DATA SHEET

PQ20/16

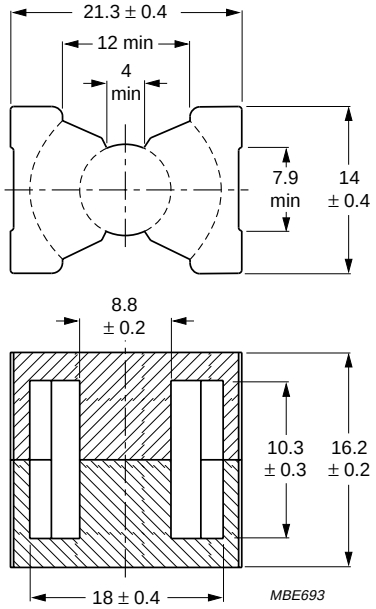
PQ cores and accessories

Supersedes data of February 2002 2004 Sep 01

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
Σ(l/A)	core factor (C1)	0.607	mm^{-1}
V_e	effective volume	2330	mm^3
l_e	effective length	37.6	mm
A_e	effective area	61.9	mm^2
A_{min}	minimum area	59.1	mm^2
m	mass of set	≈ 13	g



Dimensions in mm.

Fig.1 PQ20/16 core set.

Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 30 ±10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C81	160 ±3%	≈ 77	≈ 600	PQ20/16-3C81-A160
	250 ±3%	≈ 121	≈ 350	PQ20/16-3C81-A250
	315 ±3%	≈ 152	≈ 270	PQ20/16-3C81-A315
	400 ±3%	≈ 193	≈ 200	PQ20/16-3C81-A400
	630 ±5%	≈ 305	≈ 120	PQ20/16-3C81-A630
	4080 ±25%	≈ 1970	≈ 0	PQ20/16-3C81
3C90	160 ±3%	≈ 77	≈ 600	PQ20/16-3C90-A160
	250 ±3%	≈ 121	≈ 350	PQ20/16-3C90-A250
	315 ±3%	≈ 152	≈ 270	PQ20/16-3C90-A315
	400 ±3%	≈ 193	≈ 200	PQ20/16-3C90-A400
	630 ±5%	≈ 305	≈ 120	PQ20/16-3C90-A630
	3250 ±25%	≈ 1570	≈ 0	PQ20/16-3C90
3C91 des	4080 ±25%	≈ 1970	≈ 0	PQ20/16-3C91
3C94	3600 ±25%	≈ 1740	≈ 0	PQ20/16-3C94
3C96 des	3250 ±25%	≈ 1570	≈ 0	PQ20/16-3C96

GRADE		A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3F3		160 ±3%	≈ 77	≈ 600	PQ20/16-3F3-A160
		250 ±3%	≈ 121	≈ 350	PQ20/16-3F3-A250
		315 ±3%	≈ 152	≈ 270	PQ20/16-3F3-A315
		400 ±3%	≈ 193	≈ 200	PQ20/16-3F3-A400
		630 ±5%	≈ 305	≈ 120	PQ20/16-3F3-A630
		3080 ±25%	≈ 1490	≈ 0	PQ20/16-3F3

Properties of core sets under power conditions

GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 25 kHz; T = 100 °C	$\hat{B}$ = 200 mT; f = 25 kHz; T = 100 °C	$\hat{B}$ = 100 mT; f = 100 kHz; T = 100 °C	$\hat{B}$ = 200 mT; f = 100 kHz; T = 100 °C	$\hat{B}$ = 50 mT; f = 400 kHz; T = 100 °C
3C81	≥320	≤ 0.54	–	–	–
3C90	≥320	≤ 0.28	≤ 0.3	–	–
3C91	≥320	–	≤ 0.16[1]	≤ 1.1[1]	–
3C94	≥320	–	≤ 0.22	≤ 1.4	–
3C96	≥340	–	≤ 0.16	≤ 1.1	≤ 0.43
3F3	≥320	–	≤ 0.26	–	≤ 0.44

Properties of core sets under power conditions (continued)

GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 25 kHz; T = 100 °C	$\hat{B}$ = 50 mT; f = 500 kHz; T = 100 °C	$\hat{B}$ = 100 mT; f = 500 kHz; T = 100 °C	$\hat{B}$ = 30 mT; f = 1 MHz; T = 100 °C	$\hat{B}$ = 10 mT; f = 3 MHz; T = 100 °C
3C81	≥320	–	–	–	–
3C90	≥320	–	–	–	–
3C91	≥320	–	–	–	–
3C94	≥320	–	–	–	–
3C96	≥340	≤ 0.9	–	–	–
3F3	≥320	–	–	–	–

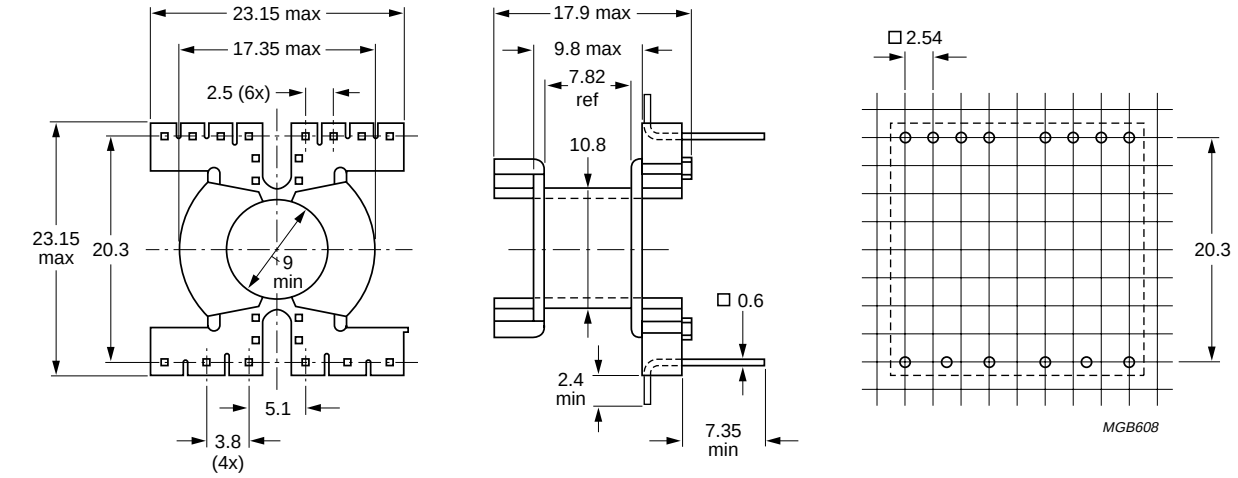
Note

1. Measured at 60 °C.

COIL FORMER

General data 14-pins PQ20/16 coil former

PARAMETER	SPECIFICATION
Coil former material	thermoplastic polyester, glass-reinforced, flame retardant in accordance with *"UL 94V-0"*; UL file number E69578(M)
Pin material	copper-tin alloy (CuSn), tin-lead alloy (SnPb) plated, transition to lead-free (Sn) ongoing
Maximum operating temperature	155 °C, *"IEC 60085"*, class F
Resistance to soldering heat	*"IEC 60068-2-20"*, Part 2, Test Tb, method 1B, 350 °C, 3.5 s
Solderability	*"IEC 60068-2-20"*, Part 2, Test Ta, method 1



Dimensions in mm.

Fig.2 PQ20/16 coil former; 14-pins.

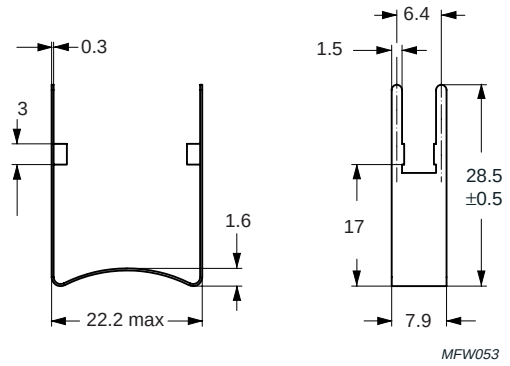
Winding data for 14-pins PQ20/16 coil former

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm^2)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	23.5	7.95	44.0	CPV-PQ20/16-1S-14P
1	23.5	7.95	44.0	CPV-PQ20/16-1S-14PD

MOUNTING PARTS

General data

ITEM	REMARKS	TYPE NUMBER
Clamp	phosphorbronze, Sn plated, earth pins solderability acc. to *"IEC 60068-2-20"*, Part 2, Test Ta, method 1: 235 °C, 2 s	CLM/P-PQ20/16



Dimensions in mm.

Fig.3 Clamp CLM/P-PQ20/16

DATA SHEET STATUS DEFINITIONS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS
Preliminary specification	Development	This data sheet contains preliminary data. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
Product specification	Production	This data sheet contains final specifications. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.

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