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HONG KONG RESISTORS MANUFACTORY

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

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AN ISO 45001: 2018 MANUFACTURER

AN ISO 14001: 2015 MANUFACTURER

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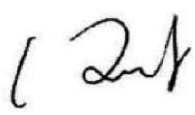
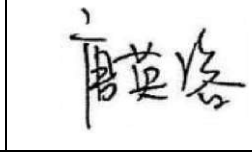
DATASHEET

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
			
JSC PROMELECTRONICS			
客户 customer approval	客户 customer approval	客户 customer approval	客户 customer approval

Spec. No. CFTB 2023

Rev. No.: 2023 Aug

PRODUCT : CARBON FILM FIXED RESISTOR | **TYPE : CF 166/25**

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 :

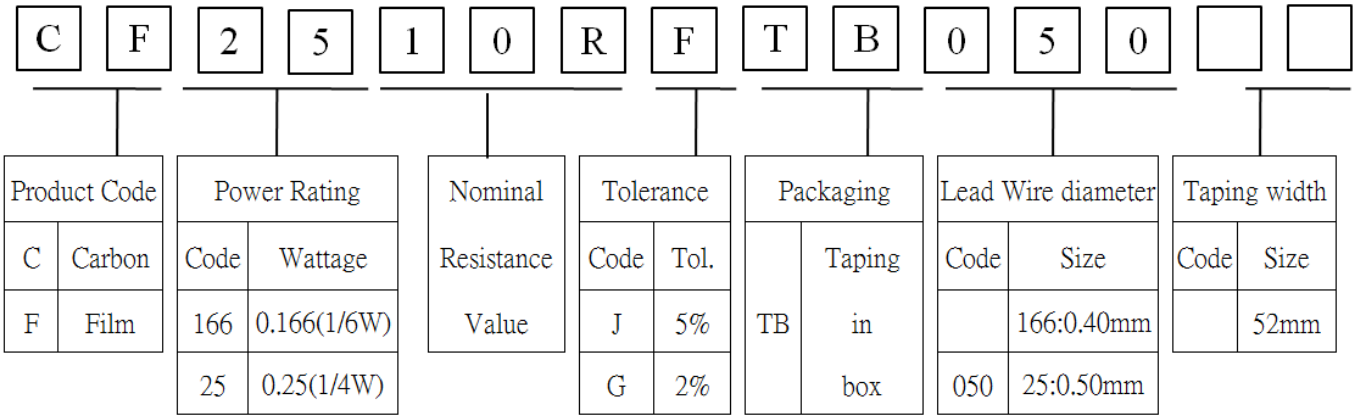
JIS C 5202

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 :



Product Code	
C	Carbon
F	Film

Power Rating	
Code	Wattage
166	0.166(1/6W)
25	0.25(1/4W)

Nominal Resistance Value

Tolerance	
Code	Tol.
J	5%
G	2%

Packaging	
	Taping
TB	in
	box

Lead Wire diameter	
Code	Size
	166:0.40mm
050	25:0.50mm

Taping width	
Code	Size
	52mm

2.2 Explanation :

Part Number	Description
CF 25 10R J TB	Carbon Film Fixed Resistor , 1/2W , 10Ω , +/-5%, tape in box, Lead Wire diameter: d=0.50mm, Taping width=52mm.

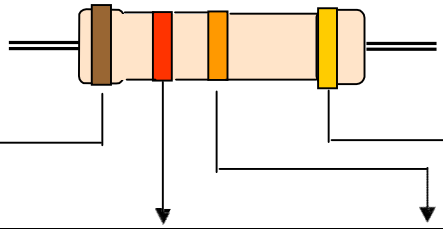
Remarks : The power rating of 1/6W is coded as 166.

PRODUCT : CARBON FILM FIXED RESISTOR	**TYPE : CF 166/25**

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

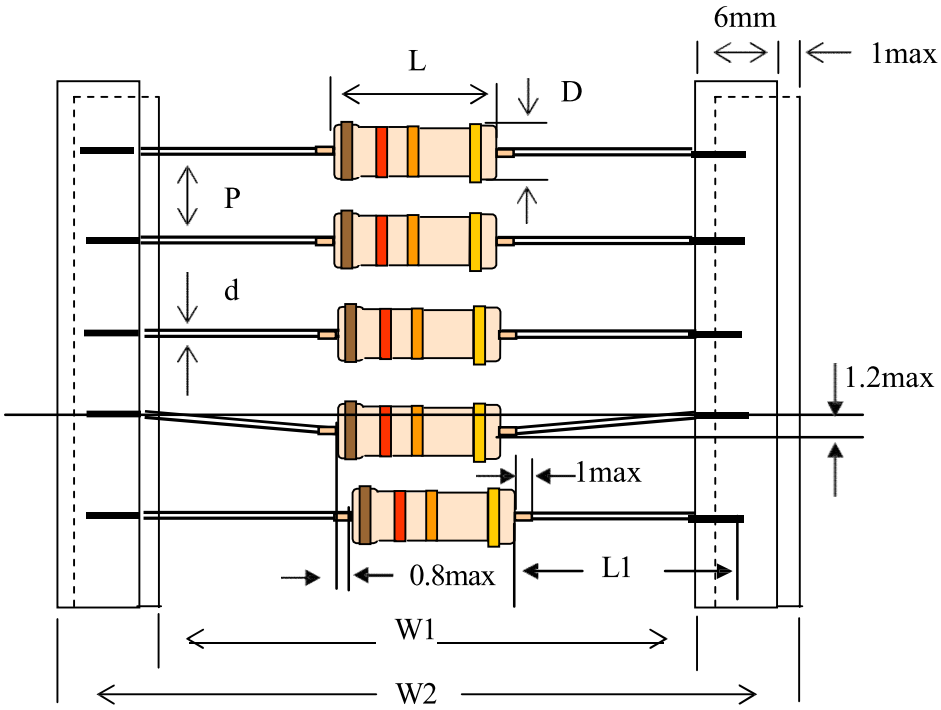


COLOR	1ST DIGIT	2ND DIGIT	MULTIPLIER	TOLERANCE
BLACK	0	0	1	
BROWN	1	1	10	
RED	2	2	100	G(±2%)
ORANGE	3	3	1,000	
YELLOW	4	4	10,000	
GREEN	5	5	100,000	
BLUE	6	6	1000,000	
VIOLET	7	7	10,000,000	
GREY	8	8		
WHITE	9	9		
GOLD			0.1	J (±5%)
SILVER			0.01	

PRODUCT : CARBON FILM FIXED RESISTOR | **TYPE : CF 166/25**

3. DIMENSIONS :

TABLE - 2



Unit : mm

TYPE	L	D	d	P	W1	W2	L1
CF166	3.5±0.5	1.7±0.5	0.40±0.05	5±0.3	52±1	64±1	27±1
CF25	6.0±1.0	2.3±0.5	0.50±0.05	5±0.3	52±1	64±1	26±1

PRODUCT : CARBON FILM FIXED RESISTOR | **TYPE : CF 166/25**

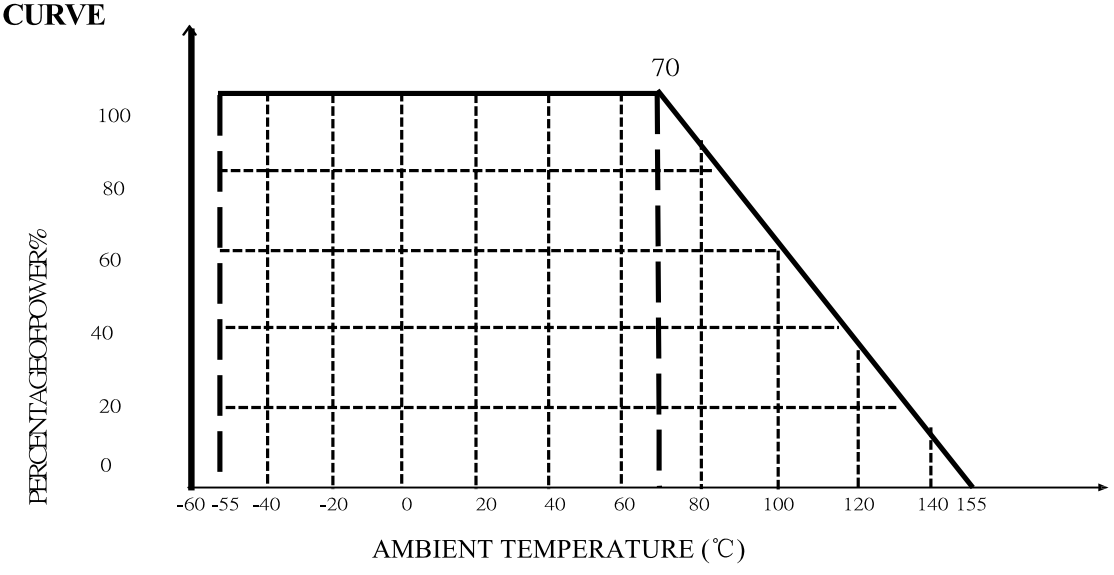
4. SPECIFICATIONS

TABLE - 3

DESCRIPTION	CF125	CF25
STANDARD RESISTANCE VALUE RANGE	1Ω-4.7MΩ	1Ω-4.7MΩ
POWER RATING AT 70℃	1/8W	1/4W
*MAX WORKING VOLTAGE	200V	250V
*MAX OVERLOAD VOLTAGE	400V	500V
OPERATING TEMPERATURE RANGE	-55℃~+135℃	-55℃~+135℃
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
TEMPERATURE CYCLING	±(1R%+0.05Ω)	±(1R%+0.05Ω)
VOLTAGE COEFFICIENT	MAX.50PPM/V	MAX.50PPM/V
INSULATION RESISTANCE	MIN.1,000MΩ	MIN.1,000MΩ
HUMIDITY	±3%	±3%
SHORT-TIME OVERLOAD	±(1R%+0.05Ω)	±(1R%+0.05Ω)
SOLDERABILITY	MIN.95% COVERED	MIN.95% COVERED
VIBRATION	±(1R%+0.05Ω)	±(1R%+0.05Ω)
LOAD LIFE	MAX.±5%	MAX.±5%

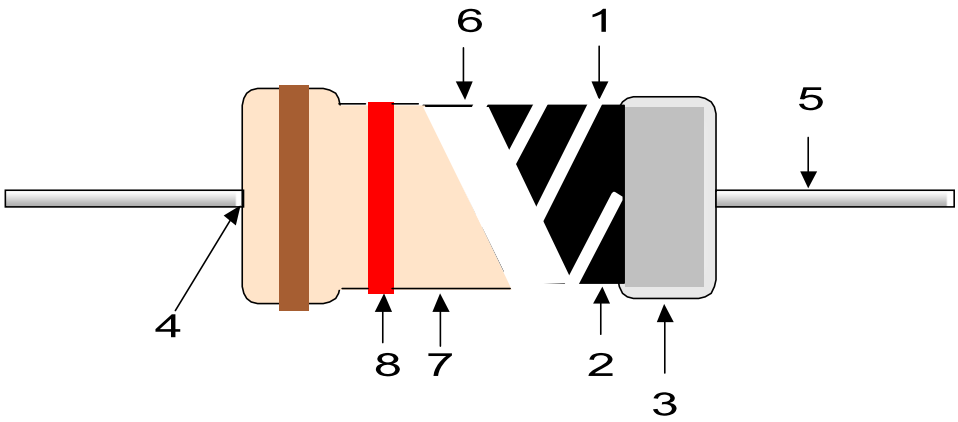
* The working voltage is calculated based on the resistance value following the formula of V=√(P*R) or to its maximum extent as indicated above
* The overload voltage is calculated based on the resistance value following the formula of V= 2.5 *√(P*R) or to its maximum extent as indicated above

5. POWER DERATING CURVE



PRODUCT : CARBON FILM FIXED RESISTOR	TYPE : CF 166/25

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

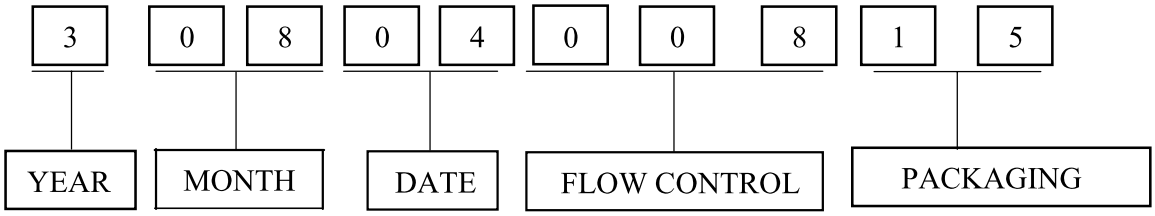
RATED RESISTANCE VALUE	MAX. TESTING VOLTAGE
	0.125W / 0.25W
0.1Ω≦R<10Ω	0.3
10Ω≦R<100Ω	0.3
100Ω≦R<1KΩ	1
1KΩ≦R<10KΩ	3
10KΩ≦R<100KΩ	10
100KΩ≦R<1MΩ	30
1MΩ≦R	50

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
CF166	5,000PCS	50,000PCS	256mm	80mm	69mm	421mm	264mm	161mm
CF25	5,000PCS	50,000PCS	260mm	77mm	100mm	413mm	270mm	227mm