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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 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

PRODUCT : METAL FILM FIXED RESISTOR | **TYPE : MF 25S/50S/100S/200S/300S**

1. APPLICABLE SCOPE :

1.1 This specification is for use in METAL 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	F	1	0	0	S	1	0	R	F	B	P					

Product Code	
M	Metal
F	Film

Power Rating	
Code	Wattage
25	0.25(1/4W)
50	0.50(1/2W)
100	1.0(1W)
200	2.0(2W)
300	3.0(3W)
500	5.0(5W)

S	Small Size

Nominal Resistance Value

Tolerance	
Code	Tol.
F	1%
J	5%

Packaging	
BP	Bulk Packing

Lead Wire diameter	
Code	Size
	25S: 0.40mm
043	25S: 0.43mm
	50S: 0.40mm
048	50S: 0.48mm
	100S: 0.48mm
060	100S: 0.60mm
	200S: 0.55mm
075	200S: 0.70mm
	300S: 0.70mm
075	300S: 0.75mm
	500S: 0.75mm

Lead Wire length	
Code	Size
	25S: 22mm
27	25S: 27mm
	50S: 20.5mm
26	50S: 26mm
	100S: 26mm
25	200S: 25mm
23	300S: 23mm
33	500S: 33mm

2.2 Explanation :

Part Number	Description
MF100S 10R F BP	Metal Film Fixed Resistor , 1W , small size, 10Ω, +/-1%, bulk packing. Lead Wire diameter: d=0.48mm, Lead Wire length: L=26mm.

* Remarks : The power rating of 1/8W is coded as 125

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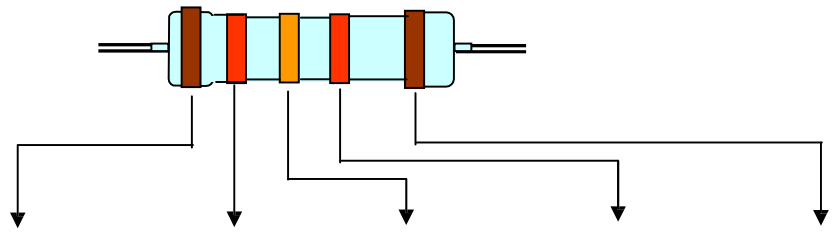
2.3 Color code indication

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

TABLE - 1



COLOR	1ST DIGIT	2ND DIGIT	3RD DIGIT	MULTIPLIER	TOLERANCE
BLACK	0	0	0	1	
BROWN	1	1	1	10	F(±1%)
RED	2	2	2	100	
ORANGE	3	3	3	1,000	
YELLOW	4	4	4	10,000	
GREEN	5	5	5	100,000	
BLUE	6	6	6	1000,000	
VIOLET	7	7	7	10,000,00	
GREY	8	8	8		
WHITE	9	9	9		
GOLD				0.1	J(±5%)
SILVER				0.01	

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3. DIMENSIONS :

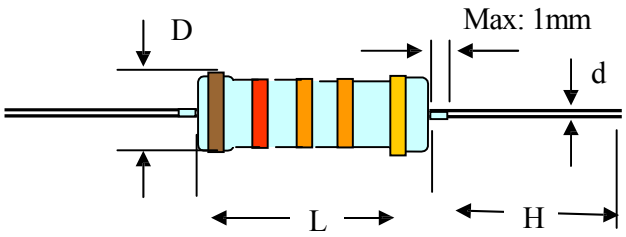

TABLE - 2

Unit : mm

TYPE	BODY		LEAD WIRE	
	L	D	H	d
MF25S	3.5±0.5	1.7±0.5	22 (27)±1	0.40 (0.43) ±0.05
MF50S	6.0±1.0	2.3±0.5	20.5 (26±)1	0.40 (0.48) ±0.05
MF100S	9.0±1.0	3.0±0.5	26±1	0.48 (0.60) ±0.05
MF200S	11.0±1.5	4.0±0.5	25 ±1	0.55 (0.70) ±0.05
MF300S	15.0±1.5	5.0±0.5	23 ±1	0.70 (0.75) ±0.05
MF500S	17.0±1.5	6.0±0.5	33 ±1	0.70 (0.75) ±0.05

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4. SPECIFICATIONS

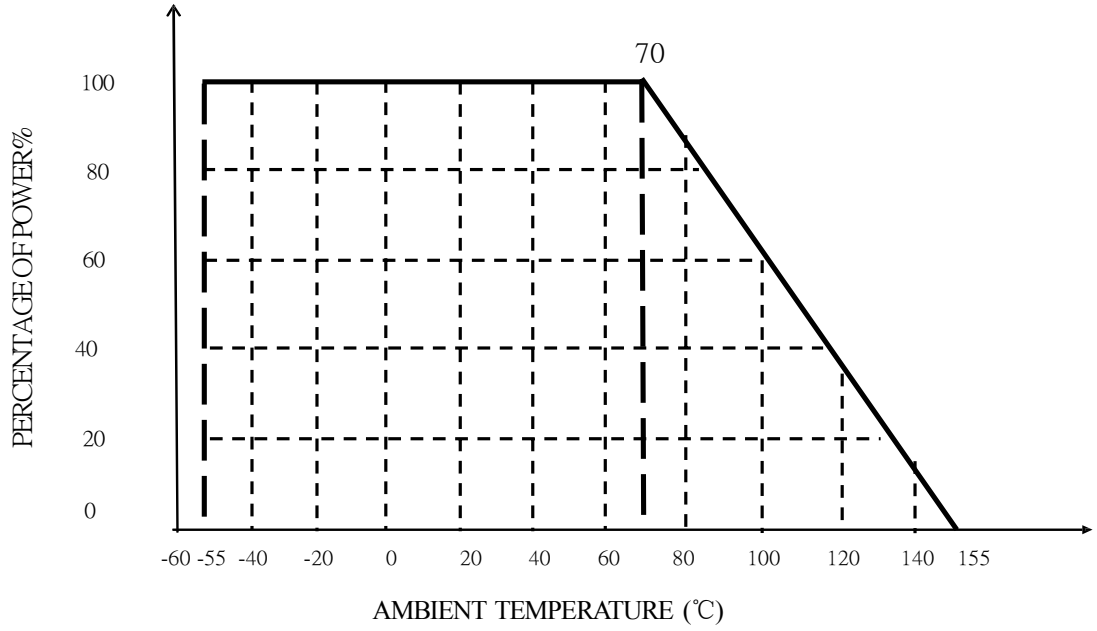
TABLE - 3

DESCRIPTION	MF-25S	MF-50S	MF-100S	MF-200S	MF-300S	MF-500S
STANDARD RESISTANCE VALUE RANGE	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ
POWER RATING AT 70℃	1/4W	1/2W	1W	2W	3W	5W
*MAX WORKING VOLTAGE	200V	250V	350V	500V	500V	500V
*MAX OVERLOAD VOLTAGE	400V	500V	700V	1,000V	1,000V	1,000V
OPERATING TEMPERATURE RANGE	-55℃~+135℃	-55℃~+135℃	-55℃~+135℃	-55℃~+155℃	-55℃~+155℃	-55℃~+155℃
TEMPERATURE COEFFICIENT	±100PPM	±100PPM	±100PPM	±100PPM	±100PPM	±100PPM
TEMPERATURE CYCLING	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)
INSULATION RESISTANCE	MIN.1,000 MΩ	MIN.1,000 MΩ	MIN.1,000 MΩ	MIN.1,000 MΩ	MIN.1,000 MΩ	MIN.1,000 MΩ
HUMIDITY	±(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)
SHORT-TIME OVERLOAD	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)
SOLDERABILITY	MIN.95% COVERED	MIN.95% COVERED	MIN.95% COVERED	MIN.95% COVERED	MIN.95% COVERED	MIN.95% COVERED
VIBRATION	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)	±(0.5%R+0.05Ω)
LOAD LIFE	±(2%R+0.05Ω)	±(2%R+0.05Ω)	±(2%R+0.05Ω)	±(2%R+0.05Ω)	±(2%R+0.05Ω)	±(2%R+0.05Ω)

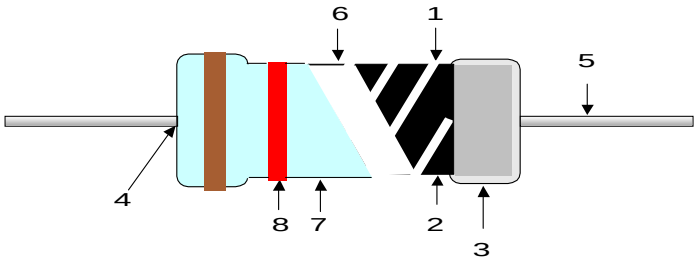
* The working voltage is calculated based on the resistance value following the formula of V=√(P*R) or to its maximum extent as indicated above

* The overload voltage is calculated based on the resistance value following the formula of V= 2.5 *√(P*R) or to its maximum extent as indicated above

5. POWER DERATING CURVE



6. STRUCTURAL DIAGRAM



(1)	CORE	CERAMIC ROD
(2)	RESISTANCE FILM	METAL FILM
(3)	TERMINAL	TINNED IRON CAP
(4)	CONNECTION	ELECTRIC WELDING
(5)	LEAD WIRE	SOLDERED OR TINNED ANNEALED COPPER WIRE
(6)	UNDERCOAT	ELECTRIC INSULATION VARNISH
(7)	FINISHING PAINTING	ELECTRIC INSULATION PAINT
(8)	INDICATION	COLOR CODE INK

TABLE – 4

RATED RESISTANCE VALUE	MAX. TESTING VOLTAGE	
	0.25W	0.5W / 1W / 2W / 3W/5W
0.1Ω≦R<10Ω	0.3	0.3
10Ω≦R<100Ω	0.3	1
100Ω≦R<1KΩ	1	3
1KΩ≦R<10KΩ	3	10
10KΩ≦R<100KΩ	10	30
100KΩ≦R<1MΩ	30	50
1MΩ≦R	50	100

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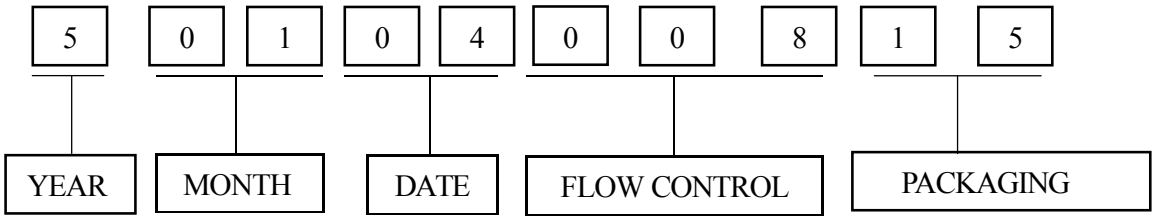
7. CHARACTERISTICS

TABLE – 5

DC RESISTANCE VALUE	TEST METHOD MIL-STD-202 ITEM 303	VOLTAGE AS TABLE -4. TEMPERATURE 25 ±2℃. 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 ±(0.5%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℃ 10±1SEC. AFTER TESTING, LEAVE FOR 3 HOURS. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(0.5%R+0.05 Ω).
TEMPERATURE CYCLE	TEST METHOD MIL-STD-202 ITEM 107	LOW SIDE TEMPERATURE : -55℃±3℃ 30MIN. ROOM TEMPERATURE : 10-15MIN. HIGH SIDE TEMPERATURE :+125℃±3℃ 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 ±(0.5%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 ±(0.5%R+0.05 Ω).
LOAD LIFE	TEST METHOD MIL-STD-202 ITEM 108	70°±2℃. 1000 HOURS RATED VOLTAGE (1.5 HOURS ON, 0.5 HOUR OFF). THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN ±(2%R+0.05 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 ±(1.5%R+0.05 Ω).

8. LOT NO. (Coding System)



9. PACKING DATA

TABLE – 6

TYPE	PER BAG	PER BOX	PER CARTON	INNER BOX			EXPORT CARTON		
				L	W	H	L	W	H
MF25S	1,000PCS	10,000PCS	100,000PCS	/	/	/	305mm	198mm	180mm
MF50S	1,000PCS	10,000PCS	100,000PCS	/	/	/	310mm	295mm	245mm
MF100S	500PCS	5,000PCS	50,000PCS	/	/	/	280mm	280mm	260mm
MF200S	500PCS	4,000PCS	40,000PCS	/	/	/	310mm	295mm	245mm
MF300S	250PCS	2,000PCS	20,000PCS	/	/	/	280mm	280mm	260mm
MF500S	100PCS	1,000PCS	10,000PCS	/	/	/	280mm	280mm	260mm