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## DATA SHEET

**Name of Product :** METAL FILM FIXED RESISTOR – TAPING

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

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

Prepared by	Inspected by	Audited by	Authorized by
customer approval	customer approval	customer approval	customer approval

**Spec. No. MFTB 2015**

**Rev. No.: 2015 May.(1)**

**PRODUCT : METAL FILM FIXED RESISTOR**

**TYPE : MF 125/25/50/100/200/300**

**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 :

M	F	1	0	0	0	R	2	7	F	T	B								
Product Code		Power Rating		Nominal Resistance Value		Tolerance		Packaging		Lead Wire diameter		Taping width							
M	Metal	Code	Wattage	Resistance Value		Code	Tol.	TB	in box	Code	Size	Code	Size						
F	Film	125	0.125(1/8W)			F	1%					125:	0.40mm		52mm				
		25	0.25(1/4W)			J	5%			043	125:	0.43mm	26	26mm					
		50	0.50(1/2W)								25:	0.40mm	62	62mm					
		60	0.60(1/2W)							048	25:	0.48mm	73	73mm					
		100	1.0(1W)								50:	0.48mm							
		200	2.0(2W)								100:	0.55mm							
		300	3.0(3W)								070	100:	0.70mm						
												200:	0.70mm						
											075	200:	0.75mm						
												300:	0.70mm						
											075	300:	0.75mm						

2.2 Explanation :

Part Number

Description

MF100 0R27 F TB

Metal Film Fixed Resistor , 1W , 0.27Ω , +/-1% , tape in box,

Lead Wire diameter: d=0.55mm, Taping width=52mm.

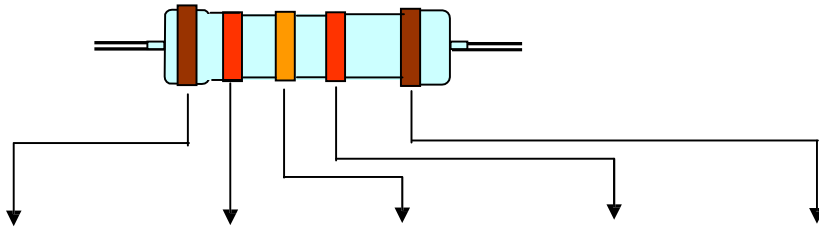
\*Remarks : The power rating of 1/8W is coded as 125

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

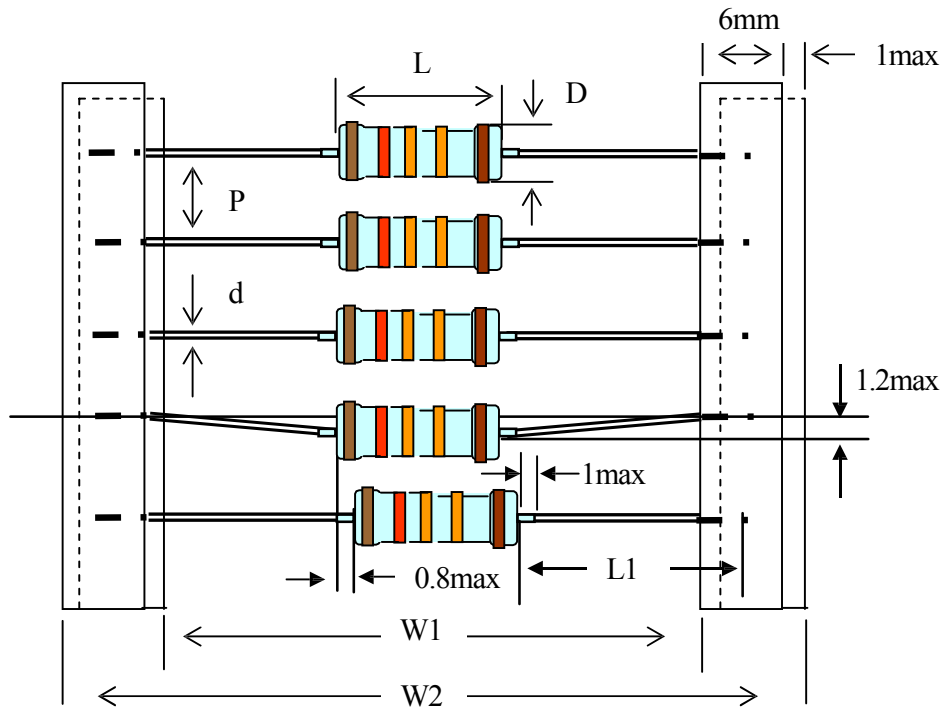
## 2.3 Color code indication

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	3 <sup>RD</sup> 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	L	D	d	P	W1	W2	L1
MF125	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
MF25	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
MF50	9.0±1.0	3.0±0.5	0.48 (0.60)±0.05	5±0.3	26±1	38±1	13±1
					52±1	64±1	26±1
MF100	11.0±1.5	4.0±0.5	0.55(0.70)±0.05	5±0.3	52±1	64±1	25±1
					62±1.5	74±1.5	30±1
MF200	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
MF300	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

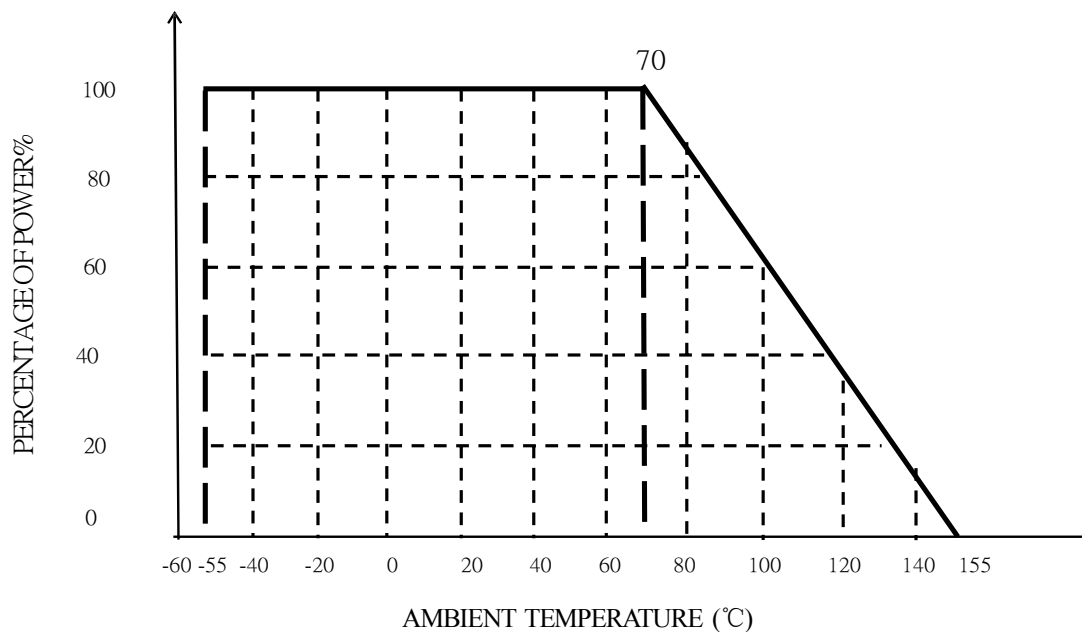
**PRODUCT : METAL FILM FIXED RESISTOR****TYPE : MF 125/25/50/100/200/300****4. SPECIFICATIONS**

TABLE - 3

DESCRIPTION	MF-125	MF-25	MF-50	MF-100	MF-200	MF-300
STANDARD RESISTANCE VALUE RANGE	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ	10Ω - 1MΩ
POWER RATING AT 70°C	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°C~+135°C	-55°C~+135°C	-55°C~+135°C	-55°C~+155°C	-55°C~+155°C	-55°C~+155°C
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  $V=\sqrt{P \cdot R}$  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

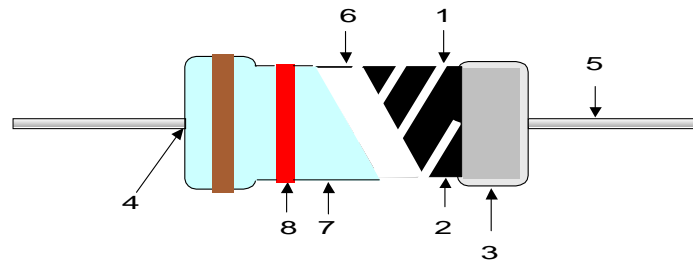
**5. POWER DERATING CURVE**

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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	
	0.125W / 0.25W	0.5W / 1W / 2W / 3W
$0.1\Omega \leq R < 10\Omega$	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

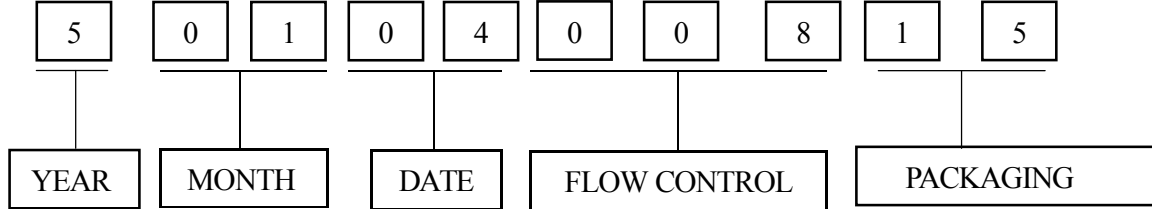
TABLE – 5

DC RESISTANCE VALUE	TEST METHOD MIL-STD-202 ITEM 303	VOLTAGE AS TABLE -4. TEMPERATURE 25 $\pm$ 2°C. AQL 0.25%.
VOLTAGE WITHSTAND	TEST METHOD MIL-STD-202 ITEM 301	V-BLOCK METHOD. VOLTAGE AS TABLE -3 $\times$ 1.42, 1 MIN. AQL 1%.
SHORT TIME OVERLOAD	TEST METHOD JIS C 5202 ITEM 5.5	RATED VOLTAGE $\times$ 2.5 TIMES OR MAX.WORKINGVOLTAGE $\times$ 2 TIMES. ABOVE TEST 5 SEC. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN $\pm(0.5\%R+0.05 \Omega)$ .
INTERMITTENT OVERLOAD	TEST METHOD JIS C 5202 ITEM 5.8	RATED VOLTAGE $\times$ 4 TIMES, (1 SEC ON, 25 SEC OFF). ABOVE TEST 10,000 CYCLES. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN $\pm(0.5\%R+0.05 \Omega)$ .
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 $\pm(0.5\%R+0.05 \Omega)$ .
SOLDERABILITY OF TERMINAL	TEST METHOD MIL-STD-202 ITEM 210	260 $\pm$ 5°C 10 $\pm$ 1SEC. AFTER TESTING, LEAVE FOR 3 HOURS. THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN $\pm(0.5\%R+0.05 \Omega)$ .
TEMPERATURE CYCLE	TEST METHOD MIL-STD-202 ITEM 107	LOW SIDE TEMPERATURE : -55°C $\pm$ 3°C 30MIN. ROOM TEMPERATURE : 10-15MIN. HIGH SIDE TEMPERATURE : +125°C $\pm$ 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 $\pm(0.5\%R+0.05 \Omega)$ .
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 $\pm(0.5\%R+0.05 \Omega)$ .
LOAD LIFE	TEST METHOD MIL-STD-202 ITEM 108	70 $\pm$ 2°C. 1000 HOURS RATED VOLTAGE (1.5 HOURS ON, 0.5 HOUR OFF). THE RESISTANCE VALUE CHANGE RATE SHALL BE WITHIN $\pm(2\%R+0.05 \Omega)$ .
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 $\pm(1.5\%R+0.05 \Omega)$ .

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



**9. PACKING DATA**

TABLE – 6

TYPE	PER BOX	PER CARTON	INNER BOX			EXPORT CARTON		
			L	W	H	L	W	H
MF125	5,000PCS	50,000PCS	255mm	81mm	72mm	419mm	264mm	170mm
MF25	5,000PCS	50,000PCS	260mm	75mm	105mm	410mm	270mm	238mm
MF50	2,000PCS	20,000PCS	258mm	78mm	80mm	423mm	270mm	355mm
MF100	1,000PCS	10,000PCS	255mm	81mm	72mm	419mm	264mm	170mm
MF200	1,000PCS	10,000PCS	260mm	78mm	87mm	422mm	270mm	200mm
MF300	500PCS	5,000PCS	255mm	100mm	90mm	515mm	267mm	203mm

