

**Harmonized system of quality
assessment for electronic components**

**Blank detail
specification:
Fixed low power
non-wirewound
resistors
(Assessment levels SB
and SC)**

The European Standard EN 140104:1996 has the status of a
British Standard

ICS 31.040.10

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW



Document Sharing Hub

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee EPL/40, Capacitors and Resistors for Electronic Equipment, to Subcommittee EPL/40/2, Resistors, upon which the following bodies were represented:

- BEAMA Ltd.
- Federation of the Electronics Industry
- Ministry of Defence
- National Supervising Inspectorate (BSI-PC)

This British Standard, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 September 1996

© BSI 11-1998

The following BSI references relate to the work on this standard:
Committee reference EPL/40/2
Draft announced in *BSI News Update* April 1996

ISBN 0 580 26062 3

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Committees responsible	Inside front cover
National foreword	ii
Foreword	2
Text of EN 140104	3
List of references	Inside back cover

National foreword

This British Standard has been prepared by Subcommittee EPL/40/2 and is the English language version of EN 140104:1996 *Blank detail specification: Fixed low power non-wirewound resistors (Assessment levels SB and SC)*, published by the Electronic Components Committee (CECC) of the European Committee for Electrotechnical Standardization (CENELEC).

This standard supersedes BS CECC 40104:1992 which is withdrawn.

This standard lists the requirements to be included in any detail specification for this type of resistor.

The requirements of this blank detail specification and BS CECC 00111 *Rule of Procedure 11. Specifications* Part 4:1991 *Regulations for CECC detail specifications* apply to detail specifications.

The British Standard which implements the CECC Rules of Procedure is BS 9000 *General requirements for a system for electronic components of assessed quality* Part 2:1996 *Specification for the national implementation of the CECC system*.

Cross-references

Publication referred to	Corresponding British Standard
EN 140000:1993	BS EN 140000:1995 <i>Harmonized system of quality assessment for electronic components. Generic specification: fixed resistors</i>
EN 100014:1991 (CECC 00014:1986)	BS EN 100014:1992 <i>Harmonized system of quality assessment for electronic components. Basic specification CECC assessed process average procedure (60 % confidence limit)</i>
CECC 00114-IV:1991 ¹⁾	BS CECC 00114 <i>Rule of procedure 14. Quality assessment procedures</i> Part 4:1992 <i>Procedure for enhanced assessment of quality</i>
IEC 68-2-20:1979	BS 2011 <i>Environmental testing</i> Part 2.1 <i>Tests</i> Part 2.1T:1981. <i>Test T. Soldering</i>
IEC 286	BS 6062 <i>Packaging of electronic components for automatic handling</i>
IEC 440:1973	BS 5694:1979 <i>Method for measurement of non-linearity in resistors</i>

Copyright

BSI copyright (see back cover) does not preclude the reproduction and free use of the pro forma pages in the course of preparing detail specifications.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

¹⁾ CECC 00114 (RP14) Part IV has replaced CECC 00107:1980 RP7 Part II.

English version

**Blank Detail Specification:
Fixed low power non-wirewound resistors
(Assessment levels SB and SC)**

Spécification particulière cadre: Résistances
fixes non-bobinées à faible dissipation (Niveaux
d'assurance de la qualité SB et SC)

Vordruck für Bauartspezifikation:
Nichtdrahtgewickelte Festwiderstände kleiner
Belastbarkeit (Bewertungsstufen SB und SC)

This European Standard was approved by CENELEC on 1995-11-28. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Foreword

This European Standard was prepared by CENELEC/TC CECC/SC 40XB, Fixed resistors. The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 140104 on 1995-11-28. This European Standard supersedes CECC 40 104:1990. The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1996-06-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-12-01

Contents

	Page
Foreword	2
1 Ratings and characteristics	3
2 Marking	4
3 Related documents	4
4 Ordering information	4
5 Certified test records	4
6 Additional information (not for inspection purposes)	5
7 Inspection requirements (see Table 2)	5
8 Assessed process average procedures	6
Table 2	7

Specification available from:	(1)	CECC 40 104-XXX	(2)
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH:	(3)		(4)
Outline and dimensions — (see Table 1) (First angle projection)	(7)	FIXED LOW POWER NON-WIREWOUND RESISTORS	(5)
			(6)
		ASSESMENT LEVELS “SB” & “SC”	(8)
NOTE 1 Other shapes are permitted within the dimensions given.			
NOTE 2 These resistors are (not) suitable for printed wiring applications.			

1 Ratings and characteristics

*Resistance range²⁾

Standard tolerances	= --- %		
Climatic category	/ /		
Vibration severity	10 Hz to 2 000 Hz; 1,5 mm or 196 m/s ² (whichever is the less severe)		
Low air pressure	2,0 kPa (20 mbar)		
Limits of resistance change after 2 000 h endurance test	(---- % R + --- Ω)		
Temperature characteristic of resistance (°C to °C)			
Maximum soldering temperature (after 1 000 h) electrical endurance test	°C	Soldering time	 sec
		Distance from case	 mm

NOTE Various parameters have been precisely specified for this component. It should not be assumed that any parameter not specified will remain unchanged from one component to another.

NOTE Should, for any reason, it be necessary for further parameter(s) to be controlled, then a new fuller specification should be used.

NOTE The additional test method(s) shall be fully described, and appropriate limits, AQL's and Inspection levels specified.

1.1 Derating

Resistors covered by this specification are normally derated according to the curve:

The detail specification shall state the maximum allowable dissipation at temperatures other than 70 °C. All break points on the curve shall be verified by test.

A larger area of operation may be given in the detail specification provided it includes all the areas given above.

An EXAMPLE of the derating curve having a larger area of operation is given below. In the example the zero rating temperature is higher than the upper category temperature.

²⁾ The preferred values are those of the E — series of IEC 63. Where the use of intermediate values is essential, they should, wherever possible, be chosen from a series in that document.