

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Ferrite cores – Dimensions –
Part 14: EFD-cores for use in power supply applications**

**Noyaux ferrites – Dimensions –
Partie 14: Noyaux EFD utilisés dans des applications d'alimentation électrique**

IEC 62317-14:2008

<https://standards.iteh.ai/standards/iec/62317/ac4-16bc-4887-8058-0ac0c35dfe50/iec-62317-14-2008>



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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX



ICS 29.100.10

ISBN 978-2-88910-669-1

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FERRITE CORES –
DIMENSIONS –**
Part 14: EFD-cores for use in power supply applications

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International Standard IEC 62317-14 has been prepared IEC technical committee 51: Magnetic components and ferrite materials.

This bilingual version, published in 2009-02, corresponds to the English version.

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

FDIS	Report on voting
51/934/FDIS	51/938/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 French version of this standard has not been voted upon.

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

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

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

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- replaced by a revised edition, or
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FERRITE CORES – DIMENSIONS –

Part 14: EFD-cores for use in power supply applications

1 Scope

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

The selection of core sizes for this standard is based on the philosophy of including those sizes which are industrial standards, either by inclusion in national standards, or by broad-based use in industry. See IEC 62317-1 for more detail concerning the philosophy of selecting core sizes to be included.

The general considerations that the design of this range of cores is based upon are given in Annex A.

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

<https://www.it-ebooks.info/book/35dfe50/iec-62317-14-2008>

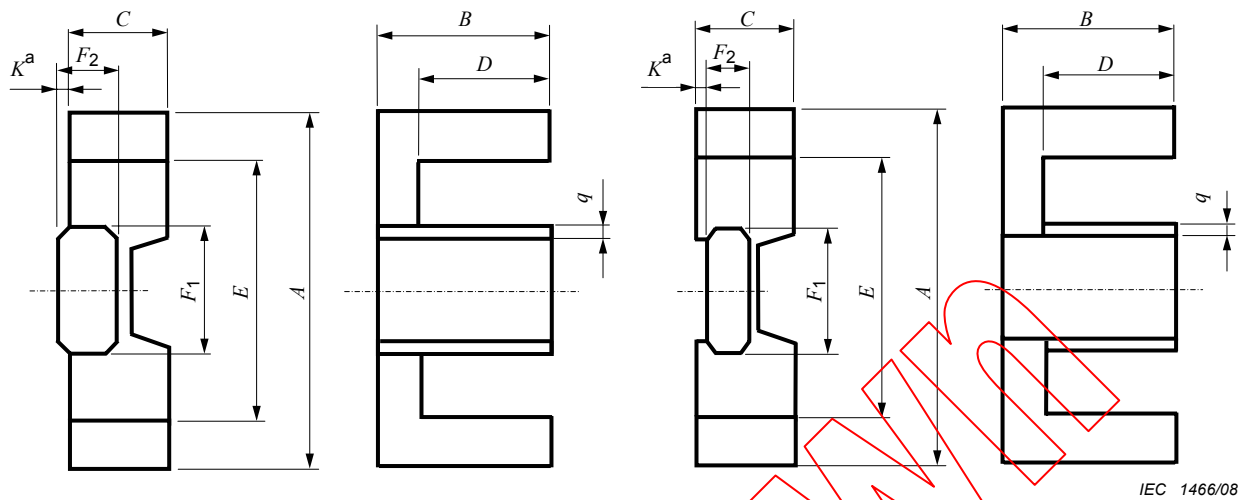
3 Primary standards

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

3.1 Dimensions of EFD-cores

3.1.1 Principal dimensions

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



^a The K dimension designates, with respect to the base level of the core, the difference in height between the base level of the core and the underside of the centre leg. In the typical case, the underside of the centre leg is above the base level of the core, and the value of K is positive. In the case that the underside of the centre leg is below the base level of the core, then the value of K will be negative.

a) EFD 10/5/3, EFD 12/6/3,5 and EFD 15/8/5 b) EFD 20/10/7, EFD 25/13/9 and EFD 30/15/9

Figure 1 – Dimensions of EFD-cores

Table 1 – Dimensions of EFD-cores

Size		A mm	B mm	C mm	D mm	E mm	F_1 mm	F_2 mm	K^a mm	q mm
EFD 10/5/3	Min.	10,20	5,10	2,60	3,60	7,40	4,40	1,40	-0,20	0,20
	Max.	10,80	5,30	2,80	3,90	7,90	4,70	1,50		
EFD 12/6/3,5	Min.	12,20	6,10	3,40	4,40	8,75	5,25	1,90	-0,20	0,20
	Max.	12,80	6,30	3,60	4,70	9,25	5,55	2,10		
EFD 15/8/5	Min.	14,60	7,35	4,50	5,25	10,65	5,15	2,30	-0,20	0,45
	Max.	15,40	7,65	4,80	5,75	11,35	5,45	2,50		
EFD 20/10/7	Min.	19,45	9,85	6,50	7,45	14,90	8,70	3,45	0,17	0,75
	Max.	20,55	10,15	6,80	7,95	15,90	9,10	3,75		
EFD 25/13/9	Min.	24,35	12,35	8,90	9,05	18,10	11,20	5,05	0,60	1,00
	Max.	25,65	12,65	9,30	9,55	19,30	11,60	5,35		
EFD 30/15/9	Min.	29,20	14,85	8,90	10,90	21,65	14,35	4,75	0,75	1,00
	Max.	30,80	15,15	9,30	11,50	23,15	14,85	5,05		

NOTE The dimensions of the cores may be checked by means of gauges.

^a The K dimension designates, with respect to the base level of the core, the difference in height between the base level of the core and the underside of the centre leg. In the typical case, the underside of the centre leg is above the base level of the core, and the value of K is positive. In the case that the underside of the centre leg is below the base level of the core, then the value of K will be negative.

3.1.2 Effective parameter and A_{\min} values

The effective parameter values for cores having the dimensions given in 3.1.1 are as shown in Table 2.

Table 2 – Effective parameter and A_{\min} values for EFD-cores

Size	C_1 mm ⁻¹	C_2 mm ⁻³	A_e mm ²	l_e mm	V_e mm ³	A_{\min}^a mm ²
EFD 10/5/3	3,301 8	0,459 50	7,19	23,7	170	6,52
EFD 12/6/3,5	2,495 8	0,218 71	11,4	28,5	325	10,7
EFD 15/8/5	2,263 3	0,149 51	15,1	34,3	519	12,3
EFD 20/10/7	1,536 6	0,050 025	30,7	47,2	1 450	30,6
EFD 25/13/9	0,995 25	0,017 301	57,5	57,3	3 290	57,3
EFD 30/15/9	0,980 56	0,014 147	69,3	68,0	4 710	69,2

^a See 2.2 of IEC 60205.

3.2 Main dimensions for coil formers

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

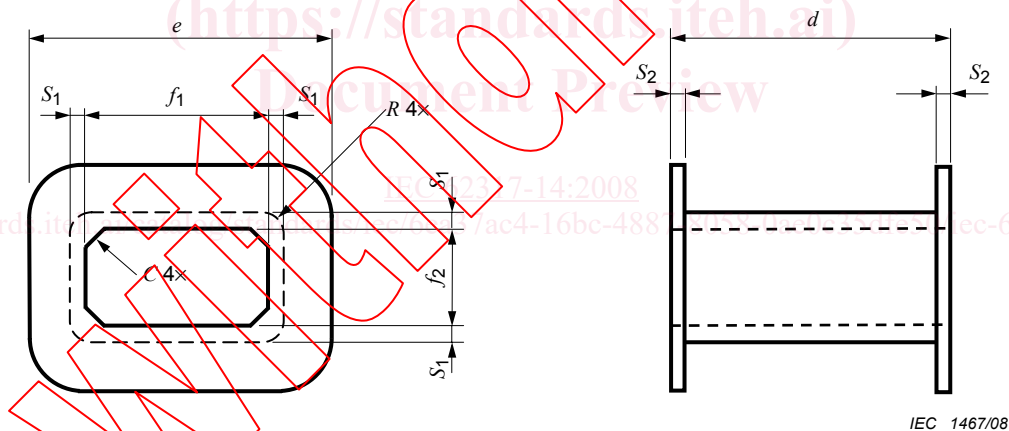


Figure 2 – Main dimensions of coil formers for EFD-cores

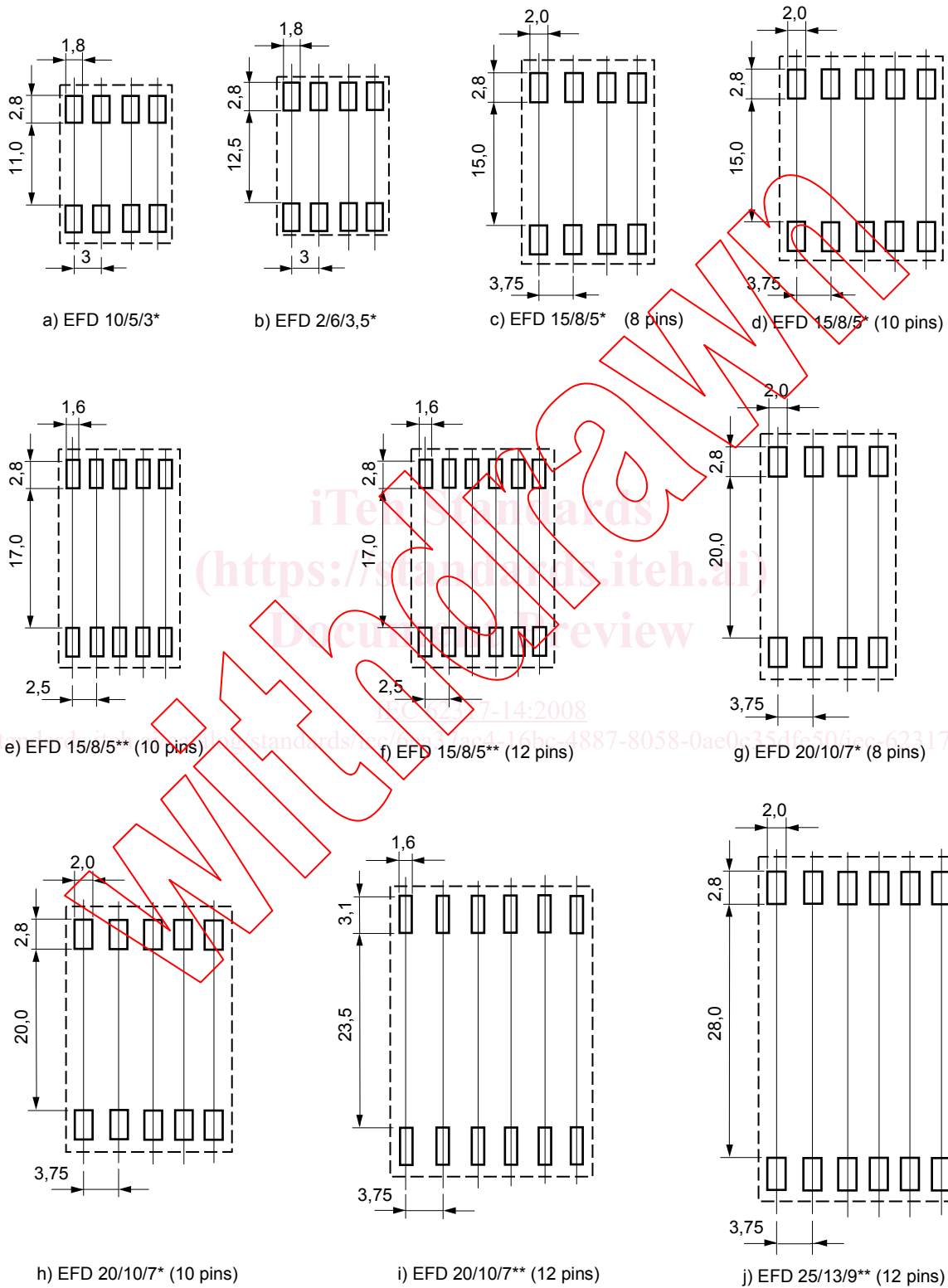
Table 3 – Main dimensions of coil formers for EFD-cores

Size	e mm	f_1 mm	f_2 mm	d mm	S_1 mm	S_2 mm	C^a mm	R mm
	Max.	Min.	Min.	Max.	Min.	Min.	Nom.	Nom.
EFD 10/5/3	7,3	4,8	1,6	7,1	0,35	0,30	0,2	0,8
EFD 12/6/3,5	8,65	5,6	2,15	8,7	0,425	0,30	0,2	0,8
EFD 15/8/5	10,4	5,55	2,6	10,55	0,45	0,40	0,45	1,5
EFD 20/10/7	14,8	9,2	3,8	14,8	0,40	0,40	0,75	2,0
EFD 25/13/9	18,0	11,7	5,4	18,0	0,55	0,55	1,0	2,0
EFD 30/15/9	21,6	14,9	5,1	21,7	0,50	0,60	1,0	2,0

^a Chamfer

3.3 Pin locations and base outlines

These shall be as shown in Figures 3 and 4, in which the base is viewed in the mounting direction, i.e. from the upper side of the printed wiring board.



NOTE * J-terminals
 ** Gull wing terminals

Figure 3 – Pin location (SMD type) viewed from the upper side of the board