CCOHM METAL OXIDE FILM RESISTORS SPEC

承認書

(APPROVAL SHEET)

客戶名稱 Client	
品　　名 Description	**METAL OXIDE FILM RESISTORS**
規　　格 Specification	
料　　號 Part No	
備　　注 Remark	

核　準 Approval	校　對 Check By	主　辦 Prepared By
林鐵軍	林峰	彭東林

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公司章	

CCOHM METAL OXIDE FILM RESISTORS SPEC

1. Scope

This specification applies to the Metal oxide Film Resistors Made by C.C.OHM ENTERPRISE CO.,LTD

2.Specification

Kind	Rated Power	Type	Character	Nominal Value of Resistance	Tolerance on Value
MOF	W	P	Y	100KOhm	J

2.1.Kind

The word "MO" represents Metal Oxide Film Resistors. The add "F" stand For flame-prove coating.

2.2.Rated power

"W" represents rated power as indicated in Table, PARAGRAPH 3.

2.3.Type

Type differentiates the shape of resistors (Refer to Paragraph 4.2).

2.4Characteristics

Characteristics means the various electrical properties (Refer to Table 1).

2.5.Nominal Value of Resistance

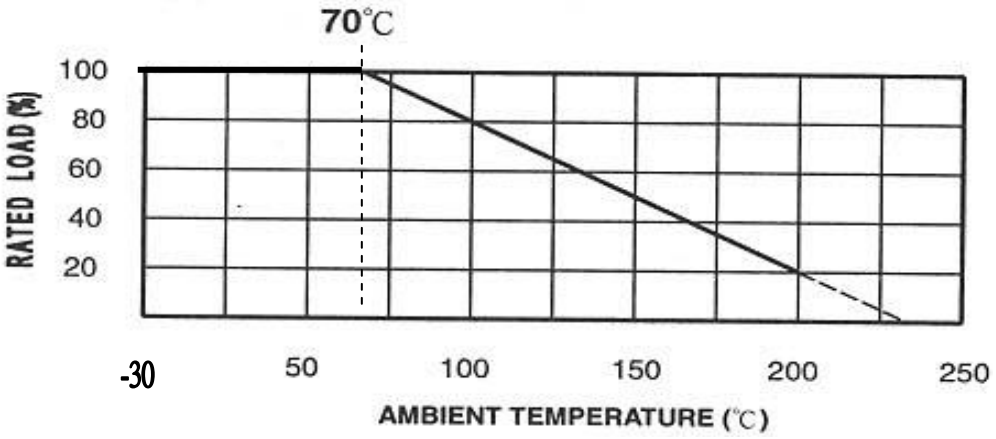
It is expressed by Ohm, K (Kilo)Ohm, M (Meg)Ohm.

2.6.Resistance Tolerance

F(±1%), G (± 2%), J(± 5%).

2.7. POWER RATING

Power rating is defined as maximum power rating continuously applied under ambient temperature at 70℃.when the ambient temperature exceeds 70℃,use chart 1.



2.8. RATED VOLTAGE

Rated voltage is defined as the DC or AC(effective
Value at commercial frequency example 50 C/S,60 C/S)
Voltage when rated power is applied and can be calculated
By the following EQUATION $E = \sqrt{P \times R}$
E=RATED VOLTAGE
P=RATED POWER (WATTS)
R=NOMINAL RESISTANCE VALUE(OHM)

When the calculated rated voltage exceeds the
Maximum usable voltage flue shown in CHART 1,the
maximum usable voltage is defined as the voltage
According to the power-decreasing curve shown in CHART1.

3.Rated Power

3-1.Rated Power

Rated power means the allowed continuous maximum power and voltage Under the ambient temperture at 70℃. If the temperature exceeds 70℃,the Rated power shall be dated as according to the chart 1.

3-2.Rated Voltage

Rated Voltage means the equivalent of rated power to the D.C. or A.C. (Commercial effective cycles) voltage. The result can be obtained from the falling equations. If the rated voltage exceeds the maximum voltage the maximum working voltage will apply.

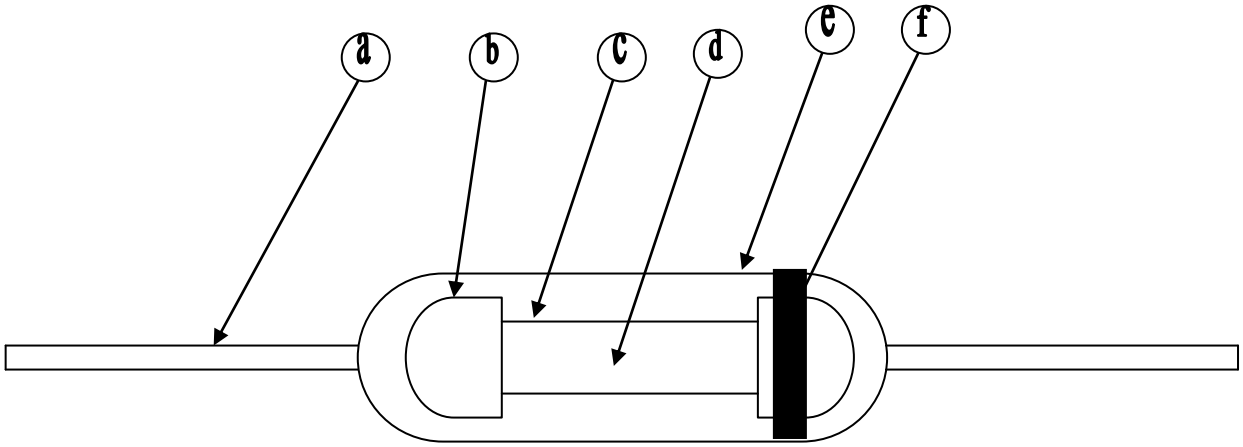
$E = \sqrt{P \cdot R}$

E：Rated Voltage (V)
P：Rated Power (W)
R：Nominal Ohm Value (Ohm)

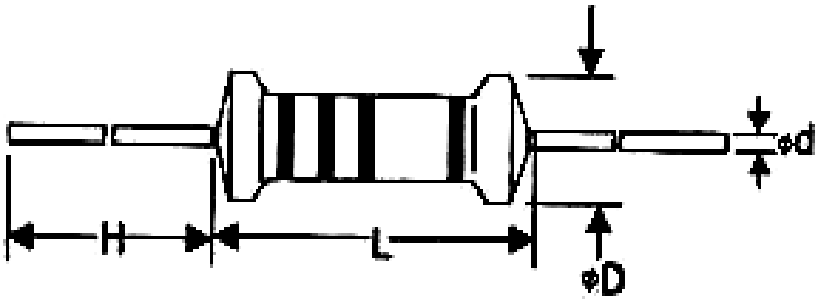
4.Construction and Dimension

4-1.Construction

a. Lead Wire .
b. End Cap.
c. Metal Oxide Film
d. Ceramic Rod
e. Epoxy Resin.
f. Color Code



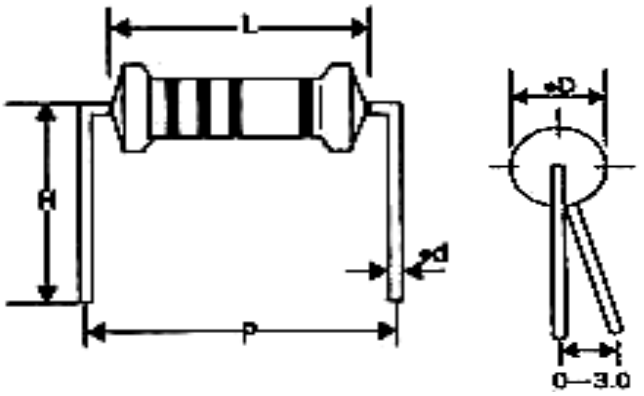
4-2. Dimension：



Watts	L	D	H(Min)	d±0.05
MO 1/4W	6.0±0.5	2.3±0.3	28±2.0	0.45
MO 1/2WS				
MO 1/2W	9.0±0.5	3.2±0.3	26±2.0	0.52
MO 1WS				
MO 1W	11±1.0	3.7±0.5	25±2.0	0.65
MO 2WS				
MO 1W	11±1.0	4.2±0.5	35±3.0	0.65
MO 2WS				
MO 2W	15±1.0	5.0±0.5	33±3.0	0.72
MO 3WS				
MO 3W	17.0±1.0	6.0±0.5	36±3.0	0.72
MO 5WS				
MO 5W, 7WS	24.0±1.0	8.0±1.0	33±3.0	0.72

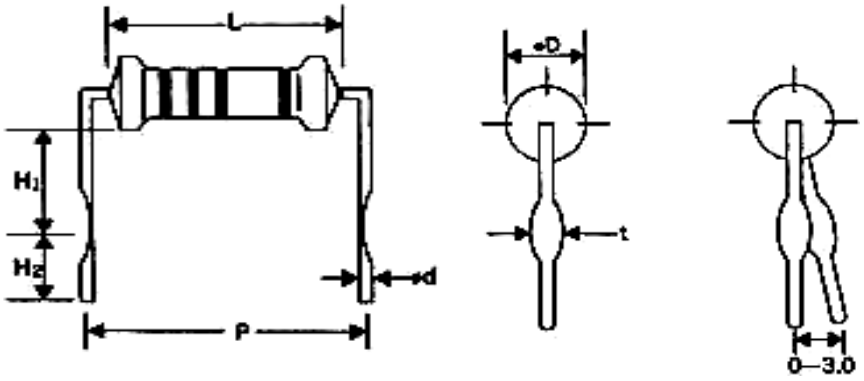
4-3 Formed Dimensions

M-TYPE



WATTS	DIMENSIONS(mm)				
	L	P±1.0	D	d±0.02	H±1.0
1/6W/1/8W/1/16W /1/4WS	3.2±0.3	6	1.8±0.3	0.40	8.0
1/4W / 1/2WS	6.0±0.3	10	2.3±0.3	0.45	8.0
1/2W / 1WS	9.0±0.5	12.5/15	3.2±0.3	0.52	8.0
1W / 2WS	11.0±1.0	15	4.2±0.5	0.65	10
2W / 3WS	15.0±1.0	20	5.0±0.5	0.72	10
3W / 5WS	17.0±1.0	25	6.0±0.5	0.72	10
5W	24.0±1.0	30	8.0±1.0	0.72	10

MB-TYPE



WATTS	DIMENSIONS (mm)						
	L	P±1.0	D	d±0.02	H1±1.0	H2±1.0	t±0.2
1/2W / 1WS	9.0±0.5	12.5	3.2±0.3	0.52	10.5	5.0	1.20
1W / 2WS	11.0±1.0	15	4.2±0.5	0.65	10.5	5.0	1.25
2W / 3WS	15.0±1.0	20	5.0±0.5	0.72	10.5	5.0	1.25
3W / 5WS	17.0±1.0	25	6.0±0.5	0.72	10.5	5.0	1.25
5W	24.0±1.0	30	8.0±1.0	0.72	10.5	5.0	1.25

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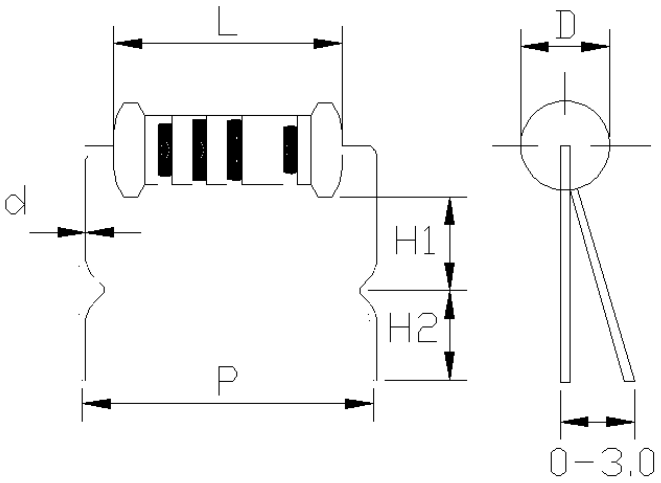
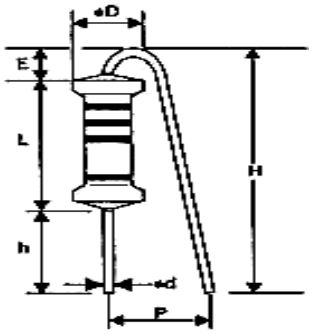
MK-TYPE



WATTS	DIMENSIONS (mm)			
	P±0.5	H1±1.0	H2±1.0	t±0.1
1W / 2WS	15	10.5	5.0	1.25
2W / 3WS	20	10.5	5.0	1.25
3W / 5WS	25	10.5	5.0	1.25

F-TYPE



WATTS	DIMENSIONS(mm)						
	L	P±1.0	D	d±0.05	h±1.0	H±1.0	Emax
1/4W / 1/2WS	6.0±0.5	6-8	2.3±0.3	0.45	8.0	14	3
1/2W / 1WS	9.0±0.5	6-8	3.2±0.3	0.52	8.0	18	3.5
1W / 2WS	11.0±1.0	6-8	4.2±0.5	0.65	8.0	20	3.5
2W / 3WS	15.0±1.0	6-8	5.0±0.5	0.72	8.0	25	3.5
3W / 5WS	17.0±1.0	6-8	6.0±0.5	0.72	8.0	30	3.5

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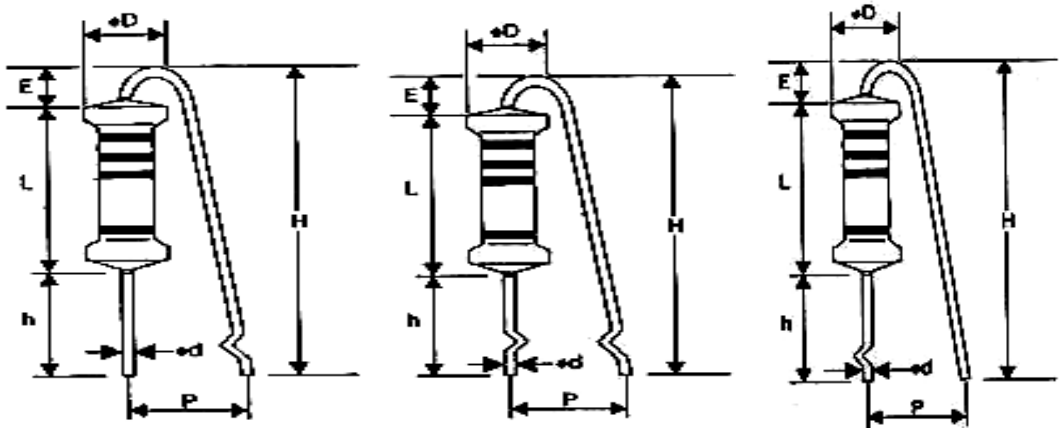
FK2-TYPE FKK-TYPE FK1-TYPE



WATTS	DIMENSIONS (mm)						
	L	P±1.0	D	d±0.05	h+1/-0	H±1.0	Emax
1/2W / 1WS	9.0±0.5	5-7	3.2±0.3	0.52	8	18	3.5
1W / 2WS	11.0±1.0	5-9	4.2±0.5	0.65	8	20	3.5
2W / 3WS	15.0±1.0	5-9	5.0±0.5	0.72	8	25	3.5
3W / 5WS	17.0±1.0	5-10	6.0±0.5	0.72	8	30	3.5

5. Tensile Strength

When the lead wire is welded and fixed at one terminal, the side Terminal on the axial direction of the body's applied a load of 2.5 Kegs For 5 seconds. The terminal lead wire shall be not broken or loosen and The compared with the value before the test.

6. Solder ability JIS-C-5202 6.5

The both of lead wire of resistor shall be dipped into a temperature 260 ±5 ℃ solder pot which consists of Son 60/Pb 40 (or Sn 63/Pb 37) with a speed of 25 ±6mm . Per second for 5±1 seconds . After the test , The lead wire shall be covered with a new layer of smooth solder and the Overage shall be over 95%

7.Electrical Characteristic

7-1. Test Condition

A standard test condition is performed under ambient temperature 20±2℃ Test can be performed under temperature 10 to 35℃ and R.H 45 to 85%

7-2. Short time overload JIS-C-5202 5.5

Apply 2.5 times of rated voltage (If the voltage exceeds the maximum Overload voltage, the maximum overload voltage will be used as the rated Voltage.) On the resistor for 5 seconds. Then measure the resistance value after the resistor is released of load for 30 minutes. The resistance value changed percent should be within ±1.00%+0.05 Ohm).

7-3.Load Life JIS-C-5202 7.10

Placed in the temperature chamber of 70±2℃ the resistors shall be Connected to the lead wire at the point of 25 mm . Length with each terminal, The resistors shall be arranged not much effected mutually by the Temperature of the resistors and the excessive ventilation shall not be Performed , for 90 minutes ON and 30 minutes OFF under this condition The rated D.C. voltage is applied continuously for 1,000 ±12hours , then leaving in room temperature at no-load for 1 hour.

The resistance value changed percent shall be within ±(5.00%+0.05 Ohm) as compared With the value before the test .

7-4.Moisture Resistance Load Life JIS-C-5202 7.9

The resistor will be placed in the constant temperature chamber of 40± 2℃ at the R.H. 90 to 95% . Then repeatedly to applied rated voltage 90 Minutes ON and 30 minutes OFF for a total 500 hours . The resistance Value will be measured after the test and leaving in room temperature for 1 hour The resistance value changed percent shall be within ±(5.00%+0.05 Ohm) And there shall be no remarkable changed in appearance and any mechanical Damage .

7.5 Effective Soldering JIS-C-5202 7.10

The terminal lead wire shall be dipped into molten solder of 350±10℃ for 3±0.5 seconds up to 3.2 to 4.8 mm. From the body of resistor . Then the resistors is left in the room temperature for 3 hours . The resistance value changed percent shall be within ±(1%+0.05 Ohm) as compared with the value before the test and no remarkable changed in appearance or mechanical damage should be observed .

7-6.Temperature Coefficient Test JIS-C-5202 5.2

Test resistor above room temperature 40℃～60℃ (Testing Temp.) at a Constant temperature oven for 30～40 minutes . Then measure the resistance The Temperature Coefficient can be calculated by the falling equation and the value shall be within range of Table 1 .

$$\text{Temperature Coefficient} = \frac{R - R_0}{R_0} \times \frac{1}{t - t_0} \times 10^6 \text{ (PPM/℃)}$$

R_1：Resistance value under the temperature .

R_2：Resistance value at the room temperature

T_1：The testing temperature .

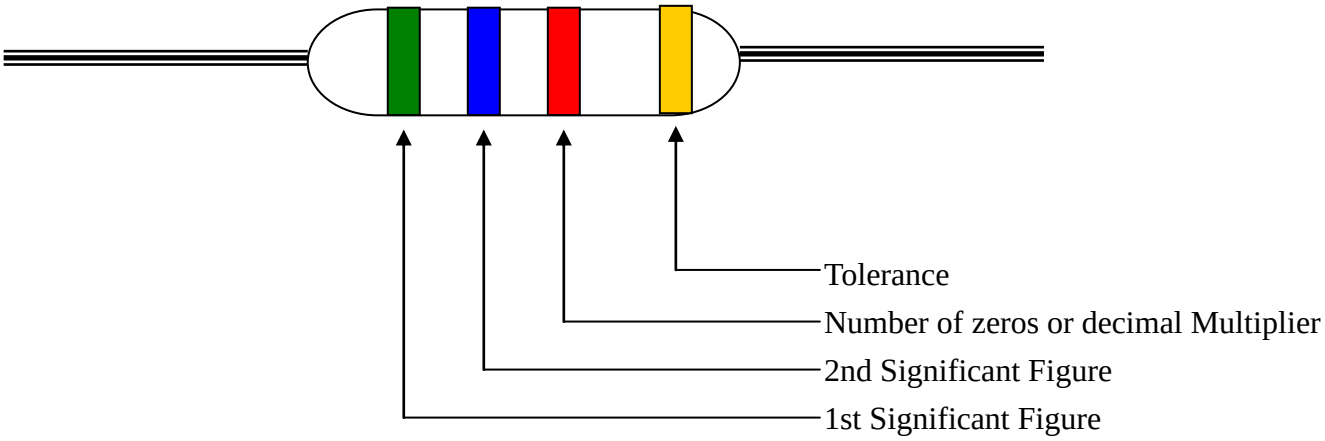
T_2：Room temperature .

0.1Ω≦Rx ＜ 10Ω	-200～+200ppm/℃
10Ω≦Rx ＜ 120kΩ	-350～+350ppm/℃

7-7. Dielectric Withstanding Voltage JIS-C-5202 5.7

The resistor is placed on the metal V block. A. terminals connected Together with the block for about 60 seconds . The resistor shall be able To withstand the voltage without any sign of a breakdown or flashover .

8.Marking (Refer to ELA－RS－ 279 Standard)



8-1.Color Refer to ELA – RS – 359

Color	1 st Band	2 nd Band	3 rt Band	4 th Band
Black	0	0	10^0	
Brown	1	1	10^1	±1%
Red	2	2	10^2	±2%
Orange	3	3	10^3	
Yellow	4	4	10^4	
Green	5	5	10^5	±0.5%
Blue	6	6	10^6	
Violet	7	7	10^7	
Grey	8	8	10^8	
White	9	9	10^9	
Gold			10^{-1}	±5%
Silver			10^{-2}	±10%

8-2.RATING

STYLE	MAX WORKING	MAX OVERLOAD	DIELECTRIC WITHSTANDING V.	RESISTANCE VALUE RANGE
MOF1/6W.1/8W.1/16W	200V	400V	200	0.1E——1M
MOFI/4 W / 1/4WS	250V	500V	250	
MOF1/2W / 1/2WS	350V	700V	350	
MOF1W / 1WS	350V	700V	350	
MOF2W /2WS	350V	700V	500	
MOF3W / 3WS	500V	1000V	500	
MOF5W	600V	1000V	700	

9. PACKING

9 – 1 TAPING TYPE

LABEL SPECIFICATION

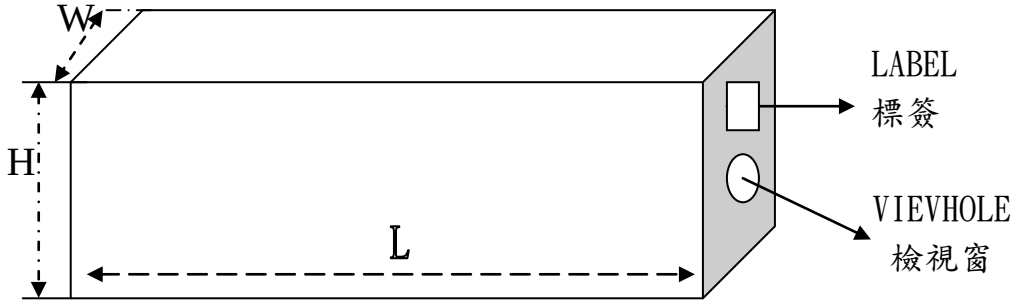
1.TYPE

2.WATTS TOLERANCE

3. RESISTANT QUANTITY

4 .P/N

5. LOT NO.



TYPE	WATTS	W(mm)	H(mm)	L(mm)	Q'TY(pcs)
T－26	1/6W / 1/8W	50	67	260	5000
	1/16W 1/4WS	50	67	260	5000
	1/4W / 1/2WS	50	100	260	5000
T－52	1/6W / 1/8W	80	72	260	5000
	1/16W / 1/4WS	80	72	260	5000
	1/4W / 1/2WS	80	100	260	5000
	1/2W / 1WS	80	85	260	2000
T－73	1W / 2WS	110	80	270	1000
	2W / 3WS	110	92	270	1000
	3W	110	92	270	700
	5WS	110	92	270	700
T---84	5W	110	92	270	250