

DATA SHEET

E13/6/6

E cores and accessories

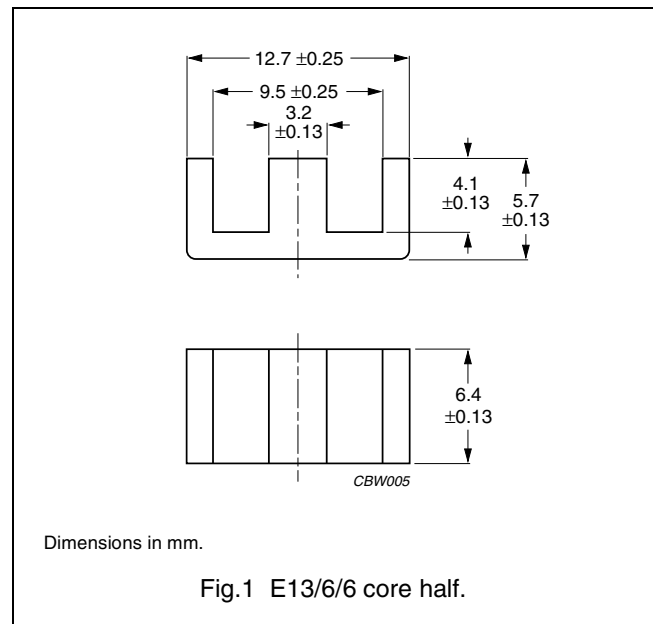
Supersedes data of September 2004

2008 Sep 01

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	1.37	mm ⁻¹
V_e	effective volume	559	mm ³
l_e	effective length	27.7	mm
A_e	effective area	20.2	mm ²
A_{min}	minimum area	20.2	mm ²
m	mass of core half	≈ 1.4	g



Core halves

A_L measured in combination with a non-gapped core half, clamping force for A_L measurements, 15 ± 5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μ m)	TYPE NUMBER
3C90	63 ± 5%	≈ 70	≈ 560	E13/6/6-3C90-A63
	100 ± 8%	≈ 110	≈ 310	E13/6/6-3C90-A100
	160 ± 8%	≈ 175	≈ 175	E13/6/6-3C90-A160
	250 ± 20%	≈ 275	≈ 100	E13/6/6-3C90-A250
	315 ± 20%	≈ 340	≈ 75	E13/6/6-3C90-A315
	1470 ± 25%	≈ 1605	≈ 0	E13/6/6-3C90
3C92 des	1080 ± 25%	≈ 1180	≈ 0	E13/6/6-3C92
3C94	1470 ± 25%	≈ 1605	≈ 0	E13/6/6-3C94
3C96 des	1250 ± 25%	≈ 1360	≈ 0	E13/6/6-3C96
3F3	63 ± 5%	≈ 70	≈ 560	E13/6/6-3F3-A63
	100 ± 8%	≈ 110	≈ 310	E13/6/6-3F3-A100
	160 ± 8%	≈ 175	≈ 175	E13/6/6-3F3-A160
	250 ± 20%	≈ 275	≈ 100	E13/6/6-3F3-A250
	315 ± 20%	≈ 340	≈ 75	E13/6/6-3F3-A315
	1250 ± 25%	≈ 1370	≈ 0	E13/6/6-3F3
3F35 des	1000 ± 25%	≈ 1090	≈ 0	E13/6/6-3F35

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Core halves of high permeability grades

 A_L measured in combination with a non-gapped core half, clamping force for A_L measurements, 15 ± 5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3E27	2600 $\pm 25\%$	≈ 2840	≈ 0	E13/6/6-3E27

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	≥ 320	≤ 0.06	≤ 0.06	–	–
3C92	≥ 370	–	≤ 0.048	≤ 0.33	–
3C94	≥ 320	–	≤ 0.048	≤ 0.33	–
3C96	≥ 340	–	≤ 0.037	≤ 0.25	–
3F3	≥ 320	–	≤ 0.06	–	≤ 0.11
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
3C96	≥ 340	≤ 0.21	–	–	–
3F3	≥ 315	–	–	–	–
3F35	≥ 300	≤ 0.075	≤ 0.6	–	–

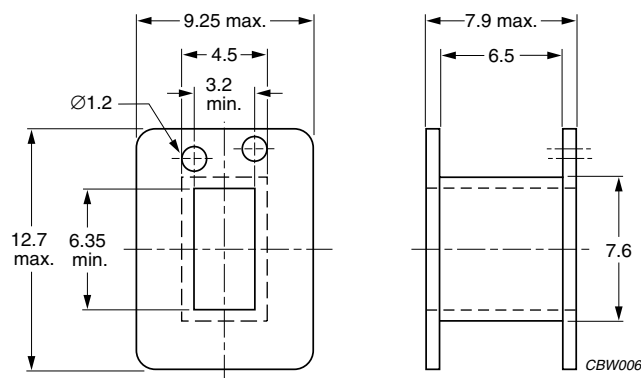
Note

1. Measured at 60 °C.

COIL FORMERS

General data for E13/6/6 coil former

ITEM	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



Dimensions in mm.

Fig.2 E13/6/6 coil former.

Winding data and area product for E13/6/6 coil former

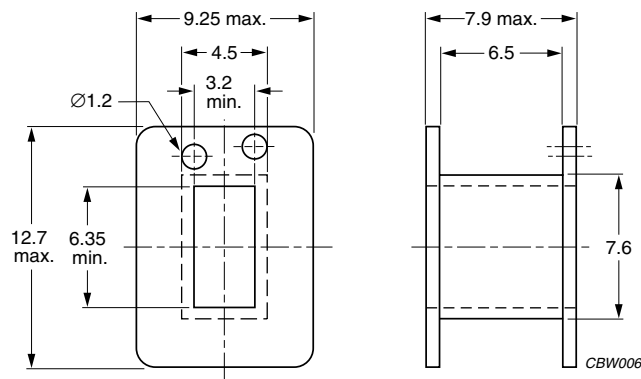
NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm ²)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm ⁴)	TYPE NUMBER
1	15.4	6.5	32.0	311	CP-E13/6/6-1S

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General data for E13/6/6 coil former

ITEM	SPECIFICATION
Coil former material	polyphenylenesulfide (PPS), glass reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E54700
Maximum operating temperature	130 °C, "IEC 60085", class B



Dimensions in mm.

Fig.3 E13/6/6 coil former.

Winding data and area product for E13/6/6 coil former

NUMBER OF SECTIONS	MINIMUM WINDING AREA (mm ²)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm ⁴)	TYPE NUMBER
1	15.4	6.5	32.0	311	CP-E13/6/6-1S-A

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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.

DISCLAIMER

Life support applications — These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Ferroxcube customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Ferroxcube for any damages resulting from such application.

PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
Prototype		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.
Design-in		These products are recommended for new designs.
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.