

Australian Standard 1541, Part 7—1983

**FIXED CAPACITORS FOR USE IN
ELECTRONIC EQUIPMENT**

**Part 7—FIXED POLYSTYRENE
FILM DIELECTRIC
DIRECT CURRENT
CAPACITORS**



STANDARDS ASSOCIATION OF AUSTRALIA

Incorporated by Royal Charter



This Australian standard was prepared by Committee TE/2, Capacitors and Resistors. It was approved on behalf of the Council of the Standards Association of Australia on 26 July 1983 and published on 2 December 1983.

The following interests are represented on Committee TE/2:

Confederation of Australian Industry
Department of Industry and Commerce
Institution of Radio and Electronics Engineers Australia
Telecom Australia

Review of Australian Standards. In the face of progress in industry, Australian standards are subject to periodic review and are kept up-to-date by the issue of amendments or new editions as necessary. It is important therefore that consumers ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all SAA publications will be found in the Annual List of Australian Standards; this information is supplemented each month by SAA's journal 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn standards.

Suggestions for improvements to Australian standards, addressed to the head office of the Association, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This standard was issued in draft form for comment as DR 77072.

AUSTRALIAN STANDARD

**FIXED CAPACITORS FOR USE IN
ELECTRONIC EQUIPMENT**

Part 7

**FIXED POLYSTYRENE FILM
DIELECTRIC DIRECT CURRENT
CAPACITORS**

AS 1541, Part 7—1983

First published1983

**PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.**



ISBN 0 7262 3236 X

PREFACE

This standard was prepared by the Association's Committee on Capacitors and Resistors. It is technically identical with IEC 384-7 issued by the International Electro-technical Commission and acknowledgement is accordingly made to the IEC.

Deviations from IEC 384-7 are editorial in nature and were necessary only because IEC 384-7 calls up IEC 384-1:1972 whereas the Australian equivalent AS 1541, Part 1 is arranged in the manner adopted by IEC 384-1:1982. The references to clause numbers of IEC 384-1 were therefore replaced by the equivalent reference to AS 1541, Part 1, as indicated by the use of a marginal bar alongside the amended text. Similarly, references to other IEC Publications have been replaced wherever possible by the Australian equivalent as indicated in Clause 3.

The purpose of the standard is to establish preferred ratings and characteristics for fixed d.c. capacitors with polystyrene film dielectric and metal foil electrodes which are intended for use in electronic equipment. Appropriate test methods, test severities and performance requirements are given. Detail specifications for particular varieties of polystyrene film dielectric capacitors based on this standard may contain additional or more severe requirements but should not omit or diminish any relevant requirements of a severity.

© Copyright — STANDARDS ASSOCIATION OF AUSTRALIA 1983

Users of standards are reminded that copyright subsists in all SAA publications. No part of this publication may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing of the Standards Association of Australia.

CONTENTS

	<i>Page</i>
SECTION 1. GENERAL	
1 Scope	4
2 Object	4
3 Referenced Documents	4
4 Terminology	4
SECTION 2. PREFERRED RATINGS AND CHARACTERISTICS	
5 Ratings and Characteristics	5
6 Marking	6
SECTION 3. REQUIREMENTS FOR TESTS AND MEASURING METHODS	
7 Type Tests	8
8 Schedule for Type Tests	8
9 Standard Atmospheric Conditions for Testing	9
10 Visual Examination and Check of Dimensions	10
11 Electrical Tests	10
11.1 Voltage Proof	10
11.2 Capacitance	10
11.3 Tangent of Loss Angle	10
11.4 Insulation Resistance	11
11.5 Variation of Capacitance with Temperature	12
11.6 Inductance (when required)	12
11.7 Outer Foil Termination (When Applicable)	12
12 Environmental Tests	12
12.1 Robustness of Terminations	12
12.2 Soldering	12
12.3 Rapid Change of Temperature	13
12.4 Vibration	13
12.5 Bump	14
12.6 Shock	14
12.7 Climatic Sequence	14
12.8 Damp heat, steady state	16
12.9 Endurance	17
12.10 Storage at Low Temperature	17
13 Schedules of Test for Quality Conformance Inspection (Under Consideration)	17
APPENDIX A. METHOD FOR MEASUREMENT OF VERY HIGH INSULATION RESISTANCE VALUES BETWEEN TERMINATIONS	18

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

FIXED CAPACITORS FOR USE IN ELECTRONIC EQUIPMENT**PART 7—SECTIONAL SPECIFICATION—FIXED POLYSTYRENE FILM DIELECTRIC
DIRECT CURRENT CAPACITORS
SELECTION OF METHODS OF TEST AND GENERAL REQUIREMENTS****SECTION 1. GENERAL****1. Scope**

This standard relates to fixed d.c. capacitors, containing a dielectric of polystyrene film, and electrodes of thin metal foils. They are intended for use in electronic equipment.

Capacitors for a reactive power exceeding 200 var are not covered by this standard.

Capacitors for radio interference suppression are not included in this standard but are covered by AS 1541, Part 14.

2. Object

The object of this standard is to prescribe preferred ratings and characteristics, to select from AS 1541, Part 1 the appropriate methods of test and to give general performance requirements for this type of capacitor.

Test severities and requirements prescribed in detail specifications referring to this sectional specification have to be of equal or higher level, because degradations are normally not permitted.

3. Referenced documents

AS 1099	Basic Environmental Testing Procedures for Electrotechnology (technically identical to IEC 68)
AS 1541	Fixed Capacitors for Use in Electronic Equipment. Part 1—Technology and Methods of Test (technically identical to IEC 384-1) Part 14—Fixed Capacitors for Radio Interference Suppression (technically identical to IEC 384-14)
AS 2065	Preferred Number Series for Resistors and Capacitors (technically identical to IEC 63)
AS 2066	Marking Codes for Resistors and Capacitors (technically identical to IEC 62)
S.A.M. 19	Report on Preferred Numbers and Their Use (technically identical to ISO 3)

4. Terminology

In addition to the applicable terms and definitions of AS 1541, Part 1 the following definition applies:

4.1 Stability class

The stability class is defined by the tolerance on the temperature coefficient together with the permissible change of capacitance after defined tests. The stability class is stated in the detail specification.

Table I, shows the stability classes.