THUNDER®

FUSIBLE METAL FILM RESISTORS

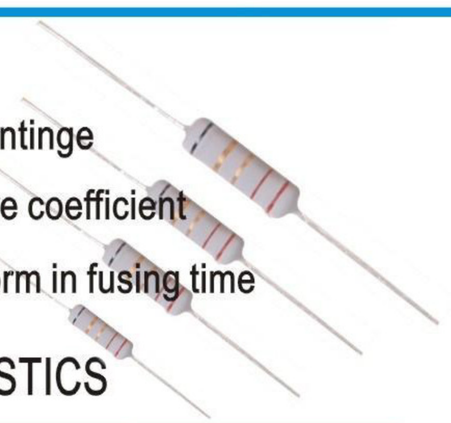
FRN

INTRODUCTION

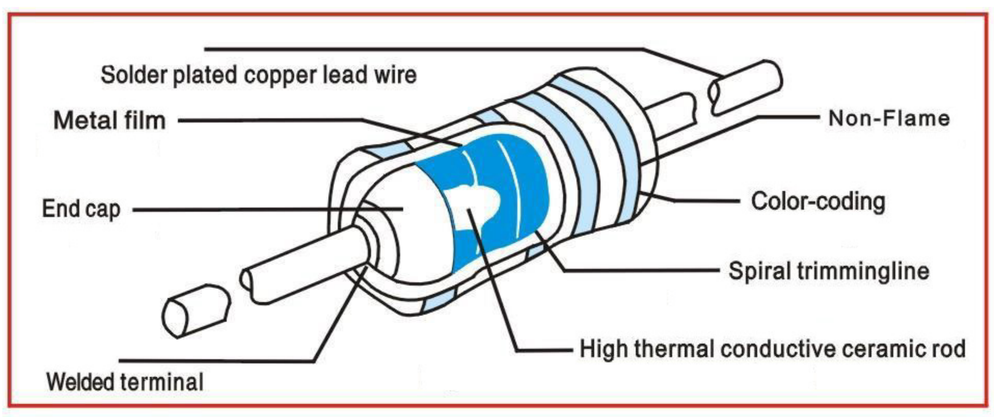
FRN, Fusible metal film resistor,is a nonflammable resistor, which is applied to protect electronic circuit boards and design.

FEATURES

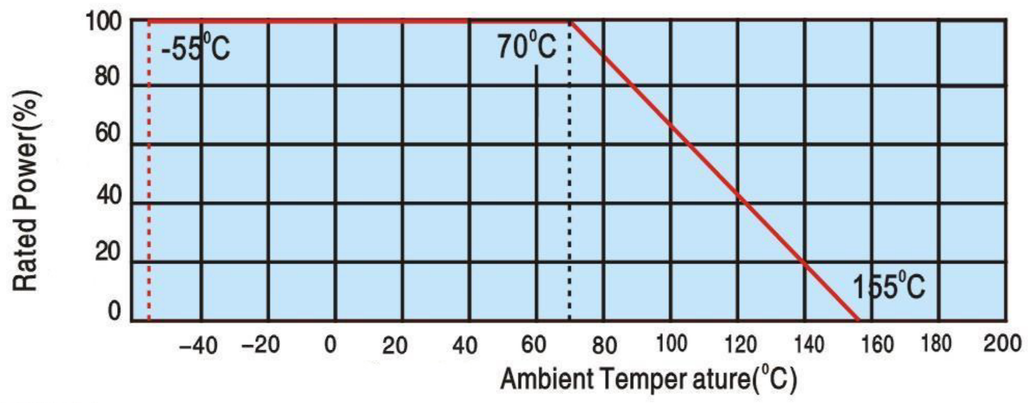
- Flame proof paintinge
- Low temperature coefficient
- Uniform in fusing time



CONSTRUCTION



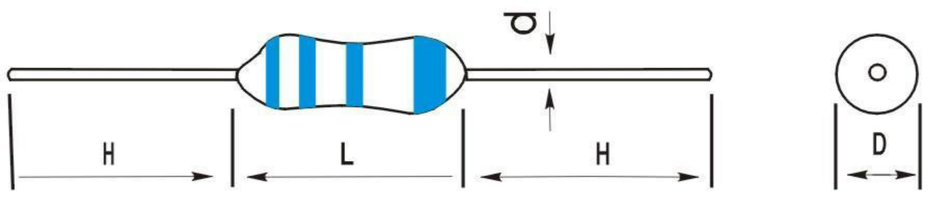
DERATING CURVE



CHARACTERISTICS

Test Items	Specified Value
Temp.coefficient of resistance	±200PPM/°C
Short time overload	±(2%+0.05Ω)
Dielectric withstanding voltage	No evidence of damage
Terminal strength	No evidence of damage
Moisture load life	±(5%+0.05Ω)
Load life at 70°C	±(5%+0.05Ω)
Temper ature cycling	±(1%+0.05Ω)
Resistance to soldering heat	Over 95%
Resistance to solvent	No evidence of damage
Flame proof	No evidence of damage

STYLE



Fusing characteristic

Times / Power Rating	X16	X25	X32	Fusing Time
1/4W	2.1 Ω ~1K Ω	1.1 Ω ~2 Ω	0.1 Ω ~1 Ω	60 sec.(Max)
1/2W				
1W				
2W				

* Fusing Voltage = $\sqrt{\text{Power rating X Resistance value X Times}}$
* The resistance value will be as high as 100 times the original value after fusing.

DIMENSIONS

TYPE		Dimensions (mm) L	D	d	H	Power Rating	Max Open Circuit Voltage	Dielectric Withstanding Voltage	Resistance Range
Normal size	FRN 1/6W	3.2±0.2	1.8±0.2	0.40±0.02	25±3	0.16W	150V	200V	0.1Ω~300KΩ
	FRN 1/4W	6.5±0.5	2.3±0.3	0.43±0.02	25±3	0.25W	200V	250V	0.1Ω~300KΩ
	FRN 1/2W	9.0±1.0	3.2±0.5	0.50±0.02	25±3	0.5W	250V	250V	0.1Ω~300KΩ
	FRN 1W	12.0±1.0	4.5±0.5	0.65±0.02	25±3	1W	250V	350V	0.1Ω~300KΩ
	FRN 2W	15.5±1.0	5.0±1.0	0.72±0.02	23±3	2W	250V	350V	0.1Ω~300KΩ
	FRN 3W	17.5±1.0	6.0±1.0	0.72±0.02	27±3	3W	250V	350V	0.1Ω~300KΩ
Small size	FRN 1/2WS	6.5±0.5	2.3±0.3	0.43±0.02	25±3	0.5W	200V	250V	0.1Ω~300KΩ
	FRN 1WS	9.0±1.0	3.2±0.5	0.50±0.02	25±3	1W	250V	250V	0.1Ω~300KΩ
	FRN 2WS	12.0±1.0	4.5±0.5	0.65±0.02	25±3	2W	250V	350V	0.1Ω~300KΩ
	FRN 3WS	15.5±1.0	5.0±1.0	0.72±0.02	23±3	3W	250V	350V	0.1Ω~300KΩ

NOTE:Specification can be constructed on request.

HOW TO ORDER

FRN — Type

1/4W — Power Rating

Nomal Size	Small Size
1/4W	1/2WS
1/2W	1WS
1W	2WS
2W	3WS
3W	5WS

T52 — Form/ Packaging

S	Bulk (Straight)
M	Bulk. M-Form series (Horizontal Forming)
U	Buld,U-Form series(Vertical Forming)
Txx	Boxed (26.52.63.73.83mm width taping)
T/R	Tape on reel packing

J — Resistance Toler ance

J	±5%
K	±10%
G	±2%
F	±1%

10K — Nominal Resistance

3–Digit:E–24, 12 Series

e.g. OR12 = 0.12Ω
120R = 120Ω
1K2 = 1.2KΩ
12M = 12MΩ