Power Metal Fixed Resistors

1W, 5%

Type Designation:

(EX.)
The type designation shall be in the following form:

Type	Power Rating	Resistance Tolerance	Nominal Resistance
MCPMR 1W-SSS	< 1 Ω : 0.6 W	J	0.56 Ω
	≥ 1 Ω : 1 W		1 Ω

Ratings:

Ratings shall be shown in the table 1

Table 1

Type	MCPMR 1W-SSS	
Rated Power at 70°C	< 1 Ω : 0.6 W	≥ 1 Ω : 1 W
Maximum Working Voltage	350 V	
Maximum Overload Voltage	400 V	
Dielectric Withstanding Voltage	350 V	
Rated Ambient Temperature	70°C	
Operating Temperature Range	-55°C to +155°C	
Resistance Tolerance	±5%	
Resistance Range	0.56 Ω to 1 MΩ	

Power Rating:

Resistors shall have a power rating based on continuous full load operation at an ambient temperature of 70°C. For temperature in excess of 70°C, the load shall be derated as shown in the figure 1.

Voltage Rating:

Resistors shall have a rated direct-current (DC) continuous working voltage or an approximate sine-wave root-mean-square (RMS) alternating-current (AC) continuous working voltage at commercial-line frequency and waveform corresponding to the power rating, as determined from the following formula:

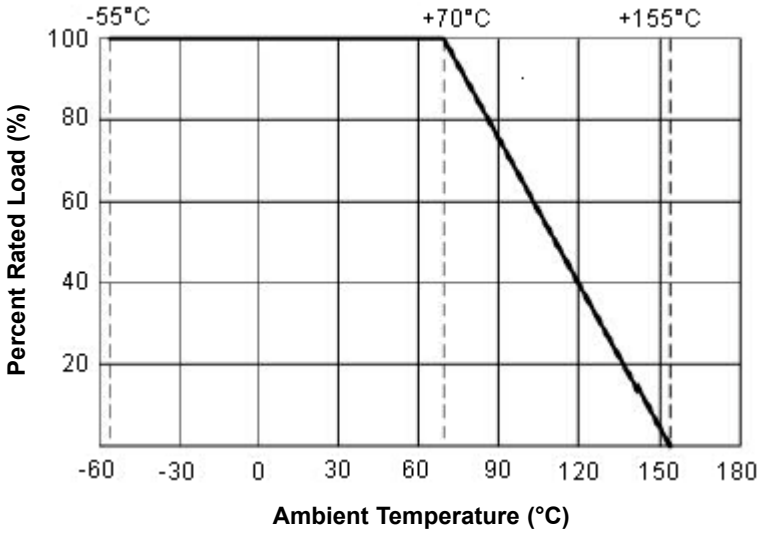
$$RCWV = \sqrt{P \times R}$$

Were : RCWV = Rated DC or RMS AC continuous working voltage at commercial-line frequency and waveform (volt)

P = Power Rating (watt)
R = Nominal Resistance (ohm)

In no case shall the rated DC or RMS AC continuous working voltage be greater than the applicable maximum value

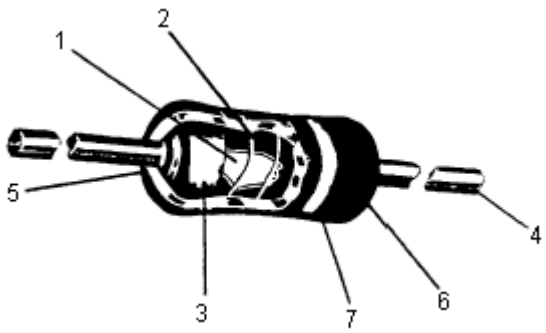
Figure 1



Nominal Resistance :

Effective figures of nominal resistance shall be in accordance with E-96, E-24 series, and resistance tolerance shall be shown by table 1

Construction :



No.	Name	Material
1	Basic Body	Rod Type Ceramics
2	Resistance Wire	Cu-Ni Alloy (< 22 Ω)
	Resistance Film	Special Metal Film (≥ 22 Ω)
3	End Cap	Steel (Tin Plated Iron Surface)
4	Lead Wire	Annealed Copper Wire Coated With Tin
5	Joint	By Welding
6	Coating	Insulated and Non-Flame Paint (Colour : Sea-Blue)
7	Colour Code	Non-Flame Epoxy Resin

Power Metal Fixed Resistors

1W, 5%

Characteristics

Characteristics	Limits	Test Methods (JIS C 5201-1)
DC Resistance	Must be within the specified tolerance	The limit of error of measuring apparatus shall not exceed allowable range or resistance tolerance of specification (Sub-clause 4.5)
Dielectric withstanding voltage	No evidence of flashover mechanical damage, arcing or insulation break down	Resistors shall be clamped in the trough of a 90° metallic V-block or foil method use a metal foil shall be wrapped closely around the body of the resistor. After that shall be tested at AC potential respectively specified in the table 1. for 60 +10/-0 s (Sub-clause 4.7)
Temperature coefficient	Within the temperature coefficient specified below: 0.56 Ω to 100 KΩ ≤ ±350 PPM/°C 101 KΩ to 470 KΩ ≤ ±400 PPM/°C 471 KΩ to 1 MΩ ≤ ±800 PPM/°C	Natural resistance change per temperature degree centigrade $\frac{R_2 - R_1}{R_1 (t_2 - t_{1)}} \times 10^6$ (PPM/°C) R_1: Resistance value at room temperature (t_1) R_2 : Resistance value at room temperature plus 100°C (t_2) (Sub-clause 4.8)
Short time overload	Resistance change rate is ± (2% + 0.05 Ω) Maximum with no evidence of mechanical damage	Permanent resistance change after the application of a potential of 2.5 times RCWV or the maximum overload voltage respectively specified in the above list, whichever less for 5 s (Sub-clause 4.13)
Terminal strength	With no evidence of mechanical damage	**Direct load:** Resistance to a 2.5 kgs direct load for 10 s in the direction of the longitudinal axis of the terminal leads **Twist test:** Terminal leads shall be bent through 90°at point of about 6 mm from the body of the resistor and shall be rotated through 360° about the original axis of the bent terminal in alternating direction for a total of 3 rotations (Sub-clause 4.16)
Solderability	95% coverage Min.	The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes. Test temperature of solder : 245°C ±3°C Dwell time in solder : 2 to 3 s (Sub-clause 4.17)
Resistance to soldering heat	Resistance change rate is ± (1% + 0.05 Ω) Max. with no evidence of mechanical damage	Permanent resistance change when leads immersed to 3.2 mm to 4.8 mm from the body in 350°C ±10°C solder for 3 ±0.5 s (Sub-clause 4.18)

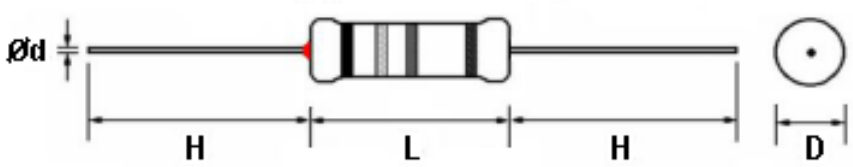
Power Metal Fixed Resistors

1W, 5%

Characteristics

<table>
<tr><th>Characteristics</th><th>Limits</th><th>Test Methods (JIS C 5201-1)</th></tr>
<tr><td>Temperature cycling</td><td>Resistance change rate is
± (2% + 0.05 Ω) Maximum
with no evidence of mechanical damage</td><td>Resistance change after continuous 5 cycles for duty shown below:
<table><tr><th>Step</th><th>Temperature</th><th>Time</th></tr><tr><td>1</td><td>-55°C ±3°C</td><td>30 mins</td></tr><tr><td>2</td><td>Room Temperature</td><td>10 to 15 mins</td></tr><tr><td>3</td><td>+155°C ±3°C</td><td>30 mins</td></tr><tr><td>4</td><td>Room Temperature</td><td>10 to 15 mins</td></tr></table>(Sub-clause 4.19)</td></tr>
<tr><td>Load life in humidity</td><td><table><tr><th>Resistance Value</th><th>Δ R/R</th></tr><tr><td>Less than 100 KΩ</td><td>±5%</td></tr><tr><td>100 KΩ or more</td><td>±10%</td></tr></table></td><td>Resistance change after 1,000 hrs
(1.5 hrs "on", 0.5 hr "off") at RCWV in a humidity chamber controlled at 40°C ±2°C and 90 to 95 % relative humidity
(Sub-clause 4.24.2.1)</td></tr>
<tr><td>Load life</td><td><table><tr><th>Resistance Value</th><th>Δ R/R</th></tr><tr><td>Less than 100 KΩ</td><td>±5%</td></tr><tr><td>100 KΩ or more</td><td>±10%</td></tr></table></td><td>Permanent resistance change after 1,000 hrs
operating at RCWV with duty cycle of (1.5 hrs "on", 0.5 hr "off") at 70°C ±2°C ambient (Sub-clause 4.25.1)</td></tr>
<tr><td>Resistance to solvent</td><td>No deterioration of protective coatings and markings</td><td>Specimens shall be immersed in a bath of trichroethane completely for 3 minutes with ultrasonic
(Sub-clause 4.3)</td></tr>
<tr><td>Pulse overload</td><td>Resistance change rate is
± (5% + 0.05Ω) Maximum with no evidence of mechanical damage</td><td>Resistance change after 10,000 cycles
(1 s "on", 25 s "off") at 1 times
RCWV or the maximum pulse overload voltage
(Sub-clause 5.8)</td></tr>
</table>

Dimension:



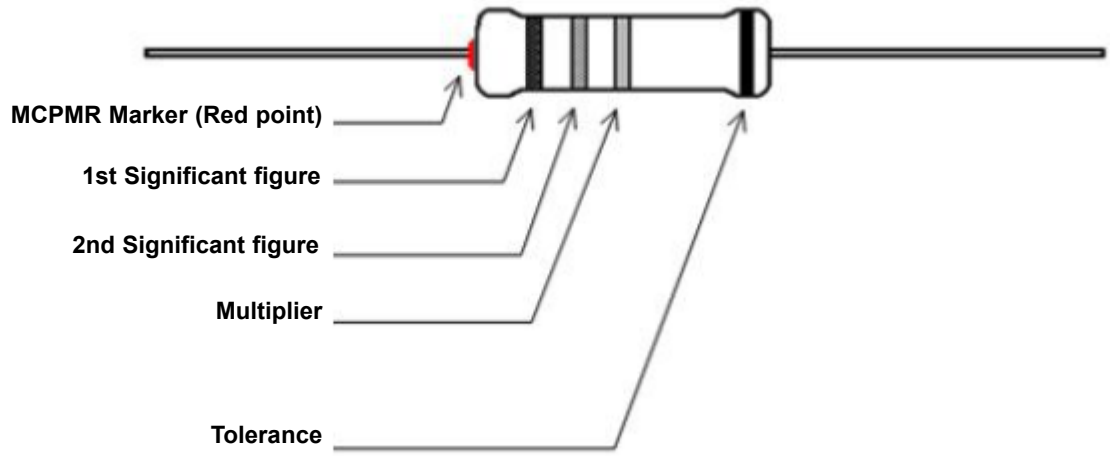
Type	Power Rating	D (Maximum)	L (Maximum)	d ±0.05	H ±3
MCPMR	1 W-SSS	2.5 mm	6.5 mm	0.54 mm	25 mm

Dimensions : Millimetres

Marking:

Resistor:

Resistors shall be marked with colour coding
Colours shall be in accordance with JIS C 0802



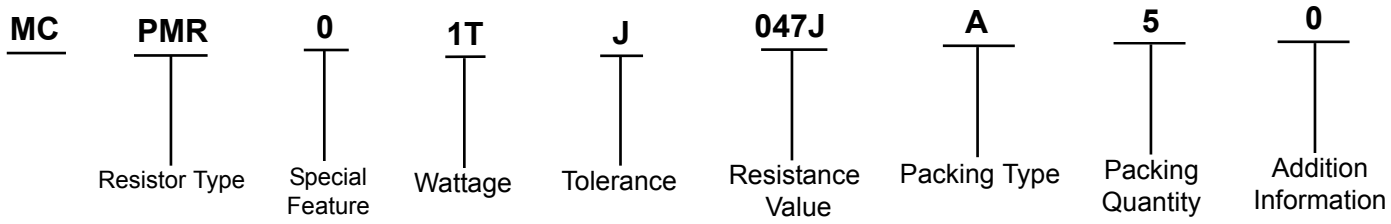
Part Number Table

Description	Part Number
Resistor, Axial, Xsmall, 4R7, 5%, 1W	MCPMR01TJ047JA50
Resistor, Axial, Xsmall, 10R, 5%, 1W	MCPMR01TJ0100A50
Resistor, Axial, Xsmall, 39R, 5%, 1W	MCPMR01TJ0390A50
Resistor, Axial, Xsmall, 47R, 5%, 1W	MCPMR01TJ0470A50
Resistor, Axial, Xsmall, 1K5, 5%, 1W	MCPMR01TJ0152A50
Resistor, Axial, Xsmall, 3K3, 5%, 1W	MCPMR01TJ0332A50
Resistor, Axial, Xsmall, 15K, 5%, 1W	MCPMR01TJ0153A50
Resistor, Axial, Xsmall, 18K, 5%, 1W	MCPMR01TJ0183A50
Resistor, Axial, Xsmall, 56K, 5%, 1W	MCPMR01TJ0563A50
Resistor, Axial, Xsmall, 100K 5%, 1W	MCPMR01TJ0104A50
Resistor, Axial, Xsmall, 120K 5%, 1W	MCPMR01TJ0124A50
Resistor, Axial, Xsmall, 150K 5%, 1W	MCPMR01TJ0154A50
Resistor, Axial, Xsmall, 470K 5%, 1W	MCPMR01TJ0474A50
Resistor, Axial, Xsmall, 680K 5%, 1W	MCPMR01TJ0684A50

Power Metal Fixed Resistors

1W, 5%

Part Number Explanation:



Resistor Type : PMR = Power Metal Fixed Resistor
Special Feature : 0 = Standard Product
Wattage : Extra Small size : 1T = 1W-SSS
Tolerance : J to ± 5%
Resistance Value : **E-24** series: the 1st digit is "0", the 2nd and 3rd digits are for the significant figures of the resistance and the 4th indicate the number of zeros following:
"J" to 0.1 "K" to 0.01
Ex.: 4.7 Ω to 47J, 4.7 KΩ to 472
E-96 Series: the 1st to 3rd digits are significant figures of resistance and the fourth one denotes number of zeros following:
Ex.: 1.33 KΩ = 1331
Packing Type : A = Tape / Box
Packing Quantity : 1 = 1,000 pieces, B = 2,500 pieces and 0 = for Bulk / Box Packing
Addition Information : 0 = PT-52 mm

Important Notice : This data sheet and its contents (the "Information") belong to the members of the Premier Farnell group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell plc 2011.

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

multicomp:

MCMF0W4FF8202A50 MCMR50V335M4X7 MCSDRH73B-681MHF CFS-TF-1818 MCWR08X39R0FTL MP005415 MUR1540 CF06332T/4/10 MC-SVT1-S06-G MC0402WGF499JTCE MC0603B393K500CT MC0603N100J201CT 2213R-24G MCAL0410A1-471KU MCMR06X1004FTL MCSDC0603-560KU SMAJ160A-13-F SPC19989 CMS-DF-1825 MC34747 MC36427 MP006964 MCMET 800MA 250V MCSR08X3300FTL MP006937 MC0603N100F500CT MCLPR50V478M30X25 MCMR08X2000FTL MCWF12R7150BTL MC34589