

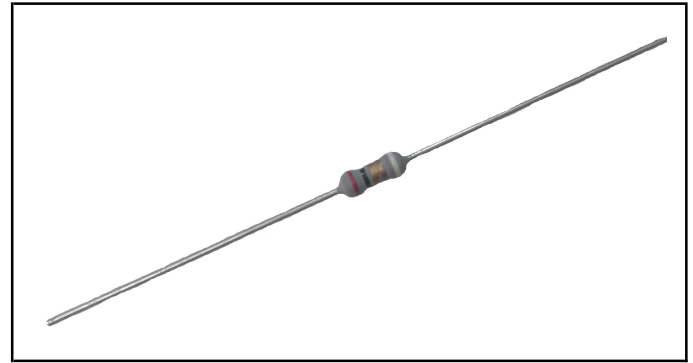
Fusible Metal Film Resistor - FRN series

FEATURES

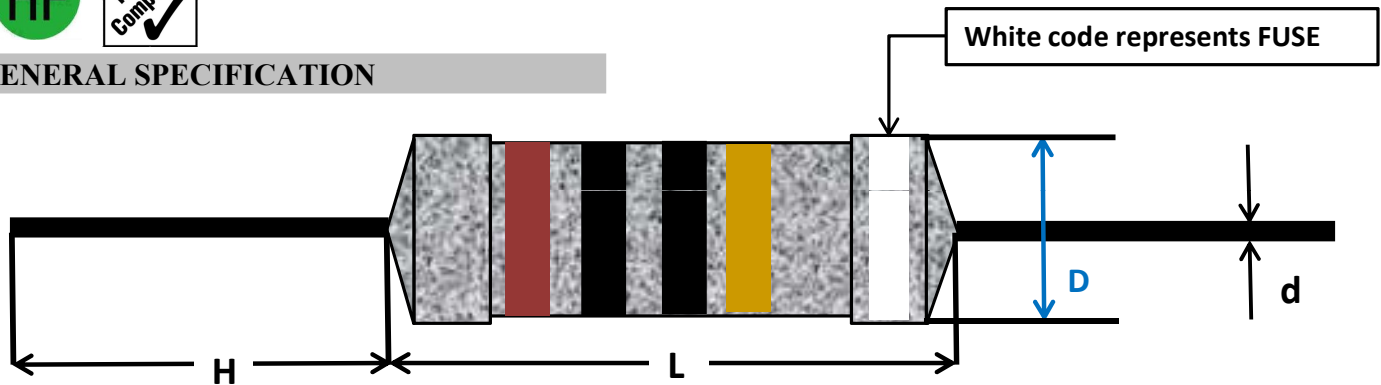
- Power Rating: 1/4W to 5W at 70°C
- Superior electrical performance
- Standard T.C.R : $\pm 100\text{PPM}$
- Tolerance: $\pm 1\%$, 5%
- Standard Value: 10R-10K in E24/E96 series
- Body Color: gray
- Flameproof coating
- Mini size available (As FRN-S type)
- Operating Temperature : $-55^{\circ}\text{C} \sim +155^{\circ}\text{C}$

MATERIAL

- Element: Vacuum-deposited Ni-Cr Alloy
- Core: High purity ceramic Al_2O_3
- Termination: Standard solder-plated cooper lead
- Coating: Silicone



GENERAL SPECIFICATION



Normal size								
TYPE	DIMENSION (mm)				POWER	MAXIMUM WORKING VOLTAGE	MAXIMUM OVERLOAD VOLTAGE	RESISTANCE RANGE
	L	D	H	d				
FRN25	6.0 $\pm$ 0.5	2.3 $\pm$ 0.3	27 $\pm$ 3.0	0.55 $\pm$ 0.05	1/4W	250V	500V	1 Ω ~10K Ω
FRN50	9.0 $\pm$ 0.5	3.0 $\pm$ 0.5	27 $\pm$ 3.0	0.59 $\pm$ 0.05	1/2W	350V	700V	1 Ω ~10K Ω
FRN100	11 $\pm$ 2.0	4.0 $\pm$ 1.0	33 $\pm$ 3.0	0.8 $\pm$ 0.05	1W	500V	1000V	1 Ω ~10K Ω
FRN200	15 $\pm$ 2.0	5.0 $\pm$ 1.0	33 $\pm$ 3.0	0.8 $\pm$ 0.05	2W	500V	1000V	1 Ω ~10K Ω
FRN300	17 $\pm$ 2.0	6.0 $\pm$ 1.0	33 $\pm$ 3.0	0.8 $\pm$ 0.05	3W	500V	1000V	1 Ω ~10K Ω

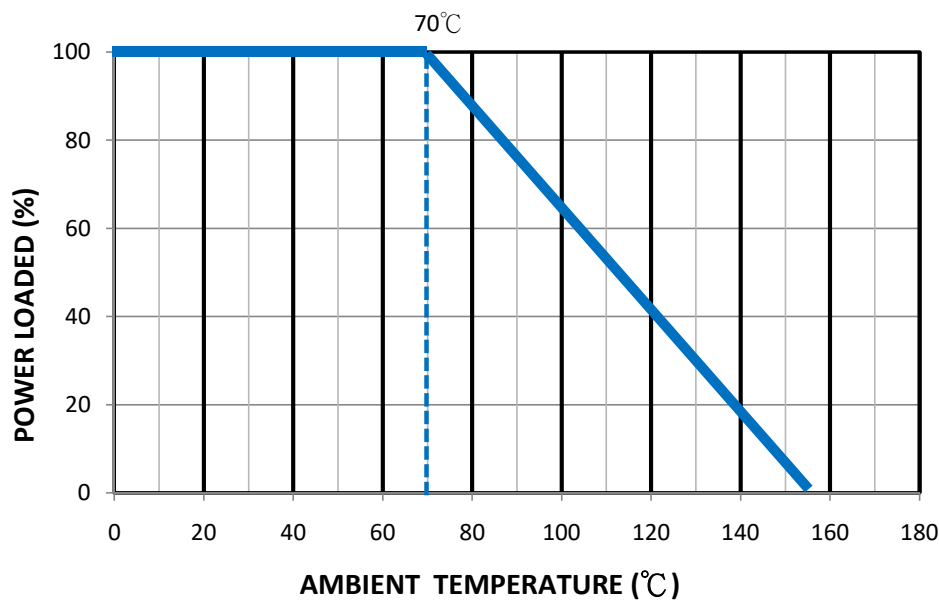
Small size								
TYPE	DIMENSION (mm)				POWER	MAXIMUM WORKING VOLTAGE	MAXIMUM OVERLOAD VOLTAGE	RESISTANCE RANGE
	L	D	H	d				
FRN50S	6.0 $\pm$ 0.5	2.3 $\pm$ 0.3	27 $\pm$ 3.0	0.55 $\pm$ 0.05	1/2W	250V ★	500V ★★	1 Ω ~10K Ω
FRN100S	9.0 $\pm$ 0.5	3.0 $\pm$ 0.5	27 $\pm$ 3.0	0.59 $\pm$ 0.05	1W	350V	700V	1 Ω ~10K Ω
FRN200S	11 $\pm$ 2.0	4.0 $\pm$ 1.0	33 $\pm$ 3.0	0.8 $\pm$ 0.05	2W	500V	1000V	1 Ω ~10K Ω
FRN300S	15 $\pm$ 2.0	5.0 $\pm$ 1.0	33 $\pm$ 3.0	0.8 $\pm$ 0.05	3W	500V	1000V	1 Ω ~10K Ω
FRN500S	17 $\pm$ 2.0	6.0 $\pm$ 1.0	33 $\pm$ 3.0	0.8 $\pm$ 0.05	5W	500V	1000V	1 Ω ~10K Ω

* Maximum Working Voltage determined by $E = \sqrt{P \times I}$ where E should not exceed value listed in column above.

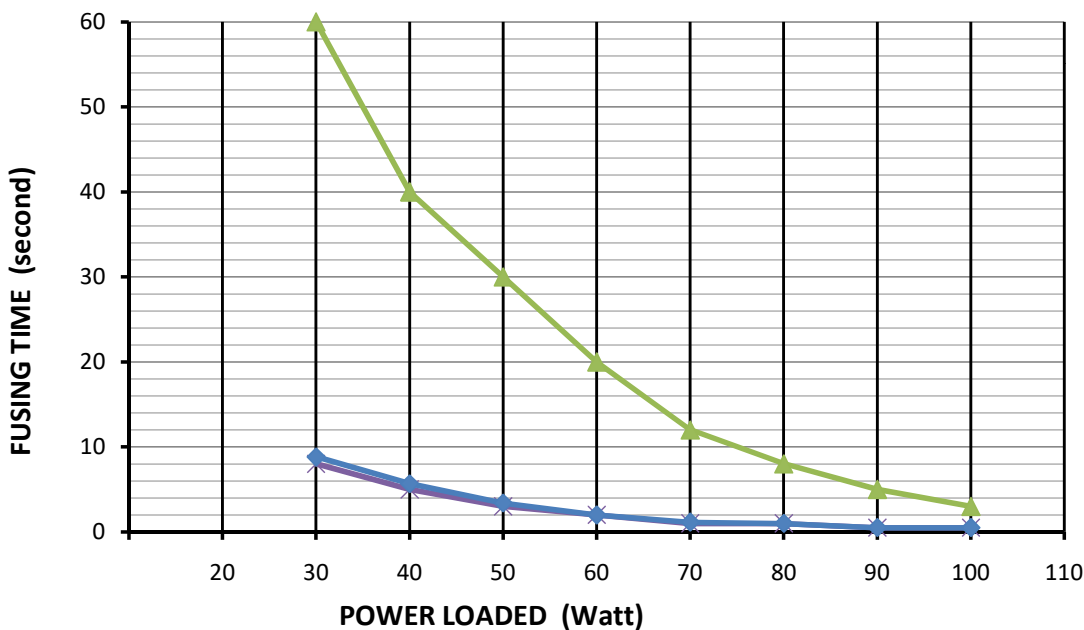
** Maximum Overload Voltage equals to $2 \times E$, but should not exceed value listed in column above

*** Consult factory for resistance is not included in the column

DERATING CURVE



FUSING TIME - FRN200-8R2



CHARACTERISTIC

TEST	TEST METHOD		APPRAISE
Temperature Coefficient	IEC 60115-1 4.8	-55℃~155℃	By type
Load Life (1000 hours)	IEC 60115-1 4.25	70±2℃ at RCWV for 1000 hours (1.5 Hr. on , 0.5 Hr. off)	<±5%+0.05Ω
Shorttime Overload	IEC 60115-1 4.13	2 times rated power for 5 sec.	<±2%+0.05Ω
Temperature Cycling	IEC 60115-1 4.19	-55℃ → room temp. → +155℃ → room temp. (5 cycles)	<±5%+0.05Ω
Moisture Resistance	IEC 60115-1 4.24	40±2℃ , 90-95% RH for 56 days , with 0.1 times RCWV	<±0.5%+0.05Ω
Solderability	IEC 60115-1 4.17	235±5℃ for 3±0.5 sec.	95% min. coverage
Effect of Soldering	IEC 60115-1 4.18	260±3℃ for 10±1 sec. immersed to point 3±0.5mm from the body	<±0.2%+0.05Ω

HOW TO ORDER :SERIESRESISTANCE TOLERANCEPACKAGE

FRN 200

8R2

5%

T

FRN 25

0R1=0.1Ω

1%

T=TAPING BOX

50

10R=10Ω

5%

R=TAPING REEL

:

1K=1KΩ

B=BULK

300

500S

PACKAGE STANDARD PACKAGE QUANTITY :

TYPE	T=TAPING BOX	R=TAPING REEL	B=BULK
1/4W-1/2WS	5000	5000	1000 pcs/bag , 10kpcs/box
1/2W-1WS	2000	2500	500 pcs/bag , 5kpcs/box
1W-2WS	1000	2000	500 pcs/bag , 2kpcs/box
2W-3WS	1000	1000	500 pcs/bag , 1kpcs/box
3W	500	1000	