

---

---

**Nespremenljivi kondenzatorji za elektronsko opremo – 13-1. del: Okvirna  
podrobna specifikacija – Nespremenljivi kondenzatorji za enosmerni tok s  
kovinsko folijo in polipropilenskim dielektrikom – Ocenjevalni nivo E (IEC  
60384-13-1:2006)**

Fixed capacitors for use in electronic equipment – Part 13-1: Blank detail  
specification – Fixed polypropylene film dielectric metal foil d.c. capacitors –  
Assessment level E (IEC 60384-13-1:2006)

**NOT A STANDARD PREVIEW  
(standards.iteh.ai)**  
[https://standards.iteh.ai/catalog/standards/sist/452f30b7-ab20-4488-962f-  
2da039ed7c58/sist-en-60384-13-1-2006](https://standards.iteh.ai/catalog/standards/sist/452f30b7-ab20-4488-962f-2da039ed7c58/sist-en-60384-13-1-2006)

# **iTeh STANDARD PREVIEW** **(standards.iteh.ai)**

SIST EN 60384-13-1:2006

<https://standards.iteh.ai/catalog/standards/sist/452f30b7-ab20-4488-962f-2da039ed7c58/sist-en-60384-13-1-2006>

**Fixed capacitors for use in electronic equipment  
Part 3-1: Blank detail specification:  
Surface mount fixed tantalum electrolytic capacitors  
with manganese dioxide solid electrolyte -  
Assessment level EZ  
(IEC 60384-3-1:2006)**

Condensateurs fixes utilisés dans les  
équipements électroniques  
Partie 3-1: Spécification particulière cadre:  
Condensateurs fixes électrolytiques  
au tantale pour montage en surface  
à électrolyte solide en bioxyde  
de manganèse -  
Niveau d'assurance de la qualité EZ  
(CEI 60384-3-1:2006)

Festkondensatoren zur Verwendung  
in Geräten der Elektronik  
Teil 3-1: Vordruck für Bauartspezifikation:  
Oberflächenmontierbare  
Tantal-Kondensatoren mit festem  
Mangandioxid-Elektrolyt -  
Qualitätsbewertungsstufe EZ  
(IEC 60384-3-1:2006)

SIST EN 60384-13-1:2006

<https://standards.iteh.ai/catalog/standards/sist/452f30b7-ab20-4488-962f-34e038d157e5/cenelec-en-60384-3-1-2006>

This European Standard was approved by CENELEC on 2006-11-01. 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, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the 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

The text of document 40/1772/FDIS, future edition 2 of IEC 60384-3-1, prepared by IEC TC 40, Capacitors and resistors for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60384-3-1 on 2006-11-01.

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) 2007-08-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2009-11-01

Annex ZA has been added by CENELEC.

---

## Endorsement notice

The text of the International Standard IEC 60384-3-1:2006 was approved by CENELEC as a European Standard without any modification.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 60384-13-1:2006  
<https://standards.iteh.ai/catalog/standards/sist/452f30b7-ab20-4488-962f-2da039ed7c58/sist-en-60384-13-1-2006>

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

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 60286-3	- <sup>1)</sup>	Packaging of components for automatic handling Part 3: Packaging of surface mount components on continuous tapes	EN 60286-3	1998 <sup>2)</sup>
IEC 60384-1 (mod)	- <sup>1)</sup>	Fixed capacitors for use in electronic equipment Part 1: Generic specification	EN 60384-1 + corr. October	2001 <sup>2)</sup> 2001
IEC 60384-3	- <sup>1)</sup>	Fixed capacitors for use in electronic equipment Part 3: Sectional specification: Surface mount fixed tantalum electrolytic capacitors with manganese dioxide solid electrolyte	EN 60384-3	2006 <sup>2)</sup>
IEC 60410	- <sup>1)</sup>	Sampling plans and procedures for inspection - by attributes		-

<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

# **iTeh STANDARD PREVIEW** **(standards.iteh.ai)**

SIST EN 60384-13-1:2006

<https://standards.iteh.ai/catalog/standards/sist/452f30b7-ab20-4488-962f-2da039ed7c58/sist-en-60384-13-1-2006>

# INTERNATIONAL STANDARD

**IEC**  
**60384-13-1**

QC 301801

Second edition  
2006-01

---

---

## Fixed capacitors for use in electronic equipment –

### Part 13-1:

#### Blank detail specification –

#### Fixed polypropylene film dielectric metal

#### foil d.c. capacitors –

#### Assessment level E

iteh STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN 60384-13-1:2006

<https://standards.iteh.ai/catalog/standards/sist/452f30b7-ab20-4488-962f-2da039ed7c58/sist-en-60384-13-1-2006>

© IEC 2006 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland  
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: [inmail@iec.ch](mailto:inmail@iec.ch) Web: [www.iec.ch](http://www.iec.ch)



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

PRICE CODE

**M**

*For price, see current catalogue*

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT –****Part 13-1: Blank detail specification – Fixed polypropylene film  
dielectric metal foil d.c. capacitors –  
Assessment level E**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60384-13-1 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

This second edition cancels and replaces the first edition published in 1991 and constitutes a minor revisions related to tables, figures and references.

The text of this standard is based on the following documents:

FDIS	Report on voting
40/1621/FDIS	40/1644/RVD

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



The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

IEC 60384 consists of the following parts, under the general title *Fixed capacitors for use in electronic equipment*:

- Part 1: Generic specification
- Part 2: Sectional specification: Fixed metallized polyethylene-terephthalate film dielectric d.c. capacitors
- Part 3: Sectional specification: Fixed tantalum chip capacitors
- Part 4: Sectional specification: Aluminium electrolytic capacitors with solid and non-solid electrolyte
- Part 5: Sectional specification: Fixed mica dielectric d.c. capacitors with a rated voltage not exceeding 3000 V – Selection of methods of test and general requirements
- Part 6: Sectional specification: Fixed metallized polycarbonate film dielectric d.c. capacitors
- Part 8: Sectional specification: Fixed capacitors of ceramic dielectric, Class 1
- Part 9: Sectional specification: Fixed capacitors of ceramic dielectric, Class 2
- Part 11: Sectional specification: Fixed polyethylene-terephthalate film dielectric metal foil d.c. capacitors
- Part 12: Sectional specification: Fixed polycarbonate film dielectric metal foil d.c. capacitors
- Part 13: Sectional specification: Fixed polypropylene film dielectric metal foil d.c. capacitors
- Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains
- Part 15: Sectional specification: Fixed tantalum capacitors with non-solid or solid electrolyte
- Part 16: Sectional specification: Fixed metallized polypropylene film dielectric d.c. capacitors
- Part 17: Sectional specification: Fixed metallized polypropylene film dielectric a.c. and pulse capacitors
- Part 18: Sectional specification: Fixed aluminium electrolytic chip capacitors with solid electrolyte
- Part 19: Sectional specification: Fixed metallized polyethylene-terephthalate film dielectric chip d.c. capacitors
- Part 20: Sectional specification: Fixed metallized polyphenylene sulfide film dielectric chip d.c. capacitors
- Part 21: Sectional specification: Fixed surface mount multilayer capacitors of ceramic dielectric, Class 1
- Part 22: Sectional specification: Fixed surface mount multilayer capacitors of ceramic dielectric, Class 2
- Part 23: Sectional specification: Fixed surface mount metallized polyethylene naphthalate film dielectric d.c. capacitors