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

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DATA SHEET

Name of Product : METAL FILM FIXED RESISTOR – (PR型)

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. MFPR 2015

Rev. No.: 2015 May.(1)

PRODUCT : METAL FILM FIXED RESISTOR

TYPE : MF 50/100/200/300

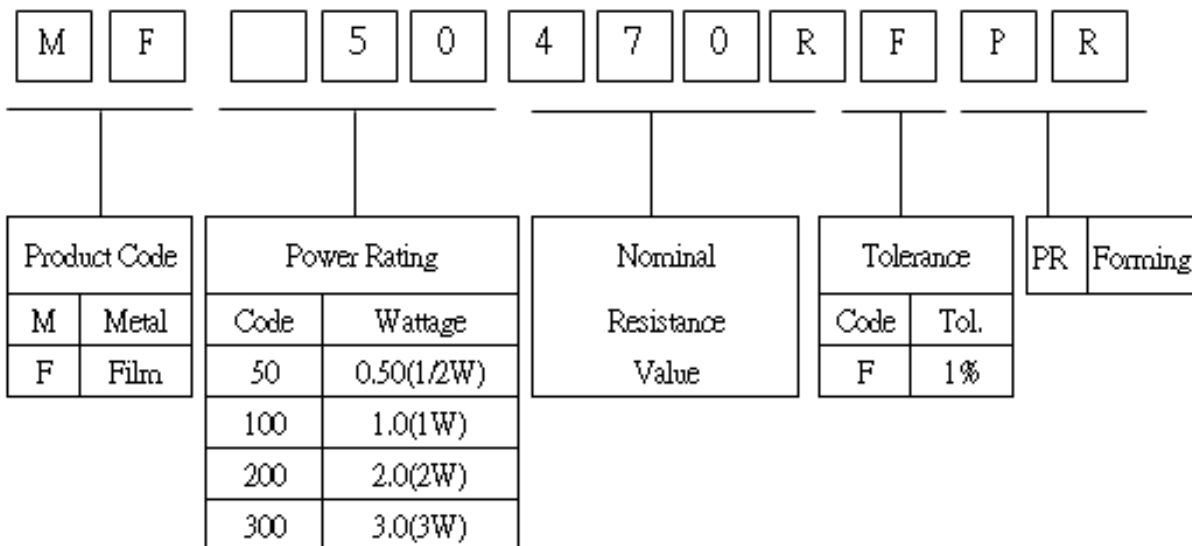
1. APPLICABLE SCOPE :

- 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 :



2.2 Explanation :

Part Number

Description

MF 50 470R F PR

Metal Film Fixed Resistor , 1/2W , 470Ω , +/-1% tolerance , forming.

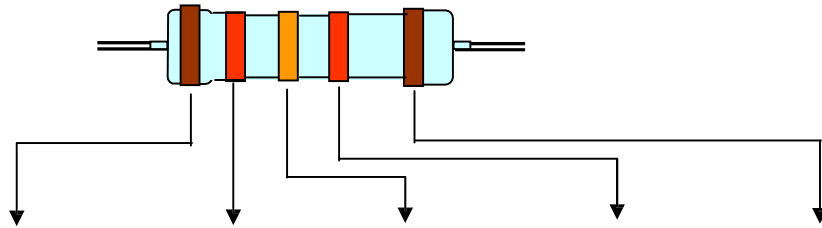
*Remarks : The power rating of 1/8W is coded as 125

PRODUCT : METAL FILM FIXED RESISTOR	TYPE : MF 50/100/200/300
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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



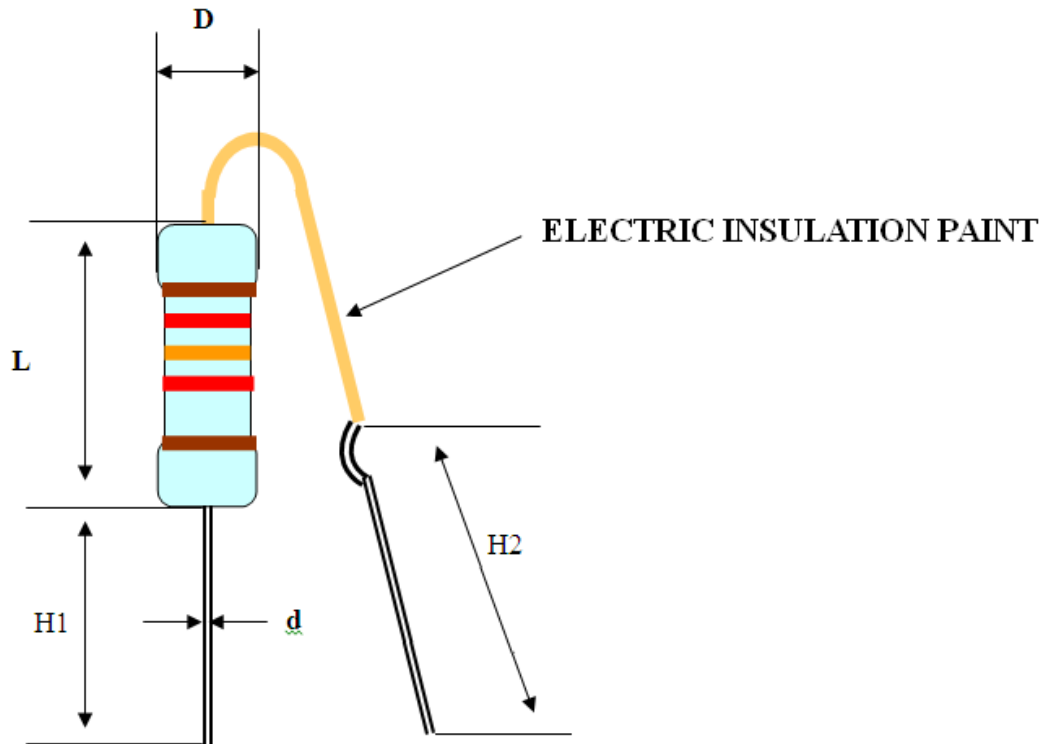
COLOR	1 ST DIGIT	2 ND DIGIT	3 RD DIGIT	MULTIPLIER	TOLERANCE
BLACK	0	0	0	1	
BROWN	1	1	1	10	F(±1%)
RED	2	2	2	100	
ORANGE	3	3	3	1,000	
YELLOW	4	4	4	10,000	
GREEN	5	5	5	100,000	
BLUE	6	6	6	1000,000	
VIOLET	7	7	7	10,000,00	
GREY	8	8	8		
WHITE	9	9	9		
GOLD				0.1	
SILVER				0.01	

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3. DIMENSIONS :

TABLE - 2



TYPE	BODY		LEAD WIRE		
	L	D	H1	H2	d
MF50	9.0±1.0	3.0±0.5	(4~4.5) ±0.5	(4~4.5) ±0.5	0.48 ±0.05
MF100	11.0±1.5	4.0±0.5	(4~4.5) ±0.5	(4~4.5) ±0.5	0.55 ±0.05
MF200	15.0±1.5	5.0±0.5	(4~4.5) ±0.5	(4~4.5) ±0.5	0.70 ±0.05
MF300	17.0 ± 1.5	6.0 ± 0.5	(4~4.5) ±0.5	(4~4.5) ±0.5	0.70 ±0.05

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4. SPECIFICATIONS

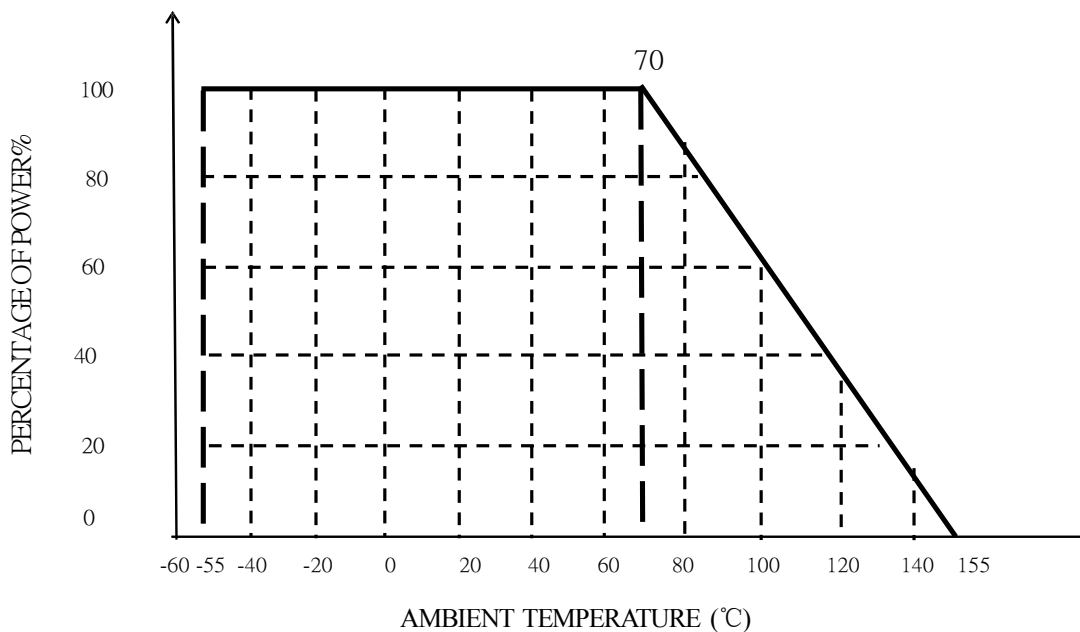
TABLE - 3

DESCRIPTION	MF-50	MF-100	MF-200	MF-300
STANDARD RESISTANCE VALUE RANGE	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ
POWER RATING AT 70°C	1/2W	1W	2W	3W
*MAX WORKING VOLTAGE	350V	500V	500V	500V
*MAX OVERLOAD VOLTAGE	700V	1,000V	1,000V	1,000V
OPERATING TEMPERATURE RANGE	-55°C ~ +135°C	-55°C ~ +155°C	-55°C ~ +155°C	-55°C ~ +155°C
TEMPERATURE COEFFICIENT	±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)
INSULATION RESISTANCE	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)
SHORT-TIME OVERLOAD	±(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
VIBRATION	±(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)

* 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

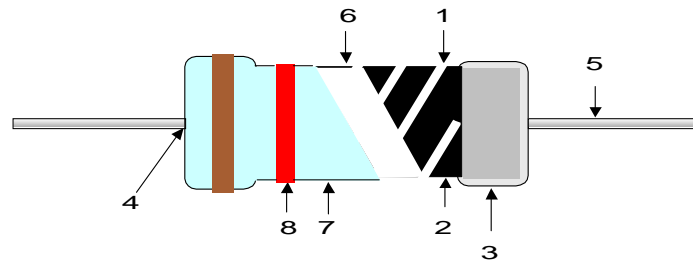
5. POWER DERATING CURVE



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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
	0.5W / 1W / 2W / 3W
$0.1\Omega \leq R < 10\Omega$	0.3
$10\Omega \leq R < 100\Omega$	1
$100\Omega \leq R < 1K\Omega$	3
$1K\Omega \leq R < 10K\Omega$	10
$10K\Omega \leq R < 100K\Omega$	30
$100K\Omega \leq R < 1M\Omega$	50
$1M\Omega \leq R$	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 ±(0.5%R+0.05 Ω).
INTERMITTENT OVERLOAD	TEST METHOD JIS C 5202 ITEM 5.8	RATED VOLTAGE×4 TIMES, (1 SEC ON, 25 SEC OFF). ABOVE TEST 10,000 CYCLES. 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°C 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°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 ±(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°C. 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).

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8. LOT NO. (Coding System)

