DATA SHEET

E32/16/9
E cores and accessories

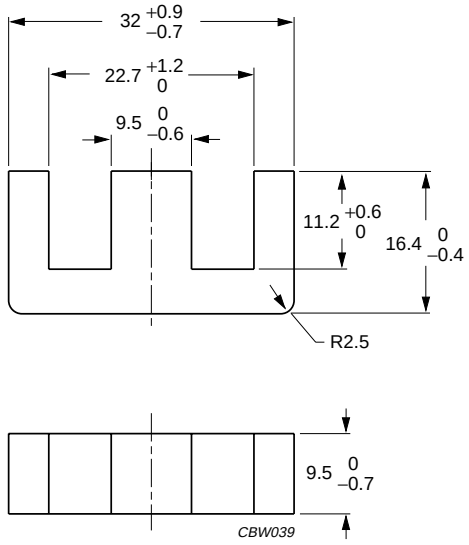
Supersedes data of February 2002 2004 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.894	mm^{-1}
V_e	effective volume	6180	mm^3
l_e	effective length	74	mm
A_e	effective area	83	mm^2
A_{min}	minimum area	83	mm^2
m	mass of core half	≈ 16	g



Dimensions in mm.

Fig.1 E32/16/9 core half.

Core halves

A_L measured in combination with a non-gapped core half, clamping force for A_L measurements 40 ±20 N, unless stated otherwise.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	100 ±5%(1)	≈ 71	≈ 1600	E32/16/9-3C90-E100
	160 ±5%(1)	≈ 114	≈ 860	E32/16/9-3C90-E160
	250 ±5%	≈ 177	≈ 480	E32/16/9-3C90-A250
	315 ±5%	≈ 223	≈ 360	E32/16/9-3C90-A315
	400 ±8%	≈ 284	≈ 260	E32/16/9-3C90-A400
	630 ±15%	≈ 447	≈ 150	E32/16/9-3C90-A630
	2500 ±25%	≈ 1770	≈ 0	E32/16/9-3C90
3C92 des	1850 ±25%	≈ 1320	≈ 0	E32/16/9-3C92
3C94	2500 ±25%	≈ 1770	≈ 0	E32/16/9-3C94
3C96 des	2300 ±25%	≈ 1630	≈ 0	E32/16/9-3C96

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3F3	100 ±5%(1)	≈ 71	≈ 1600	E32/16/9-3F3-E100
	160 ±5%(1)	≈ 114	≈ 860	E32/16/9-3F3-E160
	250 ±5%	≈ 177	≈ 480	E32/16/9-3F3-A250
	315 ±5%	≈ 223	≈ 360	E32/16/9-3F3-A315
	400 ±8%	≈ 284	≈ 260	E32/16/9-3F3-A400
	630 ±15%	≈ 447	≈ 150	E32/16/9-3F3-A630
	2300 ±25%	≈ 1630	≈ 0	E32/16/9-3F3
3F35 prot	1700 ±25%	≈ 1210	≈ 0	E32/16/9-3F35

1. A_L measured in combination with a equal gapped core half.

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
3C11	4000 ±25%	≈ 2840	≈ 0	E32/16/9-3C11
3E27	5000 ±25%	≈ 3550	≈ 0	E32/16/9-3E27

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
3C90	≥330	≤ 0.65	≤ 0.7	–	–
3C92	≥370	–	≤ 0.55	≤ 3.2	–
3C94	≥330	–	≤ 0.55	≤ 3.2	–
3C96	≥340	–	≤ 0.43	≤ 2.5	–
3F3	≥320	–	≤ 0.75	–	≤ 1.3
3F35	≥300	–	–	–	–

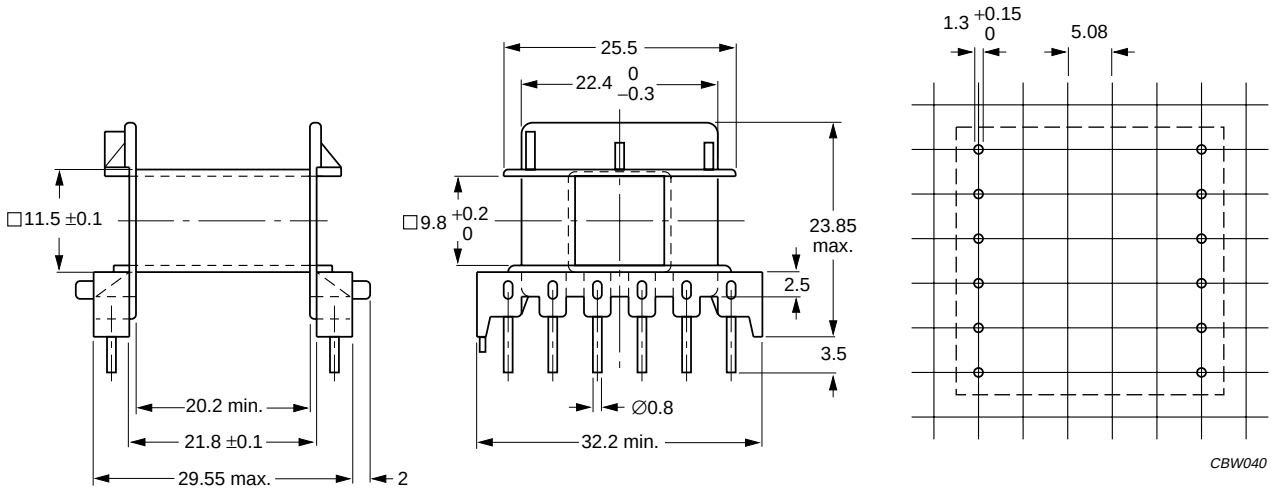
Properties of core sets under power conditions (continued)

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
3C90	≥330	–	–	–	–
3C92	≥370	–	–	–	–
3C94	≥330	–	–	–	–
3C96	≥340	≤ 2.3	–	–	–
3F3	≥320	–	–	–	–
3F35	≥300	≤ 0.83	≤ 6.5	–	–

COIL FORMER

General data for 12-pins E32/16/9 coil former

PARAMETER	SPECIFICATION
Coil former material	polyamide (PA6.6), glass reinforced, flame retardant in accordance with *"UL 94V-0"*; UL file number E41871(M)
Pin material	copper-tin alloy (CuSn), tin-lead alloy (SnPb) plated, transition to lead-free (Sn) ongoing.
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.2 E32/16/9 coil former; 12-pins.

Winding data for 12-pins E32/16/9 coil former

NUMBER OF SECTIONS	WINDING AREA (mm^2)	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	97	20.2	60	CPH-E32/16/9-1S-12P

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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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