



# 香港電阻製造廠

香港柴灣安業街十二號長益工業大廈10字樓A座

## HONG KONG RESISTORS MANUFACTORY

(wholly owned by Hong Kong Resistors Manufactory International Ltd.)

AN ISO 9001:2008 CERTIFIED MANUFACTURER

AN OHSAS 18001:2007 MANUFACTURER

AN ISO 14001 : 2004 MANUFACTURER

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## DATA SHEET

Name of Product : METAL OXIDE FILM FIXED RESISTOR

- BULK PACKING (SMALL SIZE)

Sales Executive : \_\_\_\_\_

Date: \_\_\_\_\_

製造 Prepared by	檢驗 Inspected by	審核 Audited by	核准 Authorized by
客戶 customer approval	客戶 customer approval	客戶 customer approval	客戶 customer approval

Spec. No. MOFBPS 2015

Rev. No.: 2015 May.(1)

<b>PRODUCT : METAL OXIDE FILM FIXED RESISTOR</b>	<b>TYPE : MOF25S/ 50S/100S/200S/300S/500S</b>
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**1. APPLICABLE SCOPE :**

- 1.1 This specification is for use in METAL OXIDE FILM FIXED RESISTORS
- 1.2 Characteristics and specifications are according to those of :  
JIS C 5202
- 1.3 RoHS and REACH compliant product

**2. PART NUMBER**

It is composed of description, rated wattage , nominal resistance value , tolerance and packaging.

2.1 Make Up :

M	O	F	1	0	0	S	4	7	0	R	J	B	P						
Product Code		Power Rating		Body Size		Nominal Resistance Value		Tolerance		Packaging		Lead Wire diameter		Lead Wire length					
M	Metal	Code	Wattage	S	Small Size			Code	Tol.	BP	Bulk Packing	Code	Size	Code	Size				
O	Oxide	25	0.25(1/4W)			G	2%	043	25S: 0.43mm			27	25S: 27mm						
F	Film	50	0.50(1/2W)			J	5%		50S: 0.40mm	26	50S: 26mm								
		100	1.0(1W)					048	50S: 0.48mm		100S: 26mm								
		200	2.0(2W)						100S: 0.48mm	25	200S: 25mm								
		300	3.0(3W)					060	100S: 0.60mm	23	300S: 23mm								
		500	5.0(5W)						200S: 0.55mm	33	500S: 33mm								
								070	200S: 0.70mm										
									300S: 0.70mm										
								075	300S: 0.75mm										
									500S: 0.70mm										
								075	500S: 0.75mm										

2.2 Explanation :

Part Number

MOF 100S 470R J TB

Description

Metal Oxide Film Fixed Resistor , 1W, small size, 470Ω , ±5% , bulk packing,

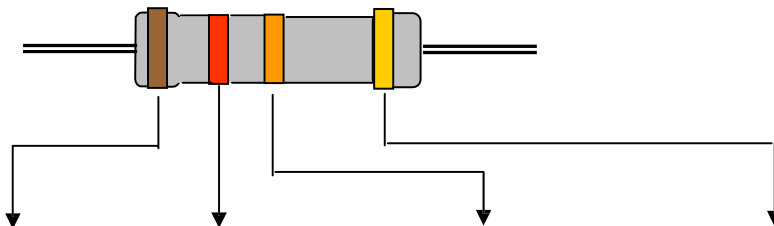
Lead Wire diameter: d=0.48mm, Lead Wire length: L=26mm.

<b>PRODUCT : METAL OXIDE FILM FIXED RESISTOR</b>	<b>TYPE : MOF25S/ 50S/100S/200S/300S/500S</b>
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### 2.3 Color code indication

Fixed resistors of which the nominal resistance value and tolerance are indicated by color codes as per Table 1 :

TABLE - 1



COLOR	1 <sup>ST</sup> DIGIT	2 <sup>ND</sup> DIGIT	MULTIPLIER	TOLERANCE
BLACK	0	0	1	
BROWN	1	1	10	
RED	2	2	100	G (±2%)
ORANGE	3	3	1,000	
YELLOW	4	4	10,000	
GREEN	5	5	100,000	
BLUE	6	6	1000,000	
VIOLET	7	7	10,000,000	
GREY	8	8		
WHITE	9	9		
GOLD			0.1	J (±5%)
SILVER			0.01	

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**3. DIMENSIONS :**

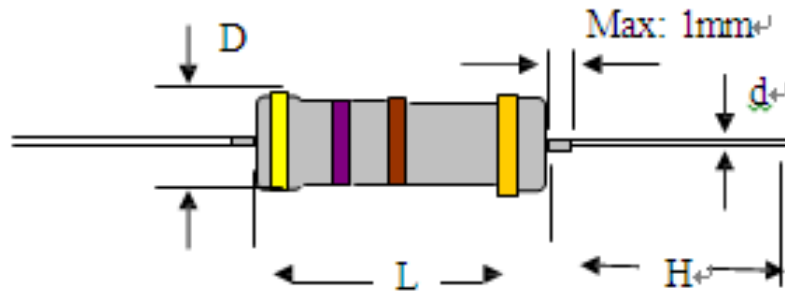


TABLE - 2

Unit : mm

TYPE	BODY		LEAD WIRE	
	L	D	H	d
MOF25S	4.0±0.5	1.7±0.5	22 (27)±1	0.40 (0.43) ±0.05
MOF50S	6.0±1.0	2.3±0.5	20.5 (26±)1	0.40 (0.48) ±0.05
MOF100S	9.0±1.0	3.0±0.5	26 ±1	0.48 (0.60) ±0.05
MOF200S	11.0±1.5	4.5±0.5	25 ±1	0.55(0.70) ±0.05
MOF300S	15.0±1.5	5.0±0.5	23 ±1	0.70 (0.75) ±0.05
MOF500S	17.0±1.5	6.0±0.5	33 ±1	0.70 (0.75) ±0.05

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## 4. SPECIFICATIONS

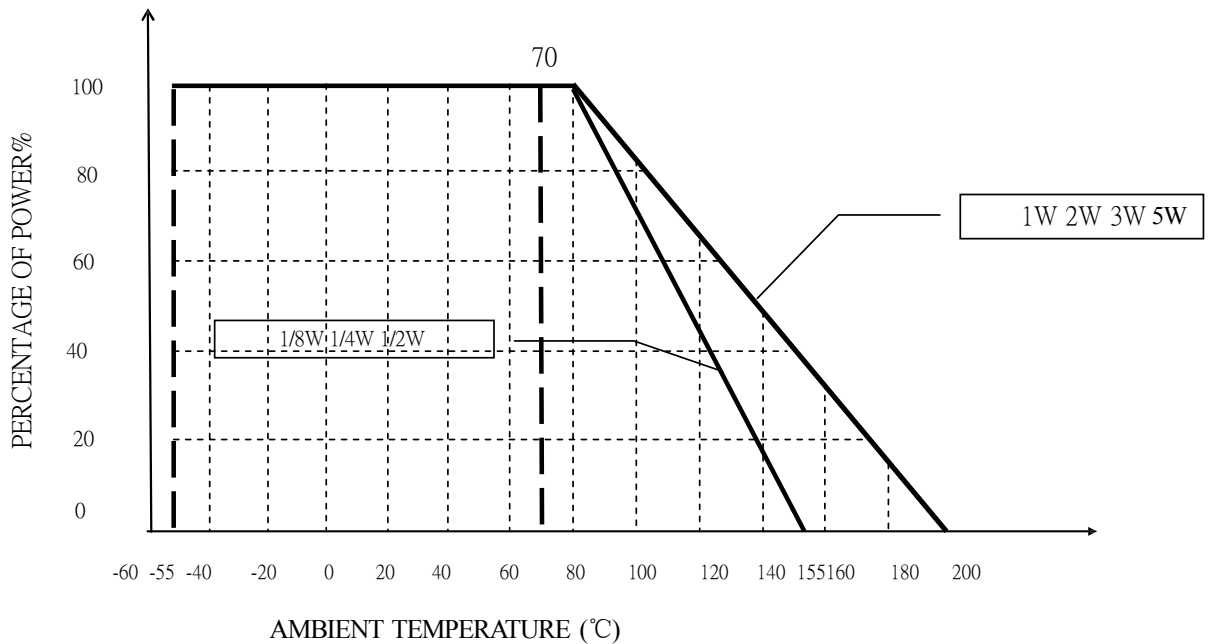
TABLE - 3

DESCRIPTION	MOF-25S	MOF-50S	MOF-100S	MOF-200 S	MOF-300S	MOF-500 S
STANDARD RESISTANCE VALUE RANGE	1Ω- 510KΩ	1Ω- 510KΩ	1Ω- 510KΩ	1Ω- 510KΩ	1Ω- 510KΩ	1Ω- 510KΩ
POWER RATING AT 70°C	1/4W	1/2W	1W	2W	3W	5W
*MAX WORKING VOLTAGE	200V	250V	250V	350V	500V	750V
*MAX OVERLOAD VOLTAGE	400V	500V	600V	600V	800V	1,000V
OPERATING TEMPERATURE RANGE	-40°C ~+200°C	-40°C ~+200°C	-40°C ~+200°C	-40°C ~+200°C	-40°C ~+200°C	-40°C ~+200°C
TEMPERATURE COEFFICIENT	±350PPM	±350PPM	±350PPM	±350PPM	±350PPM	±350PPM
TEMPERATURE CYCLING	±(1%R+0.05Ω)	±(1%R+0.05Ω)	±(1%R+0.05Ω)	±(1%R+0.05Ω)	±(1%R+0.05Ω)	±(1%R+0.05Ω)
INSULATION RESISTANCE	MIN.1,000MΩ	MIN.1,000MΩ	MIN.1,000MΩ	MIN.1,000MΩ	MIN.1,000MΩ	MIN.1,000MΩ
HUMIDITY	±(2.5%R+0.05Ω)	±(2.5%R+0.05Ω)	±(2.5%R+0.05Ω)	±(2.5%R+0.05Ω)	±(2.5%R+0.05Ω)	±(2.5%R+0.05Ω)
SHORT-TIME OVERLOAD	±(2.5%R+0.05Ω)	±(2.5%R+0.05Ω)	±(2.5%R+0.05Ω)	±(2.5%R+0.05Ω)	±(2.5%R+0.05Ω)	±(2.5%R+0.05Ω)
SOLDERABILITY	MIN. 80% COVERED	MIN. 80% COVERED	MIN. 80% COVERED	MIN. 80% COVERED	MIN. 80% COVERED	MIN. 80% COVERED
VIBRATION	±(1.5%R+0.05Ω)	±(1.5%R+0.05Ω)	±(1.5%R+0.05Ω)	±(1.5%R+0.05Ω)	±(1.5%R+0.05Ω)	±(1.5%R+0.05Ω)
LOAD LIFE	±(5%R+0.15Ω)	±(5%R+0.15Ω)	±(5%R+0.15Ω)	±(5%R+0.15Ω)	±(5%R+0.15Ω)	±(5%R+0.15Ω)

\* The working voltage is calculated based on the resistance value following the formula of  $V = \sqrt{P \cdot R}$  or to its maximum extent as indicated above

\* The overload voltage is calculated based on the resistance value following the formula of  $V = 2.5 \cdot \sqrt{P \cdot R}$  or to its maximum extent as indicated above

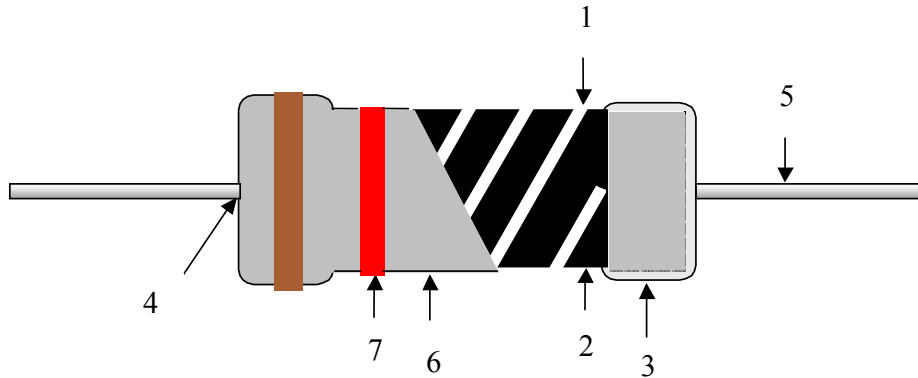
## 5. POWER DERATING CURVES



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**6. STRUCTURAL DIAGRAM**



- |                        |   |
|------------------------|---|
| (1) CORE               | CERAMIC ROD                             |
| (2) RESISTANCE FILM    | METAL OXIDE FILM                        |
| (3) TERMINAL           | TINNED IRON CAP                         |
| (4) CONNECTION         | ELECTRIC WELDING                        |
| (5) LEAD WIRE          | SOLDERED OR TINNED ANNEALED COPPER WIRE |
| (6) FINISHING PAINTING | FLAMEPROOF SILICON PAINT                |
| (7) INDICATION         | COLOR CODE INK                          |

TABLE - 4

RATED RESISTANCE VALUE	MAX. TESTING VOLTAGE	
	0.25W	0.5W / 1W / 2W / 3W / 5W
$1\Omega \leq R < 10\Omega$	0.3	0.3
$10\Omega \leq R < 100\Omega$	0.3	1
$100\Omega \leq R < 1K\Omega$	1	3
$1K\Omega \leq R < 10K\Omega$	3	10
$10K\Omega \leq R < 100K\Omega$	10	30
$100K\Omega \leq R < 1M\Omega$	30	50
$1M\Omega \leq R$	50	100

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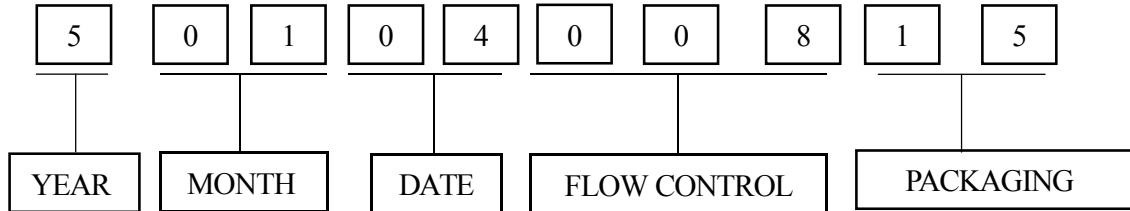
## 7. CHARACTERISTICS

TABLE – 5

DC RESISTANCE VALUE	TEST METHOD MIL-STD-202 ITEM 303	VOLTAGE AS TABLE -4. TEMPERATURE 25 ±2°C. AQL 0.25%.
VOLTAGE WITHSTAND	TEST METHOD MIL-STD-202 ITEM 301	V-BLOCK METHOD. VOLTAGE AS TABLE -3 ×1.42, 1 MIN. AQL 1%.
SHORT TIME OVERLOAD	TEST METHOD JIS C 5202 ITEM 5.5	RATED VOLTAGE × 2.5 TIMES OR MAX.WORKINGVOLTAGE × 2 TIMES. ABOVE TEST 5 SEC. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(2.5%R+0.05 Ω).
TERMINAL STRENGTH	TEST METHOD MIL-STD-202 ITEM 211	TENSILE STRENGTH : 1KG TENSIONAL STRENGTH : 180°, 2 CYCLES. BENDING STRENGTH : 0.5KG, 2 TIMES. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(0.5%R+0.05 Ω).
SOLDERABILITY OF TERMINAL	TEST METHOD MIL-STD-202 ITEM 210	260±5°C 10±1SEC. AFTER TESTING, LEAVE FOR 3 HOURS. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(1%R+0.05 Ω).
TEMPERATURE CYCLE	TEST METHOD MIL-STD-202 ITEM 107	LOW SIDE TEMPERATURE : -55°C±3°C 30MIN. ROOM TEMPERATURE : 10-15MIN. HIGH SIDE TEMPERATURE : +125°C±3°C 30MIN. ROOM TEMPERATURE : 10-15MIN. ABOVE TEST 5 CYCLES AFTER LAST CYCLE, LEAVE FOR 1-3 HOURS. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(1%R+0.05 Ω).
VIBRATION WITHSTAND	TEST METHOD MIL-STD-202 ITEM 204	X, Y, Z-EACH DIRECTION 2 HOURS. AMPLITUDE 0.75MM. RANGE : 10HZ ~ 500HZ. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(1.5%R+0.05 Ω).
LOAD LIFE	TEST METHOD MIL-STD-202 ITEM 108	70±2°C. 1000 HOURS RATED VOLTAGE (1.5 HOURS ON, 0.5 HOUR OFF). THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(5%R+0.15 Ω).
RESISTANCE TEMPERATURE COEFFICIENT	TEST METHOD MIL-STD-202 ITEM 304	THE RESISTANCE VALUE CHANGE RATE SHALL BE AS TABLE – 3.
LOAD LIFE IN HUMIDITY	TEST METHOD MIL-STD-202 ITEM 103	THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(2.5%R+0.05 Ω).

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### 8. LOT NO. (Coding System)



### 9. PACKING DATA

TYPE	PER BOX	PER CARTON	INNER BOX			EXPORT CARTON		
			L	W	H	L	W	H
MOF25S	5,000PCS	50,000PCS	255mm	81mm	72mm	419mm	264mm	170mm
MOF50S	5,000PCS	50,000PCS	260mm	75mm	105mm	410mm	270mm	238mm
MOF100S	2,000PCS	20,000PCS	260mm	75mm	105mm	410mm	270mm	238mm
MOF200S	1,000PCS	10,000PCS	255mm	81mm	72mm	419mm	264mm	170mm
MOF300S	1,000PCS	10,000PCS	260mm	78mm	87mm	422mm	270mm	200mm
MOF500S	500PCS	5,000PCS	255mm	100mm	90mm	515mm	267mm	203mm

