

DATA SHEET

E20/10/6

E cores and accessories

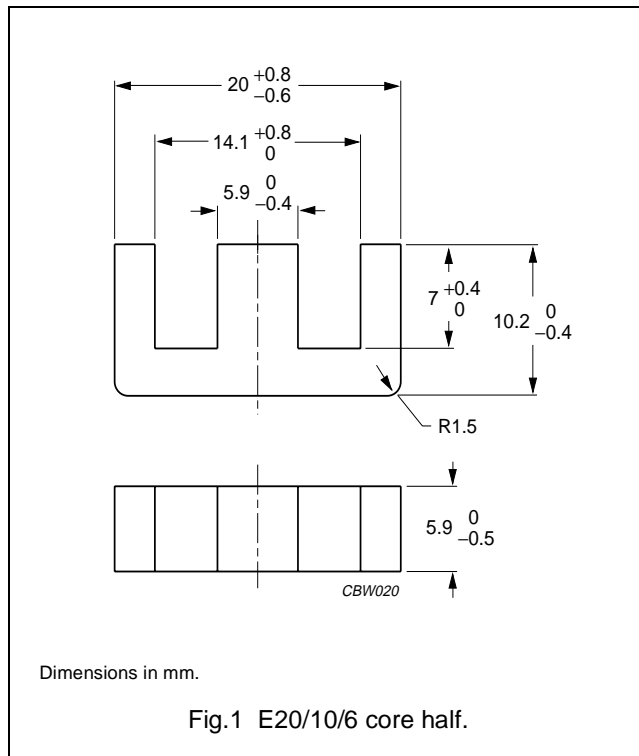
Supersedes data of February 2002

2004 Sep 01

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	1.45	mm ⁻¹
V_e	effective volume	1490	mm ³
l_e	effective length	46.0	mm
A_e	effective area	32.0	mm ²
A_{min}	minimum area	32.0	mm ²
m	mass of core half	≈ 3.7	g



Core halves

Clamping force for A_L measurements, 20 ±10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μ m)	TYPE NUMBER
3C90	63 ±5%	≈ 72	≈ 980	E20/10/6-3C90-A63
	100 ±8%	≈114	≈ 520	E20/10/6-3C90-A100
	160 ±8%	≈183	≈ 280	E20/10/6-3C90-A160
	250 ±15%	≈ 286	≈160	E20/10/6-3C90-A250
	315 ±15%	≈ 360	≈120	E20/10/6-3C90-A315
	1450 ±25%	≈1660	≈ 0	E20/10/6-3C90
3C92 <small>des</small>	1130 ±25%	≈1300	≈ 0	E20/10/6-3C92
3C94	1450 ±25%	≈1660	≈ 0	E20/10/6-3C94
3C96 <small>des</small>	1350 ±25%	≈1580	≈ 0	E20/10/6-3C96
3F3	63 ±5%	≈ 72	≈ 980	E20/10/6-3F3-A63
	100 ±8%	≈114	≈ 520	E20/10/6-3F3-A100
	160 ±8%	≈183	≈ 280	E20/10/6-3F3-A160
	250 ±15%	≈ 286	≈160	E20/10/6-3F3-A250
	315 ±15%	≈ 360	≈120	E20/10/6-3F3-A315
	1350 ±25%	≈1580	≈ 0	E20/10/6-3F3
3F35 <small>prot</small>	1000 ±25%	≈1140	≈ 0	E20/10/6-3F35

E cores and accessories

E20/10/6

Core halves of high permeability grades

Clamping force for A_L measurements, 20 ± 10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C11	$2600 \pm 25\%$	≈ 2970	≈ 0	E20/10/6-3C11
3E27	$2700 \pm 25\%$	≈ 3090	≈ 0	E20/10/6-3E27

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	≤ 0.16	≤ 0.18	–	–
3C92	≥ 370	–	≤ 0.14	≤ 0.75	–
3C94	≥ 320	–	≤ 0.14	≤ 0.75	–
3C96	≥ 340	–	≤ 0.11	≤ 0.6	–
3F3	≥ 320	–	≤ 0.2	–	≤ 0.3
3F35	≥ 300	–	–	–	–

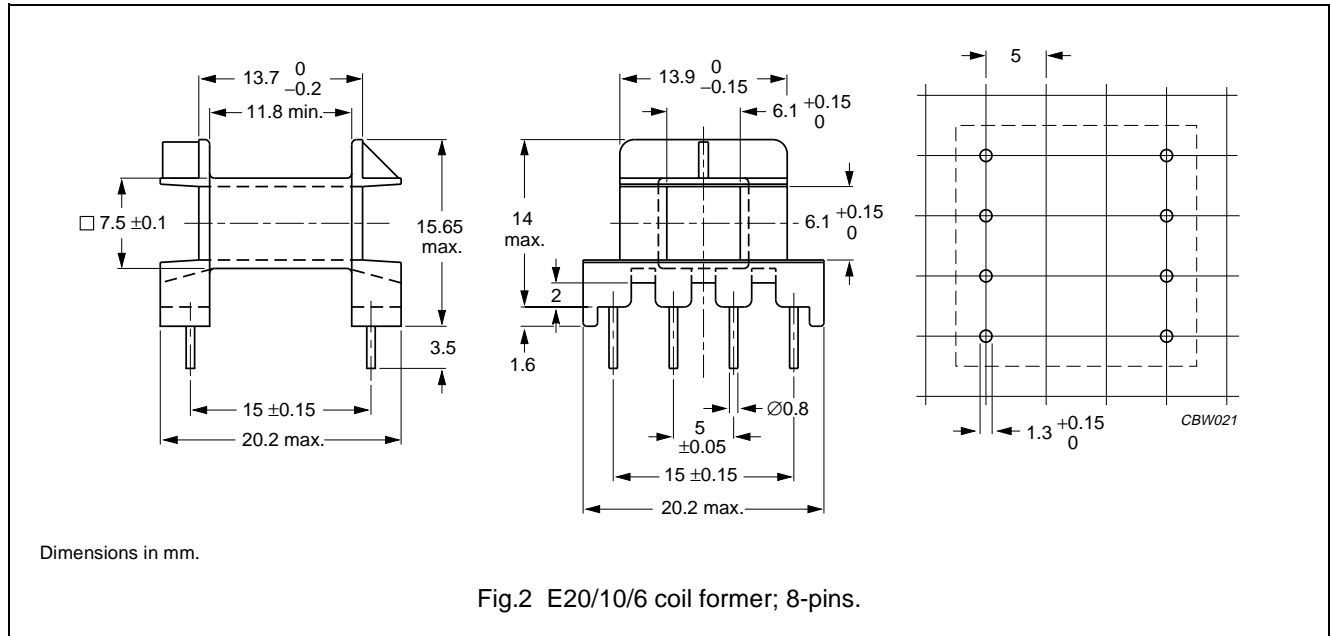
Properties of core sets under power conditions (continued)

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	≥ 320	–	–	–	–
3C92	≥ 370	–	–	–	–
3C94	≥ 320	–	–	–	–
3C96	≥ 340	≤ 0.55	–	–	–
3F3	≥ 320	–	–	–	–
3F35	≥ 300	≤ 0.2	≤ 1.5	–	–

COIL FORMER

General data for 8-pins E20/10/6 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-lead alloy (SnPb) plated, transition to lead-free (Sn) ongoing.
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

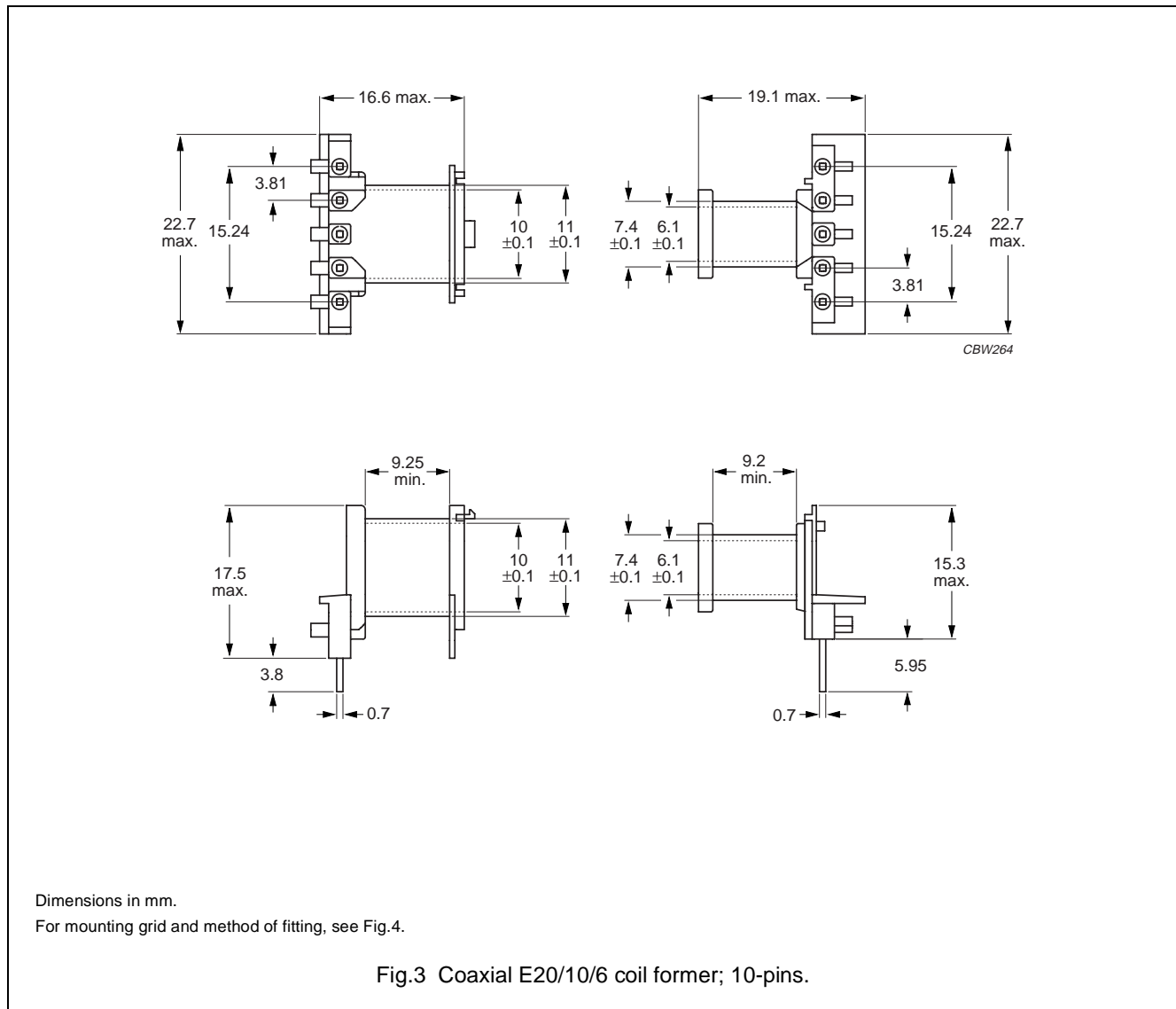


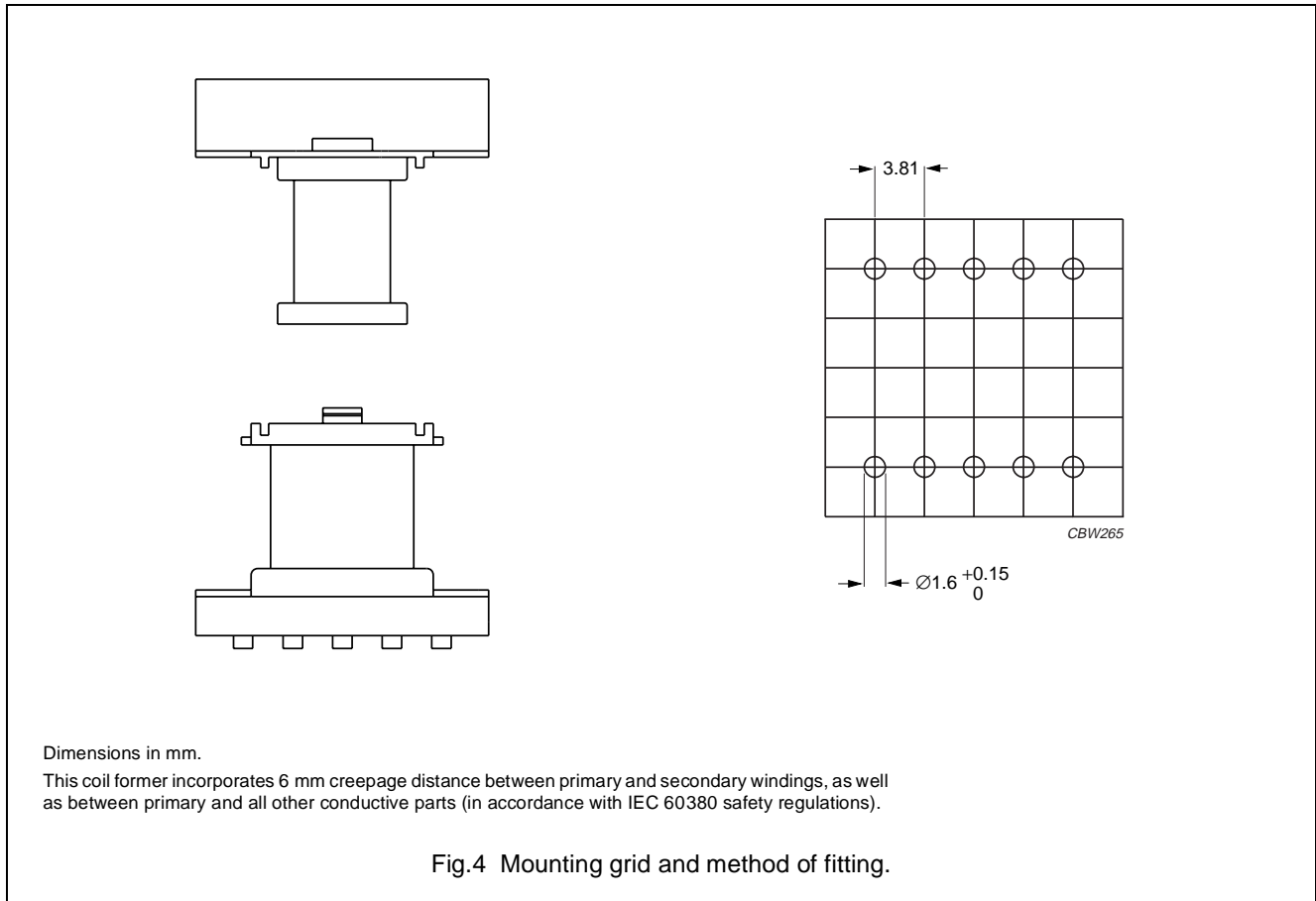
Winding data for 8-pins E20/10/6 coil former

NUMBER OF SECTIONS	WINDING AREA (mm ²)	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	35	11.8	39	CPH-E20/10/6-1S-8P

General data 10-pins coaxial E20/10/6 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





Winding data for coaxial E20/10/6 coil former

NUMBER OF SECTIONS	WINDING AREA (mm ²)	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	11.3	9.2	34.7	CPCI-E20/6-1S-5P-G; see note 1
1	13.1	9.25	50	CPCO-E20/6-1S-5P-G; see note 1

Note

1. Also available with post-inserted pins. Different number of pins available on request for all types.




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.