 0.5$
F	$\pm 1.0$
J	$\pm 5.0$

④ Temperature coefficient (PPM/ $^{\circ}$ C)

Code	Temperature coefficient (PPM/ $^{\circ}$ C)
C2	$\pm 50$
C3	$\pm 25$
C5	$\pm 15$
C6	$\pm 10$

⑤ Packaging

Code	Packaging
T	Taping Reel
P	Bulk