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HONG KONG RESISTORS MANUFACTORY

(Wholly owned by Charter Technology 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 : FLAMEPROOF METAL FILM FIXED RESISTOR – TAPING

Spec. No. MFFTB2013
Rev. No.: 2013Aug.(2)

PRODUCT : FLAMEPROOF METAL FILM FIXED RESISTOR	**TYPE : MFF 125/25/50/100/200/300**

1. APPLICABLE SCOPE :

1.1 This specification is for use in FLAMEPROOF METAL FILM FIXED RESISTORS

1.2 Characteristics and specifications are according to those of :

MIL-STD-105
MIL-STD-202
JIS C 5202
GB 5731-85
IEC 115-2-1-1982
QC 400101

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	F	1	0	0	4	7	0	R	J	T	B						

Product Code	
M	Metal
F	Film
F	Flameproof

Power Rating	
Code	Wattage
125	0.125(1/8W)
25	0.25(1/4W)
50	0.50(1/2W)
100	1.0(1W)
200	2.0(2W)
300	3.0(3W)

Nominal Resistance Value

Tolerance	
Code	Tol.
F	1%
J	5%

Packaging	
TB	Taping in box

Lead Wire diameter	
Code	Size
	125: 0.40mm
043	125: 0.43mm
	25: 0.40mm
048	25: 0.48mm
	50: 0.48mm
060	50: 0.60mm
	100: 0.60mm
075	100: 0.75mm
	200: 0.70mm
075	200: 0.75mm
	300: 0.70mm
075	300: 0.75mm

Taping width	
Code	Size
	52mm
26	26mm
62	62mm
73	73mm

2.2 Explanation :

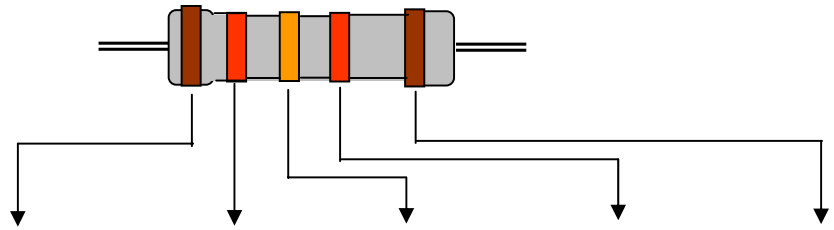
Part Number	Description
MFF 100 470R J TB	Flameproof Metal Film Fixed Resistor , 1W, 470Ω, +/-5%, tape in box, Lead Wire diameter: d=0.60mm, Taping width=52mm.

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

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	

PRODUCT : FLAMEPROOF METAL FILM FIXED RESISTOR | **TYPE : MFF 125/25/50/100/200/300**

3. DIMENSIONS :

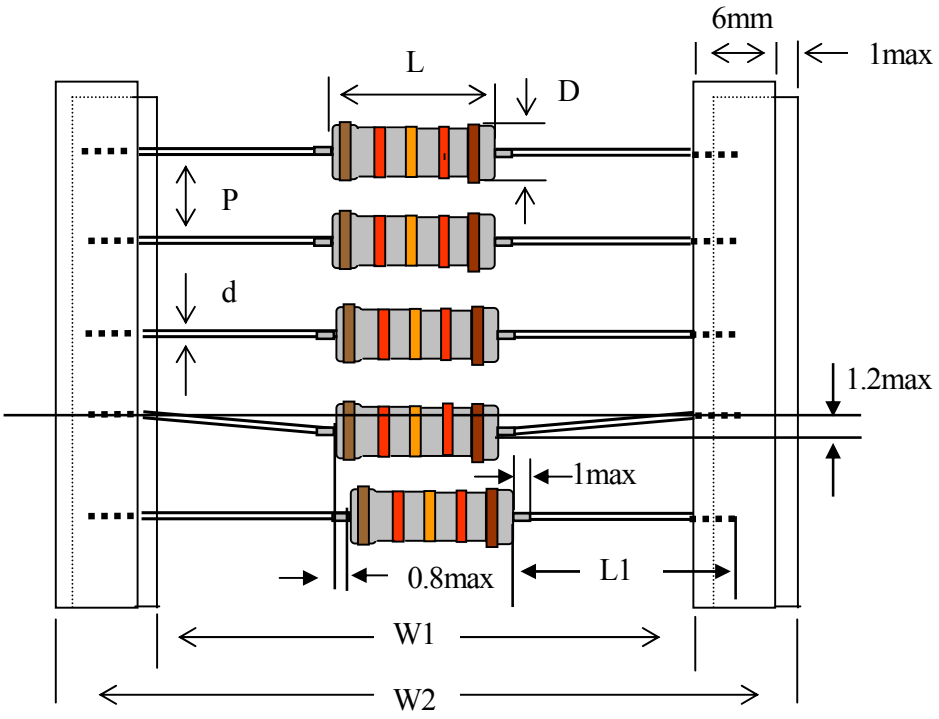


TABLE - 2

Unit : mm

TYPE	L	D	d	P	W1	W2	L1
MFF125	3.5±0.5	1.7±0.5	0.40 (0.43)±0.05	5±0.3	26±1	38±1	15±1
					52±1	64±1	27±1
MFF 25	6.0±1.0	2.3±0.5	0.40 (0.48)±0.05	5±0.3	26±1	38±1	14±1
					52±1	64±1	26±1
MFF 50	9.0±1.0	3.0±0.5	0.48 (0.60)±0.05	5±0.3	26±1	38±1	12±1
					52±1	64±1	26±1
MFF 100	11.0±1.5	4.0±0.5	0.60(0.75)±0.05	5±0.3	52±1	64±1	25±1
					62±1.5	74±1.5	30±1
MFF 200	15.0±1.5	5.0±0.5	0.70(0.75)±0.05	10±0.3	52±1	64±1	23±1
					73±1.5	85±1.5	34±1
MFF 300	17.0 ± 1.5	6.0 ± 0.5	0.70(0.75)±0.05	10±0.3	73±1.5	85±1.5	33±1

PRODUCT : FLAMEPROOF METAL FILM FIXED RESISTOR | **TYPE : MFF 125/25/50/100/200/300**

4. SPECIFICATIONS

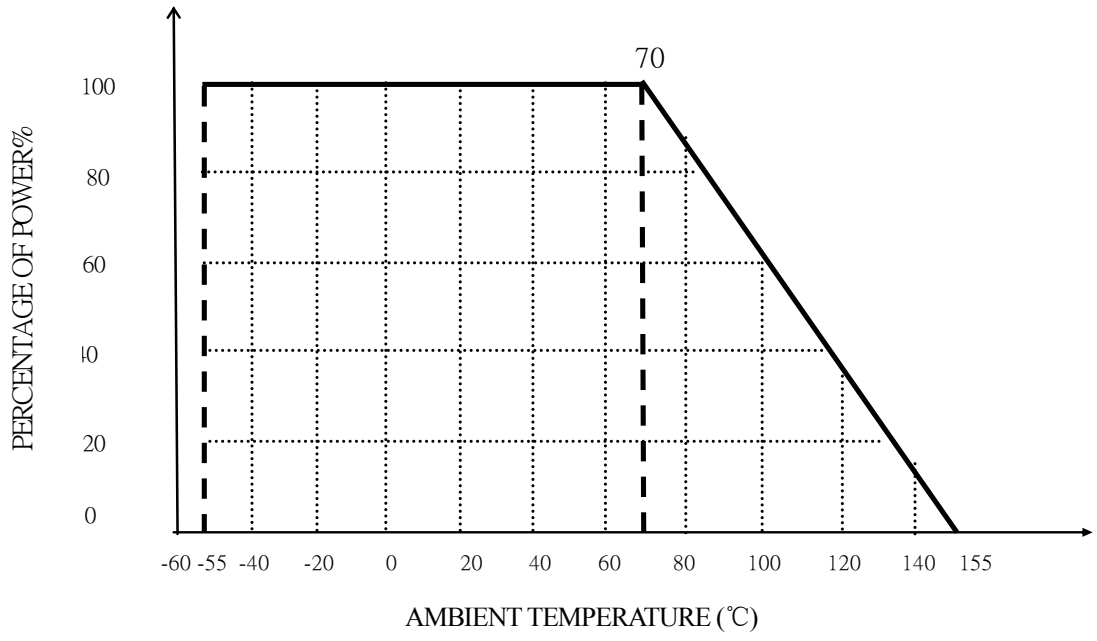
TABLE – 3

DESCRIPTION	MFF-125	MFF-25	MFF-50	MFF-100	MFF-200	MFF-300
STANDARD RESISTANCE VALUE RANGE	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ
POWER RATING AT 70℃	1/8W	1/ 4W	1/2W	1W	2W	3W
*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)

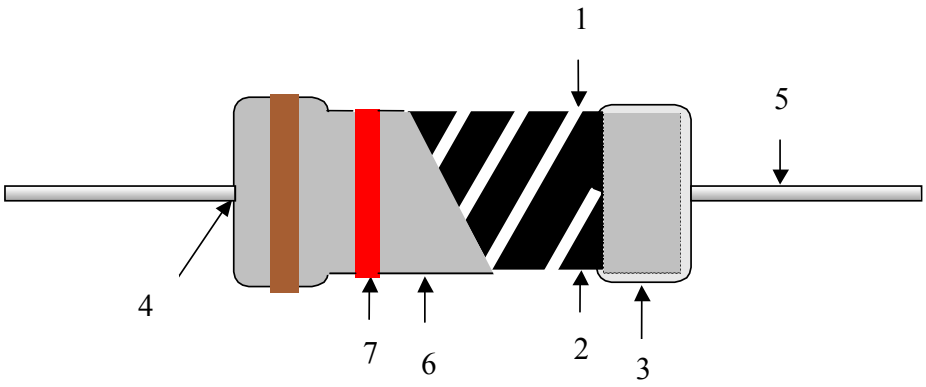
* The working voltage is calculated based on the resistance value following the formula of V=√(P*R) or to its maximum extent as indicated above

* 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 CURVES



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)	FINISHING PAINTING	FLAMEPROOF SILICON PAINT
(7)	INDICATION	COLOR CODE INK

TABLE – 4

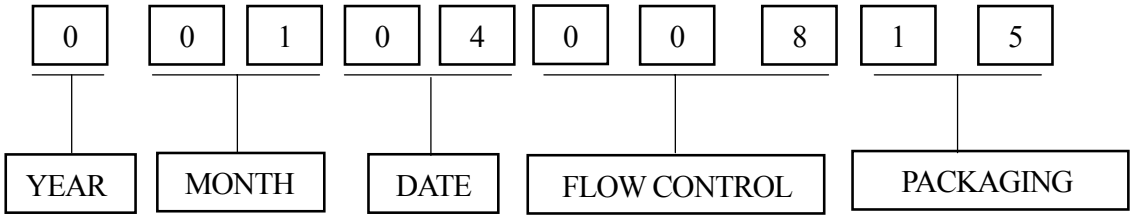
RATED RESISTANCE VALUE	MAX. TESTING VOLTAGE	
	0.125W / 0.25W	0.5W / 1W / 2W / 3W
0.1Ω≦R<10Ω	0.3	0.3
10Ω≦R<100Ω	0.3	1
100Ω≦R<1KΩ	1	3
1KΩ≦R<10KΩ	3	10
10KΩ≦R<100KΩ	10	30
100KΩ≦R<1MΩ	30	50
1MΩ≦R	50	100

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. TAPING RESISTOR - PACKING DATA

TABLE – 6

TYPE	PER BOX	PER CARTON	INNER BOX			EXPORT CARTON		
			L	W	H	L	W	H
MFF125	5,000PCS	50,000PCS	255mm	81mm	72mm	419mm	264mm	170mm
MFF25	5,000PCS	50,000PCS	260mm	75mm	105mm	410mm	270mm	238mm
MFF50	2,000PCS	20 ,000PCS	258mm	78mm	80mm	423mm	270mm	355mm
MFF100	1,000PCS	10,000PCS	255mm	81mm	72mm	419mm	264mm	170mm
MFF200	1,000PCS	10,000PCS	260mm	78mm	87mm	422mm	270mm	200mm
MFF300	500PCS	5,000PCS	255mm	100mm	90mm	515mm	267mm	203mm