

European Committee for Electrotechnical Standardization (CENELEC)
Cenelec Electronic Components Committee

CECC



Système Harmonisé d'Assurance de la Qualité
des Composants Electroniques

SPECIFICATION PARTICULIERE:

RESISTANCES FIXES NON-BOBINEES A FAIBLE DISSIPATION

STABILITE 1%

Harmonized System of Quality Assessment for
Electronic Components

DETAIL SPECIFICATION:

FIXED LOW POWER NON-WIREWOUND RESISTORS

STABILITY 1%

Harmonisiertes Gütebestätigungssystem für
Bauelemente der Elektronik

BAUARTSPEZIFIKATION:

NICHTDRAHTGEWICKELTE FESTWIDERSTÄNDE KLEINER BELASTBARKEIT

STABILITÄT 1%

1 Edition
Issue
Ausgabe

CECC 40101-803

Cette page bleue doit être insérée après la page de garde de la CECC 40 101-803 (Edition 1)

PREMIERE MODIFICATION A LA CECC 40 101-803 :
SPECIFICATION PARTICULIERE :
RESISTANCES FIXES NON-BOBINES A FAIBLE
DISSIPATION Stabilité 1 %

Les modifications suivantes doivent être effectuées à la main à l'Edition 1 (1979) de la CECC 40 101-803 :

Modifier le Tableau 2 à la page 6 comme suit :

Sous-groupe B1: supprimer NP = S-4
remplacer par NP = S-3

This blue page should be inserted after the title page of CECC 40 101-803 (Issue 1)

1ST AMENDMENT TO CECC 40 101-803 :
DETAIL SPECIFICATION :
FIXED LOW POWER NON-WIREWOUND RESISTORS
Stability 1 %

The following amendments to Issue 1 (1979) of CECC 40 101-803 should be made in manuscript :

Please amend Table 2 on page 6 as follows :

Sub-Group B1: delete IL = S-4
insert IL = S-3

Dieses blaue Blatt ist nach dem Titelblatt der CECC 40 101-803 (Ausgabe 1) einzusetzen

1. ÄNDERUNG ZU CECC 40 101-803 :
RADARTSPEZIFIKATION :
NICHTDRAHTGEWICKELTE FESTWIDERSTÄNDE
KLEINER BELASTBARKEIT Stabilität 1 %

Bei der Ausgabe 1 (1979) der CECC 40 101-803 ist keine Änderung im deutschen Text notwendig

CECC 40 101-803	Modification	1	1979
	Amendment	1	
	Änderung	1	

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PREFACE

This detail specification was prepared by CECC Working Group 4: "Resistors".

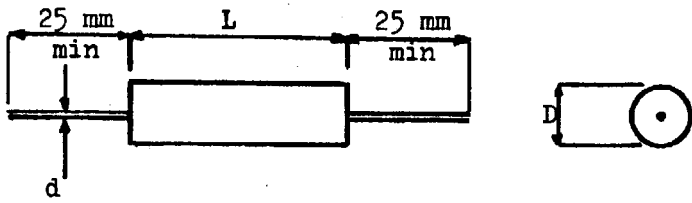
It is one of a series of detail specifications for fixed low power non-wirewound resistors, all relating to the generic specification printed as CECC 40 000, the sectional specification printed as CECC 40 100 and the blank detail specification printed as CECC 40 101.

The text of this specification was circulated to the CECC for voting in the documents listed below and was ratified by the CECC for publishing as a CECC Specification.

Document**Voting date**

CECC(Secretariat)360
CECC(Secretariat)641

11 August 1975
5 November 1977

Copies of this specification can be obtained from: CECC General Secretariat Stresemannallee 21 D-6000 FRANKFURT/MAIN 70 or from the addressees shown on the inside cover.	CECC 40 101-803 1979 
ELECTRONIC COMPONENTS OF ASSESSED QUALITY - DETAIL SPECIFICATION IN ACCORDANCE WITH CECC 40 000 AND CECC 40 100	Issue 1
 Outline and dimensions data (See table 1)	FIXED LOW POWER NON - WIREWOUND INSULATED RESISTORS AXIAL WIRE TERMINATIONS TYPICAL CONSTRUCTION : (See 1) 1 % STABILITY

For ordering information, see 4.

NOTE 1 : Other shapes are permitted with the dimensions given.

NOTE 2 : These resistors are suitable for printed wiring applications.

1. RATINGS AND CHARACTERISTICS

*Resistance range	The range of values available in each style shall be given in the Qualified Products List (CECC 00 200).
Standard tolerances	$\pm 0,5 \%$; $\pm 1 \%$; $\pm 2 \%$
Climatic category	55/125/56
Vibration severity	10 Hz to 500 Hz; 0,75 mm or 98 m/s ² (whichever is the less severe)
Low air pressure	8,5 kPa (85 mbar)
Limit of resistance change after 1000 h endurance test	$\pm (1 \%R + 0,05 \Omega)$
*The preferred values are taken from IEC 63 : E48 for $\pm 2 \%$ selection tolerance; E96 for other values of selection tolerance. Where the use of intermediate values is essential they should, whenever possible, be chosen from a series in that document.	

See the relevant Qualified Products List for availability of components made to this detail specification.

TABLE 1

Style (See Note 1)	Rated dissipation at 70 % (W)	Category dissipation at 125 % (W)	Limiting element voltage (V d.c. or a.c. r.m.s.)	Isolation voltage (V d.c. or a.c. peak)	Dimensions (mm) (See Note 2)									
					L		D		d preferred			d permissible		
					min	max	min	max	min	nom.	max	min	nom.	max
A*	0,063	0,036	200	280	3,3	4,7	1,2	1,8	0,45	0,5	0,55	0,35	0,4	0,44
B*	0,125	0,063	200	280	5,2	7,2	2,0	2,5	0,55	0,6	0,66	-	-	-
C*	0,25	0,125	250	350	7,5	11,1	2,4	4,2	0,55	0,6	0,66	0,75	0,8	0,88
D*	0,50	0,25	350	500	11,0	16,7	3,9	6,5	0,75	0,8	0,88	0,55	0,6	0,66

NOTE 1 : Asterisk to be replaced by the letter appropriate to the temperature characteristic (see 'Ratings and characteristics'). The style reference code shown here is arbitrarily chosen and relates to this detail specification only.

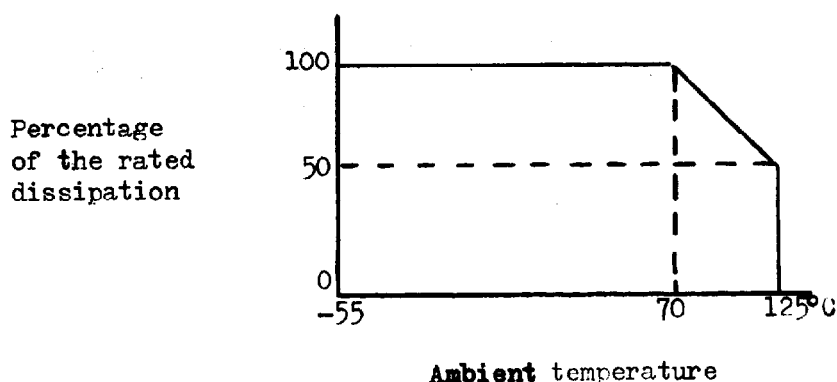
NOTE 2 : The Qualified Products List shall show whether the preferred or permissible dimensions have been used in approving the component and if the permissible dimensions have been used this information shall be given in a note to the Qualified Products List entry.

Temperature characteristic
of resistance
(20 to 70 °C)

Code letter	$\Delta R/R$ (20/70)	Temp. coeff. ($10^{-6}/K$)	Typical construction
K	$\pm 0,50 \%$	± 100	Metal or metal oxide film
C	$\pm 0,25 \%$	± 50	Metal film
E	$\pm 0,125 \%$	± 25	Metal film

1.1 Derating

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



2. MARKING

The marking of the component and package shall be in accordance with the requirements of 2.4 of CECC 40 000.

3. RELATED DOCUMENTS

CECC 40 000	(1973)	Generic Specification: Fixed resistors.
CECC 40 100	(1973)	Sectional Specification: Fixed low power non-wirewound resistors.
CECC 00 007	(1978)	Basic Specification: Sampling plans and procedures for inspection by attributes (Issue 2).

4. ORDERING INFORMATION

Orders for resistors covered by this specification shall contain the following information :

- Specification number and style
- Resistance value
- Tolerance

for example : CECC 40 101-803 Style CC, 2,2 k Ω $\pm 0,5 \%$

5. CERTIFIED TEST RECORDS (RCE)

Certified Test Records shall be prepared in accordance with 3.5.1 of CECC 40 000. Measurements information shall be in accordance with 3.5.2 of CECC 40 000 for the percentage change in resistance resulting from the Endurance Test at 70 °C.

6. INSPECTION REQUIREMENTS (See Table 2)

- 6.1 When drying is called for, Procedure I of 4.2 of CECC 40 000 shall be used.
- 6.2 When it is desired to obtain qualification approval by adopting the fixed sample size procedure, use shall be made of the test schedule given for that purpose in CECC 40 100.

The conditions of test and the performance requirements shall be identical to those prescribed for quality conformance inspection in Table 2 of this detail specification.

TABLE 2

Test (See Note 1)	D or ND	Conditions of test	I L (See Note 2)	A Q L	Performance requirements (See Note 1)						
<u>GROUP A INSPECTION</u>											
To be conducted on a sampling basis, lot-by-lot											
<u>Sub-Group A1</u> 4.3.1 Visual examination 4.3.2 Marking	ND		S-4	1,0 %	 As in 4.3.1 As in 4.3.2						
<u>Sub-Group A2</u> 4.3.3 Dimensions (gauging) 4.4 Resistance	ND	A gauge plate of 1,5 mm shall be used	S-4	1,0 %	 As specified in Table 1 As in 4.4.2						
<u>GROUP B INSPECTION</u>											
To be conducted on a sampling basis, lot-by-lot											
<u>Sub-Group B1</u> 4.6 Voltage proof	ND		S- 3	1,0 %	 As in 4.6.3						
<u>Sub-Group B2</u> 4.15.1 Soldering - Solderability 4.11 Overload	D	Solder bath method : Temperature : 230 ± 10 °C Duration : 2 ± 0,5 s <table><tr><td>Test duration</td><td>Rated dissipation</td></tr><tr><td>1 s</td><td>0,063 W</td></tr><tr><td>5 s</td><td>0,125 to 0,50 W</td></tr></table>	Test duration	Rated dissipation	1 s	0,063 W	5 s	0,125 to 0,50 W	S-3	2,5 %	 As in 4.15.1 The terminations shall be examined for good tinning, as evidenced by free flowing of the solder, with wetting of the terminations.
Test duration	Rated dissipation										
1 s	0,063 W										
5 s	0,125 to 0,50 W										

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Test (See Note 1)	D or ND	Conditions of test	Sample size & criterion of acceptability (See Note 3)			Performance requirements (See Note 1)															
			p	n	c																
- Final measurements		Visual examination Resistance Insulation resistance				As in 4.20.8 $\Delta R: \leq \pm(1\%R + 0,05 \Omega)$ $R : \geq 100 M\Omega$															
<u>Sub-Group C2</u> 4.24.1 Endurance at 70 °C	D	Duration : 1 000 h Examination at 48, 500 and 1 000 h Visual examination Resistance Examination at 1 000h Insulation resistance The test on one sample each year shall be extended to 8 000 h duration Examination at 2 000, 4 000 and 8 000 h Resistance	3 12	20 20	1 -	As in 4.24.1.7 $\Delta R: \leq \pm(1\%R + 0,05 \Omega)$ $R : \geq 1 G\Omega$ $\Delta R/R$: The results obtained are for information only															
<u>Sub-Group C3</u> 4.7 Temperature characteristic of resistance	ND		3	20	1	<table><tr><td>-55/20</td><td>20/125</td><td>Code</td></tr><tr><td colspan="3">$\Delta R: \leq \text{---} \%R$</td></tr><tr><td>$\pm 0,75$</td><td>$\pm 1,05$</td><td>K</td></tr><tr><td>$\pm 0,375$</td><td>$\pm 0,525$</td><td>C</td></tr><tr><td>$\pm 0,188$</td><td>$\pm 0,262$</td><td>E</td></tr></table>	-55/20	20/125	Code	$\Delta R: \leq \text{---} \%R$			$\pm 0,75$	$\pm 1,05$	K	$\pm 0,375$	$\pm 0,525$	C	$\pm 0,188$	$\pm 0,262$	E
-55/20	20/125	Code																			
$\Delta R: \leq \text{---} \%R$																					
$\pm 0,75$	$\pm 1,05$	K																			
$\pm 0,375$	$\pm 0,525$	C																			
$\pm 0,188$	$\pm 0,262$	E																			
<u>GROUP D INSPECTION</u>																					
To be conducted on a sampling basis at the periodicity given in column 'p'																					
<u>Sub-Group D1</u> 4.21 Damp heat, steady state	D	Visual examination Resistance Insulation resistance	12	20	1	As in 4.21.4 $\Delta R: \leq \pm(1\%R + 0,05 \Omega)$ $R : \geq 100 M\Omega$															

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CECC 40 101-803 Issue 1

Test (See Note 1)	D or ND	Conditions of test	Sample size & criterion of acceptability (See Note 3)			Performance requirements (See Note 1)
			p	n	c	
<u>Sub-Group D2</u> 4.3.4 Dimensions (detail) 4.24.3 Endurance at upper category temperature	D	Duration : 1 000 h Examination at 48, 500 and 1 000 h Visual examination Resistance Examination at 1 000h Insulation resistance	36	20	1	As specified in Table 1 As in 4.24.3.7 $\Delta R: \leq \pm(1 \% R + 0,05 \Omega)$ $R: \geq 1 \text{ G}\Omega$

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