

DATA SHEET

PQ32/20

PQ cores and accessories

Supersedes data of September 2004

2008 Sep 01

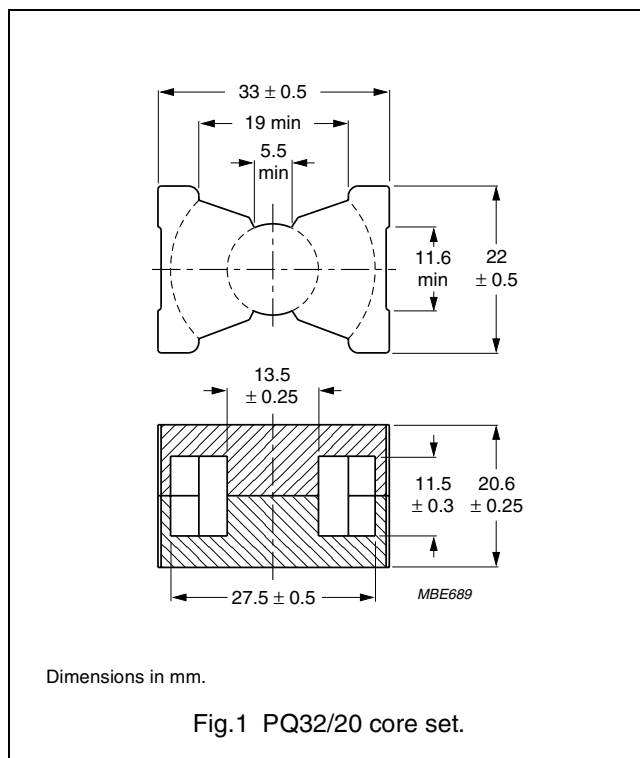


FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.331	mm ⁻¹
V_e	effective volume	9440	mm ³
l_e	effective length	55.9	mm
A_e	effective area	169	mm ²
A_{min}	minimum area	142	mm ²
m	mass of set	≈ 43	g



Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 80 ±20 N.

GRADE	A_L (nH)	μ_e	TOTAL AIR GAP (μm)	TYPE NUMBER
3C81	315 ±3%	≈ 83	≈ 790	PQ32/20-3C81-E315
	400 ±3%	≈ 105	≈ 600	PQ32/20-3C81-A400
	630 ±3%	≈ 166	≈ 350	PQ32/20-3C81-A630
	1000 ±3%	≈ 263	≈ 210	PQ32/20-3C81-A1000
	1600 ±5%	≈ 421	≈ 120	PQ32/20-3C81-A1600
	7560 ±25%	≈ 1990	≈ 0	PQ32/20-3C81
3C90	315 ±3%	≈ 83	≈ 790	PQ32/20-3C90-E315
	400 ±3%	≈ 105	≈ 600	PQ32/20-3C90-A400
	630 ±3%	≈ 166	≈ 350	PQ32/20-3C90-A630
	1000 ±3%	≈ 263	≈ 210	PQ32/20-3C90-A1000
	1600 ±5%	≈ 421	≈ 120	PQ32/20-3C90-A1600
	6800 ±25%	≈ 1790	≈ 0	PQ32/20-3C90
3C91 des	7560 ±25%	≈ 1990	≈ 0	PQ32/20-3C91
3C94	6800 ±25%	≈ 1790	≈ 0	PQ32/20-3C94
3C95 des	7560 ±25%	≈ 1990	≈ 0	PQ32/20-3C95
3C96 des	6000 ±25%	≈ 1580	≈ 0	PQ32/20-3C96

GRADE	A_L (nH)	μ_e	TOTAL AIR GAP (μm)	TYPE NUMBER
3F3	315 \pm 3%	\approx 83	\approx 790	PQ32/20-3F3-E315
	400 \pm 3%	\approx 105	\approx 600	PQ32/20-3F3-A400
	630 \pm 3%	\approx 166	\approx 350	PQ32/20-3F3-A630
	1000 \pm 3%	\approx 263	\approx 210	PQ32/20-3F3-A1000
	1600 \pm 5%	\approx 421	\approx 120	PQ32/20-3F3-A1600
	6000 \pm 25%	\approx 1580	\approx 0	PQ32/20-3F3

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	\geq 320	\leq 1.9	–	–	–	–	–
3C90	\geq 320	\leq 1.2	\leq 1.3	–	–	–	–
3C91	\geq 320	–	\leq 0.7 ⁽¹⁾	–	\leq 4.4 ⁽¹⁾	–	–
3C94	\geq 320	–	\leq 0.9	–	\leq 5.5	–	–
3C95	\geq 320	–	–	\leq 5.57	\leq 5.29	–	–
3C96	\geq 340	–	\leq 0.7	–	\leq 4.4	\leq 1.7	\leq 3.5
3F3	\geq 320	–	\leq 1.0	–	–	\leq 1.8	–

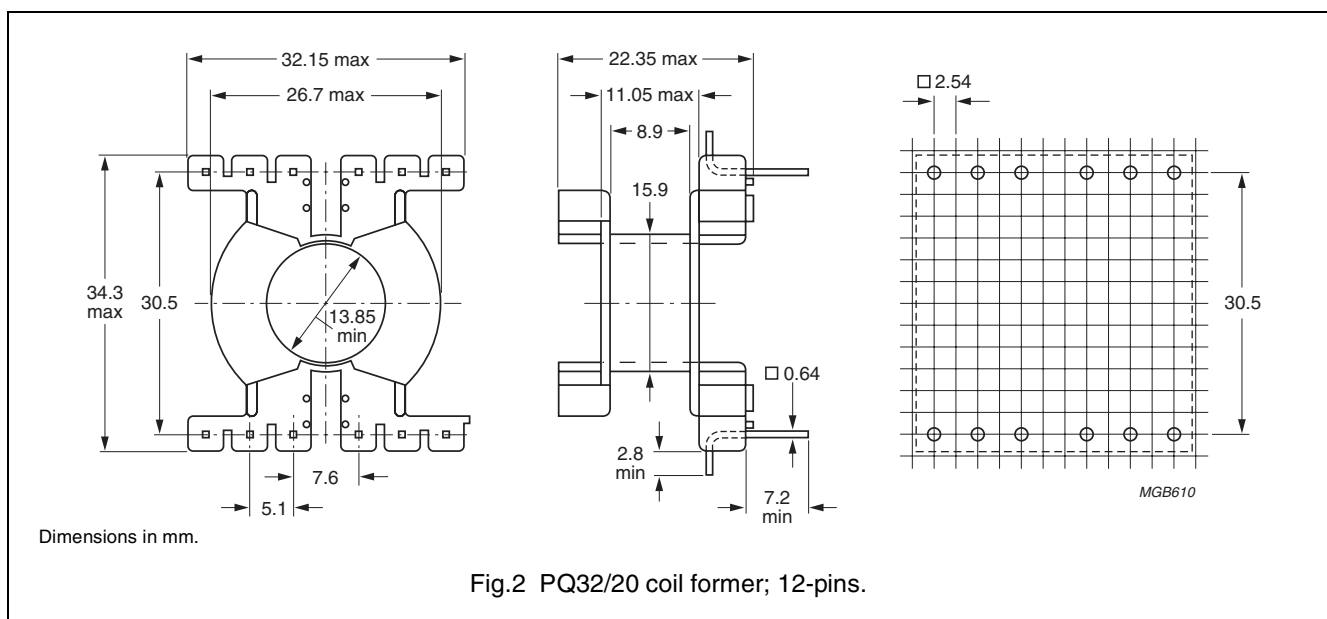
Note

1. Measured at 60 °C.

COIL FORMER

General data 12-pins PQ32/20 coil former

PARAMETER	SPECIFICATION
Coil former material	Polyethylene terephthalate (PET), 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 6068-2-20", Part 2, Test Tb, method 1B, 350 °C, 3.5 s
Solderability	"IEC 60068-2-20", Part 2, Test Ta, method 1



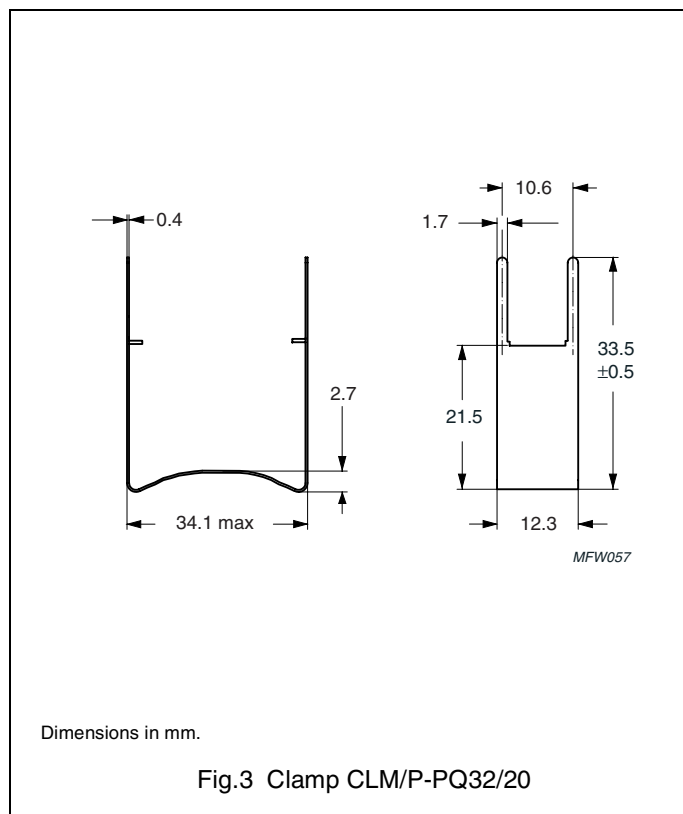
Winding data and area product for 12-pins PQ32/20 coil former

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	44.8	8.9	66.7	7570	CPV-PQ32/20-1S-12P-Z
1	44.8	8.9	66.7	7570	CPV-PQ32/20-1S-12PD-Z

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-PQ32/20






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

STATUS	INDICATION	DEFINITION
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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.