DATA SHEET

PQ32/30
PQ cores and accessories

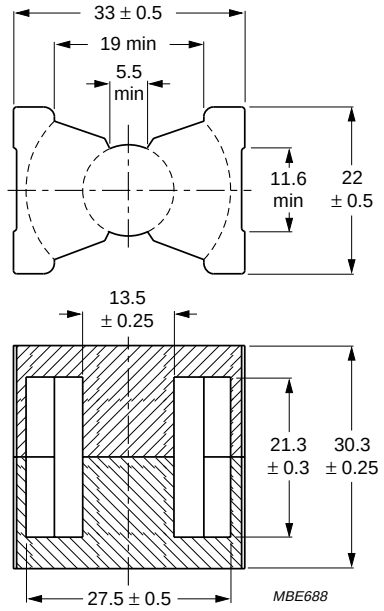
Supersedes data of February 2002 2004 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.447	mm^{-1}
V_e	effective volume	12500	mm^3
l_e	effective length	74.7	mm
A_e	effective area	167	mm^2
A_{min}	minimum area	142	mm^2
m	mass of set	≈ 57	g



Dimensions in mm.

Fig.1 PQ32/30 core set.

Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 80 ±20 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C81	315 ±3%	≈ 112	≈ 800	PQ32/30-3C81-E315
	400 ±3%	≈ 142	≈ 600	PQ32/30-3C81-A400
	630 ±3%	≈ 224	≈ 350	PQ32/30-3C81-A630
	1000 ±3%	≈ 356	≈ 200	PQ32/30-3C81-A1000
	1600 ±5%	≈ 570	≈ 110	PQ32/30-3C81-A1600
	6570 ±25%	≈ 2340	≈ 0	PQ32/30-3C81
3C90	315 ±3%	≈ 112	≈ 800	PQ32/30-3C90-E315
	400 ±3%	≈ 142	≈ 600	PQ32/30-3C90-A400
	630 ±3%	≈ 224	≈ 350	PQ32/30-3C90-A630
	1000 ±3%	≈ 356	≈ 200	PQ32/30-3C90-A1000
	1600 ±5%	≈ 570	≈ 110	PQ32/30-3C90-A1600
	5040 ±25%	≈ 1790	≈ 0	PQ32/30-3C90
3C91 des	6570 ±25%	≈ 2340	≈ 0	PQ32/30-3C91
3C94	5600 ±25%	≈ 1990	≈ 0	PQ32/30-3C94
3C96 des	5040 ±25%	≈ 1790	≈ 0	PQ32/30-3C96

GRADE		A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3F3		315 ±3%	≈ 112	≈ 800	PQ32/30-3F3-E315
		400 ±3%	≈ 142	≈ 600	PQ32/30-3F3-A400
		630 ±3%	≈ 224	≈ 350	PQ32/30-3F3-A630
		1000 ±3%	≈ 356	≈ 200	PQ32/30-3F3-A1000
		1600 ±5%	≈ 570	≈ 110	PQ32/30-3F3-A1600
		4580 ±25%	≈ 1630	≈ 0	PQ32/30-3F3

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; $\hat{B}$ = 200 mT; T = 100 °C	f = 100 kHz; $\hat{B}$ = 100 mT; T = 100 °C	f = 100 kHz; $\hat{B}$ = 200 mT; T = 100 °C	f = 400 kHz; $\hat{B}$ = 50 mT; T = 100 °C
3C81	≥320	≤ 2.6	–	–	–
3C90	≥320	≤ 1.5	≤ 1.6	–	–
3C91	≥320	–	≤ 0.9[1]	≤ 6.0[1]	–
3C94	≥320	–	≤ 1.2	≤ 7.5	–
3C96	≥340	–	≤ 0.9	≤ 6.0	≤ 2.3
3F3	≥320	–	≤ 1.4	–	≤ 2.4

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	f = 500 kHz; $\hat{B}$ = 50 mT; T = 100 °C	f = 500 kHz; $\hat{B}$ = 100 mT; T = 100 °C	f = 1 MHz; $\hat{B}$ = 30 mT; T = 100 °C	f = 3 MHz; $\hat{B}$ = 10 mT; T = 100 °C
3C81	≥320	–	–	–	–
3C90	≥320	–	–	–	–
3C91	≥320	–	–	–	–
3C94	≥320	–	–	–	–
3C96	≥340	≤ 4.7	–	–	–
3F3	≥320	–	–	–	–

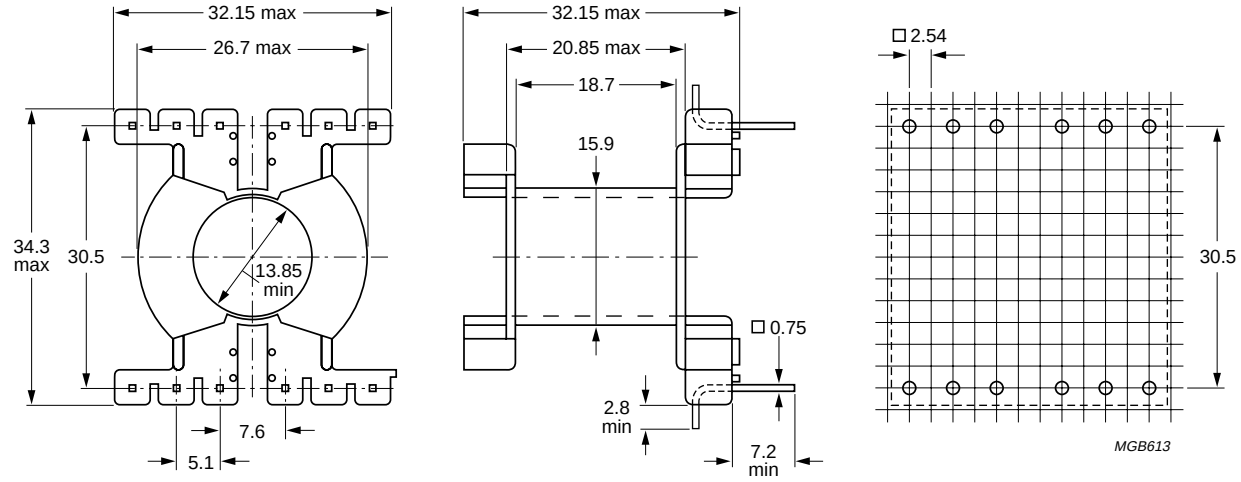
Note

1. Measured at 60 °C.

COIL FORMER

General data 14-pins PQ32/30 coil former

PARAMETER	SPECIFICATION
Coil former material	thermoplastic polyester, glass-reinforced, flame retardant in accordance with *"UL 60094V-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 PQ32/30 coil former; 12-pins.

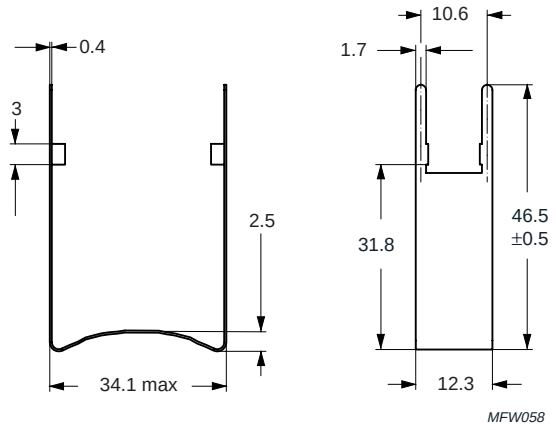
Winding data for 12-pins PQ32/30 coil former

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm^2)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	53.0	18.7	66.7	CPV-PQ32/30-1S-12P
1	53.0	18.7	66.7	CPV-PQ32/30-1S-12PD

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-PQ32/30



Dimensions in mm.

Fig.3 Clamp CLM/P-PQ32/30

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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PRODUCT STATUS DEFINITIONS

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Support	sup	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.