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香港柴湾安业街十二号长益工业大厦**10**字楼**A**座

HONG KONG RESISTORS MANUFACTORY

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

AN ISO 9001:2015 CERTIFIED MANUFACTURER

AN ISO 45001: 2018 MANUFACTURER

AN ISO 14001: 2015 MANUFACTURER

10A Cheong Yick Industrial Building, 12 On Yip St., Chai Wan, Hong Kong

Tel.: (852)28962782 Fax.: (852) 28965291

国内工厂一 : 东莞溢辉电子有限公司

地址 : 广东省东莞市大岭山镇大岭山大道396号4栋801室

Tel.: (86 769)83315373 Fax.: (86 769) 83311603

国内工厂二:恒辉电阻(益阳)有限公司

地址 : 湖南省益阳市资阳区长春工业园五福路

Tel.: (86 737)3800399 Fax.: (86 737) 3800199

国内工厂三: 南充溢辉电子科技有限公司

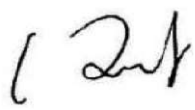
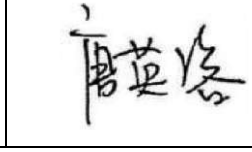
地址: 四川省南充市高坪区青莲街道金辉路8号

Tel.: (86 817) 3315 388 Fax.:(86 817)3315 388

DATASHEET

Name of Product: CARBON FILM FIXED RESISTOR - TAPING

Sales Executive:_____ Date:_____

制造 Prepared by	品质 Quality by	业务 Sales by	核准 Authorized by
			
客户 customer approval	客户 customer approval	客户 customer approval	客户 customer approval

Spec. No. CF 2023

Rev. No.: 2023 Oct

PRODUCT : CARBON FILM FIXED RESISTOR | **TYPE : CF 125/25/50/100/200/300**

1. APPLICABLE SCOPE :

1.1 This data sheet is for use in CARBON FILM FIXED RESISTORS

1.2 Characteristics and specifications are according to those of :

JIS C 5201

1.3 RoHS and REACH compliantproduct

2. PART NUMBER

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

2.1 Make Up :

C	F	1	0	0	4	7	0	R	J	T	B					

Product Code	
C	Carbon
F	Film

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.
G	2%
J	5%

Packaging	
	Taping
TB	in box

Lead Wire diameter	
Code	Size
	125：0.40mm
043	125：0.43mm
	25：0.40mm
045	25：0.45mm
048	25：0.48mm
	50：0.48mm
060	50：0.60mm
	100：0.55mm
070	100：0.70mm
	200：0.70mm
075	200：0.75mm
	300：0.70mm
075	300：0.75mm

Tapingwidth	
Code	Size
	52mm
26	26mm
62	62mm
73	73mm

2.2 Explanation :

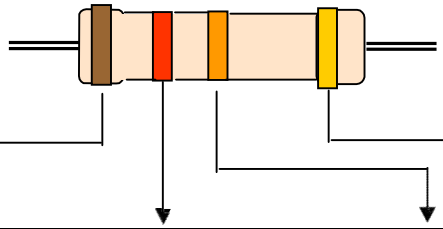
Part Number	Description
CF 100 470R J TB	Carbon Film Fixed Resistor , 1W , 470Ω , +/-5%, tape in box, Lead Wire diameter: d=0.55mm, Taping width=52mm.

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

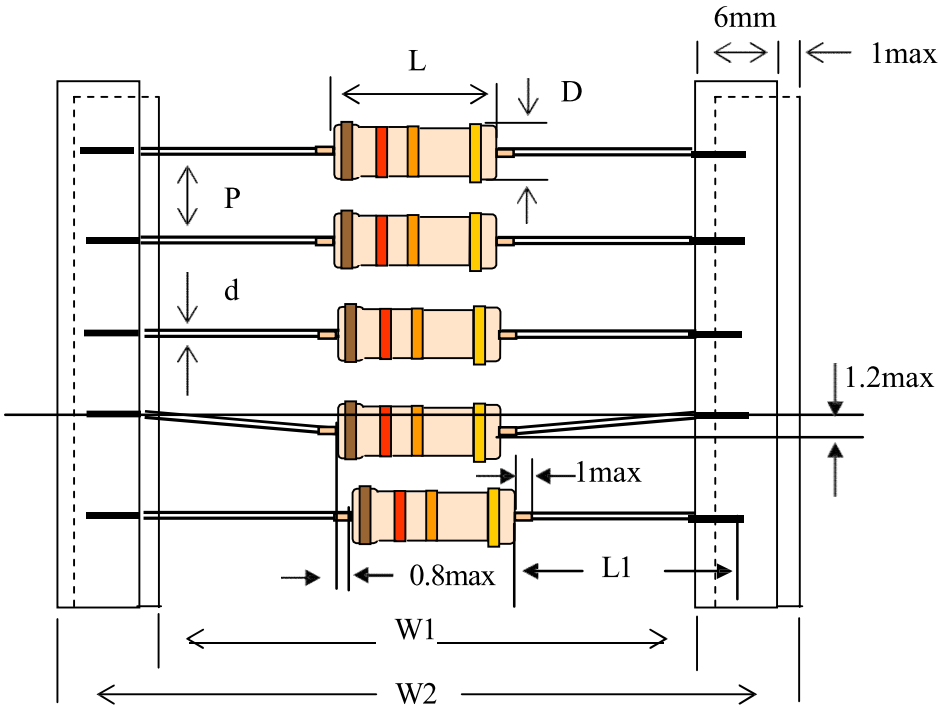


COLOR	1ST DIGIT	2ND DIGIT	MULTIPLIER	TOLERANCE
BLACK	0	0	1	
BROWN	1	1	10	
RED	2	2	100	G(±2%)
ORANGE	3	3	1,000	
YELLOW	4	4	10,000	
GREEN	5	5	100,000	
BLUE	6	6	1000,000	
VIOLET	7	7	10,000,000	
GREY	8	8		
WHITE	9	9		
GOLD			0.1	J (±5%)
SILVER			0.01	

PRODUCT : CARBON FILM FIXED RESISTOR | **TYPE : CF125/25/50/100/200/300**

3. DIMENSIONS :

TABLE - 2



Unit : mm

TYPE	L	D	d	P	W1	W2	L1
CF125	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
CF25	6.0±1.0	2.3±0.5	0.40 (0.45)(0.48)±0.05	5±0.3	26±1	38±1	14±1
					52±1	64±1	26±1
CF50	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
CF100	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
CF200	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
CF300	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 : CARBON FILM FIXED RESISTOR | **TYPE : CF125/25/50/100/200/300**

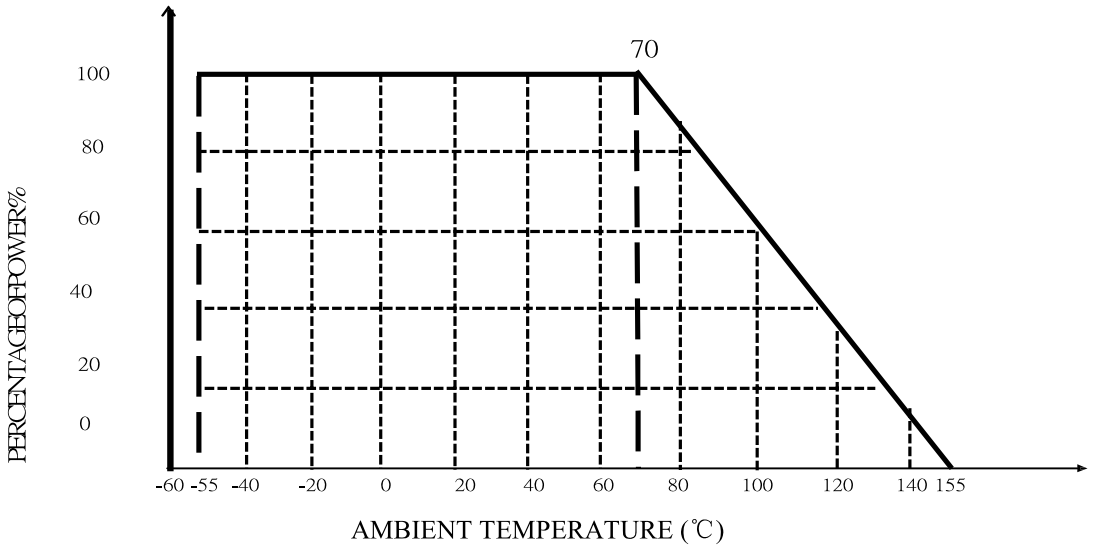
4. SPECIFICATIONS

TABLE - 3

DESCRIPTION	CF125	CF25	CF50	CF100	CF200	CF300
STANDARD RESISTANCE VALUE RANGE	1Ω-4.7MΩ	1Ω-50MΩ	1Ω-4.7MΩ	1Ω-4.7MΩ	1Ω-4.7MΩ	1Ω-4.7MΩ
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 ≦10Ω 10Ω- 220KΩ 230KΩ- 1MΩ OVER 1MΩ	 ±300PPM 0~ -500PPM 0~ -1,000PPM 0~ -1,500PPM	 ±300PPM 0~ -500PPM 0~ -1,000PPM 0~ -1,500PPM	 ±300PPM 0~ -500PPM 0~ -700PPM 0~ -1,000PPM	 ±300PPM 0~ -400PPM 0~ -600PPM 0~ -1,000PPM	 ±300PPM 0~ -400PPM 0~ -600PPM 0~ -1,000PPM	 ±300PPM 0~ -400PPM 0~ -600PPM 0~ -1,000PPM
TEMPERATURE CYCLING	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)
VOLTAGE COEFFICIENT	MAX.50PPM/V	MAX.50PPM/V	MAX.50PPM/V	MAX.50PPM/V	MAX.50PPM/V	MAX.50PPM/V
INSULATION RESISTANCE	MIN.1,000MΩ	MIN.1,000MΩ	MIN.1,000MΩ	MIN.1,000MΩ	MIN.1,000MΩ	MIN.1,000MΩ
HUMIDITY	±3%	±3%	±3%	±3%	±3%	±3%
SHORT-TIME OVERLOAD	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)
SOLDERABILITY	MIN.95% COVERED	MIN.95% COVERED	MIN.95% COVERED	MIN.95% COVERED	MIN.95% COVERED	MIN.95% COVERED
VIBRATION	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)	±(1R%+0.05Ω)
LOAD LIFE	MAX.±5%	MAX.±5%	MAX.±5%	MAX.±5%	MAX.±5%	MAX.±5%

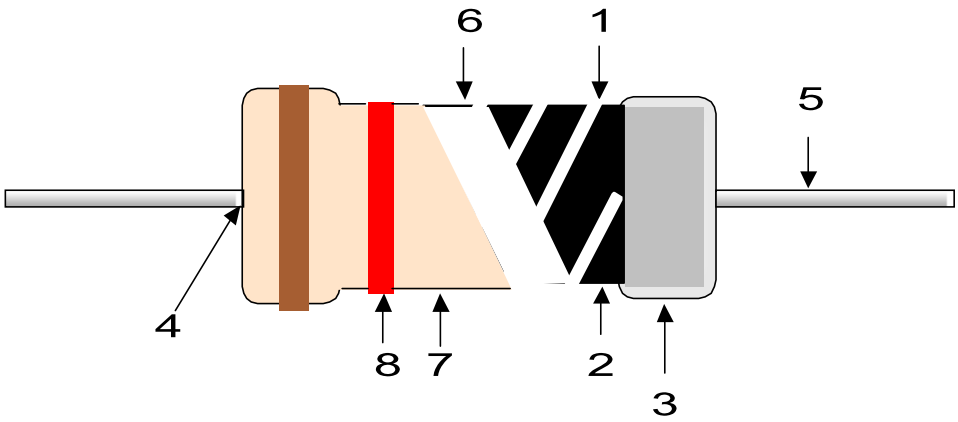
* The working voltage is calculated based on the resistance value following the formula of V=√(P*R) or to its maximum extent as indicated above
* The overload voltage is calculated based on the resistance value following the formula of V= 2.5 *√(P*R) or to its maximum extent as indicated above

5. POWER DERATING CURVE



PRODUCT : CARBON FILM FIXED RESISTOR	TYPE : CF125/25/50/100/200/300

6. STRUCTURAL DIAGRAM



(1)	CORE	CERAMIC ROD
(2)	RESISTANCE FILM	CARBON 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
0.1Ω≦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

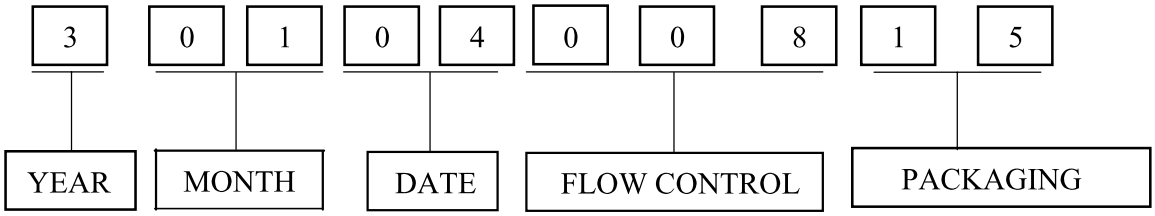
PRODUCT : CARBON FILM FIXED RESISTOR | **TYPE : CF125/25/50/100/200/300**

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 5201 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 ±(1%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 ±(1%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 ±(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%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 ±(5%R+0.1 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 ±(5%R+0.1 Ω).

8. LOT NO. (Coding System)



9. PACKING DATA

TYPE	PER BOX	PER CARTON	INNER BOX			EXPORT CARTON		
			L	W	H	L	W	H
CF125	5,000PCS	50,000PCS	256mm	80mm	69mm	421mm	264mm	161mm
CF25	5,000PCS	50,000PCS	260mm	77mm	100mm	413mm	270mm	227mm
CF50	2,000PCS	20,000PCS	258mm	78mm	80mm	423mm	270mm	355mm
CF100	1,000PCS	10,000PCS	255mm	81mm	72mm	419mm	264mm	170mm
CF200	1,000PCS	10,000PCS	260mm	78mm	87mm	422mm	270mm	200mm
CF300	500PCS	5,000PCS	255mm	100mm	90mm	515mm	267mm	203mm

