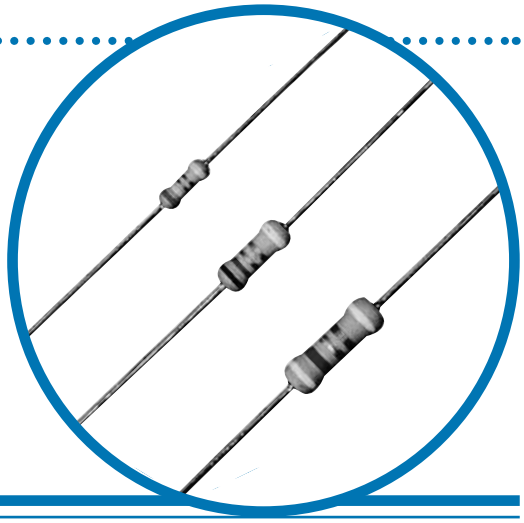
Fusible Metal Film Resistors

FM Series

- **Fuses safely under defined overload conditions**
- **Combines inrush limit and board-level protection**
- **Standard chip formats for fast placement**
- **RoHS compliant matt tin finish**



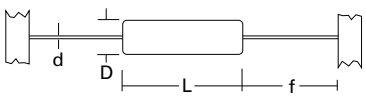
Electrical Data

		FM1/4	FM1/2	FM1
Power rating at 70° C	watt	0.25	0.5	1.0
Resistance range	ohms	0R1 - 10K	0R1 - 27K	0R2 - 1K5
Limiting element voltage	volts	250	350	350
TCR	ppm/° C	250		
Resistance tolerance	%	5		
Standard values		E24 preferred		
Thermal impedance	° C/watt	150	120	100
Ambient temperature range	° C	-55 to 155		

Physical Data

Dimensions (mm) & Weight (g)

Type	L max	D max	f min	d nom	PCB mounting centres	Min. bend radius	Wt. nom
FM1/4	6.2	2.5	21.0	0.6	10.2	0.6	0.3
FM1/2	9.0	3.4	19.6	0.8	12.7	1.2	0.6
FM1	12.5	4.2	17.8	0.8	18.4	1.2	0.9



Construction

The metal 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 special helical cut; finally the cement protection is applied to the resistor body and marked with 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 yellow band denotes constant voltage fusibility.

Solvent Resistance

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

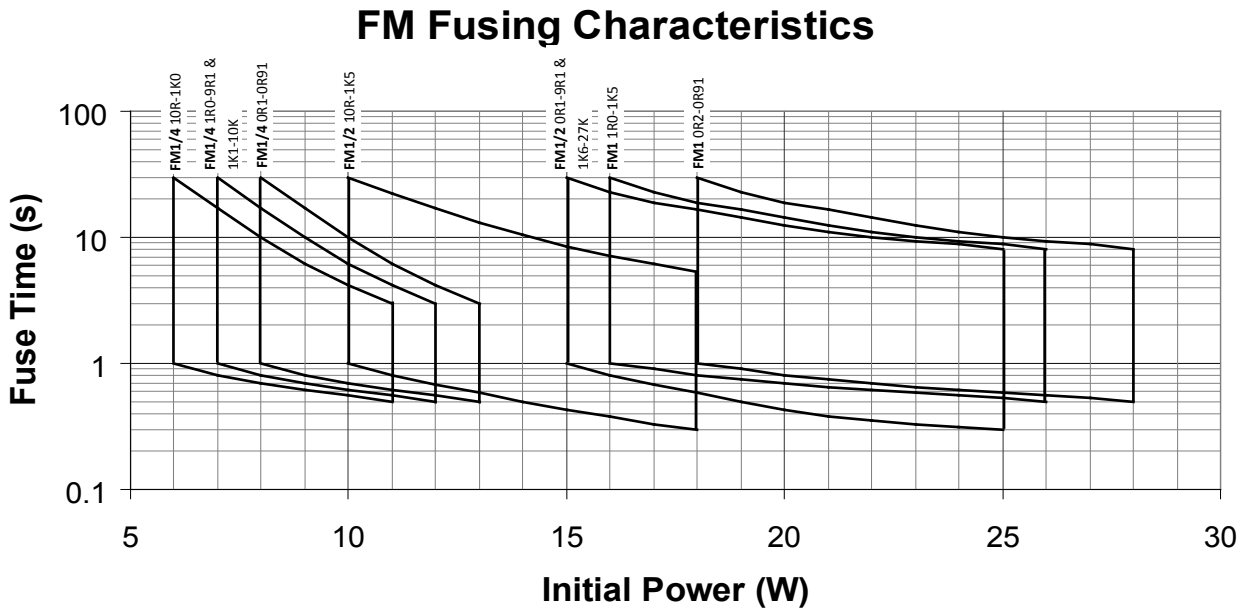
Flammability

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

Performance Data

		Maximum
Load: 1000 hours at 70˚C	ΔR%	3
Shelf life: 12 months at room temperature	ΔR%	2
Derating from rated power at 70˚C		zero at 155˚C
Temperature rapid change	ΔR%	0.5
Resistance to solder heat	ΔR%	0.5

Note: A 0.01 ohm addition to be added to the performance of all resistors <10 ohms



Fusing

After fusing the final resistance value will be ≥50 times the initial value.

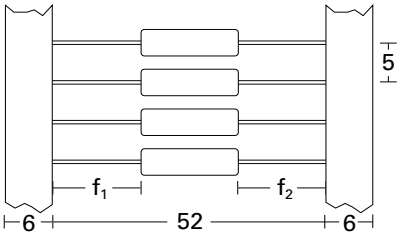
Packaging

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

The standard taping method and critical dimensions are shown in figure 1. Component wire will not protrude beyond the outside edge of the tapes.

Lead Formed resistors can also be supplied. Standard options of Lancet, Radial and Goalpost forming are available.

Figure 1



Body Location $f_1 - f_2 \leq 1.4$ mm

Ordering Procedure

Example: FM½ at 4.7 kilohms and 5% tolerance in ammo pack box of 2500 pieces -

F M 1 / 2 – 4 K 7 J I

Type

Value (use IEC62 code)

Tolerance (use IEC62 code)

J	5%

Packing

I	Ammo	FM¼	5000/box	Standard
		FM½	2500/box	
		FM1	1500/box	