

DATA SHEET

PQ20/16

PQ cores and accessories

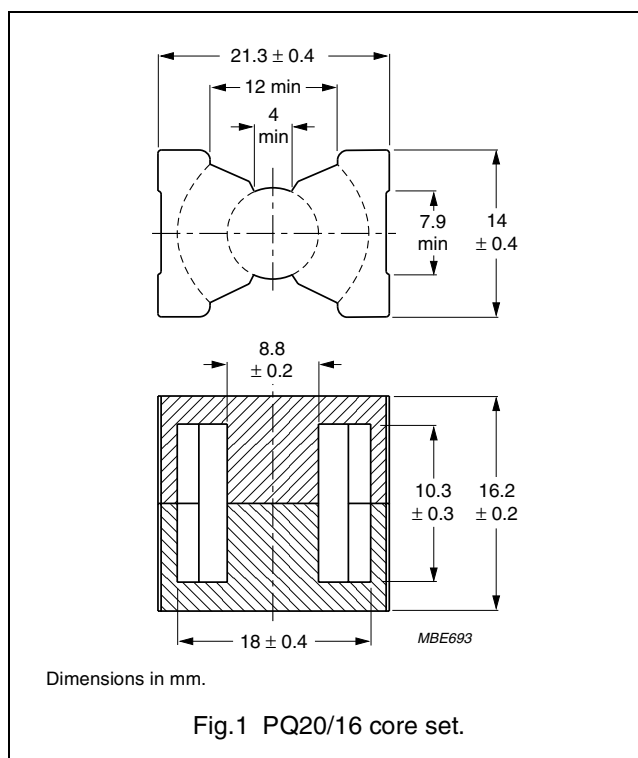
Supersedes data of September 2004

2008 Sep 01

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	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



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 (μ m)	TYPE NUMBER
3C81	160 $\pm 3\%$	≈ 77	≈ 600	PQ20/16-3C81-A160
	250 $\pm 3\%$	≈ 121	≈ 350	PQ20/16-3C81-A250
	315 $\pm 3\%$	≈ 152	≈ 270	PQ20/16-3C81-A315
	400 $\pm 3\%$	≈ 193	≈ 200	PQ20/16-3C81-A400
	630 $\pm 5\%$	≈ 305	≈ 120	PQ20/16-3C81-A630
	4080 $\pm 25\%$	≈ 1970	≈ 0	PQ20/16-3C81
3C90	160 $\pm 3\%$	≈ 77	≈ 600	PQ20/16-3C90-A160
	250 $\pm 3\%$	≈ 121	≈ 350	PQ20/16-3C90-A250
	315 $\pm 3\%$	≈ 152	≈ 270	PQ20/16-3C90-A315
	400 $\pm 3\%$	≈ 193	≈ 200	PQ20/16-3C90-A400
	630 $\pm 5\%$	≈ 305	≈ 120	PQ20/16-3C90-A630
	3600 $\pm 25\%$	≈ 1740	≈ 0	PQ20/16-3C90
3C91 des	4080 $\pm 25\%$	≈ 1970	≈ 0	PQ20/16-3C91
3C94	3600 $\pm 25\%$	≈ 1740	≈ 0	PQ20/16-3C94
3C95 des	4080 $\pm 25\%$	≈ 1970	≈ 0	PQ20/16-3C95
3C96 des	3250 $\pm 25\%$	≈ 1570	≈ 0	PQ20/16-3C96

PQ cores and accessories

PQ20/16

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

Properties of core sets under power conditions

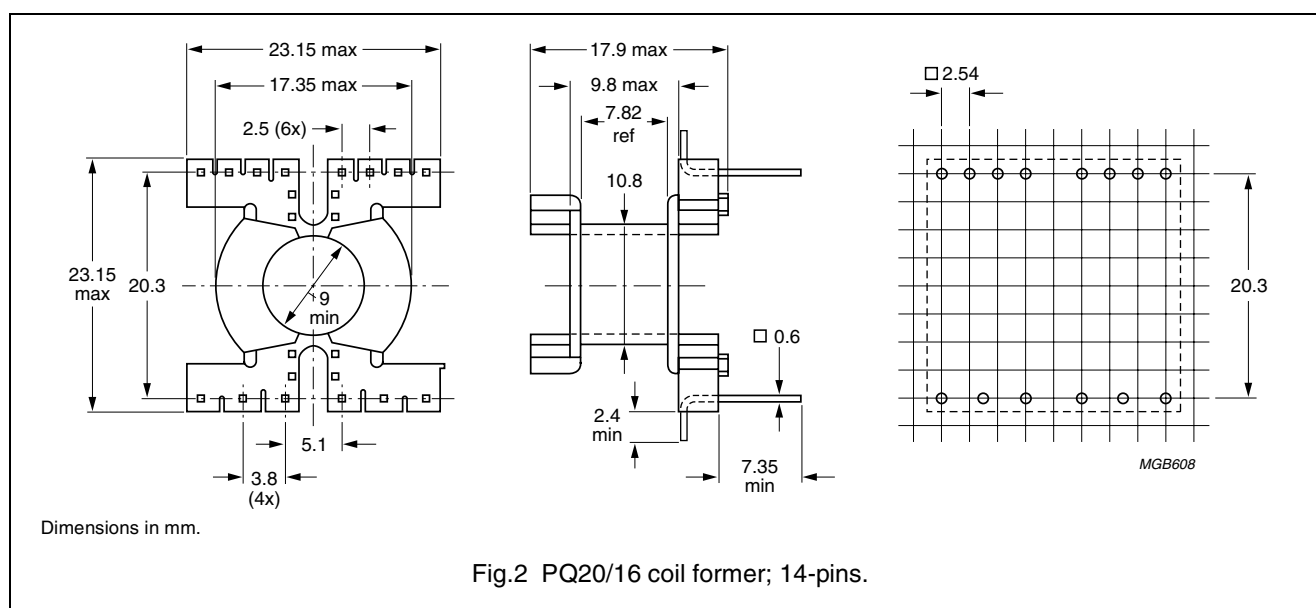
GRADE	B (mT) at	CORE LOSS (W) at					
	H = 250 A/m; f = 25 kHz; T = 100 °C	f = 25 kHz; B = 200 mT; T = 100 °C	f = 100 kHz; B = 100 mT; T = 100 °C	f = 100 kHz; B = 200 mT; T = 25 °C	f = 100 kHz; B = 200 mT; T = 100 °C	f = 400 kHz; B = 50 mT; T = 100 °C	f = 500 kHz; B = 50 mT; T = 100 °C
3C81	≥ 320	≤ 0.54	–	–	–	–	–
3C90	≥ 320	≤ 0.28	≤ 0.3	–	–	–	–
3C91	≥ 320	–	$\leq 0.16^{(1)}$	–	$\leq 1.1^{(1)}$	–	–
3C94	≥ 320	–	≤ 0.22	–	≤ 1.4	–	–
3C95	≥ 320	–	–	≤ 1.37	≤ 1.3	–	–
3C96	≥ 340	–	≤ 0.16	–	≤ 1.1	≤ 0.43	≤ 0.9
3F3	≥ 320	–	≤ 0.26	–	–	≤ 0.44	–

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 E41938
Pin material	copper-tin alloy (CuSn), tin (Sn) plated
Maximum operating temperature	180 °C, "IEC 60085", class H
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

**Winding data and area product for 14-pins PQ20/16 coil former**

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm ²)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm ⁴)	TYPE NUMBER
1	23.5	7.95	44.0	1450	CPV-PQ20/16-1S-14P
1	23.5	7.95	44.0	1450	CPV-PQ20/16-1S-14PD

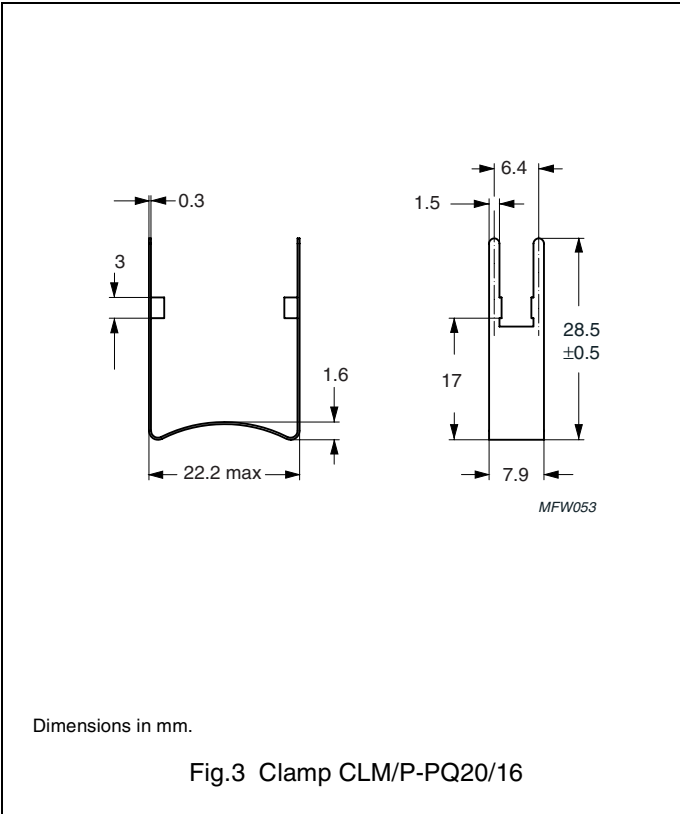
PQ cores and accessories

PQ20/16

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



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.

DISCLAIMER

Life support applications — These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Ferroxcube customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Ferroxcube for any damages resulting from such application.

PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
Prototype		These are products that have been made as development samples for the purposes of technical evaluation only. The data for these types is provisional and is subject to change.
Design-in		These products are recommended for new designs.
Preferred		These products are recommended for use in current designs and are available via our sales channels.
Support		These products are not recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability.