Innovative Service Around the Globe **YAGEO**

DATA SHEET

CARBON FILM RESISTORS

Professional, Flameproof
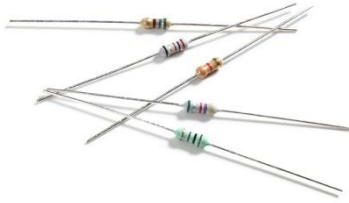### FC0 Series

±2%, ±5%

0.4W AND 0.6W

RoHS compliant & Halogen Free

YAGEO

APPLICATIONS

- All general purpose applications
- Power applications

FEATURES

- Wide resistance range
- Miniature & high power rating
- High stability
- Flameproof coating equivalent to UL-94V-0
- RoHS compliant & halogen-free

ORDERING INFORMATION

Part number of the professional, flameproof carbon film resistor are identified by the series, power rating, tolerance, packing, temperature coefficient, forming and resistance value.

PART NUMBER

FC0	**204**	**J**	**T**	**-**	**52-**	**100R**
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) SERIES

FC0 Series

(2) POWER RATING

204 = 0.4W   207 = 0.6W

(3) TOLERANCE

G = ±2%   J = ±5%

(4) PACKAGING

R = Reel Pack   B = Bulk

T = Box Pack

(5) TEMPERATURE COEFFICIENT OF RESISTANCE

- = Based on spec , See page 3 Table 2

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(6) FORMING

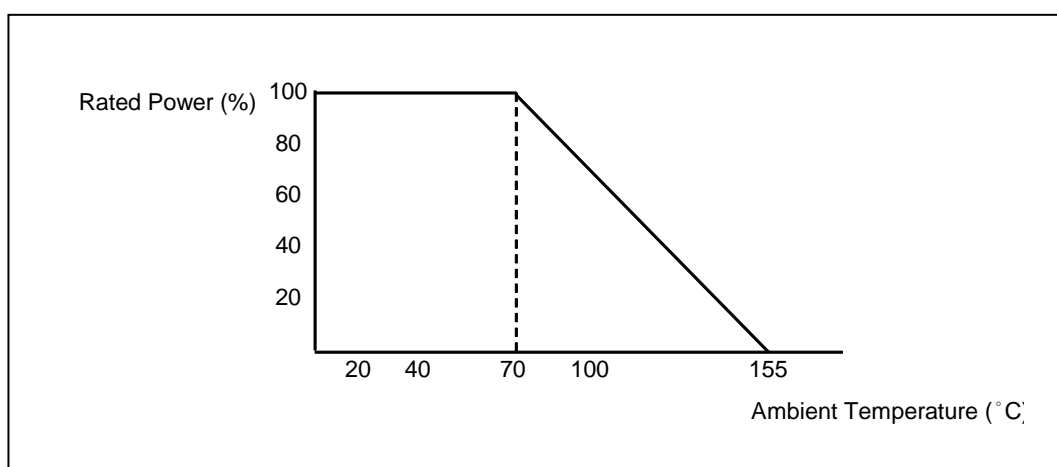|	
26- = 26mm	FT = FT Type Forming
52- = 52.4mm	PN = PANAsert
M = M-Type Forming	AV = AVIsert
MT = MT Type Forming	

(7) RESISTANCE VALUE

E24 Series
Example:
100R = 100Ω, 10K = 10,000Ω, 1M = 1,000,000Ω

DIMENSIONS

Unit: mm

Miniature	L	ψD	H	ψd
FC0204	3.4 ± 0.3	1.9 ± 0.2	28 ± 2.0	0.45 ± 0.05
FC0207	6.3 ± 0.5	2.4 ± 0.2	28 ± 2.0	0.55 ± 0.05

DERATING CURVE

ELECTRICAL CHARACTERISTICS

TABLE 1

CHARACTERISTICS	FC0204	FC0207
Power Rating at 70 °C	0.4W	0.6W
Maximum Working Voltage	200V	300V
Maximum Overload Voltage	400V	600V
Voltage Proof on Insulation	300V	500V
Resistance Range	1Ω ~10M for E24 series value	
Operating Temp. Range	- 55°C to +155°C	
Temperature Coefficient	See table 2	

Note: For resistance value out of above range is by request.

TABLE 2 TEMPERATURE COEFFICIENT

TYPE	Temp. Coefficient ppm/°C		
	Under 100KΩ	100K ~ 1MΩ	1M ~ 10MΩ
FC0204 FC0207	-500 ~ +300	-700~0	-1500~0

TEST AND REQUIRMENTS

TEST	TEST METHOD	PROCEDURE	APPRAISE
Short Time Overload	IEC 60115-1 4.13	2.5 times RCWV for 5 sec.(Not more than maximum overload voltage)	±0.75%+0.05Ω
Voltage Proof on Insulation	IEC 60115-1 4.7	In V-Block for 60 sec. test voltage as above table	No Breakdown
Temperature Coefficient	IEC 60115-1 4.8	Between -55°C to +155°C	By Type
Insulation Resistance	IEC 60115-1 4.6	In V-Block for 60 sec.	>1,000MΩ
Solderability	IEC 60115-1 4.17	245±5°C for 3±0.5 Sec.	95% Min. coverage
Solvent Resistance of Marking	IEC 60115-1 4.30	IPA for 5±0.5 Min. with ultrasonic	No deterioration of coatings and markings
Robustness of Terminations	IEC 60115-1 4.16	Direct load for 10 Sec. in the direction of the terminal leads	≥2.5Kg(24.5N)
Periodic-pulse Overload	IEC 60115-1 4.39	4 times RCWV(or Umax., whichever less) 10,000 cycles (1 Sec. on, 25 Sec.off)	±1.0%+0.05Ω
Damp Heat Steady State	IEC 60115-1 4.24	40±2°C,90-95% RH for 56 days, loaded with 0.1 times RCWV(or Umax., whichever less)	±3.0%+0.05Ω
Endurance at 70°C	IEC 60115-1 4.25	70±2°C at RCWV(or Umax., whichever less) for 1,000 Hr.(1.5 Hr.on,0.5 Hr. off)	±3.0%+0.05Ω
Temperature Cycling	IEC 60115-1 4.19	-55°C ➔ Room Temp. ➔ +155°C ➔ Room Temp.(5 cycles)	±1.0%+0.05Ω
Resistance to Soldering Heat	IEC 60115-1 4.18	260±3°C for 10±1 Sec., immersed to a point 3±0.5mm from the body	±1.0%+0.05Ω
Accidental Overload Test	IEC 60115-1 4.26	4 times RCWV(or Umax., whichever less) for 1 Min.	No evidence of flaming or arcing

Note:

RCWV (Rated Continuous Working Voltage):

The DC or AC (rms) continuous working voltage corresponding to the rated power is determined by the following formula:

$V=\sqrt{(P \times R)}$
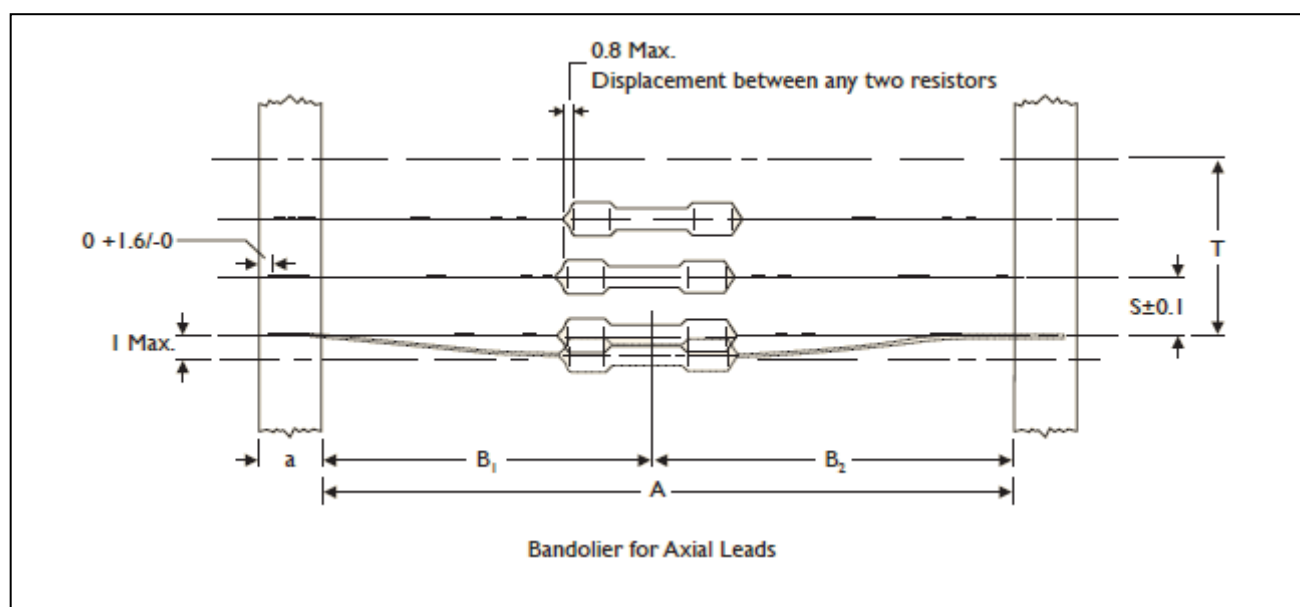or max. working voltage whichever is less

Where

V=Continuous rated DC or
    AC (rms) working voltage (V)
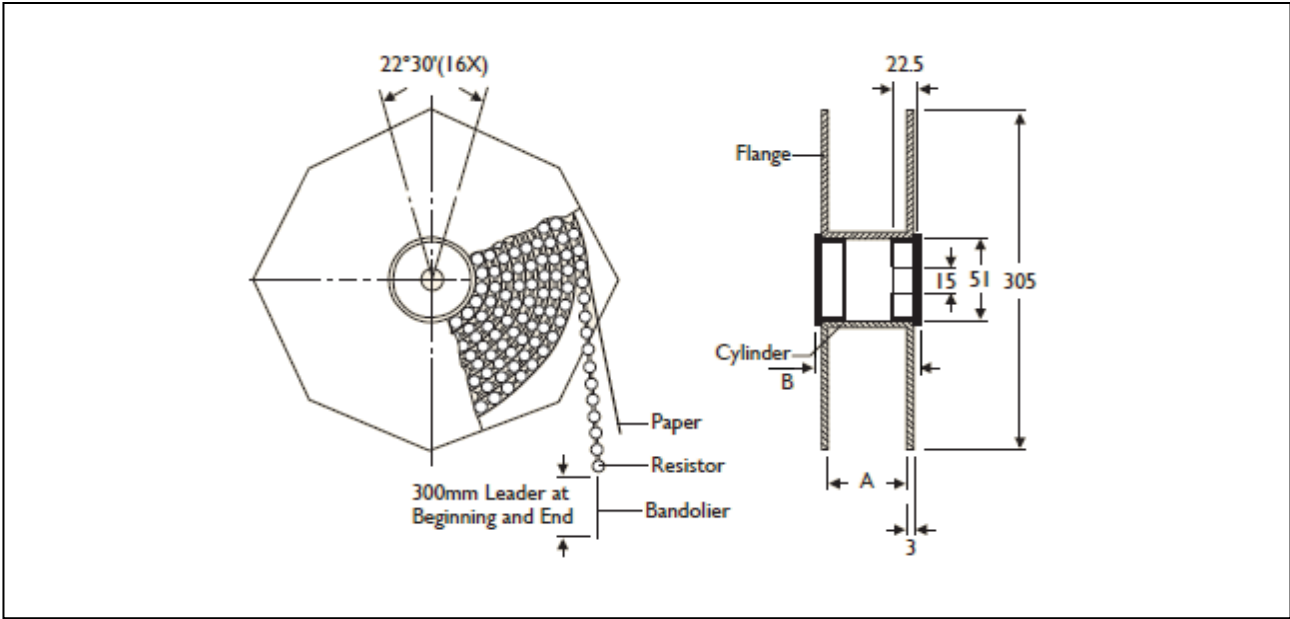
P=Rated power (W)

R=Resistance value (Ω)

AXIAL / REEL TAPE SPECIFICATION

Bandolier for Axial Leads

Unit: mm

Miniature	a	A	B1-B2 (Max.)	S (spacing)	T (max. deviation of spacing)
FC0204	6 ± 0.5	52.4 ± 1.5	1.2	5	1 mm per 10 spacing, 0.5 mm per 5 spacing
		26.0 ± 1.5	1		
FC0207	6 ± 0.5	52.4 ± 1.5	1.2	5	
		26.0 ± 1.5	1		

TAPE ON REEL PACKING

TYPE   Unit: mm/piece

Miniature	Across Flange(A)	B	Quantity Per Reel
FC0204	66.5	75.5	5,000
FC0207	66.5	75.5	5,000

TAPE ON BOX PACKING
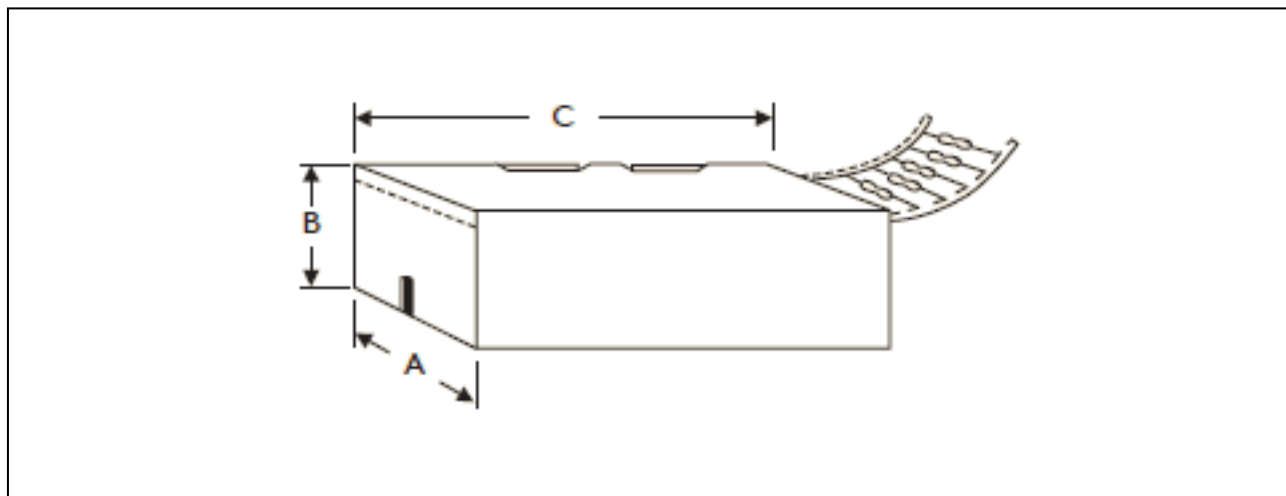
TYPE	DIMENSIONS			Unit: mm/piece
Miniature	A	B	C	Quantity Per Box
FC0204	48	102	255	5,000
FC0204	81	70	260	5,000
FC0207	48	102	255	5,000
FC0207	81	104	260	5,000

BULK PACKING

Miniature	Piece/Per Inner Box	Bag/Per Inner Box	Piece Per Bag
FC0204	10,000	10	1,000
FC0207	10,000	10	1,000

FORMING

M TYPE
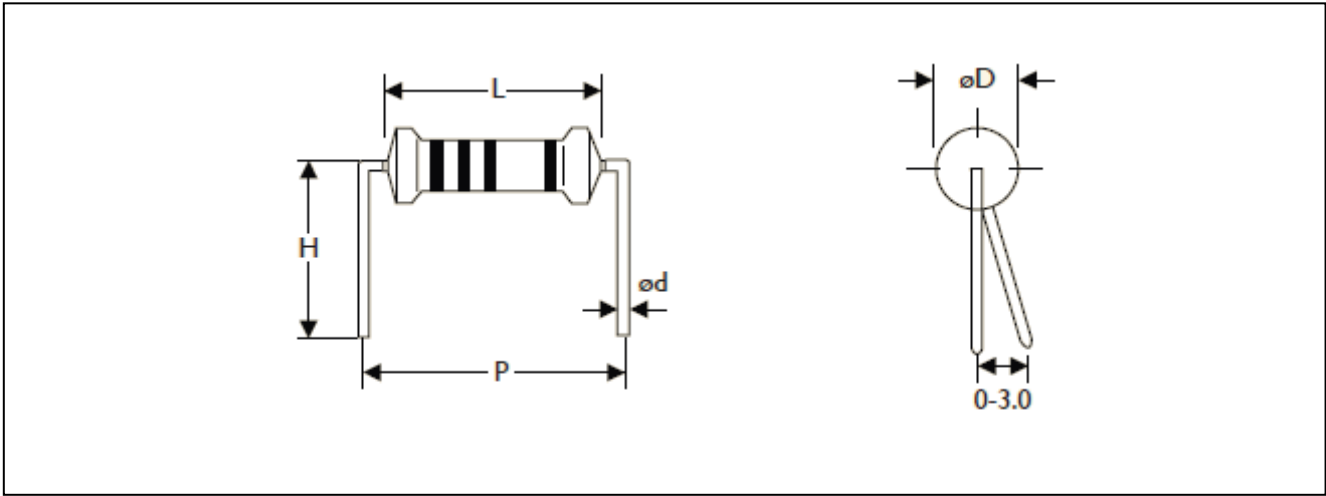
TYPE	DIMENSIONS				Unit: mm
Miniature	L	ψD	ψd	P	H
FC0204	3.4± 0.3	1.9 ± 0.2	0.45 ± 0.05	6.0 ± 1	10.0 ±1
FC0207	6.3 ± 0.5	2.4 ± 0.2	0.55 ± 0.05	10.0 ± 1	10.0 ± 1

FT TYPE (Taping Pack)
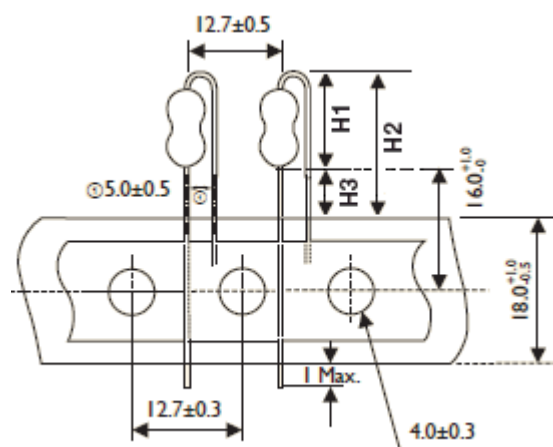
TYPE	DIMENSIONS		Unit: mm
Miniature	**H1 Max.**	**H2 Max.**	**H3 Max.**
FC0207	10	18.5	8.5

MT TYPE (Taping Pack)

Rated Watts : 0.4W
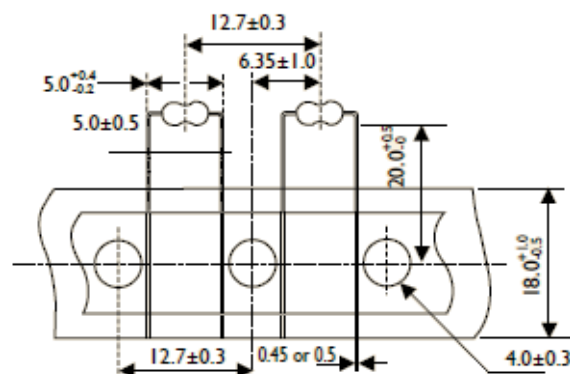
PN TYPE (Taping Pack)
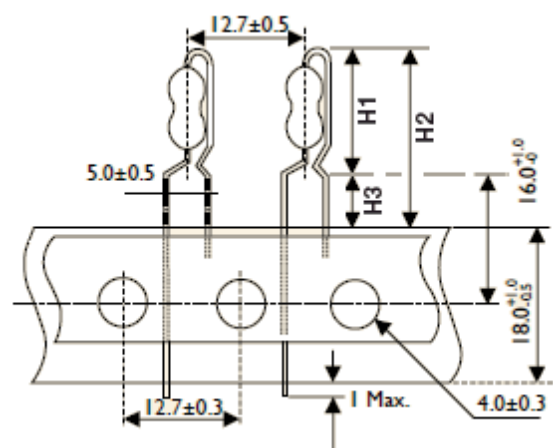
TYPE	DIMENSIONS		Unit: mm
Miniature	**H1 Max.**	**H2 Max.**	**H3 Max.**
FC0207	13	21.5	8.5

AV TYPE (Taping Pack)
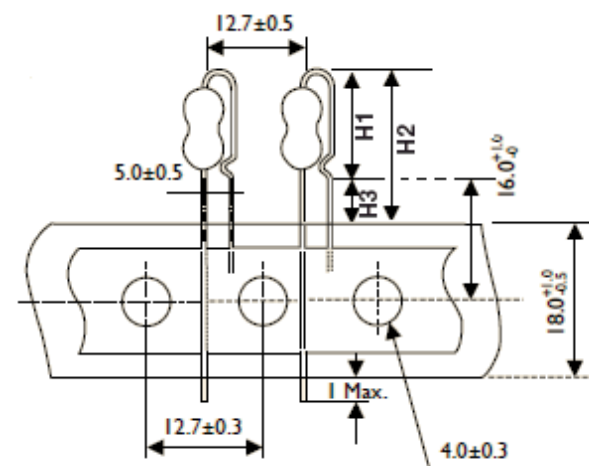
TYPE	DIMENSIONS		Unit: mm
Miniature	**H1 Max.**	**H2 Max.**	**H3 Max.**
FC0207	11.5	20	8.5

MARKING

4-BAND-CODE

±2%, ±5%

COLOR	1st BAND	2nd BAND	3rd BAND	MULTIPLIER	TOLERANCE
BLACK	0	0	0	1Ω	
BROWN	1	1	1	10Ω	
RED	2	2	2	100Ω	± 2% (G)
ORANGE	3	3	3	1KΩ	
YELLOW	4	4	4	10KΩ	
GREEN	5	5	5	100K	
BLUE	6	6	6	1MΩ	
VIOLET	7	7	7	10MΩ	
GREY	8	8	8	0.001Ω	
WHITE	9	9	9	0.0001Ω	
GOLD				0.1Ω	± 5 % (J)
SILVER				0.01Ω	

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 1	Aug.31, 2023	-	- Updated legal disclaimer
Version 0	Aug.2, 2021	-	- First issue of this specification

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