



# CERAMIC PLATE HEATER

## セメンティングスポットヒーター

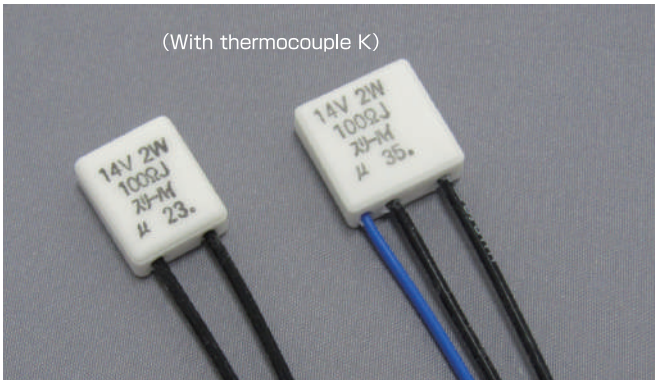
Made in Japan

Heat Resistant  
200°C/392°F

RoHS2  
Compliance

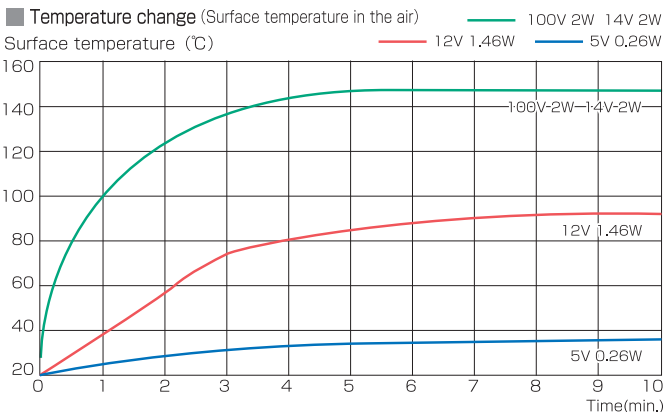
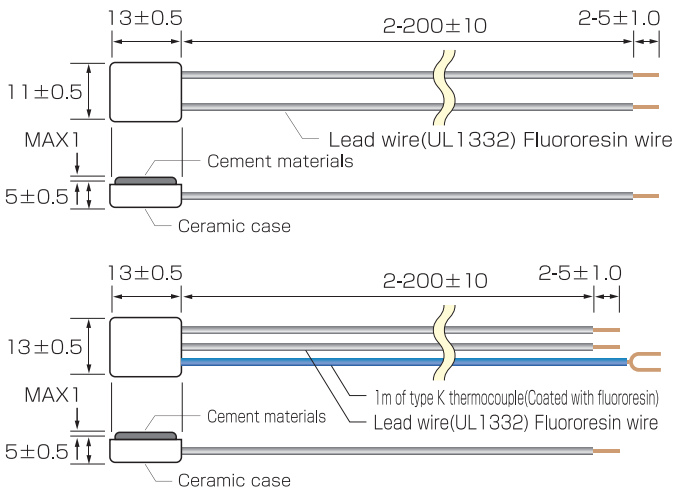
MA SA NO RI  
**MASANORI**®

First in Japan ! (Compatible with 12V and 5V as well.)  
Tiny ceramic plate heater



(With thermocouple K)

↑ Almost actual size



### Selection Standard

Product code	Standard	Size (mm)
MA1113-100-2	100V 2W	11×13
MA1113-14-2	14V 2W (12V 1.46W) (5V 0.26W)	
MA1313-100-2K (With thermocouple K)	100V 2W	13×13
MA1313-14-2K (With thermocouple K)	14V 2W (12V 1.46W) (5V 0.26W)	

### Cautions for plate type thick film element ceramic heater with cord connection

Please pay attention to the following cautions when using the product. Do not use for medical or other special purposes.

#### Environment for usage and storage

Insulation deterioration, corrosion, etc. may occur in places where corrosive gases are generated or where there are many dusts. Therefore, care must be taken in locations for installation and storage.

#### Placement

Leave a space between the heaters so that they are not affected by heat generation from other components.

#### Handling

Do not drop or give a shock that may cause damage.

The surface of the filler of this heater is water repellent, but contains porous in both the surface and the inside. Unlike common polymeric resins, it has properties such as moisture permeability, absorption of surfactants, and absorption of solvents and oils (fats and oils).

Do not use detergent to clean the surface of the filler.

Surfactant such as detergent will soak into the filler.

The impregnated detergent will not be able to escape outside and may cause the filler insulation to deteriorate.

Depending on the quality of the detergent, the heater element may also be damaged.

Do not use a substrate cleaning agent that contains a material that damages metals.

Components that damages the remaining metal will deteriorate the heater element. Water cleaning is basically recommended for cleaning.

Do not soak oil, etc., into the filler.

Depending on the quality of the absorbed oil, it may damage insulation deterioration or heater element.

#### Installation

Although this heater is water repellent, set it up in a location where the heater will not be exposed to water drops, water, etc.

It may damage the heater by generating heat with waterdrops adhering. (It may cause deterioration of insulation resistance due to a crack of the ceramic case, etc.)

Be careful not to apply excessive force to the terminals or heater body during installation.

We cannot determine the operating conditions after the heater is incorporated. Please use the heater after confirming thoroughly at your company.

Also, if a failure of our product is expected to cause serious damage such as human life, please take the following fail-safe design into sufficient consideration to ensure safety.

※Ensure system safety by setting up protection circuits and protection devices.

※Ensure system safety by providing a redundant circuit, etc. so that a single failure will not result in incomplete operation.

### Temperature control

Digital type  
Suitable for more accurate temperature control  
(0~999°C Variable button type)



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