IEC 60286-1

Edition 3.0 2017-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Packaging of components for automatic handling – Part 1: Tape packaging of components with axial leads on continuous tapes

Emballage des composants pour opérations automatisées – Partie 1: Mise en bande des composants à sorties axiales en bandes continues

IEC 60286-1:2017-07(en-fr)

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 31.020 31.240

ISBN 978-2-8322-7259-6

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PACKAGING OF COMPONENTS FOR AUTOMATIC HANDLING –

Part 1: Tape packaging of components with axial leads on continuous tapes

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International Standard IEC 60286-1 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

This bilingual version (2019-08) corresponds to the monolingual English version, published in 2017-07.

This third edition cancels and replaces the second edition published in 1997. This edition constitutes a technical revision.

This edition includes the following significant changes with respect to the previous edition:

a) a complete revision of the structure (detailed in Annex A) and reworked layout.

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

FDIS	Report on voting
40/2538/FDIS	40/2552/RVD

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

The French version of this standard has not been voted upon.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 60286 series, under the general title *Packaging of components for automatic handling*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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PACKAGING OF COMPONENTS FOR AUTOMATIC HANDLING –

Part 1: Tape packaging of components with axial leads on continuous tapes

1 Scope

This part of IEC 60286 applies to the tape packaging of components with axial leads for use in electronic equipment. In general, the tape is applied to the component leads.

It covers requirements for taping techniques used with equipment for the preforming of leads, automatic handling, insertion and other operations, and includes only those dimensions which are essential to the taping of components intended for the above-mentioned purposes.

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 60294, *Measurement of the dimensions of a cylindrical component with axial terminations*

ISO 11469, *Plastics – Generic identification and marking of plastic products*

3 Terms and definitions

No terms and definitions are listed in this document.

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

4 Dimensions

4.1 Dimensions common to tapes and taped components with axial leads

4.1.1 General

The general configuration is shown in Figure 1, Table 1 and Table 2.

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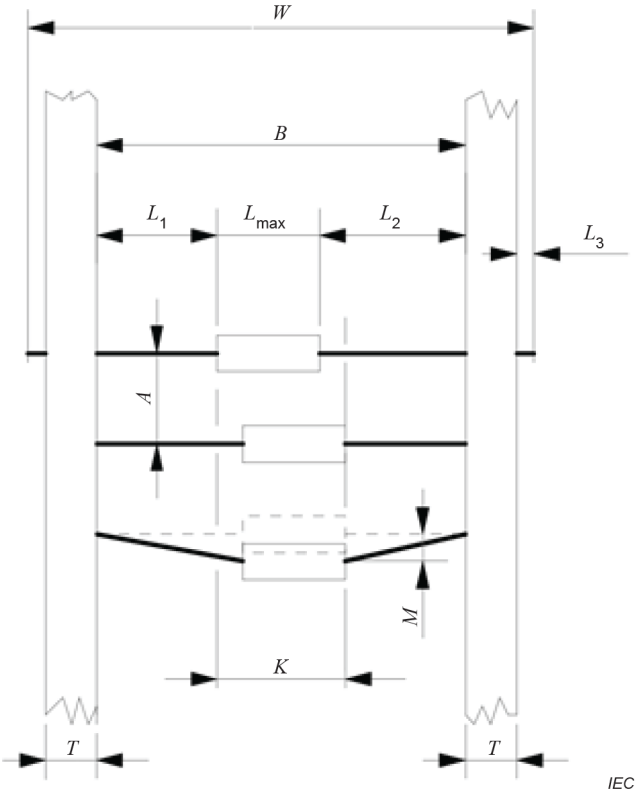

Key

A	is the distance between adjacent components in tape.
B	Is the Inner distance between two tapes.
K	is the allowed displacement distance of component in tape.
L_1	is lead length between component body and inner side of tape on left side.
L_2	is lead length between component body and inner side of tape on right side.
L_3	is the part of lead protruded outside the tape.
L_{max}	is the body length of the component.
M	is the max allowed distance of displacement.
T	is the width of the tape.
W	is the maximum allowed total distance of the component after protrusion of leads outside of the tape.

Figure 1 – Dimensions for tape packaging of components with axial leads

Table 1 – Tape widths and permissible variation

Nominal widths of tape *T* mm	Permissible variation in width mm
6	±1
9	±1

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Table 2 – Component spacing and permissible deviation

Standard spacing between components A mm	Permissible cumulative deviation over ten spacing P mm
5 ± 0,5	±2
10 ± 0,5	±2
15 ± 0,5	±2
20 ± 0,5	±2

4.1.2 Body location (permissible lateral deviation)

Dimension K, being the width of the window in which the component body shall be located, shall be 1,0 mm (for B = 26 mm) or 1,4 mm (for B > 26 mm) wider than the maximum length L_{max} of the component body. The latter is the body length measured in accordance with IEC 60294.

Unless otherwise specified, the window shall be centrally located between the tapes.

When a gauge measurement to determine dimension K is impractical, it is possible to measure the distances L_1 and L_2 of the leads. The difference between L_1 and L_2 shall not exceed 1,0 mm (for B = 26 mm) or 1,4 mm (for B > 26 mm).

4.1.3 Tape spacing

The maximum overall width W, including any lead protrusion L_3, shall not exceed 140 mm. Its value shall be chosen in relation to the component dimensions.

The tape spacing given in Table 3 is recommended.

Table 3 – Tape spacing

Inside tape spacing B mm
$26^{+1,5}_{0}$
52^{+2}_{-1}
63 ± 2
73 ± 2
83 ± 2
93 ± 2
Inside tape spacing B above 93 mm to be in 10 mm increments with a tolerance ±2 mm as long as the maximum overall width W of 140 mm is not exceeded.

4.2 Taping

4.2.1 General

The following requirements for axial components shall be met as appropriate (see Figure 1).

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