



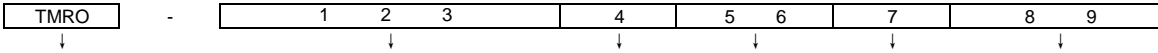
# TMRO-Metal Oxide Film Resistor

## Feature:

- High temperature resistance
- Good oxidation resistance
- Good thermal stability
- Strong load capacity

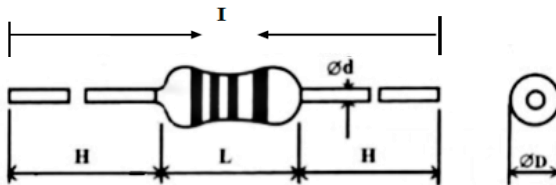
**Application** Entertainment system, TV, Audio, Power supply, Meter/Instruments system, industrial system

## Part Number:



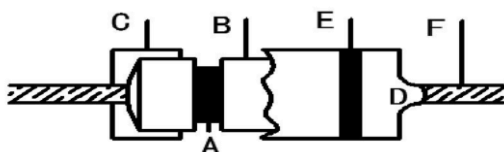
<b>Produce Code</b> TMRO: Metal Oxide Film Resistor	<b>Resistance Value Code:</b> Three digits: The first two digits are significant figures and the third one denotes number of zeros. 394=390KΩ	<b>Tolerance</b> G= ±2% J=± 5%	<b>Rated Power:</b> One digits: 1= 1W 2= 1/2W 4= 1/4W X=2W Y=3W Z=5W Two digits: XS=2WS YS=3WS ZS=5WS	<b>Packaging</b> T:tape&reel B:bulk	<b>Terminal:</b> empty value: general type F:Vertical form M:Horizontal form

## Dimension(mm):



Type		Dimensions				
Normal Size	Small Size	l±2.0	L±1.0	φD	φd±0.05	H±2.0
4(1/4W)	2S(1/2WS)	60	6.5	2.3±0.5	0.43	26
2(1/2W)	1S(1WS)	60	9.0	3.2±0.5	0.50	26
1(1W)	XS(2WS)	60	11.5	4.5±1.0	0.68	25
		73	11.5	4.5±1.0	0.68	31
X(2W)	YS(3WS)	60	15.5	5.0±1.0	0.68	23
		81	15.5	5.0±1.0	0.68	33
Y(3W)	ZS(5WS)	94	17.5	6.0±1.0	0.68	38
	Z(5W)	94	24.5	8.0±1.0	0.68	35

## Construction:



No.	Components
A	Ceramic core
B	Metal Oxide Film
C	Caps
D	Epoxy resin painting
E	Color code
F	Soldered or tinned annealed wire.



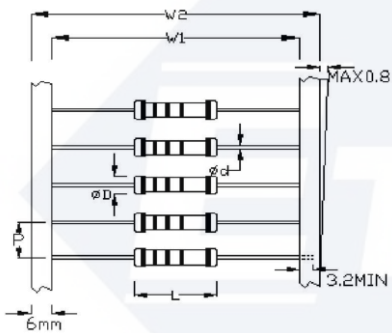
# TMRO-Metal Oxide Film Resistor

## Electrical Characteristics:

Type	Rated Power	Max Working Voltage	Max Overload voltage	Dielectric withstanding voltage	Resistance Range	Operation Temperature	T.C.R. PPM/°C
4(1/4W)	0.25W	200V	400V	250V	0Ω~22MΩ	-55°C ~+155°C	R≤50K: 350 R>50K: 700
2(1/2W)	0.5W	250V	400V	250V	0R1Ω~22MΩ		
1(1W)	1W	350V	600V	350V	0R1Ω~22MΩ		
X(2W)	2W	350V	600V	350V	0R1Ω~22MΩ		
Y(3W)	3W	500V	800V	500V	0R1Ω~22MΩ		
Z(5W)	5W	500V	800V	500V	0R1Ω~22MΩ		
2S(1/2WS) small size	0.5W	200V	400V	250V	0Ω~22MΩ		
1S(1WS) small size	1W	250V	600V	250V	0R1Ω~22MΩ		
XS(2WS) small size	2W	350V	600V	350V	0R1Ω~22MΩ		
YS(3WS) small size	3W	350V	600V	500V	0R1Ω~22MΩ		
ZS(5WS) small size	5W	500V	800V	500V	0R1Ω~22MΩ		

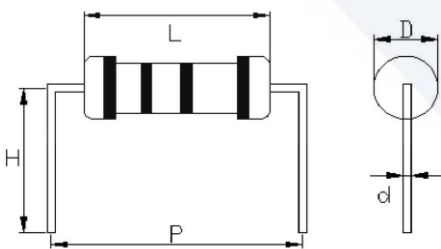
## Packing dimension:

### T Type



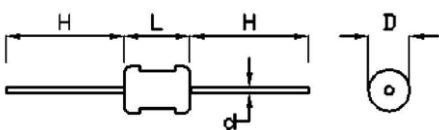
Power	Dimension(mm)					
	L±1	D±0.5	d±0.05	P±1	W1±1	W2±1
1/8W(1/4WS)	3.50	1.70	0.40	5.00	52.00	64.00
1/4W(1/2WS)	6.00	2.30	0.40	5.00	52.00	64.00
1/2W(1WS)	9.00	3.20	0.48	5.00	52.00	64.00
1W (2WS)	11.00	4.50	0.68	5.00	63.00	75.00
2W (3WS)	15.00	5.00	0.68	5.00	68.00	80.00
3W (5WS)	17.00	6.00	0.68	10.00	71.00	83.00

### M Type



Power	Dimension(mm)				
	L±1	D±0.5	d±0.05	P±1	H±1
1/8W(1/4WS)	3.50	1.70	0.40	5.00	10.00
1/4W(1/2WS)	6.00	2.30	0.40	10.00	10.00
1/2W(1WS)	9.00	3.20	0.48	12.50	10.00
1W (2WS)	11.00	4.50	0.68	15.00	10.00
2W (3WS)	15.00	5.00	0.68	20.00	10.00
3W (5WS)	17.00	6.00	0.68	25.00	10.00

### B Type

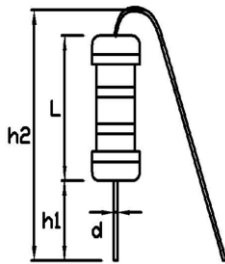


Power	Dimension(mm)			
	L±1	D±0.5	d±0.05	H±2
1/8W(1/4WS)	3.50	1.70	0.40	27.00
1/4W(1/2WS)	6.00	2.30	0.40	26.00
1/2W(1WS)	9.00	3.20	0.48	24.00
1W (2WS)	11.00	4.50	0.68	29.00
2W (3WS)	15.00	5.00	0.68	30.00
3W (5WS)	17.00	6.00	0.68	30.00



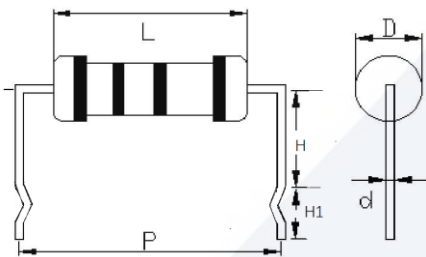
# TMRO-Metal Oxide Film Resistor

## F Type



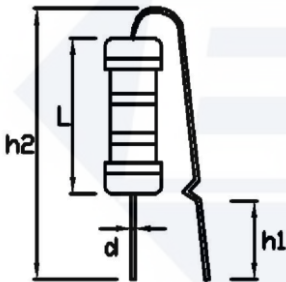
Power	Dimension(mm)			
	L±1	d±0.05	h1±0.5	h2±1
1/8W(1/4WS)	3.50	0.40	5.00	13.00
1/4W(1/2WS)	6.00	0.40	5.00	16.00
1/2W(1WS)	9.00	0.48	5.00	19.00
1W(2WS)	11.00	0.68	5.00	21.00
2W(3WS)	15.00	0.68	5.00	25.00

## MK Type



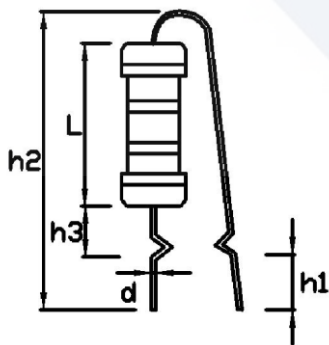
Power	Dimensions (mm)				
	D±0.5	L±1.0	P±1.0	H±1.0	H1±1.0
1/2W(1WS)	3.2	9.0	12.5	10	4.5
1W(2WS)	4.5	11.5	15	10	4.5
2W(3WS)	5	15.5	20	10	4.5
3W5WS	6	17.5	25	10	4.5

## FK Type



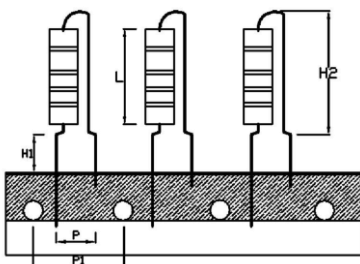
Power	Dimension(mm)			
	L±1	d±0.05	h1±0.5	h2±1
1/2W(1WS)	9.00	0.48	4.50	16.00
1W(2WS)	11.00	0.68	3.50	18.00
2W(3WS)	15.00	0.68	3.50	23.00
3W(5WS)	17.00	0.68	3.50	25.00

## FKK Type



Power	Dimensions (mm)				
	L±1	d±0.05	h1±0.5	h2±1	h3±1
1W(2WS)	11.00	0.68	3.50	22.00	4.00
2W(3WS)	15.00	0.68	3.50	26.00	4.00
3W(5WS)	17.00	0.68	3.50	28.00	4.00

## F type taping package

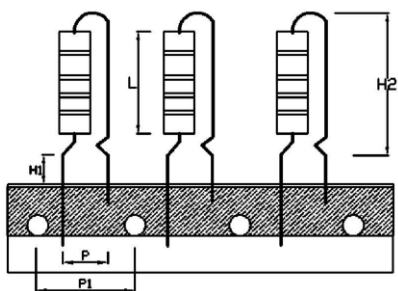


Power	Dimensions (mm)				
	L±1	H1±0.5	h2±1	P±1	P1±1
1/8W(1/4WS)	3.50	6.00	9.00	5.00	12.70
1/4W(1/2WS)	6.00	6.00	12.00	5.00	12.70
1/2W(1WS)	9.00	6.00	15.00	5.00	12.70
1W(2WS)	11.00	6.00	17.00	5.00	12.70
2W(3WS)	15.00	6.00	21.00	5.00	12.70



# TMRO-Metal Oxide Film Resistor

FK type taping package



Power	Dimensions (mm)				
	L±1	H1±0.5	h2±1	P±1	P1±1
1/8W(1/4WS)	3.50	6.00	9.00	5.00	12.70
1/4W(1/2WS)	6.00	6.00	12.00	5.00	12.70
1/2W(1WS)	9.00	6.00	15.00	5.00	12.70
1W(2WS)	11.00	6.00	17.00	5.00	12.70
2W(3WS)	15.00	6.00	21.00	5.00	12.70

ETOPMAY