

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Ferrite cores – Dimensions –  
Part 13: PQ-cores for use in power supply applications**

**Noyaux ferrites – Dimensions –  
Partie 13: Noyaux PQ utilisés dans des applications d'alimentation électrique**

IEC 62317-13:2008

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**FERRITE CORES –  
DIMENSIONS –**
**Part 13: PQ-cores for use in power supply applications**

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International Standard IEC 62317-13 has been prepared IEC technical committee 51: Magnetic components and ferrite materials.

This bilingual version, published in 2008-09, corresponds to the English version.

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

FDIS	Report on voting
51/910/FDIS	51/925/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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## FERRITE CORES – DIMENSIONS –

### Part 13: PQ-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 PQ-cores and low-profile PQI-cores made of ferrite, and the locations of their terminal pins on a 2,54 mm printed wiring grid in relation to the base outlines of the cores.

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 a national standard, 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*

IEC 62317-1, *Ferrite cores – Dimensions – Part 1: General specification*

#### 3 Primary standards

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

##### 3.1 Dimensions of PQ-cores

###### 3.1.1 Principal dimensions

The principal dimensions of PQ-cores shall be as given in Table 1 and the low-profile PQ-cores shall be as given in Table 2. See also Figures 1 and 2.

NOTE 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 and in Table 2 is permitted.

###### 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 3 and Table 4.

### 3.2 Dimensional limits for coil formers

The essential dimensions of coil formers suitable for use with a pair of PQ-cores shall be as given in Table 5. See also Figure 3.

### 3.3 Pin locations and base outlines

These shall be as shown in Figure 4.

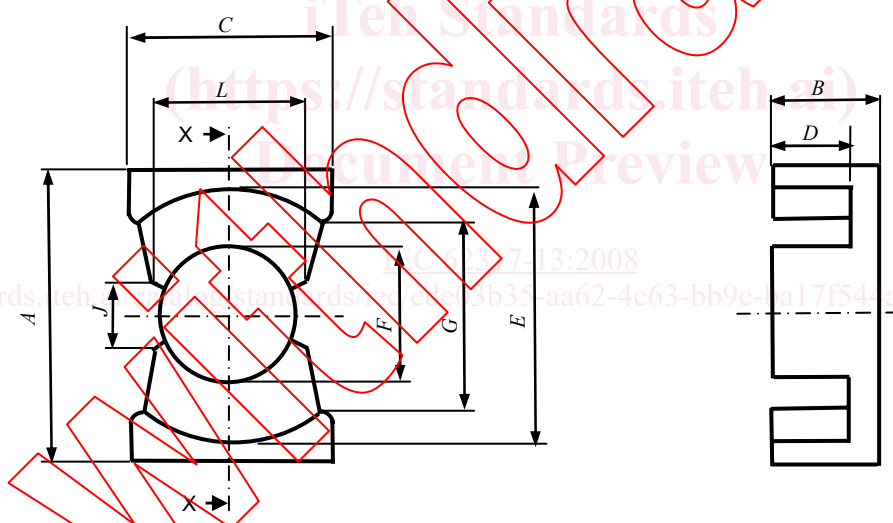
### 3.4 Pin diameter

Coil former terminations (pins) shall be accepted by a gauge having 1,2 mm holes on true position.

## 4 Mounting

Due to their sizes and respective weights, it is recommended that the three largest cores (PQ35/35, PQ40/40 and PQ 50/50) be fixed on the printed board with mounting assemblies at two opposite sides of their coil formers.

Concerning low-profile PQ-cores, no mounting assemblies are defined. It is recommended that the two cores be fixed by glue or adhesive tape.



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NOTE Shape variation

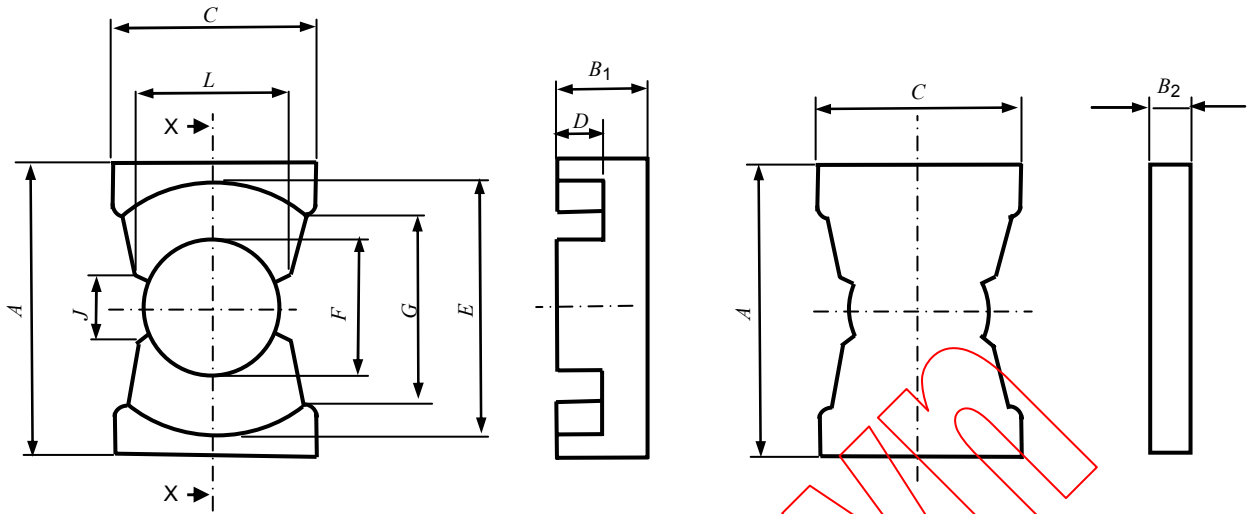
Clamp recesses may be available at the outside wall of the outer legs, keeping "A" dimension in Table 1 when measured within the recesses.

**Figure 1 – Dimensions of PQ-cores**



**Table 1 – Dimensions of PQ-cores**

Size		<i>A</i> mm	<i>B</i> mm	<i>C</i> mm	<i>D</i> mm	<i>E</i> mm	<i>F</i> mm	<i>G</i> mm	<i>J</i> mm	<i>L</i> mm
PQ 20/16	Min.	20,1	8,0	13,6	5,0	17,6	8,6	12,0	4,8	10,5
	Nom.									
	Max.	20,9	8,2	14,4	5,3	18,4	9,0	13,0		
PQ 20/20	Min.	20,1	10,0	13,6	7,0	17,6	8,6	12,0	4,8	10,5
	Nom.									
	Max.	20,9	10,2	14,4	7,3	18,4	9,0	13,0		
PQ 26/20	Min.	26,05	9,95	18,55	5,6	22,05	11,8	15,5	7,3	13,9
	Nom.									
	Max.	26,95	10,2	19,45	5,9	22,95	12,2	16,5		
PQ 26/25	Min.	26,05	12,25	18,55	7,9	22,05	11,8	15,5	7,3	13,9
	Nom.									
	Max.	26,95	12,5	19,45	8,2	22,95	12,2	16,5		
PQ 32/20	Min.	31,5	10,15	21,5	5,6	27,0	13,2	19,0	6,2	15,1
	Nom.									
	Max.	32,5	10,4	22,5	5,9	28,0	13,7	20,0		
PQ 32/30	Min.	31,5	15,05	21,5	10,5	27,0	13,2	19,0	6,2	15,1
	Nom.									
	Max.	32,5	15,3	22,5	10,8	28,0	13,7	20,0		
PQ 35/35	Min.	34,5	17,25	25,5	12,35	31,5	14,1	23,5	7,3	16,4
	Nom.									
	Max.	35,7	17,5	26,5	12,65	32,5	14,6	24,5		
PQ 40/40	Min.	39,6	19,75	27,4	14,6	36,4	14,6	28,0	7,75	16,8
	Nom.									
	Max.	41,4	20,0	28,6	14,9	37,6	15,2	29,0		
PQ 50/50	Min.	49,3	24,85	31,5	17,9	43,3	19,65	31,5	10,0	22,0
	Nom.									
	Max.	50,7	25,1	32,5	18,2	44,7	20,35	32,5		



IEC 479/08

NOTE Shape variation

Clamp recesses may be available at the outside wall of the outer legs, keeping "J" dimension in Table 2 when measured within the recesses.

Figure 2 – Dimensions of low-profile PQI-cores

Table 2 – Dimensions of low-profile PQI-cores

Size	A mm	B <sub>1</sub> mm	B <sub>2</sub> mm	C mm	D mm	E mm	F mm	G mm	J mm	L mm
PQI 16/7.8	Min. 16,1 Nom. 16,1 Max. 16,7	5,3 5,5	2,25 2,45	10,9 11,5	2,9 3,2	14,1 14,7	6,8 7,2	9,6 10,4	3,9	8,4
PQI 20/9	Min. 20,1 Nom. 20,1 Max. 20,9	5,9 6,1	2,85 3,05	13,6 14,4	2,9 3,2	17,6 18,4	8,6 9,0	12,0 12,5	4,8	10,5
PQI 26/12	Min. 26,05 Nom. 26,05 Max. 26,95	7,2 7,4	4,10 4,30	18,55 19,45	2,95 3,25	22,05 22,95	11,8 12,2	15,5 16,5	7,3	13,9

**Table 3 – Effective parameter and  $A_{\min}$  values for PQ-cores**

Size	$C_1$ mm <sup>-1</sup>	$C_2$ × 10 <sup>-3</sup> mm <sup>-3</sup>	$A_e$ mm <sup>2</sup>	$l_e$ mm	$V_e$ mm <sup>3</sup>	$A_{\min}^a$ mm <sup>2</sup>
PQ 20/16	0,580 53	9,034 6	64,3	37,3	2 400	59,3
PQ 20/20	0,709 95	11,129	63,8	45,3	2 890	59,3
PQ 26/20	0,361 41	2,932 5	123	44,5	5 490	113
PQ 26/25	0,437 38	3,569 9	123	53,7	6 590	113
PQ 32/20	0,313 14	2,001 2	157	49,0	7 670	142
PQ 32/30	0,440 40	2,833 3	155	68,5	10 600	142
PQ 35/35	0,465 38	2,718 8	171	79,7	13 600	161
PQ 40/40	0,491 97	2,602 7	189	93,0	17 600	174
PQ 50/50	0,342 34	1,032 6	332	113	37 600	314

<sup>a</sup> See 2.2 of IEC 60205.

**Table 4 – Effective parameter and  $A_{\min}$  values for low-profile PQ-cores**

Size	$C_1$ mm <sup>-1</sup>	$C_2$ × 10 <sup>-3</sup> mm <sup>-3</sup>	$A_e$ mm <sup>2</sup>	$l_e$ mm	$V_e$ mm <sup>3</sup>	$A_{\min}^a$ mm <sup>2</sup>
PQI 16/7.8	0,466 78	11,185	41,7	19,5	814	37,4
PQI 20/9	0,345 95	5,238 7	66,0	22,8	1 510	59,3
PQI 26/12	0,224 03	1,814 3	123	27,7	3 420	110

<sup>a</sup> See 2.2 of IEC 60205.

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