

BS EN 60286-4:2013



BSI Standards Publication

Packaging of components for automatic handling

Part 4: Stick magazines for electronic
components encapsulated in packages
of different forms

bsi.

...making excellence a habit.
AVA Documents™
Document Sharing Hub

National foreword

This British Standard is the UK implementation of EN 60286-4:2013. It is identical to IEC 60286-4:2013. It supersedes BS EN 60286-4:1998 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/40X, Capacitors and resistors for electronic equipment.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2013.
Published by BSI Standards Limited 2013

ISBN 978 0 580 72420 6
ICS 31.020; 31.240

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 November 2013.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60286-4

November 2013

ICS 31.020; 31.240

Supersedes EN 60286-4:1998

English version

**Packaging of components for automatic handling -
Part 4: Stick magazines for electronic components encapsulated in
packages of different forms
(IEC 60286-4:2013)**

Emballage des composants pour
opérations automatisées – Partie 4:
Magasins chargeurs pour composants
électroniques encapsulés dans des
boîtiers de différentes formes
(CEI 60286-4:2013)

Gurtung und Magazinierung von Bauteilen
für automatische Verarbeitung -
Teil 4: Stangenmagazine für elektronische
Bauelemente mit verschiedenen
Gehäusen
(IEC 60286-4:2013)

This European Standard was approved by CENELEC on 2013-08-30. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels

© 2013 CENELEC - All rights of exploitation in any form and by any means reserved worldwide for CENELEC members.

Ref. No. EN 60286-4:2013 E

 **Documents**
Document Sharing Hub

Foreword

The text of document 40/2230/FDIS, future edition 3 of IEC 60286-4, prepared by IEC TC 40, "Capacitors and resistors for electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60286-4:2013.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2014-05-30
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-08-30

This document supersedes EN 60286-4:1998.

EN 60286-4:2013 includes the following significant technical changes with respect to EN 60286-4:1998:

Clause 4 describes the guidelines for customer specific stick magazine design. It replaces the magazine design rules for IEC outlined components and rules for orientation of components in stick magazines which have been moved to Annexes Z to D.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60286-4:2013 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

ISO 11469 NOTE Harmonized as EN ISO 11469.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60191-3	1999	Mechanical standardization of semiconductor devices - Part 3: General rules for the preparation of outline drawings of integrated circuits	EN 60191-3	1999
IEC 60747-1 + corr. August + A1	2006 2008 2010	Semiconductor devices - Part 1: General	-	-

CONTENTS

1	Scope	5
2	Normative references	5
3	Terms, definitions and conventions	5
3.1	Terms and definitions	5
3.2	Conventions	5
4	Shape and cross-section of stick magazine	6
5	Dimensions of stick magazines	7
5.1	General	7
5.2	Materials	8
5.3	Recycling	8
6	Mechanical stability	8
7	End stoppers and spacers	9
8	Orientation of the components in the stick magazine	9
9	Marking	9
	Annex A (informative) DIL packages for through-hole mount	10
	Annex B (informative) SO packages for surface mounting	12
	Annex C (informative) Leadless chip carrier packages (LCCC) for surface mounting	13
	Annex D (normative) Rule for the orientation of integrated circuit packages in handling and shipping carriers such as stick magazines and rails (from IEC 60191-3:1999, Annex G)	14
	Bibliography	16
	Figure 1 – Shape and cross-sections of stick magazines	6
	Figure 2 – Schematic of stick magazine design and schematic of package profile	7
	Figure A.1 – DIL packages for through-hole mounting	10
	Figure B.1 – SO packages for surface mounting	12
	Figure C.1 – Leadless chip carrier packages (LCCC) for surface mounting	13
	Figure D.1 – Five examples of the terminal No. 1 marking locations	15
	Table 1 – Tolerances to the package profile dimensions	7
	Table 2 – Principle of stick magazine requirements	8
	Table 3 – Material reference for magazines and stoppers	8
	Table A.1 – $e_1 = 3$ modules e	10
	Table A.2 – $e_1 = 4$ modules e	11
	Table A.3 – $e_1 = 6$ modules e	11
	Table B.1 – Stick magazine dimensions for SO packages	12
	Table C.1 – Stick magazine dimensions for LCCC packages	13