

# DATA SHEET

**E32/16/9**

**E cores and accessories**

Supersedes data of September 2004

2008 Sep 01

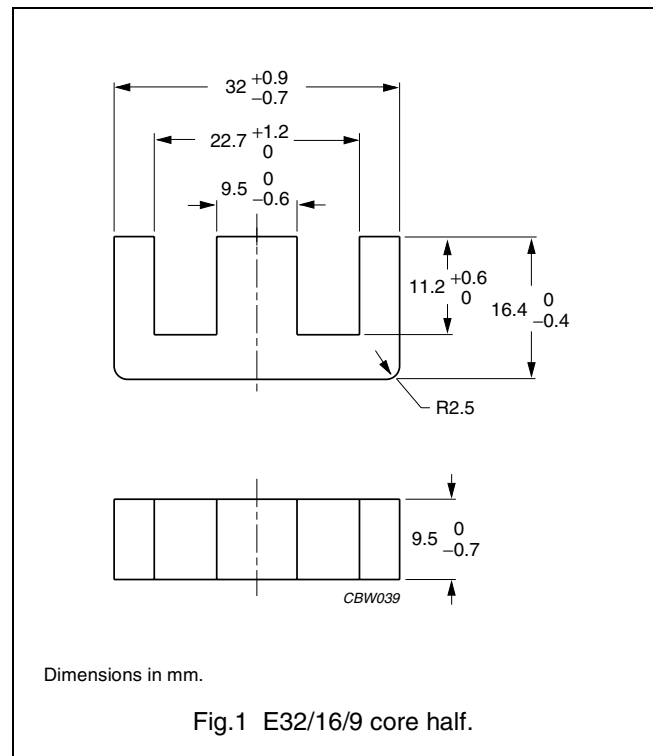


**FERROXCUBE**  
A YAGEO COMPANY

**CORE SETS**

**Effective core parameters**

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



**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)	$\mu_e$	TOTAL AIR GAP (μm)	TYPE NUMBER
3C90	100 ±5% <sup>(1)</sup>	≈ 71	≈ 1600	E32/16/9-3C90-E100
	160 ±5% <sup>(1)</sup>	≈ 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 <b>des</b>	1850 ±25%	≈ 1320	≈ 0	E32/16/9-3C92
3C94	2500 ±25%	≈ 1770	≈ 0	E32/16/9-3C94
3C96 <b>des</b>	2300 ±25%	≈ 1630	≈ 0	E32/16/9-3C96

GRADE	$A_L$ (nH)	$\mu_e$	TOTAL AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3F3	$100 \pm 5\%^{(1)}$	$\approx 71$	$\approx 1600$	E32/16/9-3F3-E100
	$160 \pm 5\%^{(1)}$	$\approx 114$	$\approx 860$	E32/16/9-3F3-E160
	$250 \pm 5\%$	$\approx 177$	$\approx 480$	E32/16/9-3F3-A250
	$315 \pm 5\%$	$\approx 223$	$\approx 360$	E32/16/9-3F3-A315
	$400 \pm 8\%$	$\approx 284$	$\approx 260$	E32/16/9-3F3-A400
	$630 \pm 15\%$	$\approx 447$	$\approx 150$	E32/16/9-3F3-A630
	$2300 \pm 25\%$	$\approx 1630$	$\approx 0$	E32/16/9-3F3
3F35 <span style="border: 1px solid black; padding: 0 2px;">des</span>	$1700 \pm 25\%$	$\approx 1210$	$\approx 0$	E32/16/9-3F35

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

#### 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	$\geq 330$	$\leq 0.65$	$\leq 0.7$	–	–
3C92	$\geq 370$	–	$\leq 0.55$	$\leq 3.2$	–
3C94	$\geq 330$	–	$\leq 0.55$	$\leq 3.2$	–
3C96	$\geq 340$	–	$\leq 0.43$	$\leq 2.5$	–
3F3	$\geq 320$	–	$\leq 0.75$	–	$\leq 1.3$
3F35	$\geq 300$	–	–	–	–

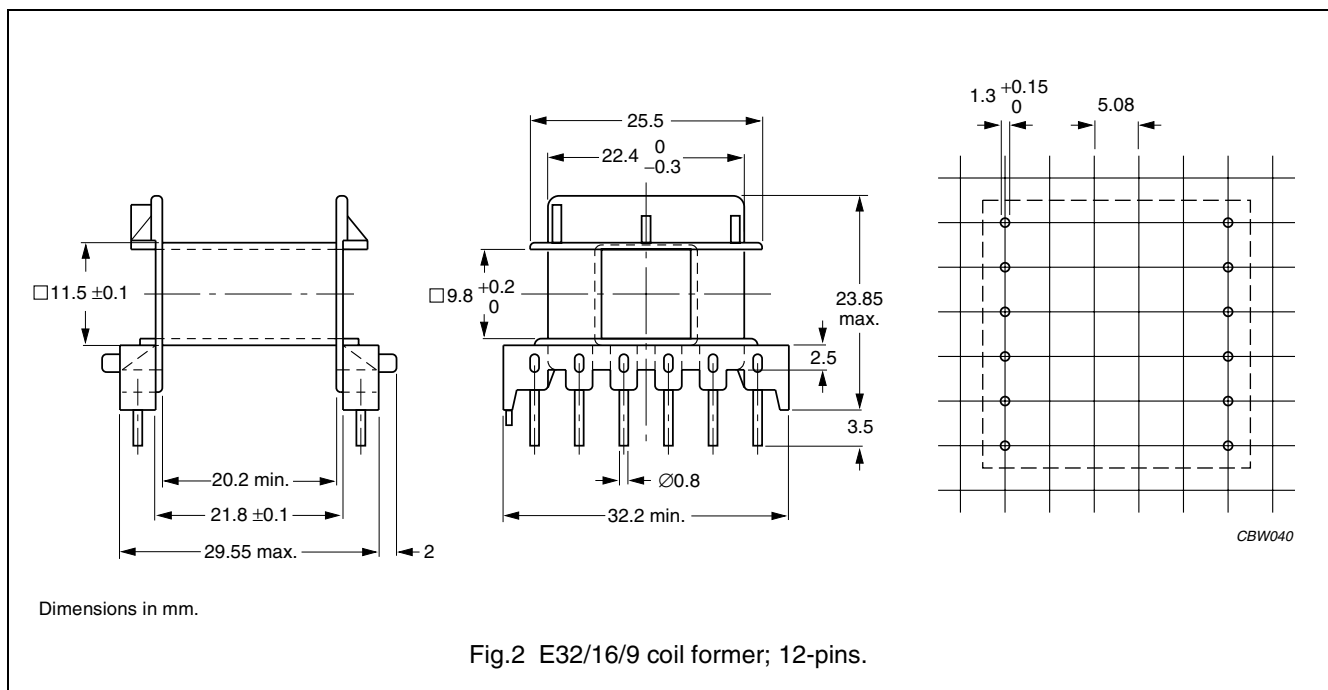
#### Properties of core sets under power conditions (continued)

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	$\geq 330$	–	–	–	–
3C92	$\geq 370$	–	–	–	–
3C94	$\geq 330$	–	–	–	–
3C96	$\geq 340$	$\leq 2.3$	–	–	–
3F3	$\geq 320$	–	–	–	–
3F35	$\geq 300$	$\leq 0.83$	$\leq 6.5$	–	–

**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 (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



**Winding data and area product for 12-pins E32/16/9 coil former**

NUMBER OF SECTIONS	WINDING AREA (mm <sup>2</sup> )	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm <sup>4</sup> )	TYPE NUMBER
1	97	20.2	60	8050	CPH-E32/16/9-1S-12P




**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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