DATA SHEET

E19/8/9
E cores and accessories

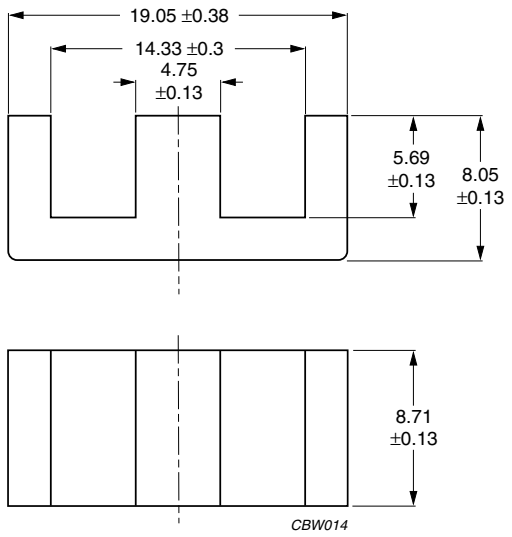
Supersedes data of September 2004 2008 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.960	mm^{-1}
V_e	effective volume	1650	mm^3
l_e	effective length	39.9	mm
A_e	effective area	41.3	mm^2
A_{min}	minimum area	41.1	mm^2
m	mass of core half	≈ 4.0	g



Dimensions in mm.

Fig.1 E19/8/9 core half.

Core halves

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

GRADE	A_L (nH)	μ_e	TOTAL AIR GAP (μm)	TYPE NUMBER
3C81	63 ±5%(1)	≈ 48	≈ 1280	E19/8/9-3C81-E63
	100 ±8%(1)	≈ 77	≈ 700	E19/8/9-3C81-E100
	160 ±8%	≈123	≈ 390	E19/8/9-3C81-A160
	250 ±15%	≈ 192	≈ 220	E19/8/9-3C81-A250
	315 ±15%	≈ 242	≈ 170	E19/8/9-3C81-A315
	2740 ±25%	≈ 2680	≈ 0	E19/8/9-3C81
3C90	63 ±5%(1)	≈ 48	≈ 1300	E19/8/9-3C90-E63
	100 ±8%(1)	≈ 77	≈ 700	E19/8/9-3C90-E100
	160 ±8%	≈123	≈ 380	E19/8/9-3C90-A160
	250 ±15%	≈ 192	≈ 220	E19/8/9-3C90-A250
	315 ±15%	≈ 240	≈170	E19/8/9-3C90-A315
	2150 ±25%	≈ 2100	≈ 0	E19/8/9-3C90
3C91 des	2740 ±25%	≈ 2680	≈ 0	E19/8/9-3C91
3C92 des	1640 ±25%	≈ 1250	≈ 0	E19/8/9-3C92
3C94	2150 ±25%	≈ 2100	≈ 0	E19/8/9-3C94
3C96 des	1830 ±25%	≈ 1410	≈ 0	E19/8/9-3C96

GRADE	A_L (nH)	μ_e	TOTAL AIR GAP (μm)	TYPE NUMBER
3F3	63 ±5%(1)	≈ 48	≈ 1300	E19/8/9-3F3-E63
	100 ±8%(1)	≈ 77	≈ 700	E19/8/9-3F3-E100
	160 ±8%	≈123	≈ 380	E19/8/9-3F3-A250
	250 ±15%	≈ 192	≈ 220	E19/8/9-3F3-A315
	315 ±15%	≈ 240	≈170	E19/8/9-3F3-A400
	1830 ±25%	≈ 1410	≈ 0	E19/8/9-3F3
3F35 des	1490 ±25%	≈ 1150	≈ 0	E19/8/9-3F35

Note

1. Measured in combination with an equal gapped core half, clamping force for A_L measurements, 20 ±10 N.

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	4250 ±25%	≈ 3270	≈ 0	E19/8/9-3E27

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	≤ 0.4	–	–	–
3C90	≥320	≤ 0.17	≤ 0.18	–	–
3C91	≥320	–	≤ 0.11(1)	≤ 0.68(1)	–
3C92	≥370	–	≤ 0.14	≤ 0.85	–
3C94	≥320	–	≤ 0.14	≤ 0.85	–
3C96	≥340	–	≤ 0.11	≤ 0.68	–
3F3	≥320	–	≤ 0.18	–	≤ 0.31
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	≤ 0.6	–	–	–
3F3	≥315	–	–	–	–
3F35	≥300	≤ 0.22	≤ 1.7	–	–

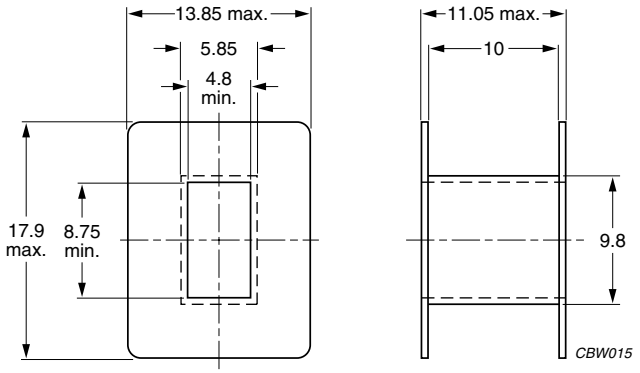
Note

1. Measured at 60 °C.

COIL FORMER

General data for E19/8/9 coil former

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	105 °C, *"IEC 60085"*, class A



Dimensions in mm.

Fig.2 E19/8/9 coil former.

Winding data and area product for E19/8/9 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	39.7	10	45.2	1640	CP-E19/8/9-1S

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	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.