

Version:  
December 1, 2022



**(HR)**  
**Heating Resistors**

[Web: www.token.com.tw](http://www.token.com.tw)

[Email: rfq@token.com.tw](mailto:rfq@token.com.tw)

**Token Electronics Industry Co., Ltd.**

**Taiwan: No.137, Sec. 1, Zhongxing Rd., Wugu District,  
New Taipei City, Taiwan. 248012  
Tel: +886 2981 0109 Fax: +886 2988 7487**

**China: 17P, Nanyuan Maple Leaf Bldg., Nanshan Ave.,  
Nanshan Dist., Shenzhen, Guangdong, China. 518054  
Tel: +86 755 26055363**



**▶ Product Introduction****Token Ceramic Thermal Far Infrared Heating Resistors (HR) with Customized Design.****Features :**

- Performance and stability, long service life.
- Materials for corrosion-resistant ceramic glaze, a wide range of hand-hygiene requirements are high or corrosive gas environment.
- For the efficient, new home appliances, high efficiency, excellent features, good seismic performance, simple and precise temperature control, energy saving.
- Components of a wide range of baked products, a good drying effect.
- A very good impact resistance voltage capability, high durability.
- Are widely used in industrial production, household appliances, medical equipment.

Token thermal far-infrared radiation ceramic glaze membrane components electric membrane is the introduction of new materials and new technologies produced a new generation of high-temperature membrane electric products, which compared to conventional electric heating elements have an unparalleled advantage.

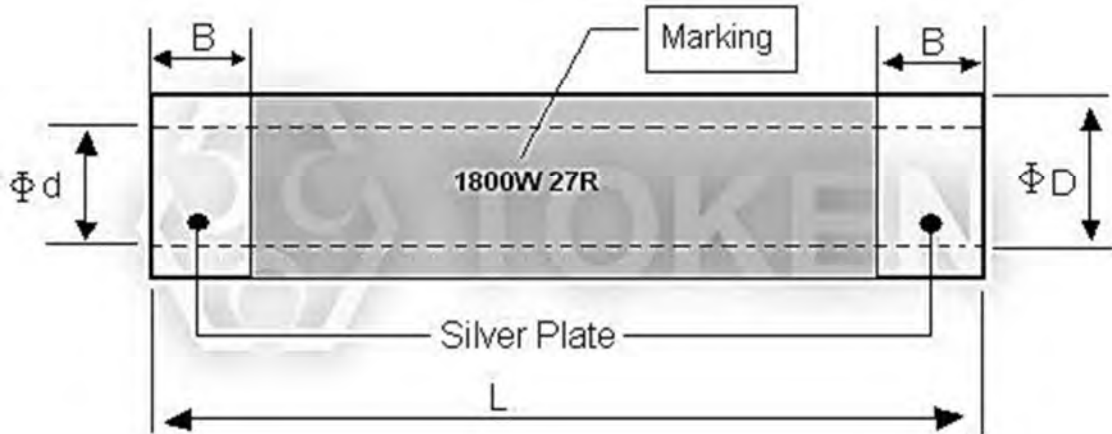
Contact us with your specific needs. For more information, please link to Token official website "[Heat Resistors](http://www.token.com.tw)".



## ► Dimensions

### (HR) Dimensions (Unit: mm)

Type	$L \pm 3.0$	$\Phi D \pm 2.0$	$\Phi d \pm 2.0$	$B \pm 2.0$
HR	250	12	9.5	13
	250	16	12	13
	250	21	17	13
	250	25	19	13



Heating Resistors - HR Series Dimensions

- Remark: For  $\Phi D=12$  Type, the length upon customized request up to 340mm.  
For  $\Phi D=16$ ,  $\Phi D=21$  and  $\Phi D=25$  Type, the length upon customized request up to 600mm.  
B: upon request.

## Specifications

### (HR) Specifications

Type	Resistance Range	Resistance Tolerance	Rated Power	Working Voltage	Operating Temperature
HR	1Ω ~ 10KΩ	K (±10%) M (±20%)	1W ~ 3000W	220V	650°C Max.

## Electrical Specifications

### (HR) Electrical Specifications

Parameters	Heat Resistors	GB4654-84GB7287-87
Service life	>10000h	>2000h
Directional radiation	>91%	>83%
Electric radiation conversion rate	>61.5%	50%
Power attenuation	<3%	/
Thermal response time	<4Min.	20Min.
Spectral range	2.5-50μm	/
Peak wavelength of radiation power	4.5μm	/
Radiation mode	Directly heater, no thermal heating wire.	/

## ▶ Advantage Heat Resistors

### Advantage Ceramic glaze electric components on film (HR) Heat Resistors

High temperature electric heating element is the use of membrane technology, new materials; new technology developed from a new generation of highly efficient energy-saving electric products, Heat Resistor HR is not a conventional electric heating electric wire, with traditional electric heating of different ways.

Electric high temperature membrane through special technology, a unique formula will be a variety of high temperature chemical element in the growth of high-strength composite ceramic substrate surface conductive heat generated films, and its surface covered in a layer of the far-infrared very thin insulating layer to Strength then its far-infrared radiation, increase the insulation properties and acid and alkali, moisture resistant.

High temperature electric heating elements of the resistance film has a good positive temperature coefficient (PTC) characteristics of long-term use of non-power recession, thus ensuring more than 10,000 hours life of components.

Film high temperature electric heating elements used for high-intensity special ceramic matrix, the high temperature membrane for electric heat source, the maximum temperature up to 800°C (General Electric film can only work at 300°C below) so stable performance.

High temperature electric heating elements major film performance indicators have reached or exceeded the international advanced level infrared radiation components.

As high temperature electric heating element is a membrane surface heating elements, with small size, light weight, small thermal inertia, heat a very short response time, the heating elements maximum spectral wavelengths and water, paint, textile and chemical fiber materials absorb infrared wavelength consistent, so heating range.

Far-infrared emission rate of 0.90 for the test, high temperature electric heating elements than the membrane electric wire, electric power saving of more than 30~40 percent.

## ▶ Order Codes

### Heating Resistor (HR) Order Codes

<b>HR</b>	<b>1800</b>	<b>B</b>	<b>27Ω</b>	<b>K</b>	<b>220V</b>	<b>450C</b>	<b>S</b>	<b>Black</b>
Product Type	Power Rating	Type	Resistance Value	Resistance Tolerance	Working Voltage	Operating Temperature	Silver plate terminal	Color
		A Quartz		K ±10%				
		B Ceramic						