Fusible Nickel Film Resistors

OBSOLETE

TT electronics
Welwyn Components

FN Series

- **Predictable fusing characteristics**
- **Constant current fusing**
- **Flameproof**

Electrical Data

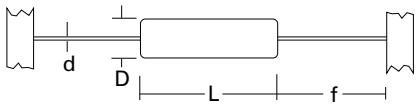
		FN4
Power rating at 70°C	watts	0.4
Resistance range	ohms	0R1 to 0R91
TCR	ppm/°C	+4200 to +5000
Resistance tolerance*	%	5, 10, 20
Standard values		E24 preferred
Thermal impedance	°C/watt	215
Ambient temperature range	°C	-55 to 155

* Below 1R, 10 and 20% only.

Physical Data

Dimensions (mm) & Weight (g)

Type	L Max	D Max	f min	d nom	PCB mounting centres	Min. bend radius	Wt. nom
FN4	6.2	2.5	21.0	0.6	10.2	0.6	0.3



Construction

The nickel film is deposited on a high purity ceramic rod. End caps are force fitted and termination wires welded to the caps. The resistive film is adjusted to the required value by a helical cut; finally the flame retardant lacquer protection is applied to the resistor body and the resistor is marked with an indelible ink.

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 five bands. Four of the bands are used to indicate value and tolerance, with IEC 62 colours being used. A fifth black band denotes constant current fusibility.

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 encandescent particles under any condition of applied temperature or power overload.

Welwyn
A subsidiary of
TT electronics plc

Telephone: +44 (0) 1670 822181 · Facsimile: +44 (0) 1670 829465 · Email: info@welwyn-tt.com · Website: www.welwyn-tt.com

OBSOLETE

TT electronics
Welwyn Components

Performance Data

		Maximum
Load: 1000 hours at 70°C	ΔR%	1
Shelf life: 12 months at room temperature	ΔR%	0.5
Derating from rated power at 70°C		zero at 155°C
Long term damp heat	ΔR%	1
Resistance to solder heat	ΔR%	0.5
Fusing characteristics		See graph

Packaging

All FN resistors are supplied tape packed ready for loading on to automatic sequencing and insertion machines.

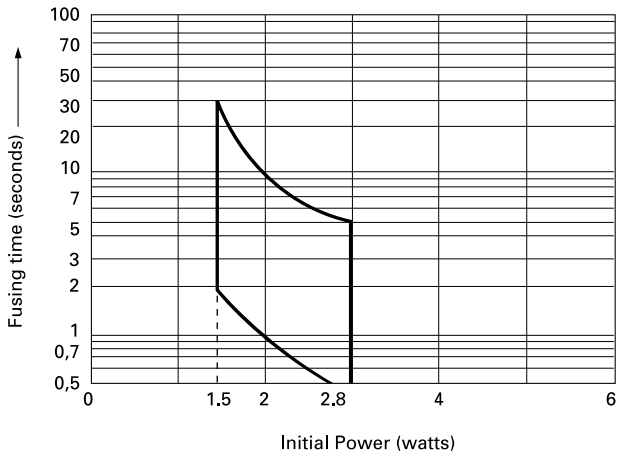
Component wires will not protrude beyond the outside edge of the tapes.

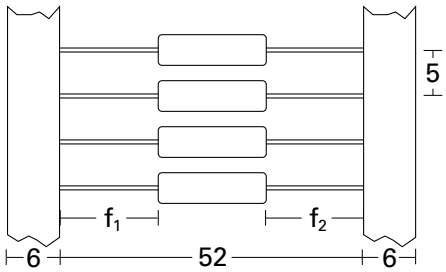
Alternative packaging available by request.

A detailed Packaging Data Sheet is available upon request.

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

Fusing time at constant current





Body location $f_1 - f_2 \leq 1.4$ mm

Fusing

After fusing the final resistance value will be ≥10 times the initial value.

Standard Quantities Per Package

Type	FN4
Large ammo pack	5000

Ordering Procedure

Example: FN4 at 0.33 ohms and 10% tolerance in ammo pack box of 5000 pieces -

F N 4 – R 3 3 K I

Type

Value (use IEC62 code)

Tolerance (use IEC62 code)

J	5%
K	10%
M	20%

Packing

I	Ammo	5000/box	Standard

 Bedlington, Northumberland NE22 7AA, UK
Telephone: +44 (0) 1670 822181 · Facsimile: +44 (0) 1670 829465 · Email: info@welwyn-tt.com · Website: www.welwyn-tt.com