DATA SHEET

E19/8/5
E cores and accessories

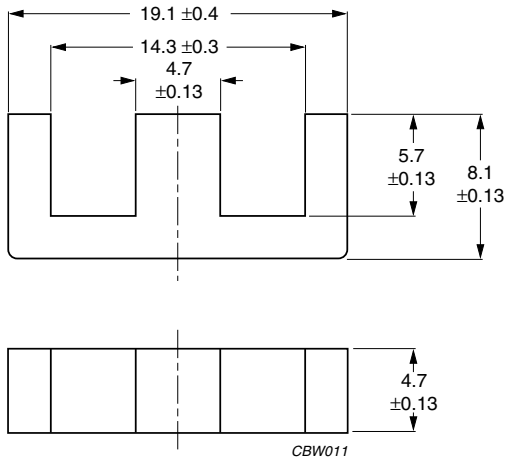
Supersedes data of September 2004 2008 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
Σ(l/A)	core factor (C1)	1.77	mm^{-1}
V_e	effective volume	900	mm^3
l_e	effective length	39.9	mm
A_e	effective area	22.6	mm^2
A_{min}	minimum area	22.1	mm^2
m	mass of core half	≈ 2.3	g



Dimensions in mm.

Fig.1 E19/8/5 core half.

Core halves

A_L measured in combination with a non-gapped core half, clamping force for A_L measurements, 20 ±10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C81	63 ±5%	≈ 88	≈ 650	E19/8/5-3C81-A63
	100 ±8%	≈140	≈ 350	E19/8/5-3C81-A100
	160 ±8%	≈ 225	≈ 200	E19/8/5-3C81-A160
	250 ±15%	≈350	≈110	E19/8/5-3C81-A250
	315 ±15%	≈ 440	≈ 80	E19/8/5-3C81-A315
	1500 ±25%	≈ 2110	≈ 0	E19/8/5-3C81
3C90	63 ±5%	≈ 88	≈ 640	E19/8/5-3C90-A63
	100 ±8%	≈140	≈ 350	E19/8/5-3C90-A100
	160 ±8%	≈ 225	≈ 190	E19/8/5-3C90-A160
	250 ±15%	≈ 350	≈110	E19/8/5-3C90-A250
	315 ±15%	≈ 440	≈ 80	E19/8/5-3C90-A315
	1170 ±25%	≈ 1650	≈ 0	E19/8/5-3C90
3C91 des	1500 ±25%	≈ 2110	≈ 0	E19/8/5-3C91
3C92 des	900 ±25%	≈ 1260	≈ 0	E19/8/5-3C92
3C94	1170 ±25%	≈ 1650	≈ 0	E19/8/5-3C94
3C96 des	1000 ±25%	≈ 1400	≈ 0	E19/8/5-3C96

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3F3	63 ±5%	≈ 88	≈ 640	E19/8/5-3F3-A63
	100 ±8%	≈140	≈ 330	E19/8/5-3F3-A100
	160 ±8%	≈ 225	≈ 190	E19/8/5-3F3-A160
	250 ±15%	≈ 350	≈ 110	E19/8/5-3F3-A250
	315 ±15%	≈ 440	≈ 80	E19/8/5-3F3-A315
	1000 ±25%	≈ 1400	≈ 0	E19/8/5-3F3
3F35 des	810 ±25%	≈ 1140	≈ 0	E19/8/5-3F35

Core halves of high permeability grades

Clamping force for A_L measurements, 20 ±10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3E27	2300 ±25%	≈ 3230	≈ 0	E19/8/5-3E27

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	≤ 0.2	–	–	–
3C90	≥320	≤ 0.09	≤ 0.1	–	–
3C91	≥320	–	≤ 0.064(1)	≤ 0.37(1)	–
3C92	≥370	–	≤ 0.08	≤ 0.45	–
3C94	≥320	–	≤ 0.08	≤ 0.45	–
3C96	≥340	–	≤ 0.064	≤ 0.37	–
3F3	≥320	–	≤ 0.1	–	≤ 0.17
3F35	≥300	–	–	–	–

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
3C96	≥340	≤ 0.32	–	–	–
3F3	≥315	–	–	–	–
3F35	≥300	≤ 0.12	≤ 0.95	–	–

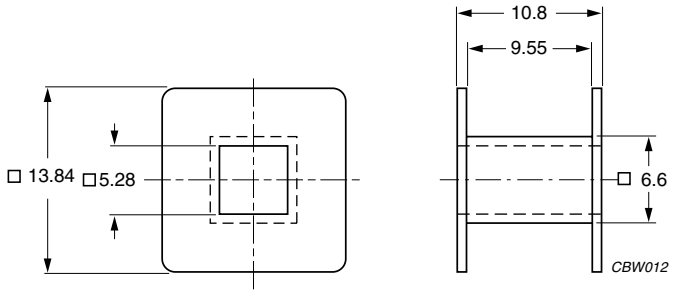
Note

1. Measured at 60 °C.

COIL FORMERS

General data for E19/8/5 coil former without pins

PARAMETER	SPECIFICATION
Coil former material	polyamide (PA6.6), glass reinforced, flame retardant in accordance with *"UL 94V-2";* UL file number E41938(M)
Maximum operating temperature	130 °C, *"IEC 60085"*, class B



Dimensions in mm.

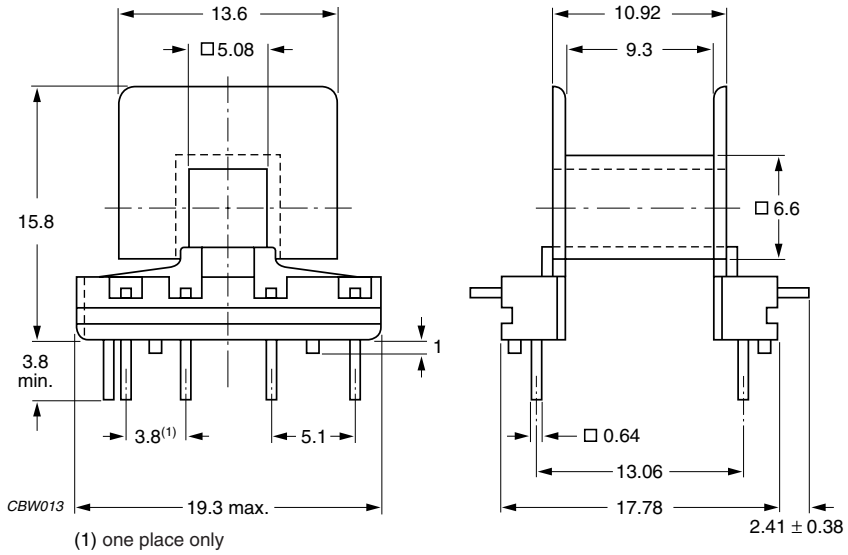
Fig.2 E19/8/5 coil former.

Winding data and area product for E19/8/5 coil forme without pins

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	33.0	9.5	37.9	746	CP-E19/8/5-1S

General data for 8-pins E19/8/5 coil former

PARAMETER	SPECIFICATION
Coil former material	polyamide (PA6.6), glass reinforced, flame retardant in accordance with UL 94V-0; UL file number E41938(M)
Pin material	copper-zinc alloy (CuZn), tin (Sn) plated
Maximum operating temperature	130 °C, *"IEC 60085"*, class B
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, 235 °C, 2 s



Dimensions in mm.

Fig.3 E19/8/5 coil former; 8-pins.

Winding data and area product for 8-pins E19/8/5 coil former

NUMBER OF SECTIONS	MINIMUM WNDING AREA (mm^2)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm^4)	TYPE NUMBER
1	32.3	9.4	40.9	730	CPH-E19/8/5-1S-8PD-Z

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
Prototype	prot	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	des	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	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.