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EUROPEAN STANDARD
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EN 62047-11

September 2013

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English version

**Semiconductor devices -
Micro-electromechanical devices -
Part 11: Test method for coefficients of linear thermal expansion
of free-standing materials for micro-electromechanical systems
(IEC 62047-11:2013)**

Dispositifs à semiconducteurs -
Dispositifs microélectromécaniques -
Partie 11: Méthode d'essai pour les
coefficients de dilatation thermique
linéaire des matériaux autonomes pour
systèmes microélectromécaniques
(CEI 62047-11:2013)

Halbleiterbauelemente -
Bauelemente der Mikrosystemtechnik -
Teil 11: Prüfverfahren für lineare
thermische Ausdehnungskoeffizienten für
freistehende Werkstoffe der
Mikrosystemtechnik
(IEC 62047-11:2013)

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Foreword

The text of document 47F/154/FDIS, future edition 1 of IEC 62047-11, prepared by IEC/TC 47F "Microelectromechanical systems" of IEC/TC 47 "Semiconductor devices" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62047-11:2013.

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62047-3	-	Semiconductor devices - Micro-electromechanical devices - Part 3: Thin film standard test piece for tensile-testing	EN 62047-3	-



IEC 62047-11

Edition 1.0 2013-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Semiconductor devices – Micro-electromechanical devices –
Part 11: Test method for coefficients of linear thermal expansion of free-standing
materials for micro-electromechanical systems**

**Dispositifs à semiconducteurs – Dispositifs microélectromécaniques –
Partie 11: Méthode d'essai pour les coefficients de dilatation thermique linéaire
des matériaux autonomes pour systèmes microélectromécaniques**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SEMICONDUCTOR DEVICES – MICRO-ELECTROMECHANICAL DEVICES –

Part 11: Test method for coefficients of linear thermal expansion of free-standing materials for micro-electromechanical systems

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International Standard IEC 62047-11 has been prepared by subcommittee 47F: Micro-electromechanical systems, of IEC technical committee 47: Semiconductor devices.

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FDIS	Report on voting
47F/154/FDIS	47F/161/RVD

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

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SEMICONDUCTOR DEVICES – MICRO-ELECTROMECHANICAL DEVICES –

Part 11: Test method for coefficients of linear thermal expansion of free-standing materials for micro-electromechanical systems

1 Scope

This part of IEC 62047 specifies the test method to measure the linear thermal expansion coefficients (CLTE) of thin free-standing solid (metallic, ceramic, polymeric etc.) micro-electro-mechanical system (MEMS) materials with length between 0,1 mm and 1 mm and width between 10 μm and 1 mm and thickness between 0,1 μm and 1 mm, which are main structural materials used for MEMS, micromachines and others. This test method is applicable for the CLTE measurement in the temperature range from room temperature to 30 % of a material's melting temperature.

2 Normative References

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IEC 62047-3, *Semiconductor devices – Micro-electromechanical devices – Part 3: Thin film standard test piece for tensile-testing*

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