

## TRA-200/300 LED THERMAL RESISTANCE STRUCTURE ANALYZE SYSTEM



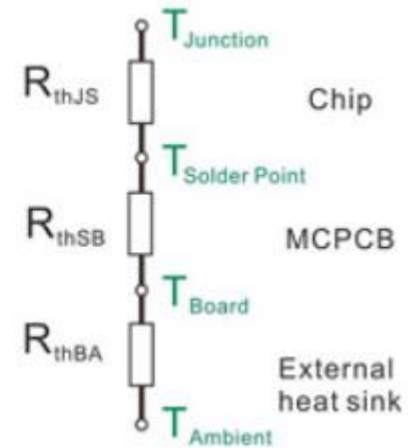
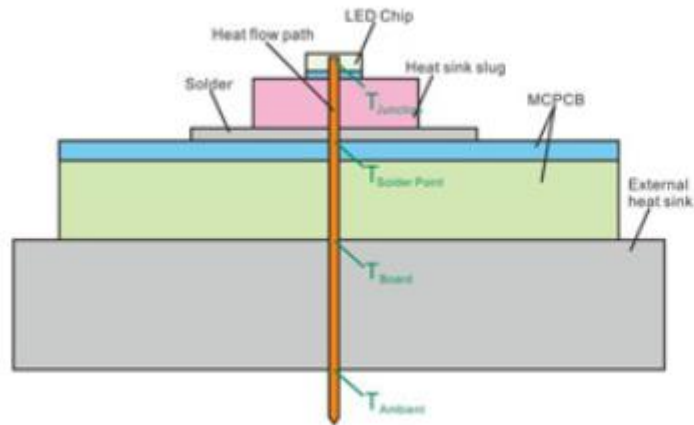
- Description

- Adopt patented technologies with high precision structure analysis function

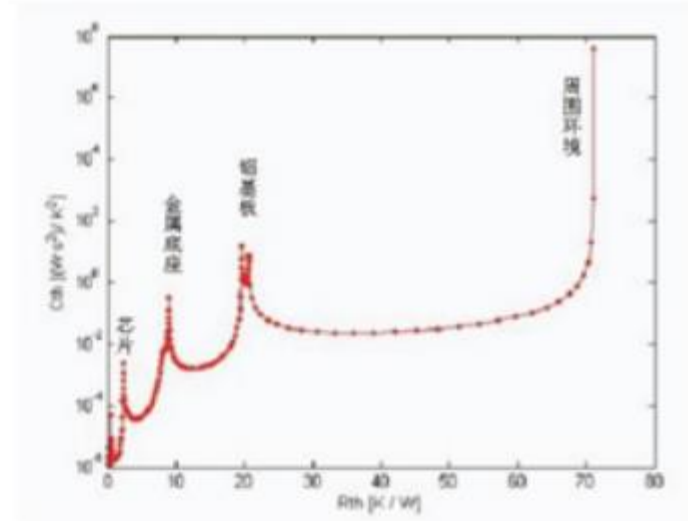
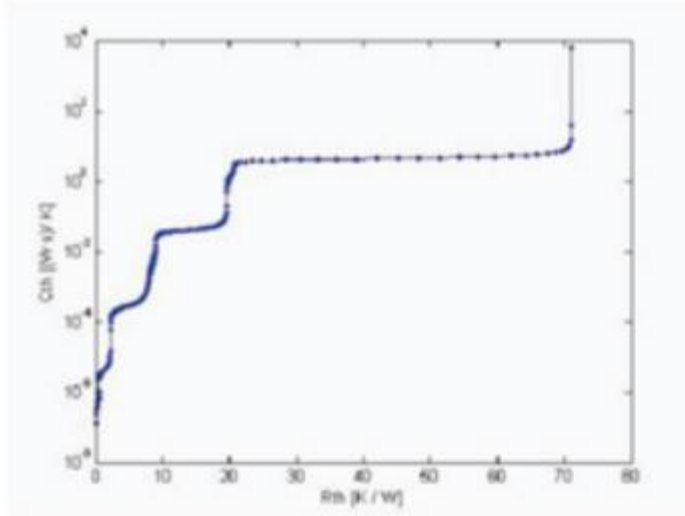
- TRA-200/300 LED Thermal Resistance Structure Analyzer is designed to measure the thermal resistance, relative thermal resistance and junction temperature as well as the corresponding curves
- The system can also analyze the cumulative and differential thermal structure function automatically, which is essential for analysis and evaluation of the LEDs thermal management.
- **Main reference standards**
  - EIA/JESD 51-1~14 Integrated Circuits Thermal Measurement Method
  - MIL-STD-750D Test Method for semiconductor Device
  - SJ 20788-2000 Semiconductor diode thermal resistance test method
  - GB / T 4023-1997 Semiconductor devices Discrete devices and integrated currents Part 2: Rectifier diodes
  - QB / T 4057-2010 Performance requirements for light-emitting diodes for general lighting

## • Parameter

- **Parameters**
- **LED junction temperature and thermal resistance**
- Thermal resistance of LED is the main judgment parameter of thermal conductivity of heat flow path. The thermal resistance structure is the thermal resistance distribution on the heat flow path of the measured device. For LED device, the total heat transfer resistance is generally composed of three parts: the thermal resistance of the chip to the metal substrate, the thermal resistance of metal substrate to the cooling system and the thermal resistance of the cooling system to the surrounding environment.



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- **LED thermal resistance structure analysis**
- The software of TRA-200/TRA-300 automatically transforms the heating or cooling curve data and obtains transient thermal resistance curve of LED. By establishing the finite element model, the integral and differential thermal structure functions are obtained. The transverse coordinates of the peaks on the differential structural functions are the thermal resistance values of each component to the PN junction on the heat flow path. The analysis of the structure function by TRA-200/TRA-300 can obtain elaborate thermal resistance structure of LED, so as to objectively evaluate the heat dissipation quality and the heat management level of the LED device, and provide the best verification for the heat dissipation design of LED.



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- Measurable parameters
- Thermal resistance ( $^{\circ}\text{C} / \text{W}$ ), thermal resistance structure analysis, junction temperature  $T_J$  ( $^{\circ}\text{C}$ );
- Measure the K coefficient curve of junction temperature and voltage under different currents;
- Can draw LED current-voltage characteristic curve, temperature rise and temperature decrease characteristic curve, etc. ;
- Forward current  $I_F$  (A), forward voltage  $V_F$  (V), spectral radiant power (W), etc. ;

