

DATA SHEET

MELF METAL FILM RESISTORS

High Power
MMP Series

$\pm 1\%$, $\pm 2\%$, $\pm 5\%$

1W AND 2W

RoHS compliant & Halogen Free





APPLICATIONS

- All general purpose applications
- Power applications
- Energy meter

FEATURES

- AEC-Q200 qualified
- MELF, SMD package
- Excellent pulse withstanding capability
- Ultra miniature size
- Higher power rating
- RoHS compliant and halogen free

ORDERING INFORMATION

Part number of the power MELF metal film resistor is identified by the series, power rating, tolerance, packing, temperature coefficient and resistance value.

PART NUMBER

| | | | | | |
|------------|------------|----------|----------|----------|-------------|
| <u>MMP</u> | <u>100</u> | <u>J</u> | <u>R</u> | <u>-</u> | <u>100R</u> |
| (1) | (2) | (3) | (4) | (5) | (6) |

(1) SERIES

MMP Series

(2) POWER RATING

100 = 1W

200 = 2W

(3) TOLERANCE

F = ±1%

J = ±5%

G = ±2%

- = Based on spec.

(4) PACKAGING

R = Reel Pack

(5) TEMPERATURE COEFFICIENT OF RESISTANCE

E=±50ppm/°C

- = Based on spec.

F=±100ppm/°C

(6) RESISTANCE VALUE

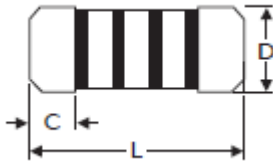
E24 & E96 Series value

Example:

1R = 1Ω, 10K = 10,000Ω, 1M = 1,000,000Ω

DIMENSIONS

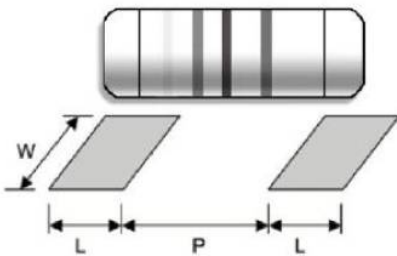
Unit: mm



| Ultra Miniature | L | D | C Min. |
|-----------------|------------|------------|--------|
| MMP100 | 5.90 ± 0.2 | 2.20 ± 0.1 | 0.5 |
| MMP200 | 8.50 ± 0.2 | 3.20 ± 0.2 | 0.5 |

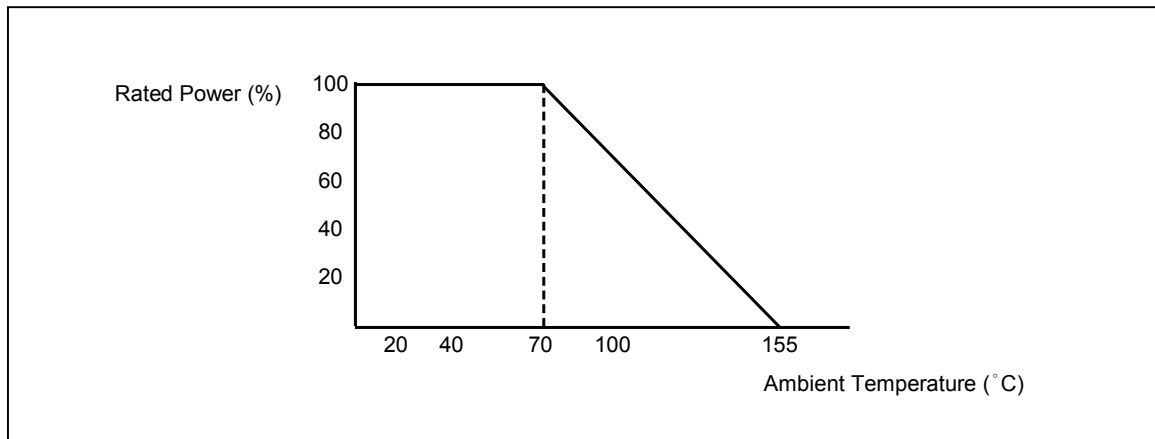
SUGGESTED PAD LAYOUT

Unit: mm



| Ultra Miniature | Soldering Mode | L Min. | P | W Min. |
|-----------------|----------------|--------|-----------|--------|
| MMP100 | Reflow | 2.0 | 3.0 ± 0.1 | 3.0 |
| | Wave | 2.5 | 3.0 ± 0.1 | 3.0 |
| MMP200 | Reflow | 2.3 | 5.5 ± 0.2 | 4.0 |
| | Wave | 2.8 | 5.5 ± 0.2 | 4.0 |

DERATING CURVE



ELECTRICAL CHARACTERISTICS

| CHARACTERISTICS | MMP100 | MMP200 |
|-----------------------------|--|--------|
| Power Rating at 70 °C | 1W | 2W |
| Maximum Working Voltage | 350V | 350V |
| Maximum Overload Voltage | 700V | 700V |
| Voltage Proof on Insulation | 500V | 500V |
| Resistance Range | 1Ω ~ 1MΩ & 0Ω for E24 & E96 series value | |
| Operating Temp. Range | - 55°C to +155°C | |
| Temperature Coefficient | ±50ppm/°C, ±100ppm/°C | |

Note: For resistance value out of above range is by request.

TEST AND REQUIRMENTS

| TEST | TEST METHOD | PROCEDURE | APPRAISE |
|-------------------------------|------------------|---|---|
| Short Time Overload | IEC 60115-1 4.13 | 2.5 times RCWV for 5 sec.(Not more than maximum overload voltage) | ±0.5%+0.05Ω |
| Voltage Proof on Insulation | IEC 60115-1 4.7 | In V-Block for 60 sec. test voltage as above table | No Breakdown |
| Temperature Coefficient | IEC 60115-1 4.8 | Between -55°C to +155°C | By Type |
| Insulation Resistance | IEC 60115-1 4.6 | In V-Block for 60 sec. | >10,000MΩ |
| Solderability | IEC 60115-1 4.17 | 245±5°C for 3±0.5 Sec. | 95% Min. coverage |
| Solvent Resistance of Marking | IEC 60115-1 4.30 | IPA for 5±0.5 Min. with ultrasonic | No deterioration of coatings and markings |
| Periodic-pulse Overload | IEC 60115-1 4.39 | 4 times RCWV 10,000 cycles (1 Sec. on, 25 Sec.off) | ±1.0%+0.05Ω |
| Damp Heat Steady State | IEC 60115-1 4.24 | 40±2°C,90-95% RH for 56 days, loaded with 0.1 times RCWV | ±2.0%+0.05Ω |
| Endurance at 70°C | IEC 60115-1 4.25 | 70±2°C at RCWV(or Umax., whichever less) for 1,000 Hr.(1.5 Hr.on,0.5 Hr. off) | ±2.0%+0.05Ω |
| Temperature Cycling | IEC 60115-1 4.19 | ➔ -55°C ➔ Room Temp. ➔ +155°C Room Temp.(5 cycles) | ±0.75%+0.05Ω |
| Resistance to Soldering Heat | IEC 60115-1 4.18 | 260±3°C for 10±1 Sec., immersed to a point 3±0.5mm from the body | ±0.5%+0.05Ω |

Note:

RCWV (Rated Continuous Working Voltage):

The DC or AC (rms) continuous working voltage corresponding to the rated power is determined by the following formula:

$$V = \sqrt{P \times R}$$

or max. working voltage whichever is less

Where

V=Continuous rated DC or
AC (rms) working voltage (V)

P=Rated power (W)

R=Resistance value (Ω)

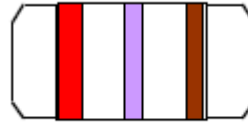
PACKING

| TYPE | | Unit: piece |
|-----------------|-----------|-------------------|
| Ultra Miniature | Packaging | Quantity Per Reel |
| MMP100 | 7" | 2,000 |
| MMP200 | 13" | 2,500 |

MARKING

3-BAND-CODE

±2%, ±5%



| COLOR | 1st BAND | 2nd BAND | 3rd BAND | MULTIPLIER |
|--------|----------|----------|----------|------------|
| BLACK | 0 | 0 | 0 | 1Ω |
| BROWN | 1 | 1 | 1 | 10Ω |
| RED | 2 | 2 | 2 | 100Ω |
| ORANGE | 3 | 3 | 3 | 1KΩ |
| YELLOW | 4 | 4 | 4 | 10KΩ |
| GREEN | 5 | 5 | 5 | 100K |
| BLUE | 6 | 6 | 6 | 1MΩ |
| VIOLET | 7 | 7 | 7 | 10MΩ |
| GREY | 8 | 8 | 8 | 0.001Ω |
| WHITE | 9 | 9 | 9 | 0.0001Ω |
| GOLD | | | | 0.1Ω |
| SILVER | | | | 0.01Ω |

±1%

5-BAND-CODE



REVISION HISTORY

| REVISION | DATE | CHANGE NOTIFICATION | DESCRIPTION |
|-----------|-------------|---------------------|-------------------------------------|
| Version 0 | Aug.2, 2021 | - | - First issue of this specification |

“ Yageo reserves all the rights for revising the content of this datasheet without further notification, as long as the products itse lf are unchanged. Any product change will be announced by PCN.”

LEGAL DISCLAIMER

Yageo, its distributors and agents (collectively, "Yageo"), hereby disclaims any and all liabilities for any errors, inaccuracies or incompleteness contained in any product related information, including but not limited to product specifications, datasheets, pictures and/or graphics. Yageo may make changes, modifications and/or improvements to product related information at any time and without notice.

Yageo makes no representation, warranty, and/or guarantee about the fitness of its products for any particular purpose or the continuing production of any of its products. To the maximum extent permitted by law, Yageo disclaims (i) any and all liability arising out of the application or use of any Yageo product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for a particular purpose, non-infringement and merchantability.

Yageo statements regarding the suitability of products for certain types of applications are based on Yageo's knowledge of typical operating conditions for such types of applications in a generic nature. Such statements are neither binding statements of Yageo nor intended to constitute any warranty concerning the suitability for a specific customer application or use. They are intended for use only by customers with requisite knowledge and experience for determining whether Yageo products are the correct products for their application or use. In addition, unpredictable and isolated cases of product failure may still occur, therefore, customer application or use of Yageo products which requires higher degree of reliability or safety, shall employ additional protective safeguard measures to ensure that product failure would not result in personal injury or property damage.

Yageo products are not designed for application or use in medical, life-saving, or life-sustaining devices or for any other application or use in which the failure of Yageo products could result in personal injury or death. Customers using or selling Yageo products not expressly indicated for above-mentioned purposes shall do so at their own risk and agree to fully indemnify Yageo and hold Yageo harmless.

Information provided here is intended to indicate product specifications only. Yageo reserves all the rights for revising this content without further notification, as long as products are unchanged. Any product change will be announced by PCN.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MELF Resistors](#) category:

Click to view products by [Yageo](#) manufacturer:

Other Similar products are found below :

[1-21002-2](#) [CHP1/810022R0JLF](#) [3-2176315-8](#) [4-2176315-4](#) [4-2176315-8](#) [4-2176316-8](#) [5-2176315-2](#) [5-2176315-6](#) [5-2176315-8](#) [5-2176316-0](#)
[6-2176315-1](#) [6-2176315-9](#) [2176315-1](#) [2176317-2](#) [2176317-3](#) [2176317-6](#) [7-2176315-5](#) [7-2176316-1](#) [7-2176316-4](#) [8-2176315-8](#) [8-2176316-5](#)
[9-2176316-0](#) [SMA-A0102BTNL180R](#) [SMA-A0102BTNL220R](#) [SMA-A0102BTNL22K](#) [SMA-A0102BTNL2K2](#) [SMA-A0102BTNL330R](#)
[SMA-A0102BTNL3K3](#) [SMA-A0102BTNL470R](#) [SMA-A0102BTNL4K7](#) [SMA-A0102BTNL820R](#) [SMA-A0102FTDL120K](#) [SMA-](#)
[A0102FTDL15R](#) [SMA-A0102FTDL1K8](#) [SMA-A0102FTDL27R](#) [SMA-A0102FTDL560R](#) [SMA-A0102FTDL680R](#) [SMA-A0102FTDL6K8](#)
[SMA-A0204BTNX120R](#) [SMA-A0204BTNX15K](#) [SMA-A0204BTNX18K](#) [SMA-A0204BTNX1K2](#) [SMA-A0204BTNX1K5](#) [SMA-](#)
[A0204BTNX270R](#) [SMA-A0204BTNX2K7](#) [SMA-A0204BTNX390R](#) [SMA-A0204BTNX39K](#) [SMA-A0204BTNX3K3](#) [SMA-](#)
[A0204BTNX3K9](#) [SMA-A0204BTNX47K](#)