

# DATA SHEET

**E56/24/19**

**E cores and accessories**

Supersedes data of September 2004

2008 Sep 01

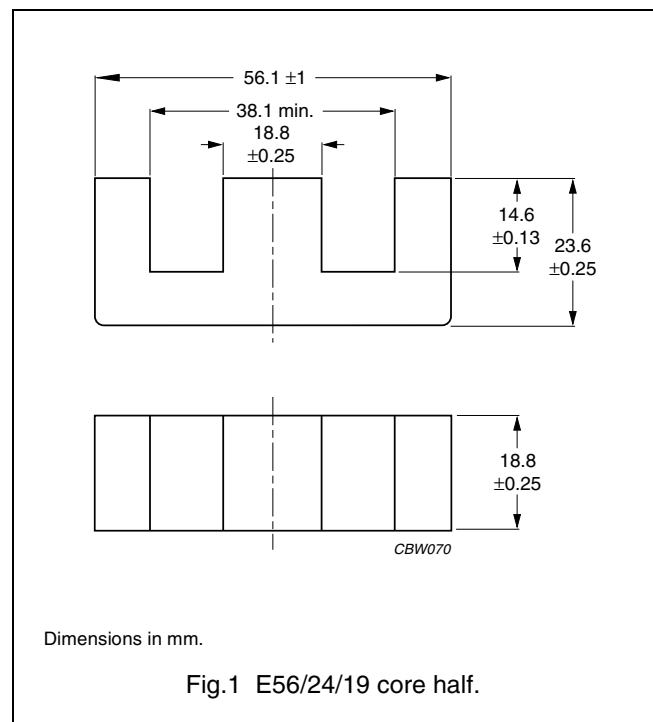
E cores and accessories

E56/24/19  
(E75)

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.320	mm <sup>-1</sup>
$V_e$	effective volume	36000	mm <sup>3</sup>
$l_e$	effective length	107	mm
$A_e$	effective area	337	mm <sup>2</sup>
$A_{min}$	minimum area	337	mm <sup>2</sup>
m	mass of core half	≈ 90	g



Core halves

$A_L$  measured in combination with a non-gapped core half, clamping force for  $A_L$  measurements  $60 \pm 20$  N, unless stated otherwise.

GRADE	$A_L$ (nH)	$\mu_e$	TOTAL AIR GAP ( $\mu$ m)	TYPE NUMBER
3C81	100 ±5% <sup>(1)</sup>	≈ 25	≈ 7780	E56/24/19-3C81-E100
	160 ±5% <sup>(1)</sup>	≈ 40	≈ 4160	E56/24/19-3C81-E160
	250 ±5% <sup>(1)</sup>	≈ 63	≈ 2320	E56/24/19-3C81-E250
	315 ±5% <sup>(1)</sup>	≈ 80	≈ 1720	E56/24/19-3C81-E315
	400 ±8% <sup>(1)</sup>	≈ 101	≈ 1280	E56/24/19-3C81-E400
	630 ±10% <sup>(1)</sup>	≈ 159	≈ 740	E56/24/19-3C81-E630
	9500 ±25%	≈ 2400	≈ 0	E56/24/19-3C81
3C90	100 ±5% <sup>(1)</sup>	≈ 25	≈ 7780	E56/24/19-3C90-E100
	160 ±5% <sup>(1)</sup>	≈ 40	≈ 4160	E56/24/19-3C90-E160
	250 ±5% <sup>(1)</sup>	≈ 63	≈ 2320	E56/24/19-3C90-E250
	315 ±5% <sup>(1)</sup>	≈ 80	≈ 1720	E56/24/19-3C90-E315
	400 ±8% <sup>(1)</sup>	≈ 101	≈ 1280	E56/24/19-3C90-E400
	630 ±10% <sup>(1)</sup>	≈ 159	≈ 740	E56/24/19-3C90-E630
	6900 ±25%	≈ 1740	≈ 0	E56/24/19-3C90
3C91 <span style="border: 1px solid black; padding: 0 2px;">des</span>	9500 ±25%	≈ 2400	≈ 0	E56/24/19-3C91
3C92 <span style="border: 1px solid black; padding: 0 2px;">des</span>	5200 ±25%	≈ 1320	≈ 0	E56/24/19-3C92
3C94	6900 ±25%	≈ 1740	≈ 0	E56/24/19-3C94
3C95 <span style="border: 1px solid black; padding: 0 2px;">des</span>	9500 ±25%	≈ 2400	≈ 0	E56/24/19-3C95

Note

1. Measured in combination with an equal gapped core half.

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## 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 = 25 °C	f = 100 kHz; $\hat{B}$ = 200 mT; T = 100 °C	f = 400 kHz; $\hat{B}$ = 50 mT; T = 100 °C
3C81	≥320	≤ 7.4	–	–	–	–
3C90	≥320	≤ 3.6	≤ 4.8	–	–	–
3C91	≥320	–	≤ 2.7 <sup>(1)</sup>	–	≤ 16 <sup>(1)</sup>	–
3C92	≥370	–	≤ 3.6	–	≤ 22	–
3C94	≥320	–	≤ 3.6	–	≤ 22	–
3C95	≥320	–	–	≤ 22.7	≤ 21.6	–

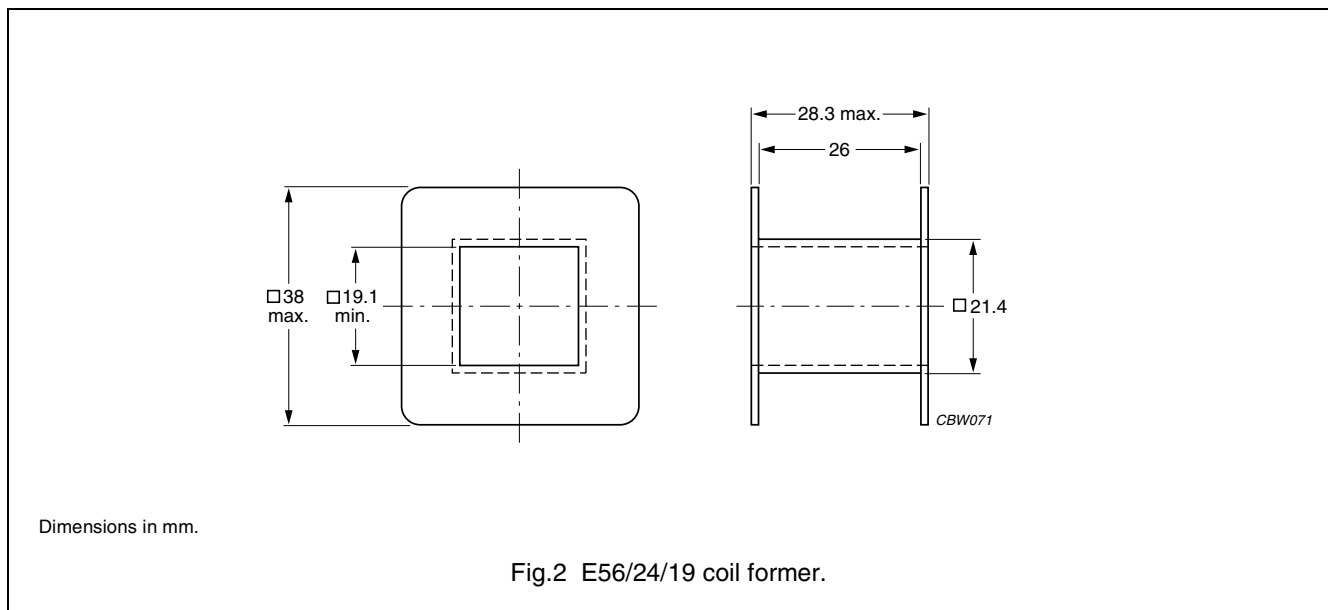
**Note**

1. Measured at 60 °C.

**COIL FORMERS**

**General data for E56/24/19 coil former without pins**

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	130 °C, "IEC 60085", class B

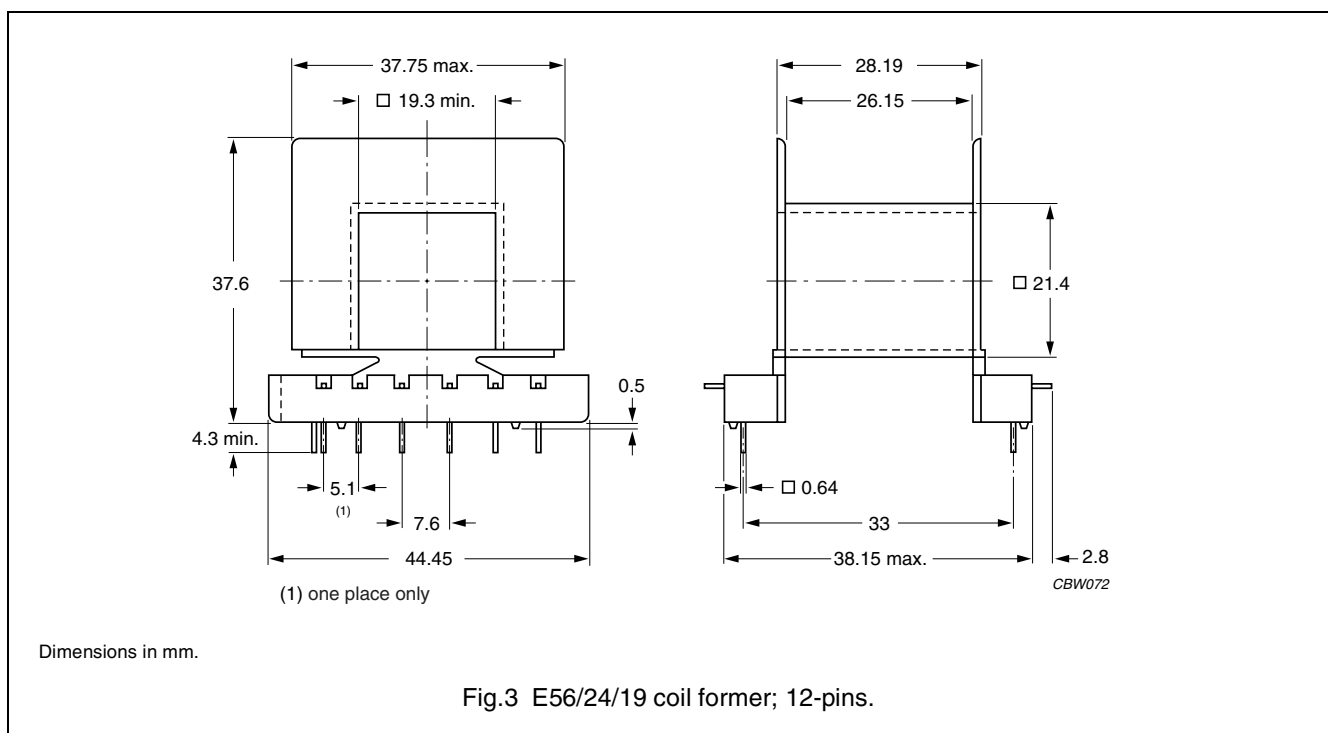


**Winding data and area product for E56/24/19 coil former without pins**

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm <sup>2</sup> )	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm <sup>4</sup> )	TYPE NUMBER
1	222	26.1	112	74800	CP-E56/24/19-1S

General data for 12-pins E56/24/19 coil former

PARAMETER	SPECIFICATION
Coil former material	Polyamide (PA66), glass reinforced, flame retardant in accordance with "UL 94V-0";UL file number E41938
Maximum operating temperature	130 °C, "IEC 60085", class B
Pin material	copper-zinc alloy (CuZn), tin (Sn) plated
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 E56/24/19 coil former

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm <sup>2</sup> )	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm <sup>4</sup> )	TYPE NUMBER
1	205	26.2	114	69100	CPH-E56/24/19-1S-12PD-Z

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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

STATUS	INDICATION	DEFINITION
<b>Prototype</b>		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.
<b>Design-in</b>		These products are recommended for new designs.
<b>Preferred</b>		These products are recommended for use in current designs and are available via our sales channels.
<b>Support</b>		These products are <b>not</b> recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability.