



#### MELF-MFR TYPE



Coating color: Blue.

塗裝色: 藍色

#### Dimensions:

Type	Size	Dimensions(mm)			
		L	D	C	S
MELF-MFR	0102	2.2+0/-0.1	1.1+0/-0.1	0.4±0.05	0.1±0.05
	0204	3.5±0.2	1.45±0.1	0.7±0.1	0.15±0.1
	0207	5.7±0.2	2.2±0.1	0.8±0.2	0.2±0.1
	0309	8.5±0.3	3±0.3	1.7±0.2	0.3±0.1
	0411	10.5±0.3	4±0.3	2.3±0.2	0.3±0.1
	0515	14.5±0.3	4.5±0.3	2.3±0.2	0.3±0.1

#### Range:

Type	Size	POWER RATING	MAX. WORKING VOLTAGE	MAX. OVERLOAD VOLTAGE	T.C.R.	RESISTANCE RANGE						
						±0.1%	±0.25%	±0.5%	±1%	±5%		
MELF-MFR	0102	1/8W 0.2W	150V	300V	±15ppm ±25ppm ±50ppm ±100ppm	50 <sub>Ω</sub> - 56K	50 <sub>Ω</sub> - 100K	1 <sub>Ω</sub> - 1M	0 <sub>Ω</sub> 22 - 2M			
		100 <sub>Ω</sub> - 56K				100 <sub>Ω</sub> - 100K	1 <sub>Ω</sub> - 1M	0 <sub>Ω</sub> 22 - 2M				
	0204	1/8W	150V	300V		100 <sub>Ω</sub> - 56K	100 <sub>Ω</sub> - 100K	1 <sub>Ω</sub> - 1M	0 <sub>Ω</sub> 5 - 2M			
		1/4W 0.4W				200V	400V	100 <sub>Ω</sub> - 100K	10 <sub>Ω</sub> - 560K	1 <sub>Ω</sub> - 5M	0 <sub>Ω</sub> 22 - 5M	
	0207	1/4W	200V	400V		100 <sub>Ω</sub> - 100K	10 <sub>Ω</sub> - 560K	1 <sub>Ω</sub> - 5M	0 <sub>Ω</sub> 22 - 5M			
		1/2W				300V	600V	100 <sub>Ω</sub> - 100K	10 <sub>Ω</sub> - 560K	1 <sub>Ω</sub> - 5M	0 <sub>Ω</sub> 22 - 5M	
		1W				400V	700V	100 <sub>Ω</sub> - 100K	10 <sub>Ω</sub> - 560K	1 <sub>Ω</sub> - 5M	0 <sub>Ω</sub> 5 - 5M	
	0309	1W	500V	1000V		-----	10 <sub>Ω</sub> - 100K	1 <sub>Ω</sub> - 1M	0.1 <sub>Ω</sub> - 1M			
	0411	2W				-----	10 <sub>Ω</sub> - 100K	1 <sub>Ω</sub> - 1M	0.1 <sub>Ω</sub> - 1M			
	0515	3W				-----	10 <sub>Ω</sub> - 100K	1 <sub>Ω</sub> - 1M	0.1 <sub>Ω</sub> - 1M			
-----					10 <sub>Ω</sub> - 100K	1 <sub>Ω</sub> - 1M	0.1 <sub>Ω</sub> - 1M					

額定電壓是以， $\sqrt{\text{功率(W)} \times \text{阻值}(\Omega)}$  計算所得的值及以規格表中所列最高使用電壓兩者相較小者。

Rated-Voltage =  $\sqrt{P(W) \times R(\Omega)}$  or Max. working voltage, whichever lower.

### PATTERN STYLES FOR MELF RESISTORS



TYPE/SIZE	WAVE SOLDERING				REFLOW SOLDERING			
	G (mm)	Y (mm)	X (mm)	Z (mm)	G (mm)	Y (mm)	X (mm)	Z (mm)
MMU 0102	0.7	1.2	1.5	3.1	1.1	0.8	1.3	2.7
MMA 0204	1.5	1.5	1.8	4.5	1.7	1.2	1.6	4.1
MMB 0207	2.8	2.1	2.6	7.0	3.2	1.7	2.4	6.6

#### Notes

• The given solder pad dimensions reflect the considerations for board design and assembly as outlined e.g. in standards IEC 61188-5-x<sup>(1)</sup>, or in publication IPC-7351

<sup>(1)</sup> The quoted IEC standards are also released as EN standards with the same number and identical contents

## Characteristics

Item	Characteristics	Test Method
1. Operating Temp. Range 使用温度范围	-55°C ~ 155°C	
2. Temperature Coefficient 温度系数	±100ppm/°C ; ±50ppm/°C ±25ppm/°C ; ±15ppm/°C	JIS-C-5202; 5.2
3. Short time overload 短时间过负载	±(0.5%+0.05Ω)	Rating voltage×2.5 or Max. overload voltage for 5 sec. Whichever less
4. Pulse overload 断续过负载	±(0.5%+0.05Ω)	Rating voltage×3 or Max. pulse overload voltage for 10,000 cycle (1 sec. "on"/25 sec. "off"), Whichever less
5. Temperature cycling 温度周率	±(0.5%+0.05Ω)	-55°C(30min.)/+85°C(30min.) for 5 cycle
6. Load Life in Humidity 耐湿负载	±(1%+0.05Ω)	40°C±2°C, 90%~95% RH, 1000h, 1.5h "on"/0.5h "off" cycle
7. Load Life 寿命负载	±(1%+0.05Ω)	70°C±2°C, 1000h, 1.5h "on"/0.5h "off" cycle
8. Resistance to soldering heat 焊接耐热性	±(0.5%+0.05Ω)	260°C±5°C, 5 sec±1 sec
9. Solderability 焊接性	90% Coverage/Min	235°C±5°C, 2 sec±0.5 sec
10. Bending test 端子强度	±(0.5%+0.05Ω)	Holding point width 90mm, Bending 5mm, 1 time
11. Non-Combustibility 不燃性	The resistors shall withstand Overload test in accordance With Article UL-94, V-0 without producing a fire hazard.	

## Classification (Part No)

MELF-MFR 0207 1/2WS 121Ω F T 50  
 STYLE SIZE POWER RESISTANCE TOLERANCE PACKING PPM

F = ±1%      T = Tape/Reel      15  
 D = ±0.5%      B = Bulk      25  
 C = ±0.25%      50  
 B = ±0.1%      100  
 J = ±5%

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