Carbon Film Resistors

Professional & Flame-Proof Type

Miniature Style [FC0 Series]



INTRODUCTION

The FCO Series Carbon Film Professional & Flame-Proof Resistors are manufactured by coating a homogeneous film of pure carbon on high grade ceramic rods. After a helical groove has been cut in the resistive layer, tinned connecting leads of electrolytic copper are welded to the end-caps. The resistors are coated with layers of green color lacquer.

FFATURES

Power Rating	0.4W, 0.6W
Resistance Tolerance	±2%, ±5%
T.C.R.	see Table I
Flameproof Multi-layer Coating Meets	UL-94V-0
Flameproof Feature Meets Overload Test	UL-1412

DERATING CLIRVE

For resistors operated in ambient temperatures above 70°C, power rating must be derated in accordance with the curve below.

Rated Load (%)



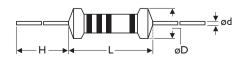
Ambient Temperature (°C)

TABLE I TEMPERATURE COFFFICIENT

STYLE	TEMP. COEFFICIE	TEMP. COEFFICIENT (ppm/°C)			
	under 100KΩ	Ι00ΚΩ - ΙΜΩ	ΙΜΩ - Ι0ΜΩ		
FC0204, FC0207	-500~300	-700~0	-1,500~0		

DIMENSIONS

Unit: mm



STYLE	DIMENSION			
Miniature	L	øD	Н	ød
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

Note:			
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ELECTRICAL CHARACTERISTICS

STYLE	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	I Ω - 10M Ω & for E24 series value			
Operating Temp, Range	-55°C to +155°C			
Temperature Coefficient	see Table I			

Note: Special value is available on request

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		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 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	±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. (1.5Hr.on, 0.5Hr. 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 I0±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 for 1 Min.	No evidence of flaming or arcing

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