



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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- Features:
- Coating meets UL 94V-0
  - Designed for constant current to provide overload protection
  - Consistent performance and reliability
  - Cut and formed product is available on select sizes, contact factory for details
  - RoHS compliant / lead-free



| Electrical Specifications |                             |                             |                          |                                    |                               |
|---------------------------|-----------------------------|-----------------------------|--------------------------|------------------------------------|-------------------------------|
| Type / Code               | Power Rating (Watts) @ 70°C | Maximum Working Voltage (1) | Maximum Overload Voltage | Resistance Temperature Coefficient | Ohmic Range (Ω) and Tolerance |
|                           |                             |                             |                          |                                    | 5%                            |
| FRN16                     | 0.166W                      | 150V                        | 200V                     | ±350 ppm/°C                        | 0.56 - 10K                    |
| FRN14                     | 0.25W                       | 200V                        | 300V                     | ±350 ppm/°C                        | 0.22 - 10K                    |
| FRN12                     | 0.5W                        | 250V                        | 400V                     | ±350 ppm/°C                        | 0.47 - 10K                    |
| FRN1                      | 1W                          | 300V                        | 600V                     | ±350 ppm/°C                        | 0.47 - 10K                    |
| FRN2                      | 2W                          | 300V                        | 600V                     | ±350 ppm/°C                        | 1 - 3K                        |

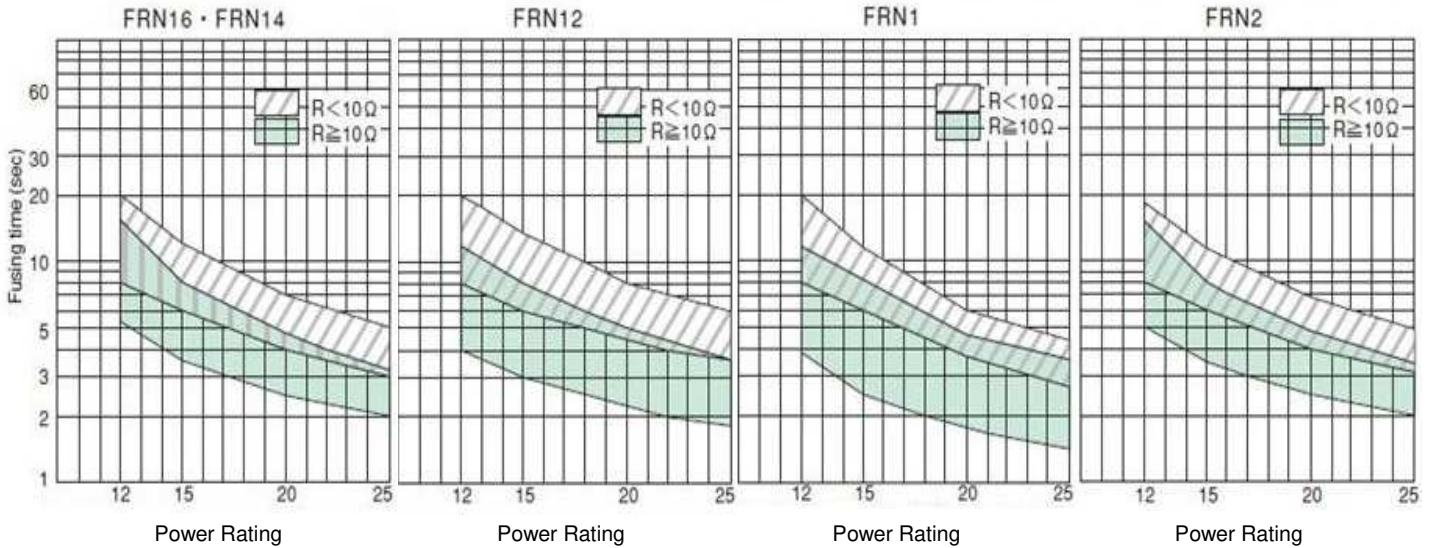
(1) Lesser of  $\sqrt{PR}$  or maximum working voltage

| Mechanical Specifications |                   |                    |                         |                    |        |
|---------------------------|-------------------|--------------------|-------------------------|--------------------|--------|
|                           |                   |                    |                         |                    |        |
| Type / Code               | A<br>Body Length  | B<br>Body Diameter | C<br>Lead Length (Bulk) | D<br>Lead Diameter | Unit   |
| FRN16                     | 0.126 ± 0.008 / 0 | 0.073 ± 0.006      | 1.102 ± 0.118           | 0.018 ± 0.002      | inches |
|                           | 3.20 ± 0.20 / 0   | 1.85 ± 0.15        | 28.00 ± 3.00            | 0.45 ± 0.05        | mm     |
| FRN14                     | 0.236 ± 0.020     | 0.091 ± 0.008      | 1.102 ± 0.118           | 0.022 ± 0.002      | inches |
|                           | 6.00 ± 0.50       | 2.30 ± 0.20        | 28.00 ± 3.00            | 0.55 ± 0.05        | mm     |
| FRN12                     | 0.354 ± 0.039     | 0.118 ± 0.020      | 1.102 ± 0.118           | 0.028 ± 0.002      | inches |
|                           | 9.00 ± 1.00       | 3.00 ± 0.50        | 28.00 ± 3.00            | 0.70 ± 0.05        | mm     |
| FRN1                      | 0.433 ± 0.039     | 0.157 ± 0.020      | 1.102 ± 0.118           | 0.031 ± 0.002      | inches |
|                           | 11.00 ± 1.00      | 4.00 ± 0.50        | 28.00 ± 3.00            | 0.80 ± 0.05        | mm     |
| FRN2                      | 0.591 ± 0.039     | 0.217 ± 0.039      | 1.378 ± 0.118           | 0.031 ± 0.002      | inches |
|                           | 15.00 ± 1.00      | 5.50 ± 1.00        | 35.00 ± 3.00            | 0.80 ± 0.05        | mm     |

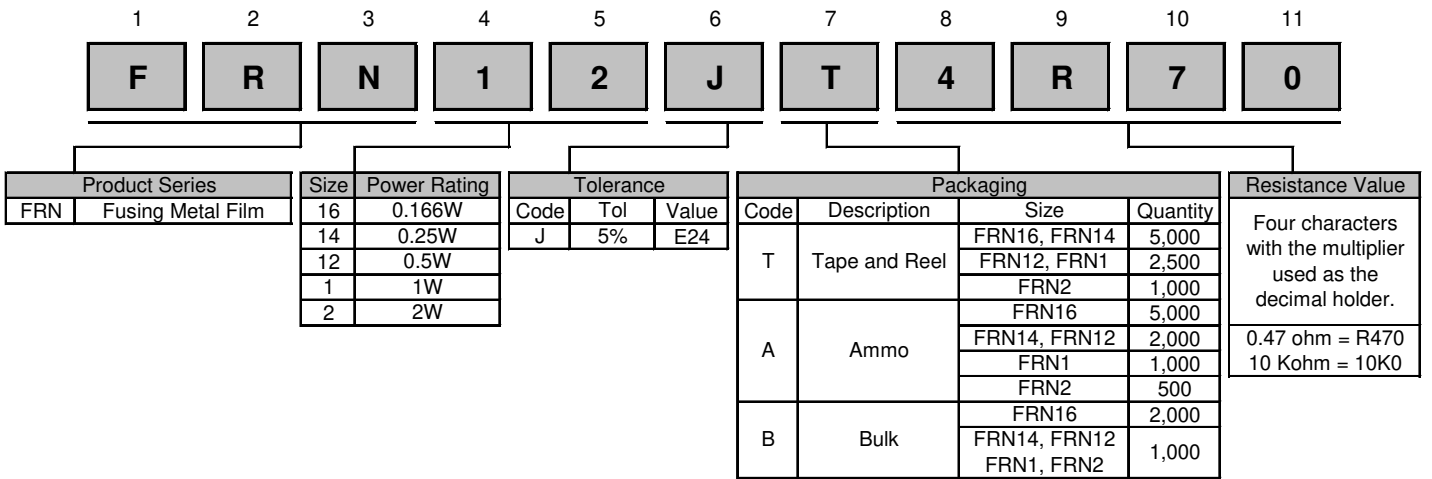
| Performance Characteristics  |              |
|------------------------------|--------------|
| Test                         | Test Results |
| Moisture Resistance          | ±5%          |
| Thermal Shock                | ±1%          |
| Load Life @ 70°C - 1,000hrs  | ±5%          |
| Resistance to Soldering Heat | ±1%          |
| Short Time Overload          | ±2%          |

Operating Temperature Range: -40°C to +155°C

**Fusing Curves**



**How to Order**



Legacy Part Number (before January 3, 2011):

| SEI Type                   |                   | Code          | Nominal Resistance | Tolerance | Packaging |
|----------------------------|-------------------|---------------|--------------------|-----------|-----------|
| FRN                        |                   | 1/2           | 4.7                | 5%        | R         |
| Type                       | Description       | Code          | Wattage            | Tolerance | Values    |
| FRN                        | Fusing Metal Film | 1/6           | 0.166W             | 5%        | E24       |
|                            |                   | 1/4           | 0.25W              |           |           |
|                            |                   | 1/2           | 0.5W               |           |           |
|                            |                   | 1             | 1W                 |           |           |
|                            |                   | 2             | 2W                 |           |           |
| SEI Types                  | Pkg Qty           | Description   | Code               |           |           |
| FRN16, FRN14               | 5,000             | tape and reel | R                  |           |           |
| FRN12, FRN1                | 2,500             |               |                    |           |           |
| FRN2                       | 1,000             |               |                    |           |           |
| FRN16                      | 5,000             | ammo          | T                  |           |           |
| FRN14, FRN12               | 2,000             |               |                    |           |           |
| FRN1                       | 1,000             |               |                    |           |           |
| FRN2                       | 500               | bulk          | A                  |           |           |
| FRN16                      | 2,000             |               |                    |           |           |
| FRN14, FRN12<br>FRN1, FRN2 | 1,000             |               |                    |           |           |