

1. Scope

This specification applies to our produce of p Type Metal Oxide Film Resistors.

2.Specification

Kind	Rated Power	Type	Character	Nominal Value of Resistance	Tolerance on Value
.....
RSF	W	P	Y	12KOhm	J

2.1.Kind

The word “RS” represents Metal Oxide Film Resistors. The add “F” stand For flame-prove coating. Although all of our metal oxide is flame-prove, Sometime “F” does not appear. Instead an “S” may take its place. For to Represent metal oxide as well, then MOS equals RSS.

2.2.Rated power

“W” represents rated power as indicated in Table 1, PARAGRAPH 3.

2.3.Type

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

2.4.Characteristics

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.

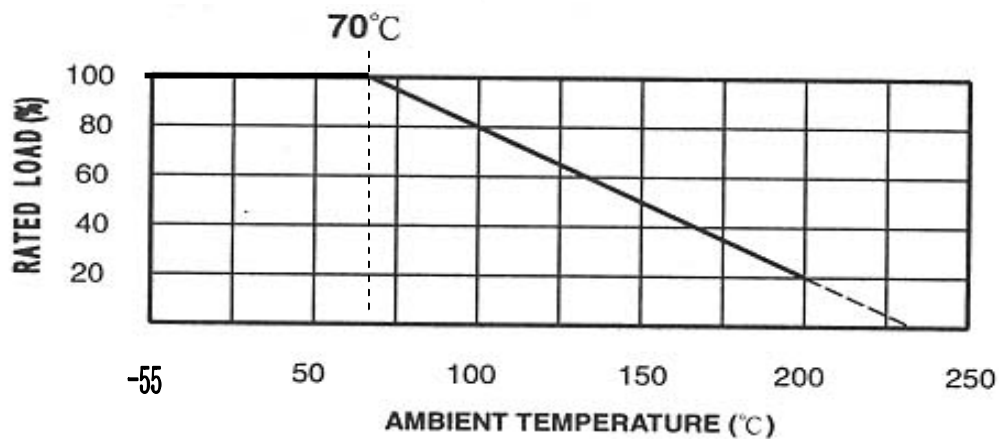
2.6.Resistance Tolerance

F ($\pm 1\%$), G ($\pm 2\%$), J ($\pm 5\%$).

2.7. POWER RATING

Power rating is defined as maximum power rating continuously applied under ambient

temperature at 70°C .when the ambient temperature exceeds 70°C ,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 EQUATIONE $=\sqrt{P \times R}$

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°C . If the temperature exceeds 70°C ,the

Rated power shall be dated as according to the Figure 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)

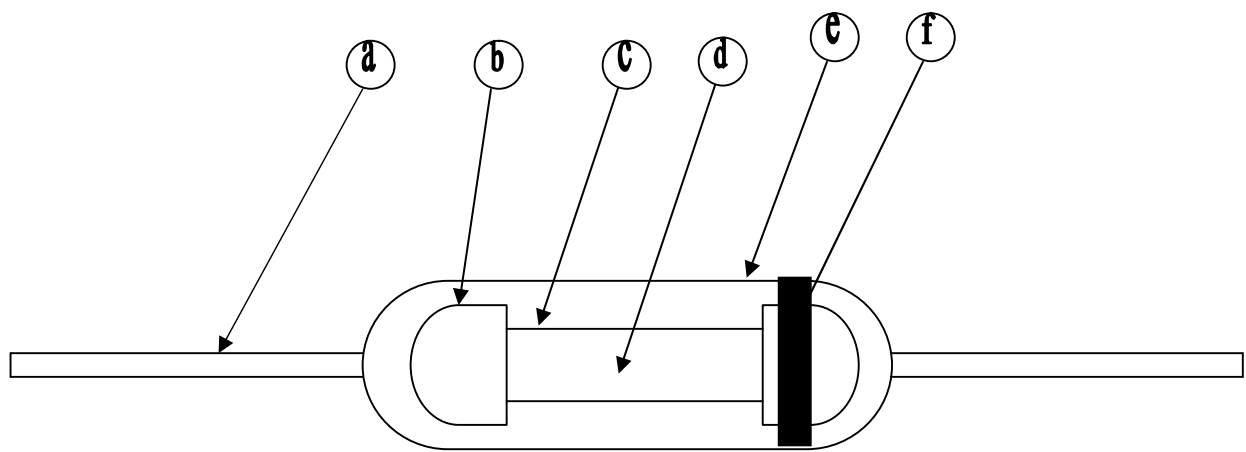
R : Nominal Ohm Value (Ohm)

4.Construction and Dimension

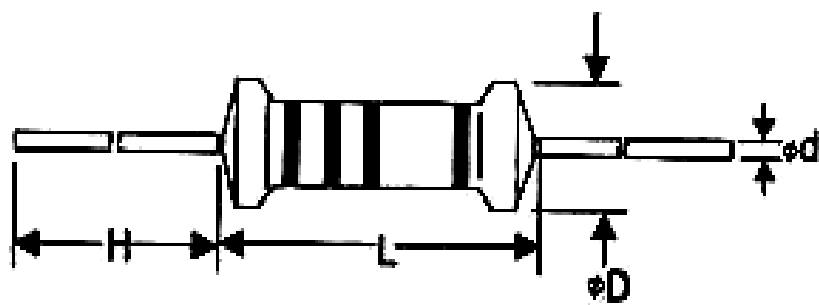
4-1.Construction

东莞市祥如电子有限公司 www.xiangrudz.com 0769-86346548

- a. Cp Wire .
- b. Tinned Iron Caps.
- c. Metal Oxide Film
- d. Ceramic Rod
- e. Nonflame Paint With Sol Vent-proof
- f. Color Code

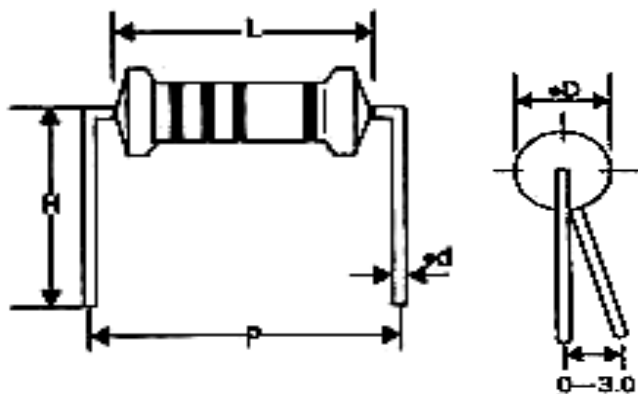


4-2. Dimension :



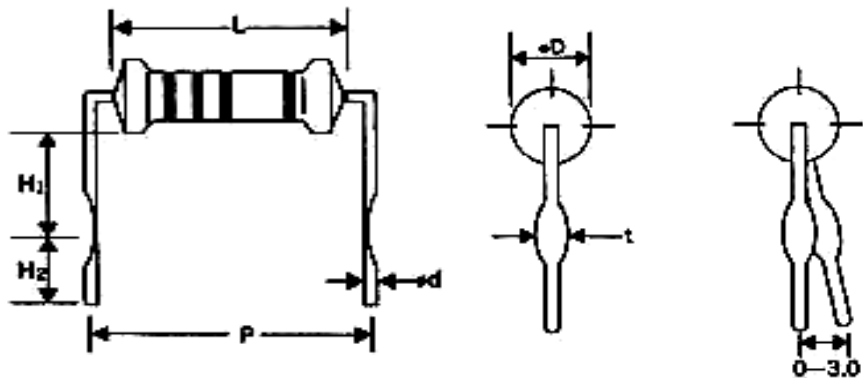
Watts	L	D	H(Min)	D±.05	PULLING (Kg)
MO 1/4W	6.0±0.5	2.3±0.3	27±2.0	0.4	2.5Kg - 30S
MO 1/2WS					
MO 1/2W	9.0±0.5	3.2±0.3	26±2.0	0.5	2.5Kg - 30S
MO 1WS					
MO 1W	11±1.0	4.5±0.5	35±2.0	0.6	3Kg - 30S
MO 2WS					
MO 2W	15±1.0	5.0±0.5	33±2.0	0.7	5Kg - 30S
MO 3WS					
MO 3W	17.0±1.0	6.0±0.5	32±2.0	0.7	5Kg - 30S
MO 5WS					
MO 5W	24.0±1.0	8.0±1.0	28±2.0	0.7	5Kg - 30S

M-TYPE

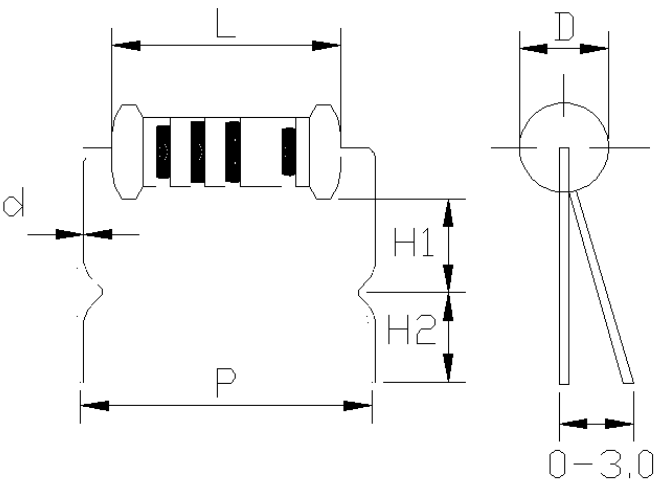


WATTS	DIMENSIONS(mm)				
	L	P±1.0	D	d±0.05	H±1.0
1/6W/1/8W/1/16W /1/4WS	3.3±0.3	6	1.8±0.3	0.4	6.0
1/4W / 1/2WS	6.0±0.3	10	2.3±0.3	0.4	10
1/2W / 1WS	9.0±0.5	12.5	3.2±0.3	0.5	10
1W / 2WS	11.0±1.0	15	4.5±0.5	0.6	12.5
2W / 3WS	15.0±1.0	20	5.0±0.5	0.7	15.0
3W / 5WS	17.0±1.0	23	6.0±0.5	0.7	15.0
5W	24.0±1.0	33	8.0±1.0	0.7	15.0

MB-TYPE

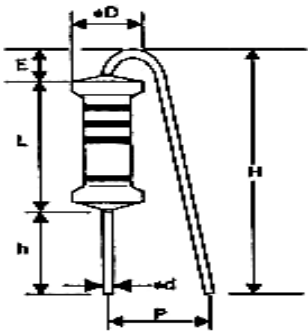


WATTS	DIMENSIONS (mm)						
	L	P±1.0	D	d±0.05	H1±1.0	H2±1.0	t±0.2
1/2W / 1WS	9.0±0.5	12.5	3.2±0.3	0.5	6.0	5.0	1.0
1W / 2WS	11.0±1.0	15	4.0±0.5	0.6	6.0	5.0	1.3
2W / 3WS	15.0±1.0	20	5.0±0.5	0.7	10.0	5.0	1.3
3W / 5WS	17.0±1.0	23	6.0±0.5	0.7	10.0	5.0	1.3
5W	24.0±1.0	33	8.0±1.0	0.7	10.0	5.0	1.3



WATTS	DIMENSIONS (mm)			
	$P\pm0.5$	$H1\pm1.0$	$H2\pm1.0$	$t\pm0.1$
1W / 2WS	15	6.0	5.0	1.3
2W / 3WS	20	7.0	5.0	1.3
3W / 5WS	30	13.0	5.0	1.3

F-TYPE

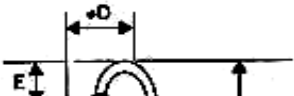


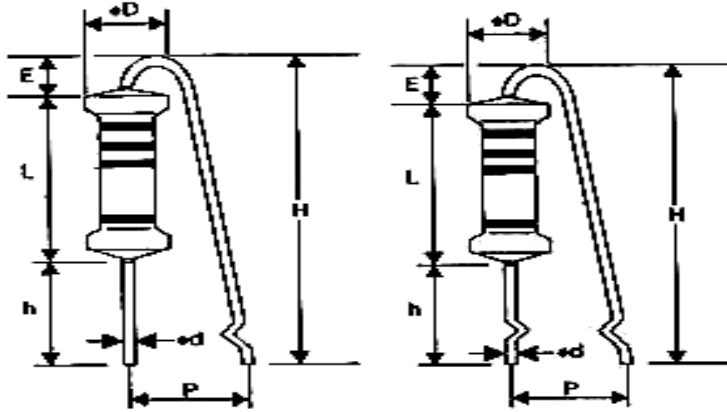
WATTS	DIMENSIONS(mm)						
	L	$P\pm1.0$	D	$d\pm0.05$	$h\pm1.0$	$H\pm1.0$	E _{max}
1/4W / 1/2WS	6.0 ± 0.5	6	2.3 ± 0.3	0.4	5.0	14	3
1/2W / 1WS	9.0 ± 0.5	6	3.2 ± 0.3	0.5	5.0	18	3.5
1W / 2WS	11.0 ± 1.0	6	4.0 ± 0.5	0.6	5.0	20	3.5
2W / 3WS	15.0 ± 1.0	6	5.0 ± 0.5	0.7	5.0	25	3.5
3W / 5WS	17.0 ± 1.0	6	6.0 ± 0.5	0.7	5.0	30	3.5

FK2-TYPE

FKK-TYPE

FK1-TYPE





WATTS	DIMENSIONS (mm)						
	L	P ± 1.0	D	d ± 0.05	h+1/-0	H ± 1.0	E _{max}
1/2W / 1WS	9.0 ± 0.5	6	3.2 ± 0.3	0.5	5	18	3.5
1W / 2WS	11.0 ± 1.0	6	4.0 ± 0.5	0.6	5	20	3.5
2W / 3WS	15.0 ± 1.0	6	5.0 ± 0.5	0.7	5	25	3.5
3W / 5WS	17.0 ± 1.0	6	6.0 ± 0.5	0.7	5	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 Kgs 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 °C solder with a speed of 25 ± 6 mm . 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 °C
Test can be performed under temperature 10 to 35°C 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 $\pm 1.00\% + 0.05$ Ohm).

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

Placed in the temperature chamber of 70 ± 2 °C 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

东莞市祥如电子有限公司 www.xiangrudz.com 0769-86346548

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 6.4

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 .

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

R₁ : Resistance value under the temperature .
R₂ : Resistance value at the room temperature
T₁ : The testing temperature .
T₂ : Room temperature .

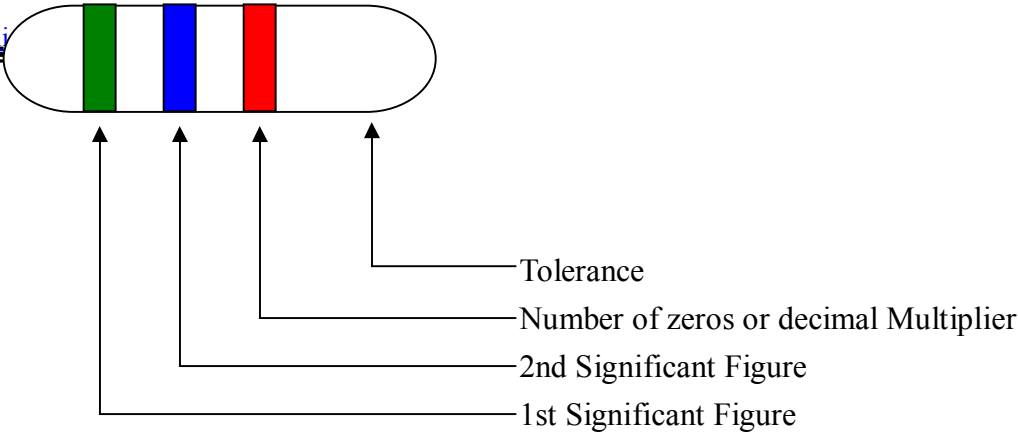
0.1 Ω ≤ Rx < 10Ω	-200~+200ppm/℃
10 Ω ≤ Rx < 120kΩ	-350~+350ppm/℃

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	
Red	2	2	10^2	$\pm 2\%$
Orange	3	3	10^3	
Yellow	4	4	10^4	
Green	5	5	10^5	
Blue	6	6	10^6	
Violet	7	7	10^7	
Grey	8	8	10^8	
White	9	9	10^9	
Gold			10^{-1}	$\pm 5\%$
Silver			10^{-2}	$\pm 10\%$

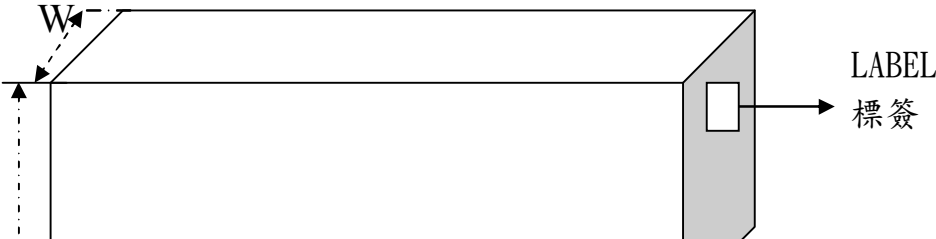
8-2.RATING

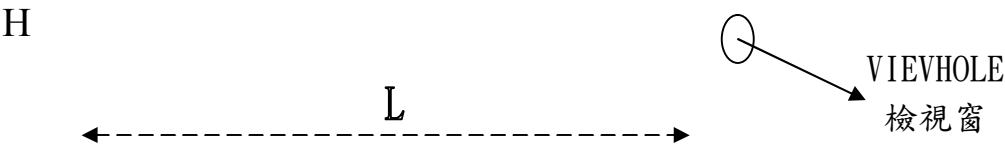
STYLE	MAX WORKING V	MAX OVERLOAD	DIELECTRIC WITHSTANDING V.	RESISTANCE VALUE RANGE
MOF1/6W.1/8W.1/16W	200V	400V	200	$0.1\Omega \sim 120K\Omega$
MOF1/4 W / 1/4WS	250V	500V	250	$0.1\Omega \sim 120K\Omega$
MOF1/2W / 1/2WS	350V	700V	350	$0.1\Omega \sim 120K\Omega$
MOF1W / 1WS	350V	700V	350	$0.1\Omega \sim 120K\Omega$
MOF2W /2WS	350V	700V	500	$0.1\Omega \sim 120K\Omega$
MOF3W / 3WS	500V	1000V	500	$0.1\Omega \sim 120K\Omega$
MOF5W / 7WS	600V	1000V	700	$0.1\Omega \sim 120K\Omega$

9. PACKING

9 – 1 TAPING TYPE
LABEL SPECIFICATION

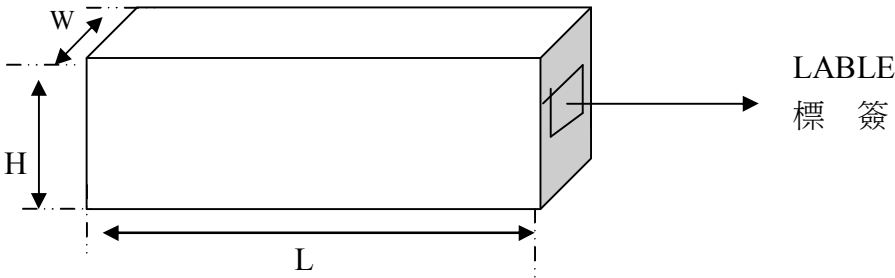
- 1.TYPE
- 2.WATTS TOLERANCE
3. RESISTANT QUANTITY
- 4 .P/N
5. LOT NO.





TYPE	WATTS	W(mm)	H(mm)	L(mm)	Q'TY(pcs)
T-26	1/6W / 1/8W	50	72	260	5000
	1/16W 1/4WS	50	72	260	5000
	1/4W / 1/2WS	53	103	260	5000
T-52	1/6W / 1/8W	73	72	267	5000
	1/16W / 1/4WS	73	72	267	5000
	1/4W / 1/2WS	73	110	267	5000
	1/2W / 1WS	73	57	255	1000
T-73	1W / 2WS	92	83	267	1000
	2W / 3WS	92	100	267	1000
	3W / 5WS	92	83	267	500
	5W	92	83	267	500

9-2 BULK



WATTS	TYPE	L(mm)	W(mm)	H(mm)	POLY BOG	BOX(pcs)
1/6W .1/8W.1/16W/1/4WS	P	250	140	67	1000	20000
	MOLDING					
1/4W / 1/2WS	P	250	140	67	500	10000
	MOLDING					
1/2W / 1WS	P	250	140	67	500	5000
	MOLDING					
1W / 2WS	P	250	140	67	200	2000
	MOLDING					
2W / 3WS	P	250	140	67	200	1000
	MOLDING					
3W / 5WS	P	250	140	67	100	1000
	MOLDING					
5W	P	250	140	67	100	1000
	MOLDING					