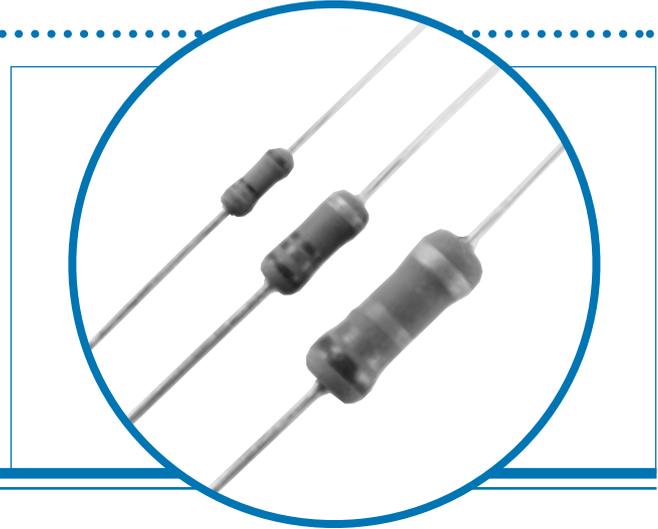


# Flameproof Metal Film Resistors

## FA Series

- Approval to BS CECC 40101-019 and 40101-024
- Resistance range 0.1 ohm to 1M ohm
- Flameproof protection



## Electrical Data

		FA025	FA05	FA1	FA94
Power rating at 70°C	watts	0.5	1.0	1.5	2.0
Resistance range	ohms	0R1 to 1M	0R1 to 1M	0R1 to 1M	2R6 to 1M0
Limiting element voltage	volts	350	350	500	700
Isolation voltage	volts	500	500	700	1000
TCR	ppm/°C	150			
Resistance tolerance	%	≤1 ohm: 5, 10 >1 ohm: 1, 2, 5			
Ambient temperature range	°C	-55 to 155			

* Approved CECC 40101-019 / 40101-024		FX	EX	DX	CX
Power rating at 70°C	watts	0.25	0.5	1.0	2.0
Resistance range	ohms	1 to 1M	1 to 1M	1 to 1M	10 to 100k
Limiting element voltage	volts	250	350	500	700
Isolation voltage	volts	500	700	1000	1400
**TCR	ppm/°C	250			
Resistance tolerance	%	1, 2, 5			
Ambient temperature range	°C	-55 to 125			

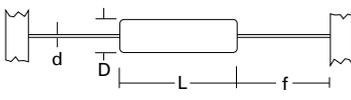
Standard values		E24 preferred			
Thermal impedance	°C/watt	140	110	90	60

\*These specifications are identical except that BS CECC 40101-024 includes flammability tests.

\*\*Specification TCR - actual TCR as for commercial.

## Physical Data

Dimensions (mm) & Weight (g)							
Type	L Max	D Max	f min	d nom	PCB mounting centres	Min. bend radius	Wt.nom
FA025	6.2	2.5	21.0	0.6	10.2	0.6	0.3
FA05	9.0	3.6	19.6	0.8	12.7	1.2	0.5
FA1	14.5	5.3	23.6	0.8	20.3	1.2	1.1
FA94	13.1	5.9	29.5	0.8	19.5	1.2	1.1



### General Note

Welwyn Components reserves the right to make changes in product specification without notice or liability. All information is subject to Welwyn's own data and is considered accurate at time of going to print.

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# Flameproof Power Metal Film Resistors

FA Series

## Construction

The resistance element is a precisely controlled thin film of metal alloy on a high purity ceramic core, protected by a cement coating applied so that terminations remain completely clear.

This permits a well defined body length, (clean lead to clean lead dimension L).

## Terminations

**Material** Solder-coated copper wire.

**Strength** The terminations meet the requirements of IEC 68.2.21

**Solderability** The terminations meet the requirements of IEC 115-1, Clause 4.17.3.2

## Marking

Resistors are colour coded with 4 bands.  
IEC 62 colours are used.

## Solvent Resistance

The body protection and marking are resistant to all normal industrial cleaning solvents suitable for printed circuits.

## Flammability

The resistors will not burn or emit incandescent particles under any condition of applied temperature or power overload.

## Performance Data

		CECC 40101-019/40101-024	Actual Performance	
		Requirements	Maximum	Typical
Load at commercial rating: 1000 hrs at 70°C	ΔR %	not specified	3	1
Load at CECC rating: 1000 hrs at 70°C		2	2	1
Load at 35% rated power: 1000 hrs at 125°C	ΔR %	2	1	0.7
Dry heat: 1000 hours at 155°C	ΔR %	not specified	1	0.7
Shelf life: 12 months at room temperature	ΔR %	not specified	0.5	0.5
Derating		35% of rated power at 125°C	zero at 235°C	
Short term overload	ΔR %	0.5	0.2	0.02
Climatic	ΔR %	2	0.5	0.5
Climatic category	ΔR %	55/125/56	55/125/56	
Long term damp heat	ΔR %	2	2	0.5
Temperature rapid change	ΔR %	0.5	0.25	0.05
Resistance to solder heat	ΔR %	0.5	0.25	0.07
Vibration and bump	ΔR %	0.5	0.1	0.01

## Application Notes

1. If the resistors are to dissipate full rated power, it is recommended that the terminations should not be soldered closer than 4mm from the body.
2. Due to operating temperature limitations imposed by some pcb materials, derating may be necessary. An estimate of the temperature rise to be expected can be calculated using the thermal impedance figures given under Electrical Data.

## Standard Quantities Per Package

Type	FA025	FA05	FA1	FA94
Large ammo pack	5000	2500	1000	1000

Type	b	c
FA025/FA05	52	5
FA1	67	10
FA94	77	10

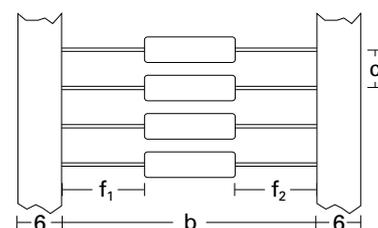
## Packaging

All FA Series resistors are normally supplied tape packed ready for loading onto automatic sequencing and insertion machines.

Component wires will not protrude beyond the outside edge of the tapes.

Alternative packaging available by request.

Lead Formed resistors can also be supplied. Standard options of Lancet, Radial and Goalpost forming are shown in Lead Form Information section.



Body Location  $f_1 - f_2 \leq 1.4 \text{ mm}$