

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 62317-13:2015

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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 by technical committee 51: Magnetic components and ferrite materials.

This second edition cancels and replaces the first edition published in 2008. This edition constitutes a technical revision.

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

- a) addition of three core sizes (PQ 65/54, PQ 78/39 and PQ 107/87) in Table 1,
- b) addition of effective parameter and A_{\min} values, of main dimensions of coil formers and of gauge dimensions for PQ-cores for PQ 65/54, PQ 78/39 and PQ 107/87.

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

FDIS	Report on voting
51/1095/FDIS	51/1104/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 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 stability 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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WITHDRAWN

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.

NOTE 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 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 mechanical interchangeability of complete assemblies and wound coil formers.

3.2 Dimensions of PQ-cores

3.2.1 Principal dimensions

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

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, although no relaxation of the requirements for the dimensions of the cores given in Table 1 and in Table 2 is permitted.

3.2.2 Effective parameter and A_{\min} values

The effective parameter values for cores having the dimensions given in 3.2.1 are as shown in Table 3 and Table 4.

3.3 Dimensions 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.

3.4 Pin locations and base outlines

These shall be as shown in Figure 4.

3.5 Pin diameter

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

4 Mounting

Due to their sizes and respective weights, it is recommended that the cores above PQ 35/35 (including PQ 35/35) 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.

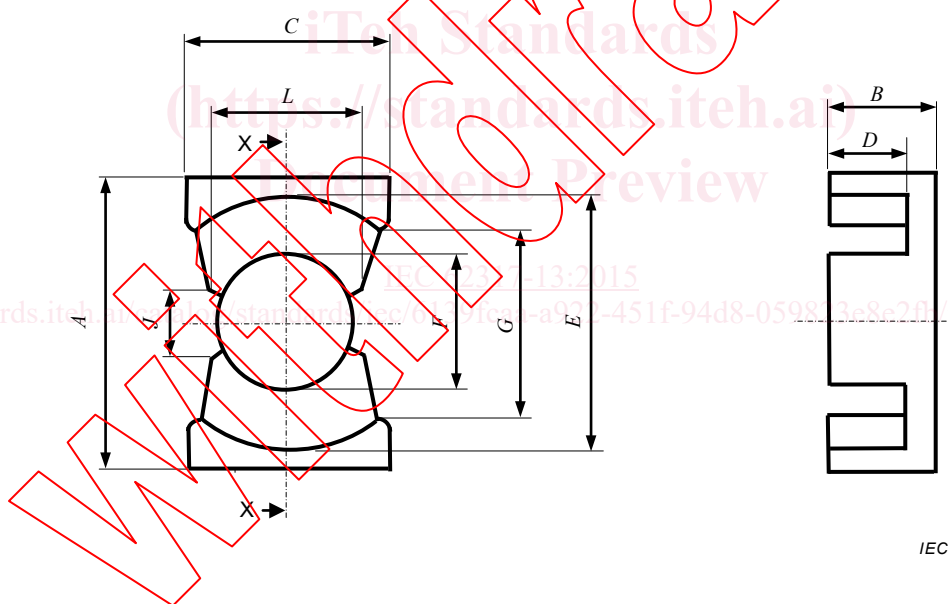
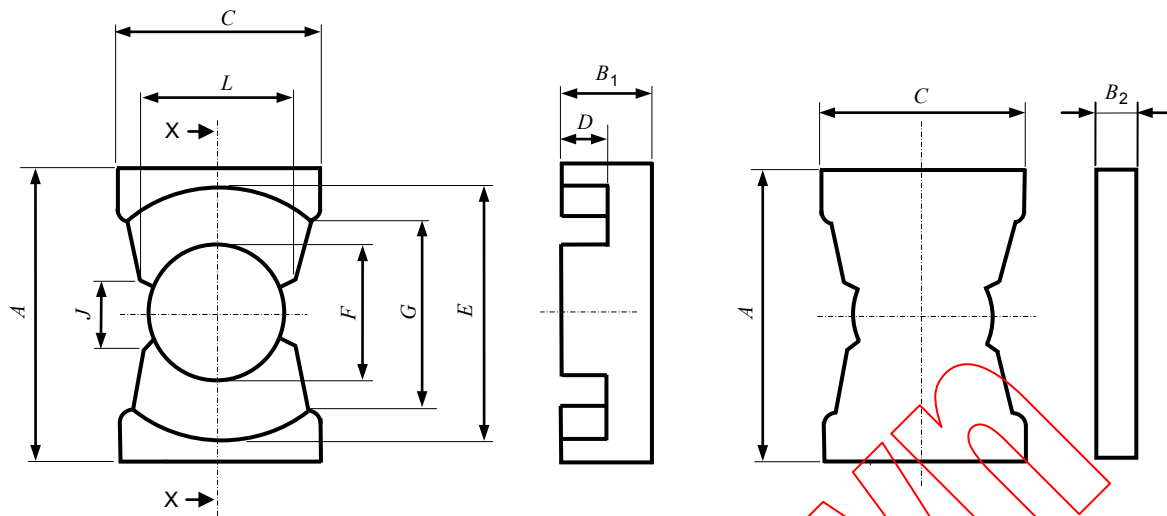


Figure 1 – Dimensions of PQ-cores

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Table 1 – Dimensions of PQ-cores

Size		A mm	B mm	C mm	D mm	E mm	F mm	G mm	J mm	L mm
PQ 20/16	Min.	20,10	8,00	13,60	5,00	17,60	8,60	12,00		
	Nom.								4,80	10,50
	Max.	20,90	8,20	14,40	5,30	18,40	9,00	13,00		
PQ 20/20	Min.	20,10	10,00	13,60	7,00	17,60	8,60	12,00		
	Nom.								4,80	10,50
	Max.	20,90	10,20	14,40	7,30	18,40	9,00	13,00		
PQ 26/20	Min.	26,05	9,95	18,55	5,60	22,05	11,80	15,50		
	Nom.								7,30	13,90
	Max.	26,95	10,20	19,45	5,90	22,95	12,20	16,50		
PQ 26/25	Min.	26,05	12,25	18,55	7,90	22,05	11,80	15,50		
	Nom.								7,30	13,90
	Max.	26,95	12,50	19,45	8,20	22,95	12,20	16,50		
PQ 32/20	Min.	31,50	10,15	21,50	5,60	27,00	13,20	19,00		
	Nom.								6,20	15,10
	Max.	32,50	10,40	22,50	5,90	28,00	13,70	20,00		
PQ 32/30	Min.	31,50	15,05	21,50	10,50	27,00	13,20	19,00		
	Nom.								6,20	15,10
	Max.	32,50	15,30	22,50	10,80	28,00	13,70	20,00		
PQ 35/35	Min.	34,50	17,25	25,50	12,35	31,50	14,10	23,50		
	Nom.								7,30	16,40
	Max.	35,70	17,50	26,50	12,65	32,50	14,60	24,50		
PQ 40/40	Min.	39,70	19,75	27,40	14,60	36,40	14,60	28,00		
	Nom.								7,75	16,80
	Max.	41,30	20,00	28,60	14,90	37,60	15,20	29,00		
PQ 50/50	Min.	49,00	24,85	31,50	17,90	43,30	19,65	31,50		
	Nom.								10,00	22,00
	Max.	51,00	25,10	32,50	18,20	44,70	20,35	32,50		
PQ 65/54	Min.	65,70	26,80	39,20	17,75	52,00	25,55	39,20		
	Nom.								12,00	27,50
	Max.	66,30	27,20	40,80	18,25	54,00	26,45	40,80		
PQ 78/39	Min.	77,00	19,45	41,20	12,60	69,10	25,00	60,10		
	Nom.								13,60	27,60
	Max.	80,00	19,95	42,80	13,20	71,90	26,00	62,50		
PQ 107/87	Min.	105,00	43,10	68,50	27,50	93,70	40,20	72,50		
	Nom.								22,80	43,70
	Max.	109,00	43,90	71,50	28,50	97,30	41,80	75,30		



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Figure 2 – Dimensions of low-profile PQI-cores

Table 2 – Dimensions of low-profile PQI-cores

Size		A mm	B ₁ mm	B ₂ mm	C mm	D mm	E mm	F mm	G mm	J mm	L mm
PQI 16/7,8	Min.	16,10	5,30	2,25	10,90	2,90	14,10	6,80	9,60		
	Nom.									3,90	8,40
	Max.	16,70	5,50	2,45	11,50	3,20	14,70	7,20	10,40		
PQI 20/9	Min.	20,10	5,90	2,85	13,60	2,90	17,60	8,60	12,00		
	Nom.									4,80	10,50
	Max.	20,90	6,10	3,05	14,40	3,20	18,40	9,00	12,50		
PQI 26/12	Min.	26,05	7,20	4,10	18,55	2,95	22,05	11,80	15,50		
	Nom.									7,30	13,90
	Max.	26,95	7,40	4,30	19,45	3,25	22,95	12,20	16,50		

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

Size	C_1 mm ⁻¹	$C_2 \times 10^{-3}$ mm ⁻³	A_e mm ²	l_e mm	V_e mm ³	A_{\min}^a mm ²
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 83	3,569 9	123	53,7	6 590	113
PQ 32/20	0,313 14	2,001 2	156	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
PQ 65/54	0,209 36	0,355 40	589	123	72 700	531
PQ 78/39	0,256 49	0,577 90	444	114	50 500	386
PQ 107/87	0,141 35	0,098 530	1 430	203	291 000	1 320

^a See 2.2 of IEC 60205:2006.

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

Size	C_1 mm ⁻¹	$C_2 \times 10^{-3}$ mm ⁻³	A_e mm ²	l_e mm	V_e mm ³	A_{\min}^a mm ²
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

^a See 2.2 of IEC 60205:2006.