

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Ferrite cores – Dimensions –  
Part 6: ETD-cores for use in power supplies**

**Noyaux ferrites – Dimensions –  
Partie 6: Noyaux ETD destinés à être utilisés dans des alimentations**

IEC 62317-6:2015

<https://standards.iteh.ai/standards/iec/62317-6:2015>



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## CONTENTS

FOREWORD .....	3
1 Scope .....	5
2 Normative references .....	5
3 Primary standards .....	5
3.1 General .....	5
3.2 Dimensions of ETD-cores .....	5
3.2.1 Principal dimensions .....	5
3.2.2 Effective parameter and $A_{\min}$ values .....	6
3.3 Dimensional limits for coil formers .....	7
3.4 Pin locations and base outlines .....	8
3.5 Pin diameter .....	11
4 Marking .....	11
5 Mounting .....	11
Annex A (normative) Derived standards .....	12
Annex B (normative) Example of a standard for gauges to check the dimensions of ETD-cores meeting this primary standard .....	14
B.1 General .....	14
B.2 Procedure and requirements .....	14
Bibliography .....	15
Figure 1 – Dimensions of ETD-cores .....	6
Figure 2 – Essential dimensions of coil formers .....	7
Figure 3 – Pin locations and base outlines viewed from the upper-side of the board (see 3.4) (1 of 2) .....	9
Figure A.1 – Main dimensions of coil formers .....	13
Figure B.1 – Gauge dimensions .....	14
Table 1 – Dimensions of ETD-cores .....	6
Table 2 – Effective parameter and $A_{\min}$ values .....	7
Table 3 – Essential dimensions of coil formers .....	8
Table A.1 – Main dimensions of coil formers .....	13
Table B.1 – Gauge dimensions .....	14

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## FERRITE CORES – DIMENSIONS –

## Part 6: ETD-cores for use in power supplies

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International Standard IEC 62317-6 has been prepared by IEC technical committee 51: Magnetic components and ferrite materials.

This first edition cancels and replaces the second edition of IEC 61185 published in 2005. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Changed dimension A of ETD 54 core.

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

FDIS	Report on voting
51/1105/FDIS	51/1120/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.

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

A list of all parts in the IEC 62317 series, published under the general title *Ferrite cores – Dimensions*, can be found on the IEC website.

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- reconfirmed,
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- amended.

## FERRITE CORES – DIMENSIONS –

### Part 6: ETD-cores for use in power supplies

#### 1 Scope

This part of IEC 62317 specifies the dimensions that are of importance for mechanical interchangeability for ETD-cores made of ferrite, the essential dimensions of coil formers to be used with them, and the effective parameter values to be used in calculations involving them.

The use of “derived” standards which give more detailed specifications of component parts while still permitting compliance with this standard is discussed in Annex A, which also contains an example of a derived standard for coil formers.

#### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Void.

#### 3 Primary standards

##### 3.1 General

Compliance with the following requirements ensures the mechanical interchangeability of complete assemblies and coil formers.

##### 3.2 Dimensions of ETD-cores

###### 3.2.1 Principal dimensions

The principal dimensions of ETD-cores shall be as given in Figure 1 and Table 1.

The dimensions of the cores may be checked by means of gauges. By way of example, a possible standard for these gauges is given in Annex B. In order to facilitate production it may be necessary to use gauges having dimensions differing from those given in Annex B, although no relaxation of the requirements for the dimensions of the cores given in Table 1 is permitted.

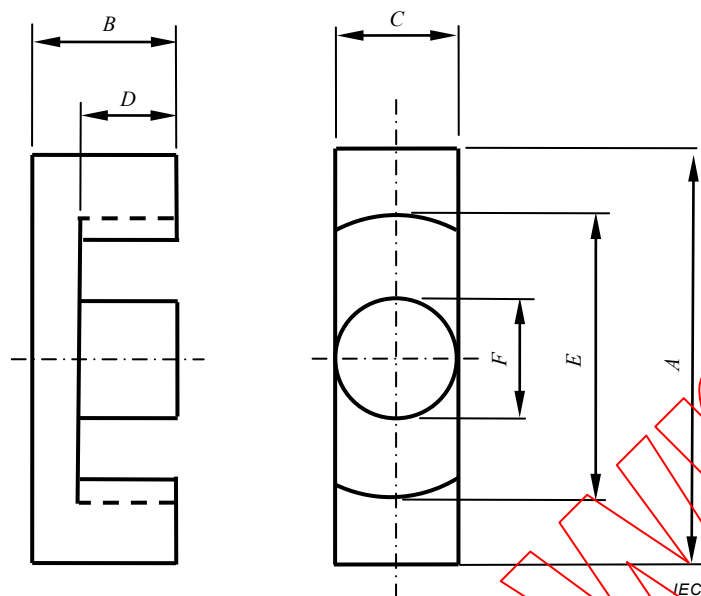


Figure 1 – Dimensions of ETD-cores

Table 1 – Dimensions of ETD-cores

Size	A mm		B mm		C mm		D mm		E mm		F mm	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
ETD 19	19,1	20,1	13,5	13,8	7,2	7,6	9,2	9,6	14,4	15,4	7,2	7,6
ETD 24	23,8	25,0	14,3	14,6	8,2	8,8	9,9	10,3	18,0	19,2	8,2	8,8
ETD 29	29,0	30,6	15,6	16,0	9,2	9,8	10,7	11,3	22,0	23,4	9,2	9,8
ETD 34	33,4	35,0	17,1	17,5	10,5	11,1	11,8	12,4	25,6	27,0	10,5	11,1
ETD 39	38,2	40,0	19,6	20,0	12,2	12,8	14,2	15,0	29,3	30,9	12,2	12,8
ETD 44	43,0	45,0	22,1	22,5	14,4	15,2	16,1	16,9	32,5	34,1	14,4	15,2
ETD 49	47,6	49,8	24,5	24,9	15,9	16,7	17,7	18,5	36,1	37,9	15,9	16,7
ETD 54	53,2	55,8	27,4	27,8	18,5	19,3	19,8	20,6	40,1	42,3	18,5	19,3
ETD 59	58,4	61,2	30,8	31,2	21,2	22,1	22,0	22,9	43,6	45,8	21,2	22,1

### 3.2.2 Effective parameter and $A_{\min}$ values

The effective parameter values of a pair of cores whose dimensions comply with 3.2.1 shall be as given in Table 2.

$A_{\min}$  is specified in IEC 60205:2009, 2.2.



**Table 2 – Effective parameter and  $A_{\min}$  values**

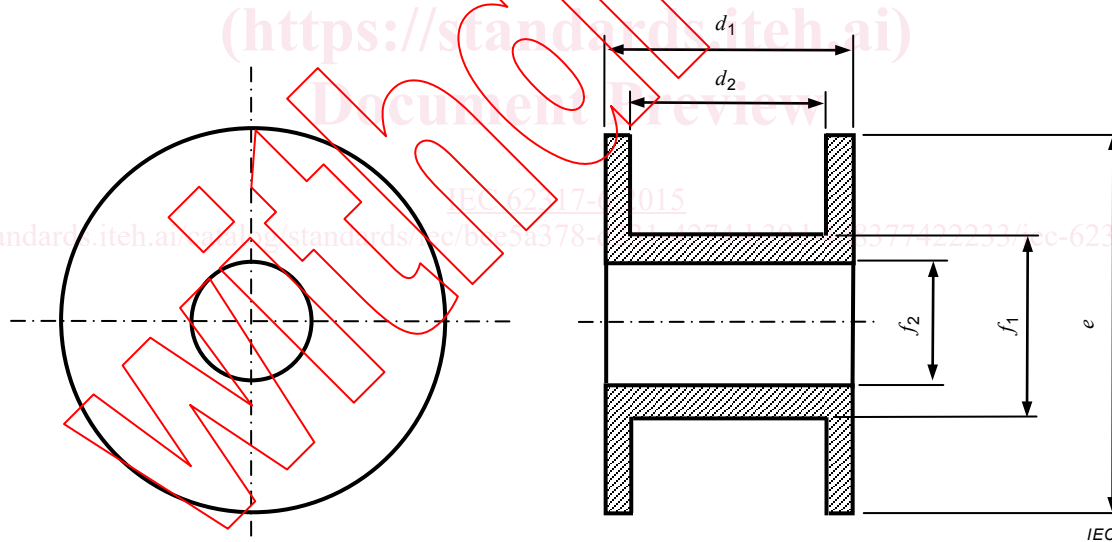
Size	$C_1$ mm <sup>-1</sup>	$C_2$ mm <sup>-3</sup>	$L_e$ mm	$A_e$ mm <sup>2</sup>	$V_e$ mm <sup>3</sup>	$A_{\min}$ mm <sup>2</sup>
ETD 19	1,253 9	$28,412 \times 10^{-3}$	55,3	44,1	2 440	39,5
ETD 24	1,053 7	$17,811 \times 10^{-3}$	62,3	59,2	3 690	55,0
ETD 29	0,927 07	$12,139 \times 10^{-3}$	70,8	76,4	5 410	70,9
ETD 34	0,814 49	$8,387 9 \times 10^{-3}$	79,1	97,1	7 680	91,6
ETD 39	0,742 00	$5,940 1 \times 10^{-3}$	92,7	125	11 600	123
ETD 44	0,599 18	$3,462 8 \times 10^{-3}$	104	173	17 900	172
ETD 49	0,542 45	$2,569 2 \times 10^{-3}$	115	211	24 200	209
ETD 54	0,455 01	$1,625 1 \times 10^{-3}$	127	280	35 700	280
ETD 59	0,382 24	$1,038 9 \times 10^{-3}$	141	368	51 700	366

NOTE 1 The manufacturers may indicate in their catalogues more precise values than those given in Table 2.

NOTE 2 The above values have been calculated using the method given in IEC 60205:2009, 3.5.

### 3.3 Dimensional limits for coil formers

The essential dimensions of coil formers suitable for use with a pair of ETD-cores shall be as given in Figure 2 and Table 3.

**Figure 2 – Essential dimensions of coil formers**

**Table 3 – Essential dimensions of coil formers**

Size	$e$ mm	$f_1$ mm	$f_2$ mm	$d_1$ mm	$d^2$ mm
	Max.	Max.	Min.	Max.	Min.
ETD 19	14,1	9,8	7,8	18,2	15,9
ETD 24	17,6	11,0	9,0	19,6	17,1
ETD 29	21,6	12,0	10,0	21,2	18,7
ETD 34	25,2	13,6	11,3	23,4	20,9
ETD 39	28,8	15,3	13,0	28,2	25,7
ETD 44	32,0	17,7	15,4	32,0	29,5
ETD 49	35,5	19,5	17,0	35,2	32,2
ETD 54	39,5	22,1	19,6	39,3	36,3
ETD 59	43,0	24,9	22,4	43,7	40,7

### 3.4 Pin locations and base outlines

These shall be as shown in Figure 3, in which the base is viewed in the mounting direction, i.e. from the upper side of the printed wiring board.

NOTE The module, designated as  $m$ , as shown in the grid plan, may be 2,50 mm or 2,54 mm.

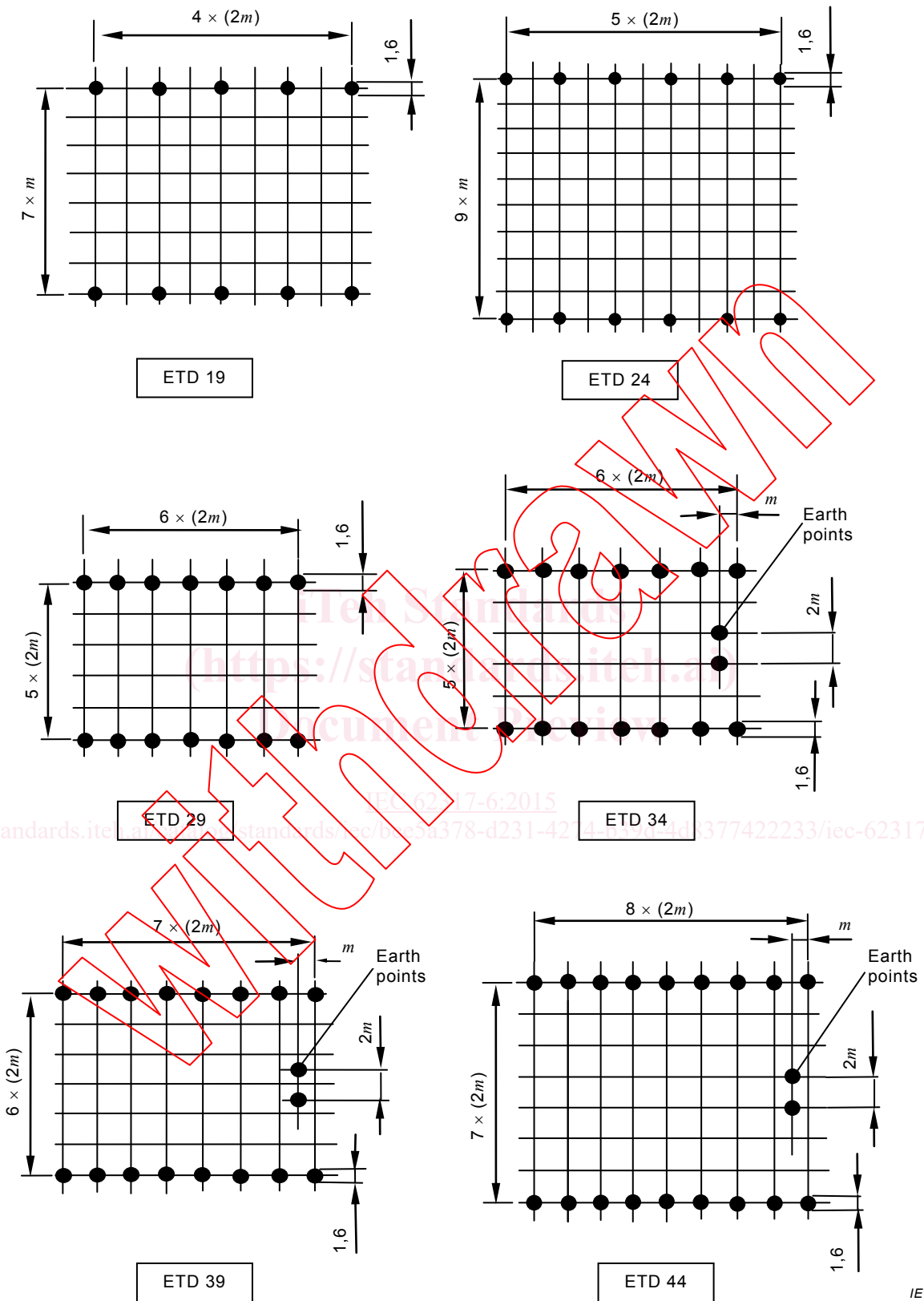


Figure 3 – Pin locations and base outlines viewed from the upper-side of the board (see 3.4) (1 of 2)