

JEDEC STANDARD

Two-Resistor Compact Thermal Model Guideline

JESD15-3

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TWO-RESISTOR COMPACT THERMAL MODEL GUIDELINE

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TWO-RESISTOR COMPACT THERMAL MODEL GUIDELINE

(From JEDEC Board Ballot JCB-08-29, formulated under the cognizance of the JC15.1 Committee on Thermal Characterization.)

1 Scope

This document specifies the definition and construction of a two-resistor compact thermal model (CTM) from the JEDEC junction-to-case and junction-to-board thermal metrics. The guidance provided in this document only applies to thermal metrics defined in JEDEC standards JESD51-8 and JESD51-12.

The scope of this document is limited to single-die packages that can be effectively represented by a single junction temperature.

2 Normative references

1. JESD51, *Methodology for the Thermal Measurement of Component Packages (Single Semiconductor Device)*, Dec. 1995.
2. JESD51-2, *Integrated Circuits Thermal Test Method Environmental Conditions – Natural Convection (Still Air)*, Dec. 1995.
3. JESD51-3, *Low Effective Thermal Conductivity Test Board for Leadless Surface Mount Packages*, Aug. 1996.
4. JESD51-5, *Extension of Thermal Test Board Standards For Packages With Direct Thermal Attachment Mechanisms*, Feb. 1996.
5. JESD51-6, *Integrated Circuit Thermal Test Method Environmental Conditions - Forced Convection (Moving Air)*, March 1999.
6. JESD51-7, *High Effective Thermal Conductivity Test Board for Leadless Surface Mount Packages*, Feb. 1999.
7. JESD51-8, *Integrated Circuit Thermal Test Method Environmental Conditions – Junction-to-Board*, Oct. 1999.
8. JESD51-9, *Test Boards for Area Array Surface Mount Package Thermal Measurements*, July 2000.
9. JESD51-10, *Test Boards for Through-Hole Perimeter Leadless Package Thermal Measurements*, July 2000.
10. JESD51-11, *Test Boards for Through-Hole Area Array Leadless Package Thermal Measurement*, June 2001.
11. JESD51-12, *Guidelines for Reporting and Using Electronic Package Thermal Information*, May 2005.
12. JESD15, *Thermal Modeling Overview*¹⁾.
13. JESD15-1, *Compact Thermal Modeling Overview*¹⁾.
14. JESD15-2, *Terms and Definitions for Modeling Standards*¹⁾.
15. JESD15-4, *DELPHI Compact Thermal Model Guideline*¹⁾.

¹⁾ To be published.