

SINCE 1889



Power Semiconductor Mounting Board Thermal Character Evaluation/Analysis Equipment

Evaluate and Analyze Thermal Characteristic of Metalized Substrates

Conformance ISO4825-1:2023 TE100

Evaluation of Thermal Characteristics (Thermal Resistance) of Power Semiconductor Mounting Boards and Materials *Measured by ISO Compliant*

Equipment Configuration



- Equipment for Evaluating Thermal Characteristics (Thermal Resistance) of Power Device Substrates
- Evaluated According to ISO4825-1:2023
- Capable of Evaluating Heat Dissipation Characteristics Due to Module Structure
- Capable of Measuring and Evaluating Heat Dissipation Characteristics of Individual Substrate Materials

About [ISO4825-1:2023]

Fine ceramics (advanced ceramics, advanced technical ceramics) -Test method for thermal property measurements of metalized ceramic substrates -Part 1: Evaluation of thermal resistance for use in power modules

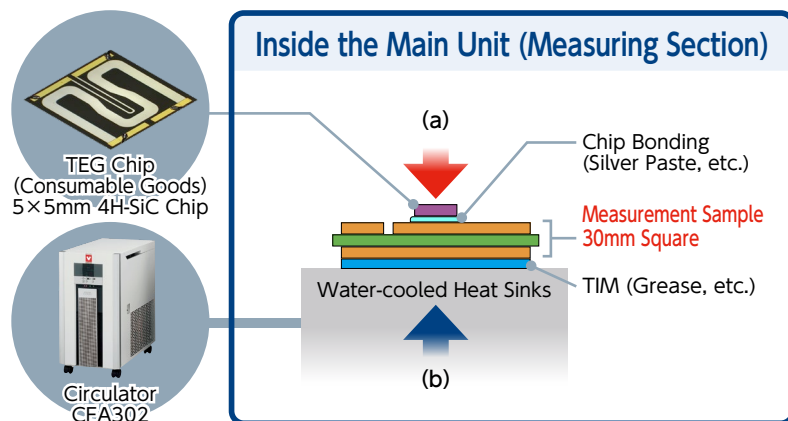
For more information, please visit the web.



* Appearance may change without informing.

When measuring, open the lower part and set the sample.
(See figure below)

Measurement Method



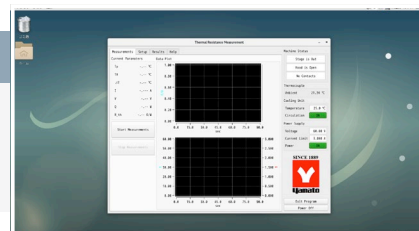
a. Heating the surface of the sample to be measured with a TEG tip

b. Cooling of the backside of the measurement sample with a heat sink

c. Find the temperature difference between the front and back surfaces and convert to thermal resistance

Analysis System (Software) as Standard

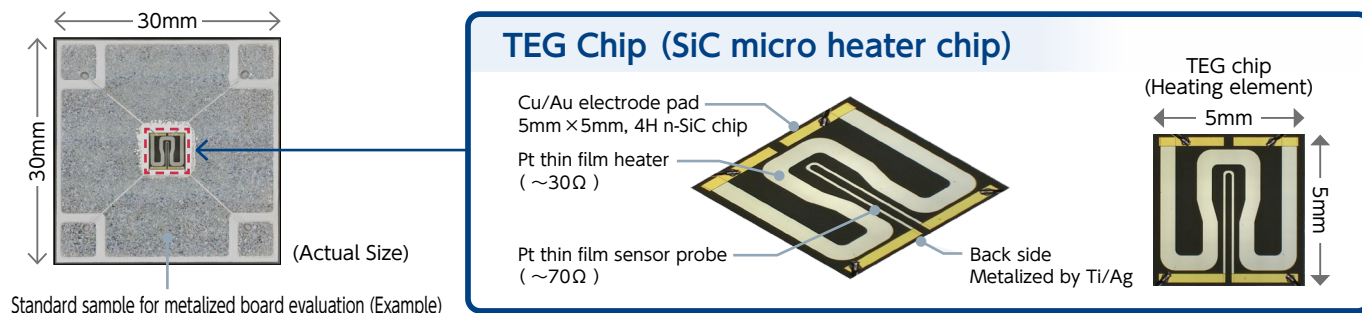
- Simple Operation Screen with "Setting", "Measurement", "Result", and "HELP"
- Centralized Heating of TEG Chips and Cooling by Circulator CFA302



Yamato Scientific Co.,Ltd.

TEG Chip (Consumable)

The TEG Chip is Attached to a Sample for Evaluation, such as a Metallized Substrate.



Specification

Body		
Type	TE100	
Compatible test size (ISO4825-1: 2023 Standard)	30 × 30mm	
Specimen Load	10kg	
Temperature Characteristics	resolution $\geq 0.01^{\circ}\text{C}$	
Electrical Resistance Measurement Error	$\pm 0.1\text{m}\Omega$ (70~130Ω)	
Sampling Rate	100sampling/sec (max)	
Supply Voltage	AC100V · 50/60Hz	
Size	Controller	W380 × D470 × H180mm
	Measurement Unit	W380 × D400 × H320mm

* Monitor, keyboard, and mouse are not included.

Sample testing is available. Please contact your local Yamato Scientific office!

TEG Chip	
Type	TEG Chip
Heat Generation Density	1KW/cm ²
Maximum Input Power	about 250W
Rate of Temperature Increase	$1.4 \times 10^4 \text{K/sec}$
Size	W5 × D5 × H0.35mm

Circulator (External Closed System Precision Circulator NeoCool)	
Type	CFA302
Circulation Method	External Closed System Circulation
Cooling Method	Air Cooling
Temperature Control Range	-10~60°C
Power Supply Capacity	AC100V · 13.8A
Size	W380 × D565 × H725mm

Q&A Power Semiconductor Mounting Board Thermal Character Evaluation/Analysis Equipment TE100

Q What markets can it be used in? Also, is it only applicable to metallized ceramic substrates?

The target area is power semiconductors, such as for automotive, electrical, and railroad applications. It contributes to high thermal conductivity design of semiconductors. It can be applied to ceramic substrates, heat transfer materials, heat sinks, and other power semiconductor components.

Q Is sample testing available?

Is possible. We will measure and evaluate the thermal resistance of your sample using a TEG chip. Please feel free to contact us.



The specifications and performance figures of the products listed in this catalog are presented as a user guide under general operating conditions. When using the product, please understand the contents of the instruction manual and use the product correctly. Please note that we cannot be held responsible for any damage to persons or property caused by using the product outside the conditions of use described in the instruction manual.

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