

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

CECC

Système Harmonisé d'Assurance de la Qualité
des Composants Electroniques

SPECIFICATION PARTICULIERE:

VARISTANCES BASSE TENSION POUR MATERIEL TELEPHONIQUE

Disque avec sorties unidirectionnelles par fils: protégé
0,4 W: Niveau d'assurance de qualité P

Harmonized System of Quality Assessment for
Electronic Components

DETAIL SPECIFICATION:

LOW VOLTAGE VARISTORS PRIMARILY FOR TELEPHONY APPLICATIONS

Disc type, with unidirectional wire terminations: protected
0,4 W: Assessment level P

Harmonisiertes Gütebestätigungssystem für
Bauelemente der Elektronik

BAUARTSPEZIFIKATION: NIEDERSPANNUNGS- VARISTOREN VORZUGSWEISE FÜR TELEPHONIE-ANWENDUNGEN

Scheibenbauform mit einseitig herausgeführten
Anschlußdrähten: lackumhüllt
0,4 W: Gütebestätigungsstufe P



1 Edition
Issue
Ausgabe

CECC 42 101-801

1982

Information about the System may be obtained from:



FEN e.V. Secretariat
and
CECC General Secretariat
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*or from the National Authorized Institutions
of the participating countries listed
who can supply copies of:*

- 1 The Internal Regulations of the FEN e.V.
- 2 The Rules of Procedure of the System
- 3 CECC Specifications of the FEN and National Specifications for the System
- 4 CECC 00 200: Qualified Products List (QPL)
- 5 CECC 00 300: CECC Publications and their related national documents
- 6 Other CECC Publications and publicity documents

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FOREWORD

The CENELEC Electronic Components Committee (CECC) is composed of those member countries of the European Committee for Electrotechnical Standardization (CENELEC) who wish to take part in a harmonized System for electronic components of assessed quality.

The object of the System is to facilitate international trade by the harmonization of the specifications and quality assessment procedures for electronic components, and by the grant of an internationally recognized Mark, or Certificate, of Conformity. The components produced under the System are thereby accepted by all member countries without further testing.

This specification has been formally approved by the CECC, and has been prepared for those countries taking part in the System who wish to issue national harmonized specifications for LOW VOLTAGE VARISTORS PRIMARILY FOR TELEPHONY-APPLICATIONS (ASSESSMENT LEVEL P). It should be read in conjunction with document CECC 00 100: Basic Rules (1974).

At the date of printing of this document the member countries of the CECC are Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Sweden, Switzerland, and the United Kingdom. Copies of it can be obtained from the addresses shown on the inside cover.

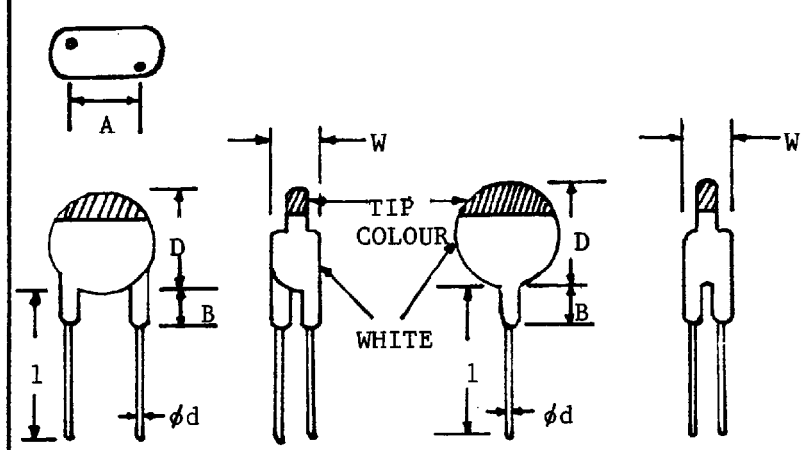
PREFACE

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

It is one of a series of detail specifications for low voltage varistors primarily for telephony applications, all relating to the generic specification printed as CECC 42 000, the sectional specification printed as CECC 42 100 and the blank detail specification printed as CECC 42 101.

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

<u>Document</u>	<u>Voting date</u>	<u>Report on the voting</u>
CECC(Secretariat)823	October 1979	CECC(Secretariat)952

Copies of this specification can be obtained from : CECC General Secretariat Stresemannallee 15 D-6000 Frankfurt/Main 70 or from the addresses shown on the inside cover.	CECC 42 101-801 1982
ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH CECC 42 000, GENERIC SPECIFICATION FOR VARISTORS AND CECC 42 100, SECTIONAL SPECIFICATION FOR LOW VOLTAGE VARISTORS PRIMARILY FOR TELEPHONY APPLICATION.	Issue 1
Outline and dimensions :- (See Table 1)  Style A- Style B-	LOW VOLTAGE VARISTORS PRIMARILY FOR TELEPHONY APPLICATIONS TYPICAL CONSTRUCTION : SILICON CARBIDE DISC TYPE, WITH UNIDIRECTIONAL WIRE TERMINATIONS. PROTECTED 0,4 W ASSESSMENT LEVEL 'P'

For ordering information, see Clause 4.

NOTE 1 : Other shapes are permitted within the dimensional envelope shown.

NOTE 2 : The non-dimensioned details do not affect the use of the device.

TABLE 1

Style	Colour of disc tip	Max. Current at reference voltage (48 V) (mA)	Peak Current for voltage (145 V) under pulse conditions (mA)	Dimensions (mm)					
				D max.	W max.	d nom (See IEC 301)	l min.	B max.	A
*A	black	0,5	27	14	6	0,8	35	6	**
*B	maroon	0,9	44	14	6	0,8	35	6	**
*C	red	1,7	65	14	6	0,8	35	6	**
*D	orange	3	91	14	6	0,8	35	6	**
*E	yellow	5	152	14	6	0,8	35	6	**

** To be in accordance with ordering information.
 * Style in accordance with outline drawing above to be inserted.

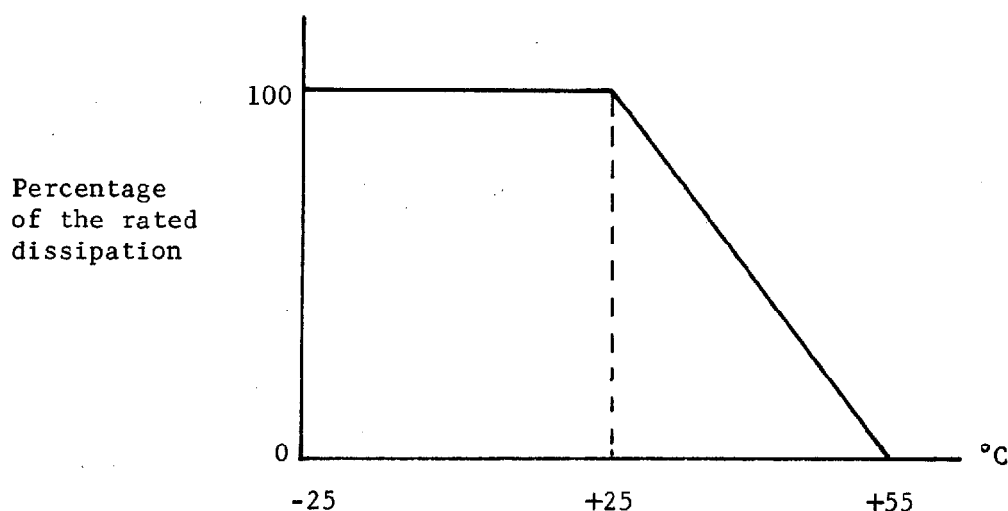
See the relevant Qualified Products List for the availability of components qualified to this detail specification.

1 RATINGS AND CHARACTERISTICS

Climatic category	25/055/21
Reference voltage	48 V d.c.
Rated dissipation (at 25 °C)	0,4 W
Temperature coefficient of current (measured at 48 V)	0,8 %/°C max.
Non-linearity	145 V _{max.}

1.1 De-rating curve

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

2 MARKING

The marking of the component and the package shall be in accordance with the requirements of CECC 42 000.

3 RELATED DOCUMENTS

CECC 00 006	1981	Basic specification : Environmental test procedures
CECC 42 000	1978	Generic specification : Varistors
CECC 42 100	1978	Sectional specification: Low voltage varistors primarily for telephony applications
IEC 68-2-20	1979	Basic environmental testing procedures. Test T: Soldering
IEC 301	1971	Preferred diameters of wire terminations of capacitors and resistors
IEC 410	1973	Sampling plans and procedures for inspection by attributes

4 ORDERING INFORMATION

Orders for varistors covered by this specification shall contain the following information in clear or coded form :

- reference voltage
- maximum current at reference voltage
- number of this detail specification and style reference
- dimension "l" if other than that in Table 1
- the value of dimension "A".

5. CERTIFIED TEST RECORDS (RCE)

Certified test records shall be prepared in accordance with 3.5 of CECC 42 000.

6. INSPECTION REQUIREMENTS (See Table 2)

When it is desired to obtain qualification approval by adopting the fixed sample size procedure, (See 3.3.3 of CECC 42 000) use shall be made of the test schedule given for that purpose in CECC 42 100.

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

(See Notes 1 and 2)

See Notes 1 and 2

Clause Number and Test	Conditions of Test	IL	AQL	Performance Requirements
GROUP A INSPECTION				
To be conducted on a sampling basis, lot-by-lot				
Sub-Group A1 (Non-destructive)		II	4%	As in 4.2.1.
4.2.1	Visual examination			
Sub-Group A2 (Non-destructive)		II	1%	As in 4.2.2 As specified in Table 1
4.2.2	Marking			
4.2.3	Dimensions (gauging)	Dimension D		
Sub-Group A3 (Non-destructive)		II	1,5%	V _{max} : 145 V I : ≤ --- mA As specified in Table 1.
Cl.2	Voltage under pulse conditions	For peak current see Table 1		
4.3	Current at reference voltage	Reference voltage : 48 V		
Sub-Group A4 (Non-destructive)		S-1	4%	As specified in Table 1
4.2.4	Dimensions (detail)	∅d, l, W		
GROUP B INSPECTION (See Note 6)				
To be conducted on a sampling basis, lot-by-lot				
Sub-Group B1 (Destructive)		S-3	2,5%	As in 4.11.6 Δ I : ≤ 10 % The terminations shall be uniformly tinned.
4.11	Robustness of terminations	Tensile and bending tests. (See Note 5)		
		Visual examination		
		Current at reference voltage		
		Reference voltage : 48 V		
4.10.1	Soldering - solderability	Solder bath method : 230 ± 10 °C		

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(See Notes 1,2 and 3)

See Notes 1, 2 and 3

Clause Number and Test	Conditions of Test	IL	AQL	Performance Requirements
<u>Sub-Group B3 (Destructive)</u>		S-2	1,5%	As in Cl.1.4 $\Delta I : \leq 15\%$ $V_{max} : 145 V$
Cl.1 Overload	Visual examination Current at reference voltage Reference voltage : 48 V Voltage under pulse conditions			
<u>GROUP C INSPECTION</u> To be conducted on a sampling basis at the periodicity given in column 'P'		Sample size & criterion of acceptability		
		P	n	c
<u>Sub-Group C1 (Destructive)</u>		6	8	1
Cl.3 Pulse endurance	Visual examination Current at reference voltage Reference voltage : 48 V Voltage under pulse conditions			As in Cl.3.4 $\Delta I : \leq 10\%$ $V_{max} : 145 V$
<u>Sub-Group C2 (Destructive)</u>		6	13	1
4.10.2 Soldering- Resistance to solder heat	Method 1A of IEC 68-2-20 Visual examination Current at reference voltage Reference voltage : 48 V			As in 4.10.2.4 $\Delta I : \leq 10\%$
4.12 Rapid change of temperature	$T_A : - 25^{\circ}C$ $T_B : 55^{\circ}C$ Visual examination			As in 4.12.4

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(See Notes 1 and 3)

Clause Number and Test	Conditions of Test	Sample size & criterion of acceptability			Performance Requirements
		P	n	c	
	Current at reference voltage Reference voltage : 48 V				$\Delta I : \leq 10\%$
GROUP D INSPECTION					
To be conducted on a sampling basis at the periodicity given in column 'P'					
Sub-Group D1 (Destructive)		12	8	1	
4.16	Climatic sequence - Dry heat 55 °C - Damp heat, cyclic, first cycle - Cold - 25 °C - Damp heat, cyclic, remaining cycles - Final measurements (Low air pressure test not applicable) Reference voltage : 48 V Reference voltage : 48 V Visual examination Current at reference voltage Reference voltage : 48 V				As in 4.16.9.1 $\Delta I : \leq 30\%$
Sub-Group D2 (Destructive)		24	8	1	
4.17	Damp heat, steady state 4 specimens no applied voltage Other 4 specimens with applied voltage: 0,8 to 1,0 times reference voltage Visual examination Current at reference voltage Reference voltage : 48 V				As in 4.17.3.1 $\Delta I : \leq 30\%$

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(See Notes 1 and 3)

Clause Number and Test	Conditions of Test	Sample size & criterion of acceptability			Performance Requirements						
		P	n	c							
<u>Sub-Group D3 (Non-destructive)</u>		24	8	1	<table><tr><td>25/-25</td><td>25/55</td></tr><tr><td colspan="2">$\Delta I : \leq$</td></tr><tr><td>0,8%/°C</td><td>0,8%/°C</td></tr></table>	25/-25	25/55	$\Delta I : \leq$		0,8%/°C	0,8%/°C
25/-25	25/55										
$\Delta I : \leq$											
0,8%/°C	0,8%/°C										
4.5	Temperature coefficient of current										
	Reference voltage : 48 V										
<u>Sub-Group D4 (Destructive)</u>		24	6	1	As in 4.14.3 $\Delta I : \leq 30\%$						
4.14	Shock										
	Pulse shape : half sine										
	Acceleration : 490 m/s ²										
	Pulse duration : 11 ms (See Note 4)										
	Visual examination										
	Current at reference voltage										
	Reference voltage : 48 V										
<u>Sub-Group D5 (Destructive)</u>		24	5	0							
4.18	Flammability (Under consideration)										

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