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Ferrite cores – Technology approval schedule (TAS)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FERRITE CORES – TECHNOLOGY APPROVAL SCHEDULE (TAS)

FOREWORD

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- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- The subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 62398, which is a technical specification, has been prepared jointly by IEC technical committee 51: Magnetic components and ferrite materials, and the IEC Quality Assessment System for Electronic Components (IECQ-CECC).

The text of this Technical specification is based on the following documents:

Enquiry draft	Report on voting
51/765/DTS	51/785/RVC

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

The QC number, which is the specification number in the IECQ-CECC, is QC 210018.

This publication has been partially drafted in accordance with the ISO/IEC Directives, Part 2 (2001). It also follows the requirements given in IEC QC 210000:1995, Technology Approval Schedules – Requirements under the IEC Quality Assessment System for Electronic Components (IECQ-CECC), available on the IECQ-CECC web site www.iecq-cecc.org.

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

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this Technical specification may be issued at a later date.

International Electrotechnical Commission Quality Assessment System for Electronic Components (IECQ-CECC)	QC 210018
Responsible NAI: Name Address Tel: Fax:	Specification available as shown in QC 001004 Specifications List (see www.iecq-cecc.org) or from any National Authorized Institution (NAI)
TECHNOLOGY APPROVAL SCHEDULE	Issue QC 210018 2004-10

INTRODUCTION

The IEC Quality Assessment System for Electronic Components (IECQ-CECC) is composed of those member countries of the International Electrotechnical Commission (IEC) that 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 specifications and quality assessment procedures for electronic components and by the granting of an internationally recognized mark or certificate of conformity. The components produced under the System are acceptable in all member countries without further testing.

This TAS has been prepared for use by those countries taking part in the System who wish to issue national harmonized specifications for Technology Approval of Manufacturers of ferrite cores. It should be read in conjunction with the current regulations of the IECQ-CECC System.

At the date of printing of this specification the member countries of IECQ-CECC are Austria, China, Denmark, Finland, France, Germany, India, Japan, Republic of Korea, Norway, Russian Federation, Thailand, United Kingdom, USA and Yugoslavia. Copies of this specification can be obtained from their National Authorized institutions, National standard Organizations or, in case of difficulty, from the Central Office of IEC in Geneva, Switzerland (email info@iec.ch or fax 41 22 9190300) as described in the Specifications List QC 001004 (see www.iecq-cecc.org).

The requirements for Technology Approval of manufacturers of electronic and electromechanical components are given in QC 001002-3, Clause 6. The procedures for approval defined in that Clause requires the manufacturer to have available an appropriate Technology Approval Schedule (TAS).

This schedule defines how the principles and requirements of QC 001002-3, Clause 6 are applied to ferrite cores. In particular it defines minimum technical requirements which must be met by a manufacturer writing a Technology Approval Declaration Document (TADD) in accordance with Annex C of QC 001002-3, Clause 6.

Organizations responsible for preparing the present TAS

IEC Technical committee 51: Magnetic components and ferrite materials.

Preface

This schedule was prepared by TC51/WG1.

FERRITE CORES – TECHNOLOGY APPROVAL SCHEDULE (TAS)

1 General

1.1 Scope

This TAS defines the terms, definitions, symbols, quality system, test, assessment and verification methods and other requirements relevant to the design, manufacture and supply of ferrite cores in compliance with the general requirements of the IECQ-CECC System for components of assessed quality.

1.2 Normative references

The following referenced documents are indispensable for the application 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 60027 (all parts), *Letter symbols to be used in electrical technology*

IEC 60050, *International Electrotechnical Vocabulary (IEV)*

IEC 60133, *Dimensions of pot-cores made of magnetic oxides and associated parts*

IEC 60205, *Calculation of the effective parameters of magnetic piece parts*

IEC 60401-1, *Terms and nomenclature for cores made of magnetically soft ferrites – Part 1: Terms used for physical irregularities*

IEC 60401-2, *Terms and nomenclature for cores made of magnetically soft ferrites – Part 2: Reference of dimensions*

IEC 60401-3, *Terms and nomenclature for cores made of magnetically soft ferrites – Part 3: Guidelines on the format of data appearing in manufacturers' catalogues of transformer and inductor cores*

IEC 60431, *Dimensions of square cores (RM-cores) made of magnetic oxides and associated parts*

IEC 60617-DB:2001[1], *Graphical symbols for diagrams*

IEC 61185, *Magnetic oxide cores (ETD-cores) intended for use in power supply applications – Dimensions*

IEC 61246, *Magnetic oxide cores (E-cores) of rectangular cross-section and associated parts – Dimensions*

IEC 61247, *PM-cores made of magnetic oxides, and associated parts – Dimensions*

IEC 61596, *Magnetic oxide EP-cores and associated for use in inductors and transformers – Dimensions*

IEC 61631, *Test method for the mechanical strength of cores made of magnetic oxides*

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[1] "DB" refers to the IEC on-line database.

IEC 62044 (all parts), *Cores made of soft magnetic materials – Measuring methods*

ISO 497, *Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers*

ISO 1000, *SI units and recommendations for the use of their multiples and of certain other units*

QC 200000, *Process assessment schedules for requirements under the IEC Quality Assessment System for Electronic Components (IECQ) for approval of specialist contractors' processes and/or products within the electronic components industry*

QC 210000, *Technology Approval Schedules – Requirements under the IECQ Quality Assessment System for Electronic Components* (IECQ)

1.3 Units, symbols and terminology

Units, graphical symbols, letter symbols and terminology shall, whenever possible, be taken from the following publications:

IEC 60027, *Letter symbols to be used in electrical technology*;

IEC 60050, *International Electrotechnical Vocabulary (IEV)*;

IEC 60617-DB:2001, *Graphical symbols for diagrams*;

ISO 1000, *SI units and recommendations for the use of their multiples and of certain other units*.

Any other units, symbols and terminology shall be taken from the relevant IEC or ISO documents listed under Normative references.

1.4 Standard and preferred values

Technology Approval allows core dimensions and characteristics to be selected to suit each customer, and so preferred values are therefore not mandatory. However, when there are not over-riding customer needs, it is recommended that the established preferred values for core dimensions and A_L values are utilised. These may be found in the following publications:

IEC 60133, *Dimensions of pot-cores made of magnetic oxides and associated parts;*

IEC 60431, *Dimensions of square cores (RM-cores) made of magnetic oxides and associated parts;*

IEC 61185, *Magnetic oxide cores (ETD-cores) intended for use in power supply applications – Dimensions;*

IEC 61246, *Magnetic oxide cores (E-cores) of rectangular cross-section and associated parts – Dimensions;*

IEC 61247, *PM-cores made of magnetic oxides, and associated parts – Dimensions;*

IEC 61596, *Magnetic oxide EP-cores and associated for use in inductors and transformers – Dimensions.*

Nominal values of the inductance factor A_L should preferably be taken from the R10 series of ISO 497. When other values have been used, these should be taken from another series in that standard.