

DATA SHEET

E32/16/9

E cores and accessories

Supersedes data of September 2004

2008 Sep 01

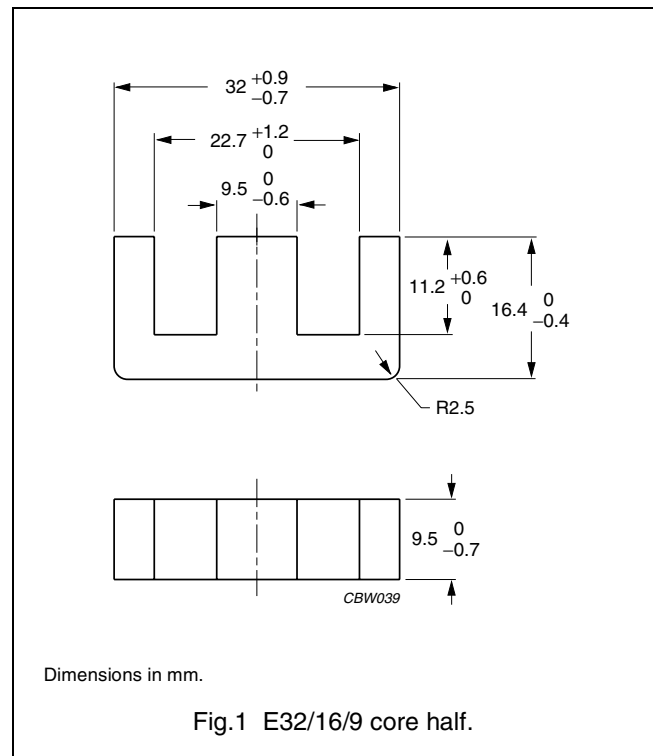


FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.894	mm ⁻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



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	TOTAL 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 <small>des</small>	1850 ±25%	≈ 1320	≈ 0	E32/16/9-3C92
3C94	2500 ±25%	≈ 1770	≈ 0	E32/16/9-3C94
3C96 <small>des</small>	2300 ±25%	≈ 1630	≈ 0	E32/16/9-3C96

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

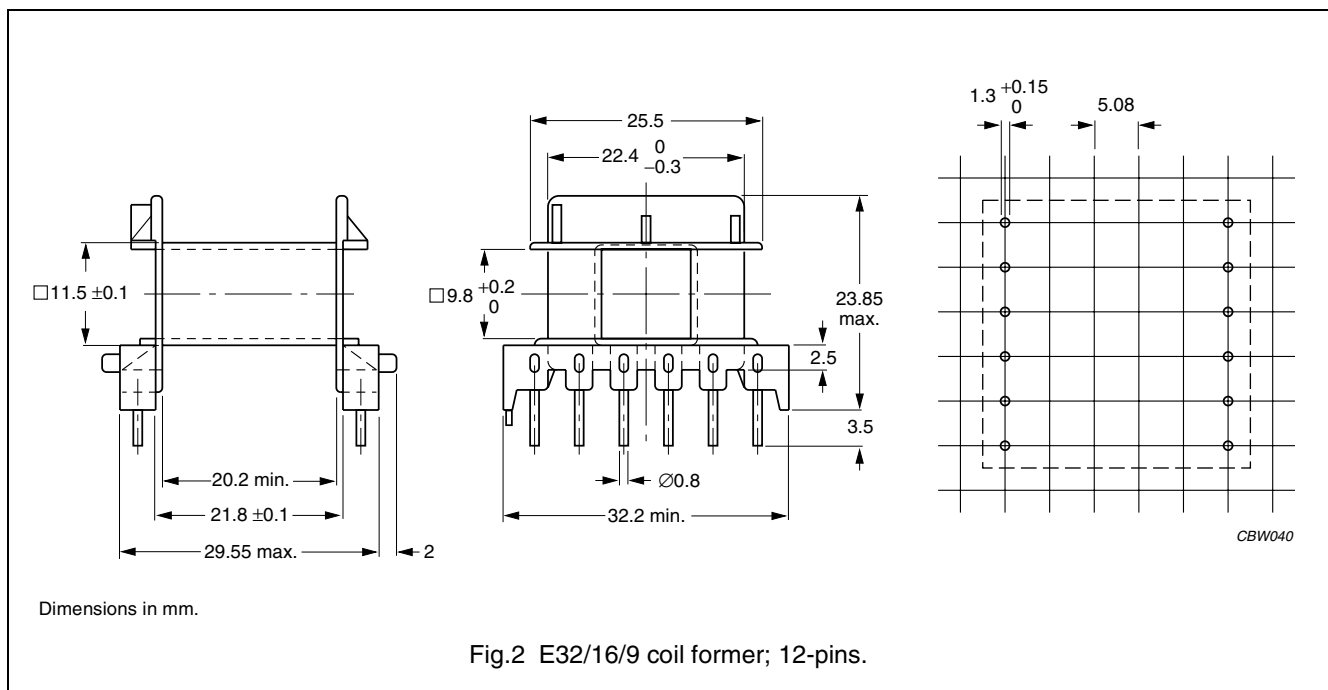
Properties of core sets under power conditions (continued)

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 (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 ²)	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm ⁴)	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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PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
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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.