



# PR01, PR02, PR03 POWER METAL FILM RESISTOR

## PRODUCT OVERVIEW

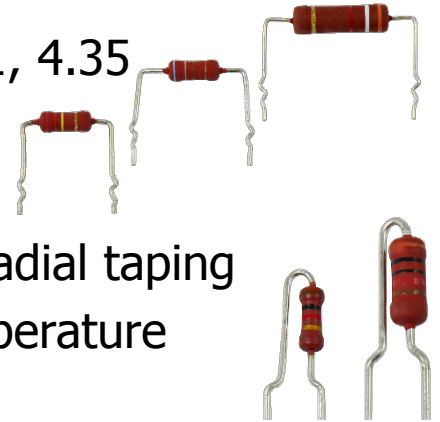


A **WORLD OF**  
**SOLUTIONS**



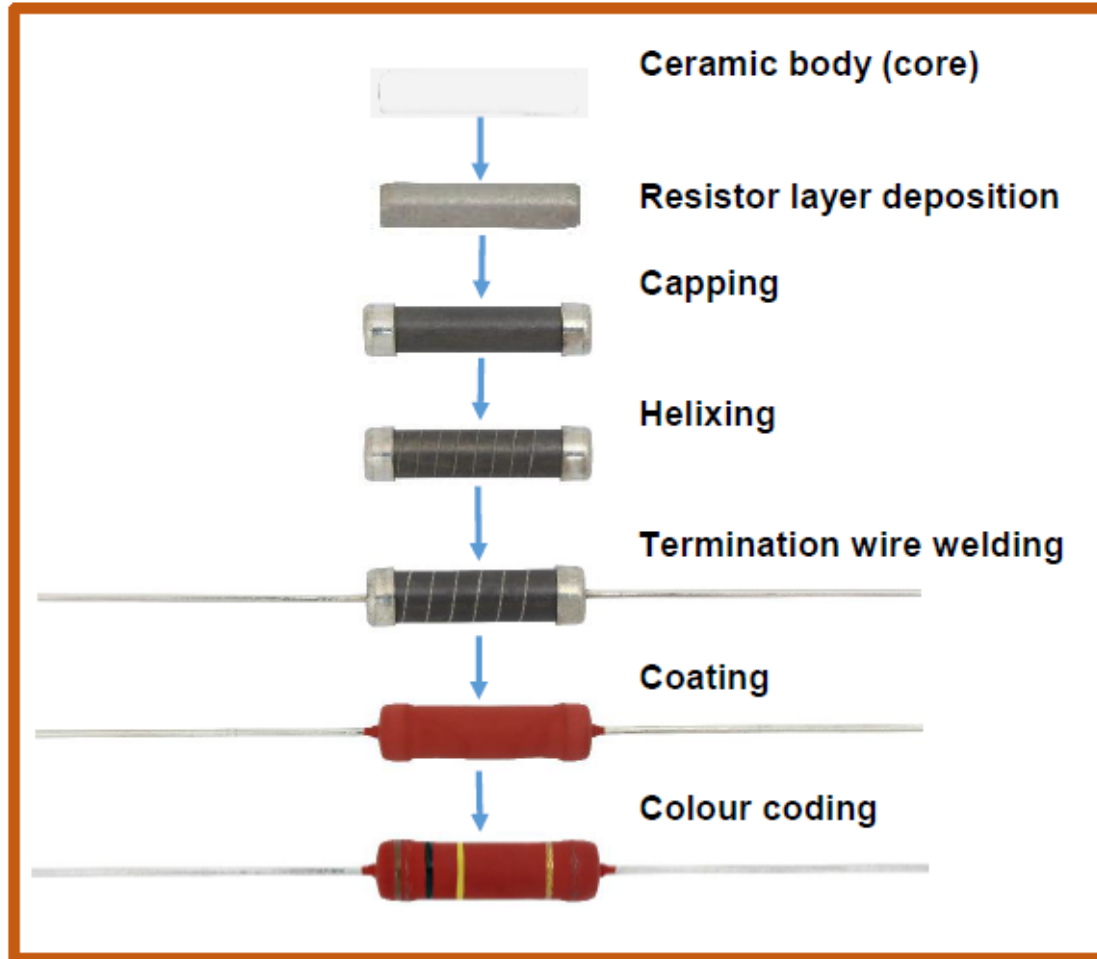
# MAIN FEATURES OF THE PR01, PR02, PR03 SERIES

- Three sizes: PR01 (0207), PR02 (0411), and PR03 (0617)
- Rated power,  $P_{70}$ : 1W, 2W, 3W
- Resistance range and tolerance: 0.22Ω to 1MΩ, 1% and 5%
- AEC-Q200 qualified (PR01, PR02)
- Non-flammable lacquer which meets UL 94V-0
- Meets flammability requirements according to IEC-60115-1, 4.35
- Maximum operating temperature up to 200°C
- Defined fusing characteristic for  $R < 560\Omega$
- Offered with different termination style: double-kink and radial taping
- FeCu lead wire version available for lower solder spot temperature
- RoHS compliant
- Halogen free



The PR01/02/03 Power Metal Film Leaded Resistor series from Vishay is a good choice for applications requiring high power in small packages. High-reliability applications will benefit from AEC-Q200 qualification, making this product series an ideal selection where reliability, non-flammable lacquer which meets UL 94V-0 and temperature up to 200°C are required. This metal film series offers fusing characteristic for resistance values  $< 560\Omega$  and different termination styles, such as double-kink and radial taping. The PR01 series is offered from 0.22Ω to 1MΩ, PR02 from 0.33Ω to 1MΩ while the PR03 is available from 0.68Ω to 1MΩ. This product series is RoHS compliant, Halogen free and meets flammability requirements as per IEC standard.

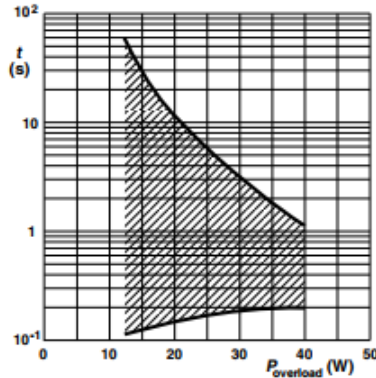
# CONSTRUCTION OF PR01, PR02, PR03 SERIES



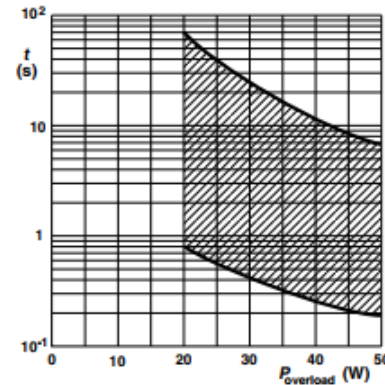
A homogeneous film of metal alloy is deposited on a high grade ceramic body. After a helical groove has been cut in the resistive layer, tinned connecting wires of electrolytic copper or copper-clad iron are welded to the end-caps. The resistors are coated with a red, non-flammable lacquer which provides electrical, mechanical and climatic protection.



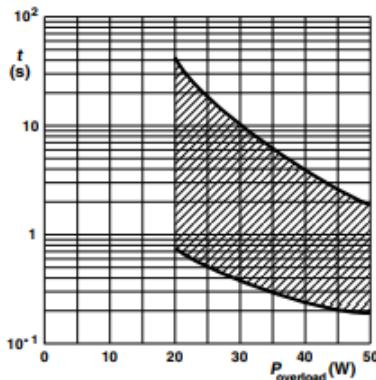
# FUSING OPERATION DEFINED ( $R < 560\Omega$ )



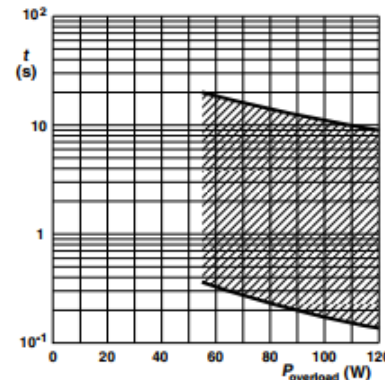
**PR01** Time to interruption as a function of overload power for range:  $0.22\ \Omega \leq R_n < 1\ \Omega$   
This graph is based on measured data under constant voltage conditions; the data may deviate according to the applications.



**PR01** Time to interruption as a function of overload power for range:  $16\ \Omega \leq R_n \leq 560\ \Omega$   
This graph is based on measured data under constant voltage conditions; the data may deviate according to the applications.



**PR01** Time to interruption as a function of overload power for range:  $1\ \Omega \leq R_n \leq 15\ \Omega$   
This graph is based on measured data under constant voltage conditions; the data may deviate according to the applications.

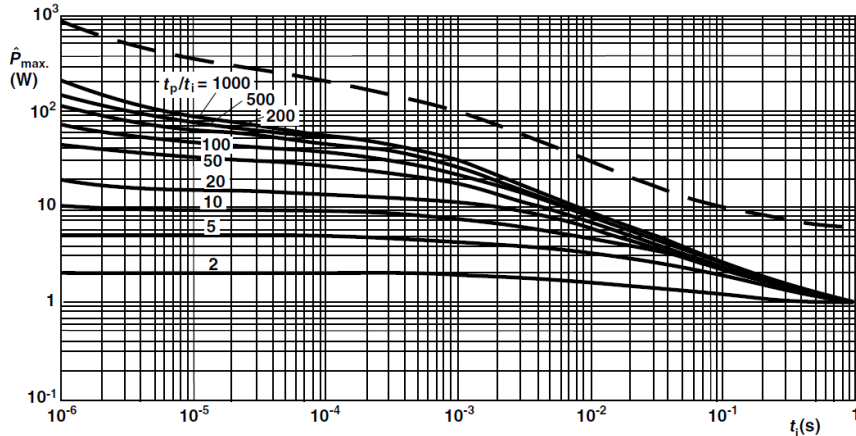


**PR02** Time to interruption as a function of overload power for range:  $0.33\ \Omega \leq R_n \leq 5\ \Omega$   
This graph is based on measured data under constant voltage conditions; the data may deviate according to the applications.

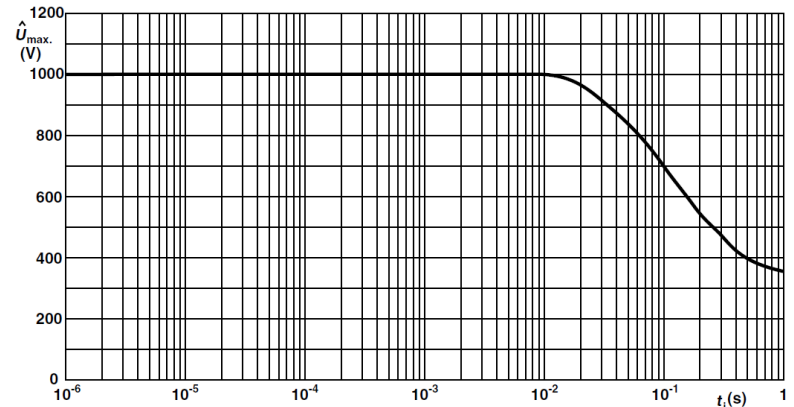
The series has well-established interruption behavior as function of the overload power applied for resistance range  $< 560\Omega$  as shown on the graphs above. This series can be used as a fusible resistor with defined fusing time for resistances from  $0.22\Omega$  to  $560\Omega$  for the PR01,  $0.33\Omega$  to  $560\Omega$  for the PR02 and  $0.68\Omega$  to  $560\Omega$  for the PR03.



# PULSE POWER AND PULSE VOLTAGE



PR01 Pulse on a regular basis; maximum permissible peak pulse power ( $\hat{P}_{max}$ ) as a function of pulse duration ( $t_i$ )



PR01 Pulse on a regular basis; maximum permissible peak pulse voltage ( $\hat{U}_{max}$ ) as a function of pulse duration ( $t_i$ )

The pulse load graph above shows the peak power as a function of pulse duration for the PR01 series that can withstand nearly 900W for 1 $\mu$ s square single pulse, as per dashed line. The same type of graph can be found in product datasheet for the PR02 and PR03, which can handle nearly 2000W and 3000W, respectively, at the same 1 $\mu$ s square single pulse. Additionally, to be used along with the pulse load graph, whichever shows **lesser** peak voltage, mostly applicable for high resistance values, the datasheet specifies the surge voltage curve as a function of pulse duration. The PR01 can handle 1000V whereas the PR02 withstands 1500V and the PR03 2000V, for pulse durations less than 10ms.



# APPLICATIONS

## Automotive

- Heater Control Module
- Inverter
- Wiring harness

## Consumer

- Lighting Ballast
- Home Appliances
- TV, Monitors

## Industrial

- Relays
- Control and Automation
- Filtered Connector
- Elevator
- Traffic Light Module



These power metal film resistor series are especially designed for automotive, consumer and industrial applications where customer application requires rated power of 1W, 2W, and 3W like all general purpose power applications, automotive electronics and lighting ballast.



- PR|
- PR
- PR0
- PR01
- PR010
- PR0100
- PR02
- PR020
- PR0200
- PR02F
- PR02FS
- PR02L
- PR02L0
- PR02S
- PR02S0
- PR03
- PR030
- PR0300
- PR03S
- PR03S0
- PR1



Now



## SEARCH RESULTS

### RESULTS

**FILTER RESULTS BY**

**DOCUMENT TYPE**

- 3D Models (\*.zip) (1)
- Datasheet (1)

Showing 1 to 2 of 2 entries Show 15 entries

Title	Image	Description	Information and Services
PR01, PR02, PR03	<p>Enlarge</p>	Power Metal Film Led Resistors	<p><b>Product Page</b> All Product Information</p> <p><b>Product Datasheet</b>  Datasheet</p> <p><b>Other Product Information</b>  <a href="#">Datasheet (1)</a>  <a href="#">3D Models (*.zip) (1)</a>  <a href="#">Technical Notes (5)</a>  <a href="#">Packaging Information (1)</a>  <a href="#">Product Literature (2)</a></p> <p><b>Customer Support</b>  <a href="#">Samples</a>  <a href="#">Technical Questions</a>  <a href="#">Sales Contacts</a></p>
3D Model		PR01, PR02, PR03	RESISTORS, FIXED, METAL FILM

Showing 1 to 2 of 2 entries Show 15 entries