

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Test methods for electrical materials, printed board and other interconnection structures and assemblies –  
Part 2-808: Thermal resistance of an assembly by thermal transient method**

**Méthodes d'essai pour les matériaux électriques, les cartes imprimées et autres structures et assemblages d'interconnexion –  
Partie 2-808 : Résistance thermique d'un assemblage par la méthode du transitoire thermique**



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# CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references .....	5
3 Terms and definitions .....	5
4 Objective .....	5
5 Test specimen .....	6
6 Test equipment and procedures.....	7
6.1 Test method and recommended test parameters.....	7
6.2 Test equipment.....	7
6.3 Test procedure.....	8
7 Test result .....	8
8 Report .....	9
Annex A (informative) Additional test methods for thermal resistance .....	11
Annex B (informative) Thermal resistance of die attach materials .....	13
B.1 Test specimen .....	13
B.2 Die attach materials .....	13
B.3 Test result.....	14
Annex C (informative) Uncertainty and repeatability for thermal resistance test .....	16
C.1 Test specimen .....	16
C.2 Test result.....	16
Annex D (informative) Thermostat equipment .....	18
Bibliography.....	20
Figure 1 – Structure of an assembly.....	6
Figure 2 – The fabricated test sample .....	6
Figure 3 – Test structure for measuring thermal resistance .....	8
Figure 4 – Test result for thermal resistance of an assembly.....	9
Figure B.1 –Structure of test sample using die attach material .....	13
Figure B.2 –The fabricated test sample using die attach material.....	13
Figure B.3 – Test graph for die attach materials.....	15
Figure C.1 – Test structure for measuring thermal resistance .....	16
Figure C.2 – Test result for thermal resistance of assembly .....	16
Figure D.1 – Connection of the thermostat unit to the T3Ster® main system unit .....	18
Figure D.2 –Calibration diagram recorded by the T3Ster® thermostat.....	19
Table 1 – Test result for thermal resistance of an assembly .....	9
Table A.1 – ASTM C1113 .....	11
Table A.2 – ASTM E1461.....	11
Table A.3 – ASTM D5470 .....	12
Table B.1 – Properties for die attach materials.....	14
Table B.2 – Test result for die attach materials .....	15
Table C.1 – Test result for thermal resistance of assembly .....	17

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**TEST METHODS FOR ELECTRICAL MATERIALS, PRINTED BOARD AND  
OTHER INTERCONNECTION STRUCTURES AND ASSEMBLIES –****Part 2-808: Thermal resistance of an assembly  
by thermal transient method**

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The text of this International Standard is based on the following documents:

Draft	Report on voting
91/1935/FDIS	91/1955/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

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# TEST METHODS FOR ELECTRICAL MATERIALS, PRINTED BOARD AND OTHER INTERCONNECTION STRUCTURES AND ASSEMBLIES –

## Part 2-808: Thermal resistance of an assembly by thermal transient method

### 1 Scope

This part of IEC 61189 describes the thermal transient method to characterize the thermal resistance of an assembly consisting of a heat source (e.g. power device), an attachment material (e.g. solder) and a dielectric layer with electrode. This method is suitable to determine the thermal resistance of materials and assembly methods as well as to optimize the thermal flux to a heat sink.

NOTE This method is not intended to measure and specify the value of the thermal resistance of a dielectric material. For that purpose, other standards exist. Examples are given in Annex A.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60194-2, *Printed boards design, manufacture and assembly – Vocabulary – Part 2: Common usage in electronic technologies as well as printed board and electronic assembly technologies*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60194-2 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia, available at <https://www.electropedia.org/>
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### 4 Objective

The increasing power consumption of devices such as LED require a close examination of the heat dissipating path within thermal conductive printed circuit boards (Annex A). Therefore, effective removal of heat to maintain a safe junction temperature is the key to meeting the heat flux by using thermal conductive material for printed circuit boards. Thermal resistance is the crucial factor of heat dissipation dielectric materials in printed circuit board. Therefore, with the aim to reduce the thermal resistance in circuit boards, it is proposed to determine the thermal resistance by measuring the thermal transient characteristics of an assembly.