

# DATA SHEET

**E16/8/5**

**E cores and accessories**

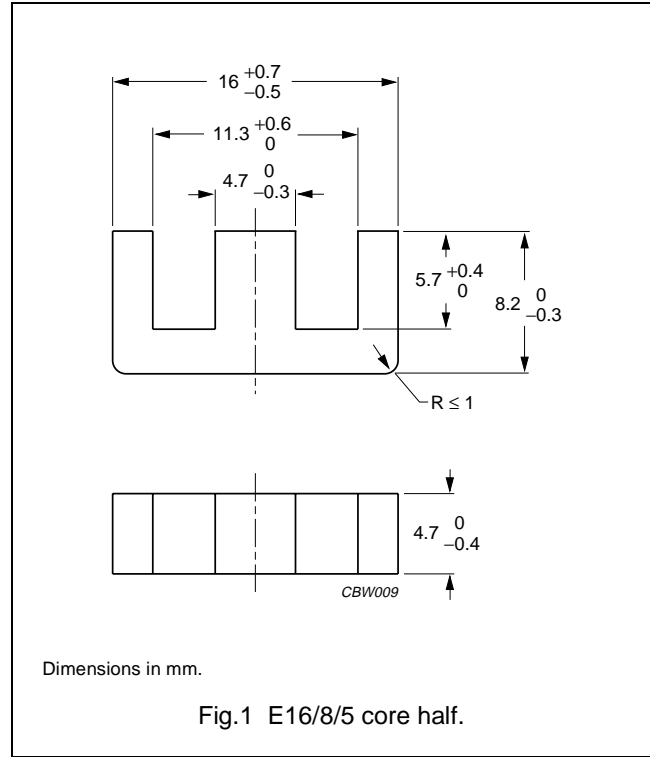
Supersedes data of February 2002

2004 Sep 01

**CORE SETS**

**Effective core parameters**

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	1.87	mm <sup>-1</sup>
$V_e$	effective volume	750	mm <sup>3</sup>
$l_e$	effective length	37.6	mm
$A_e$	effective area	20.1	mm <sup>2</sup>
$A_{min}$	minimum area	19.3	mm <sup>2</sup>
$m$	mass of core half	≈ 2.0	g



**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)	$\mu_e$	AIR GAP (μm)	TYPE NUMBER
3C90	63 ±5%	≈ 95	≈ 570	E16/8/5-3C90-A63
	100 ±8%	≈ 150	≈ 310	E16/8/5-3C90-A100
	160 ±8%	≈ 240	≈ 170	E16/8/5-3C90-A160
	250 ±15%	≈ 370	≈ 95	E16/8/5-3C90-A250
	315 ±15%	≈ 470	≈ 70	E16/8/5-3C90-A315
	1100 ±25%	≈ 1640	≈ 0	E16/8/5-3C90
3C92 <small>des</small>	840 ±25%	≈ 1250	≈ 0	E16/8/5-3C92
3C94	1100 ±25%	≈ 1640	≈ 0	E16/8/5-3C94
3C96 <small>des</small>	980 ±25%	≈ 1460	≈ 0	E16/8/5-3C96
3F3	63 ±5%	≈ 95	≈ 570	E16/8/5-3F3-A63
	100 ±8%	≈ 150	≈ 310	E16/8/5-3F3-A100
	160 ±8%	≈ 240	≈ 170	E16/8/5-3F3-A160
	250 ±15%	≈ 370	≈ 95	E16/8/5-3F3-A250
	315 ±15%	≈ 470	≈ 70	E16/8/5-3F3-A315
	980 ±25%	≈ 1460	≈ 0	E16/8/5-3F3
3F35 <small>prot</small>	760 ±25%	≈ 1130	≈ 0	E16/8/5-3F35

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## Core halves of high permeability grades

Clamping force for  $A_L$  measurements,  $20 \pm 10$  N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3E27	$2200 \pm 25\%$	$\approx 3300$	$\approx 0$	E16/8/5-3E27

## 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
3C90	$\geq 320$	$\leq 0.1$	$\leq 0.1$	–	–
3C92	$\geq 370$	–	$\leq 0.075$	$\leq 0.38$	–
3C94	$\geq 320$	–	$\leq 0.075$	$\leq 0.38$	–
3C96	$\geq 340$	–	$\leq 0.055$	$\leq 0.3$	–
3F3	$\geq 320$	–	$\leq 0.1$	–	$\leq 0.15$
3F35	$\geq 300$	–	–	–	–

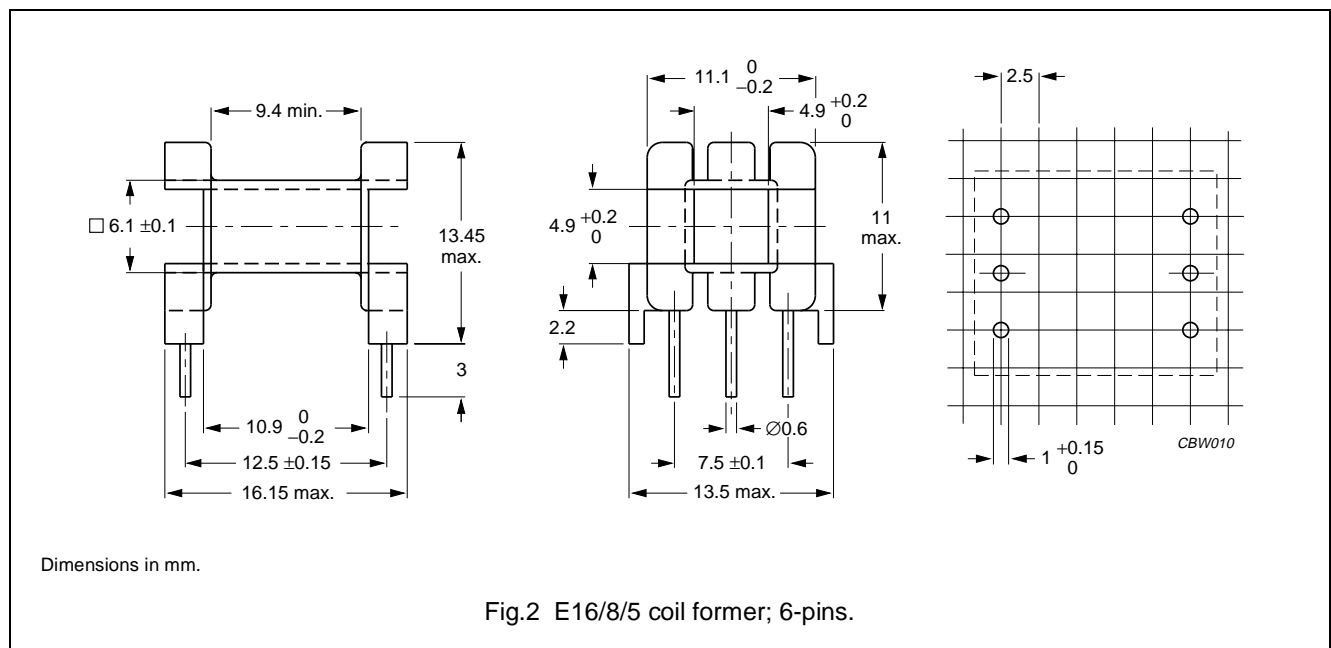
## Properties of core sets under power conditions (continued)

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	$\geq 320$	–	–	–	–
3C92	$\geq 370$	–	–	–	–
3C94	$\geq 320$	–	–	–	–
3C96	$\geq 340$	$\leq 0.28$	–	–	–
3F3	$\geq 315$	–	–	–	–
3F35	$\geq 300$	$\leq 0.1$	$\leq 0.8$	–	–

**COIL FORMER**

**General data for 6-pins E16/8/5 coil former**

PARAMETER	SPECIFICATION
Coil former material	polyamide (PA6.6), glass reinforced, flame retardant in accordance with "UL 94V-0"; UL file number 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



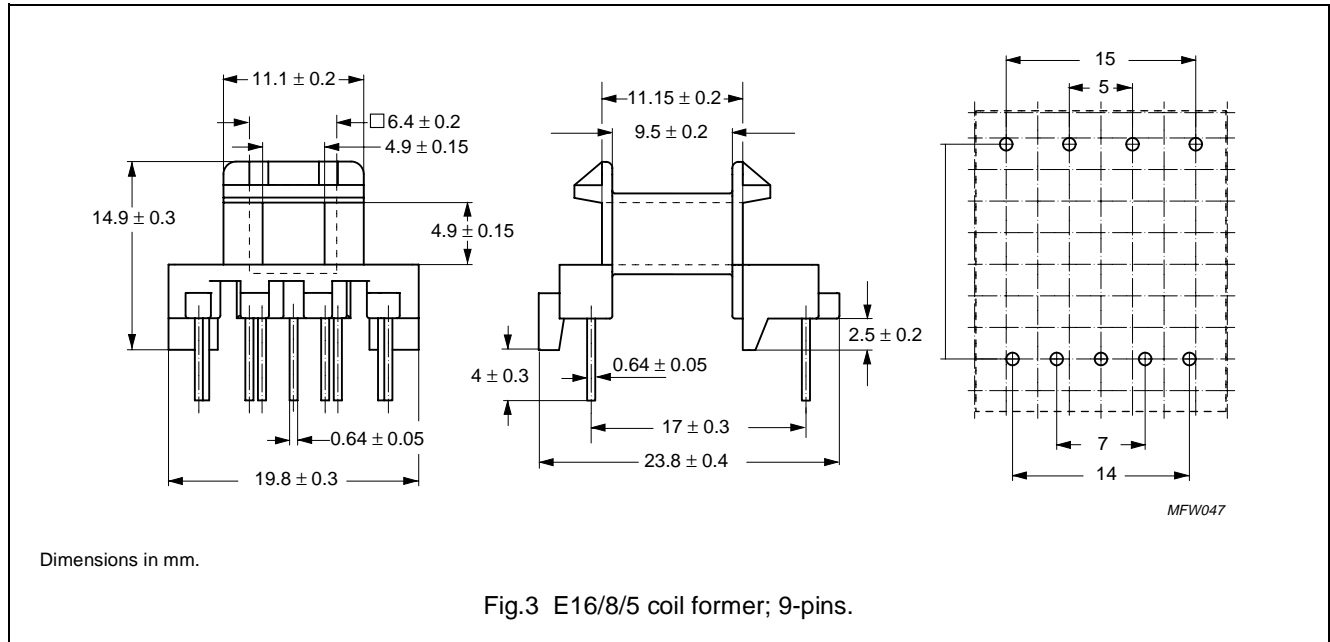
**Winding data for 6-pins E16/8/5 coil former**

NUMBER OF SECTIONS	WINDING AREA (mm <sup>2</sup> )	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	21.6	9.4	33	CPH-E16/8/5-1S-6P-Z

**COIL FORMER**

**General data for 9-pins E16/8/5 coil former**

PARAMETER	SPECIFICATION
Coil former material	phenolformaldehyde (PF), glass reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E41429 (M)
Pin material	copper-clad steel, tin-lead alloy (SnPb) plated, transition to lead-free (Sn) ongoing.
Maximum operating temperature	180 °C, "IEC 60085", class H
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 9-pins for E16/8/5 coil former; note 1**

NUMBER OF SECTIONS	WINDING AREA (mm <sup>2</sup> )	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	20.2	9.6	35	CSH-E16/8/5-1S-9P

**Note**

1. This coil former is optimized for the use of triple-isolated wire. This wire is approved for safety isolation without the usual creepage distance.

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## 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

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