DATA SHEET

ETD34
ETD cores and accessories

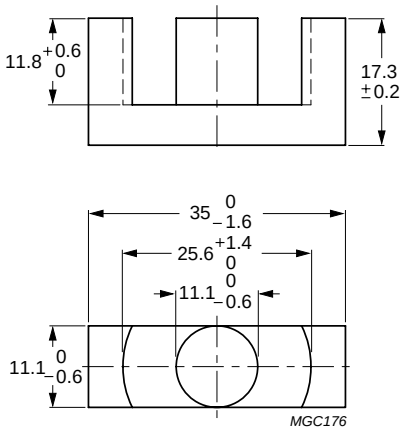
Supersedes data of November 2000 2002 Feb 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.810	mm^{-1}
V_e	effective volume	7640	mm^3
l_e	effective length	78.6	mm
A_e	effective area	97.1	mm^2
A_{min}	minimum area	91.6	mm^2
m	mass of core half	≈ 20	g



Dimensions in mm.

Fig.1 ETD34 core half.

Core halves

Clamping force for A_L measurements, 40 ±20 N. Gapped cores are available on request.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	2700 ±25%	≈ 1740	≈ 0	ETD34-3C90
3C94 des	2700 ±25%	≈ 1740	≈ 0	ETD34-3C94
3C96 prot	2500 ±25%	≈ 1610	≈ 0	ETD34-3C96
3F3	2500 ±25%	≈ 1610	≈ 0	ETD34-3F3
3F35 prot	1850 ±25%	≈ 1190	≈ 0	ETD34-3F35

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	≤ 0.92	≤ 0.97	–	–
3C94	≥330	–	≤ 0.73	≤ 4.2	–
3C96	≥340	–	≤ 0.55	≤ 3.4	–
3F3	≥320	–	≤ 0.9	–	≤ 1.6
3F35	≥300	–	–	–	–

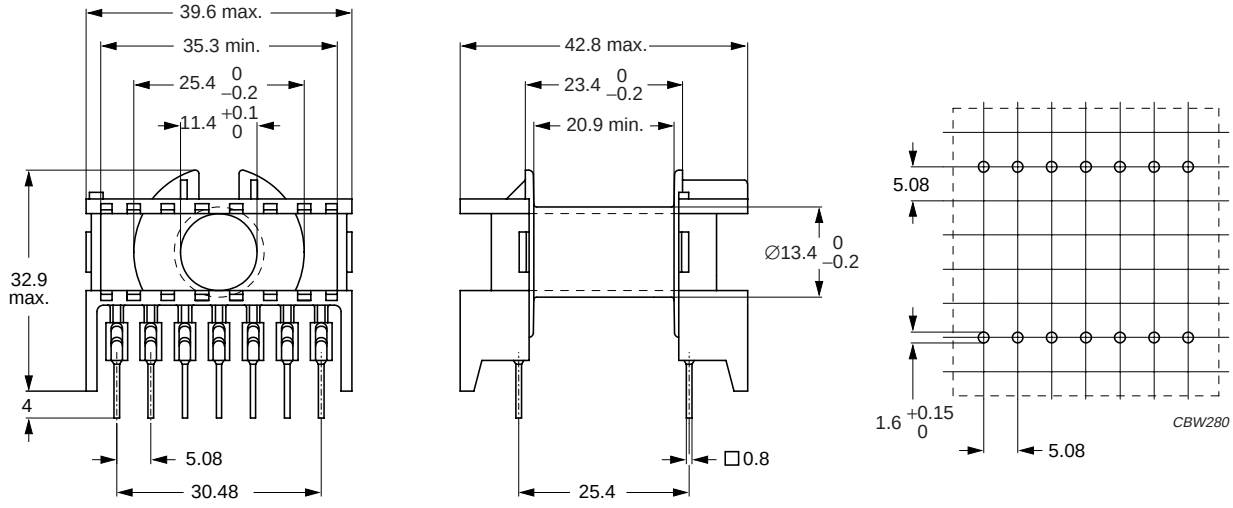
Properties of core sets under power conditions (continued)

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	–	–	–	–
3C94	≥330	–	–	–	–
3C96	≥340	≤ 2.8	–	–	–
3F3	≥320	–	–	–	–
3F35	≥300	≤ 1.0	≤ 8.0	–	–

COIL FORMERS

General data 14-pins ETD34 coil former

PARAMETER	SPECIFICATION
Coil former material	polybutyleneterephtalate (PBT), glass-reinforced, flame retardant in accordance with *"UL 94V-0"*; UL file number E45329(R)
Pin material	copper-tin alloy (CuSn), tin-lead alloy (SnPb) plated
Maximum operating temperature	155 °C, *"IEC 60085"*, class F
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



Dimensions in mm.

Fig.2 ETD34 coil former; 14-pins.

Winding data for 14-pins ETD34 coil former

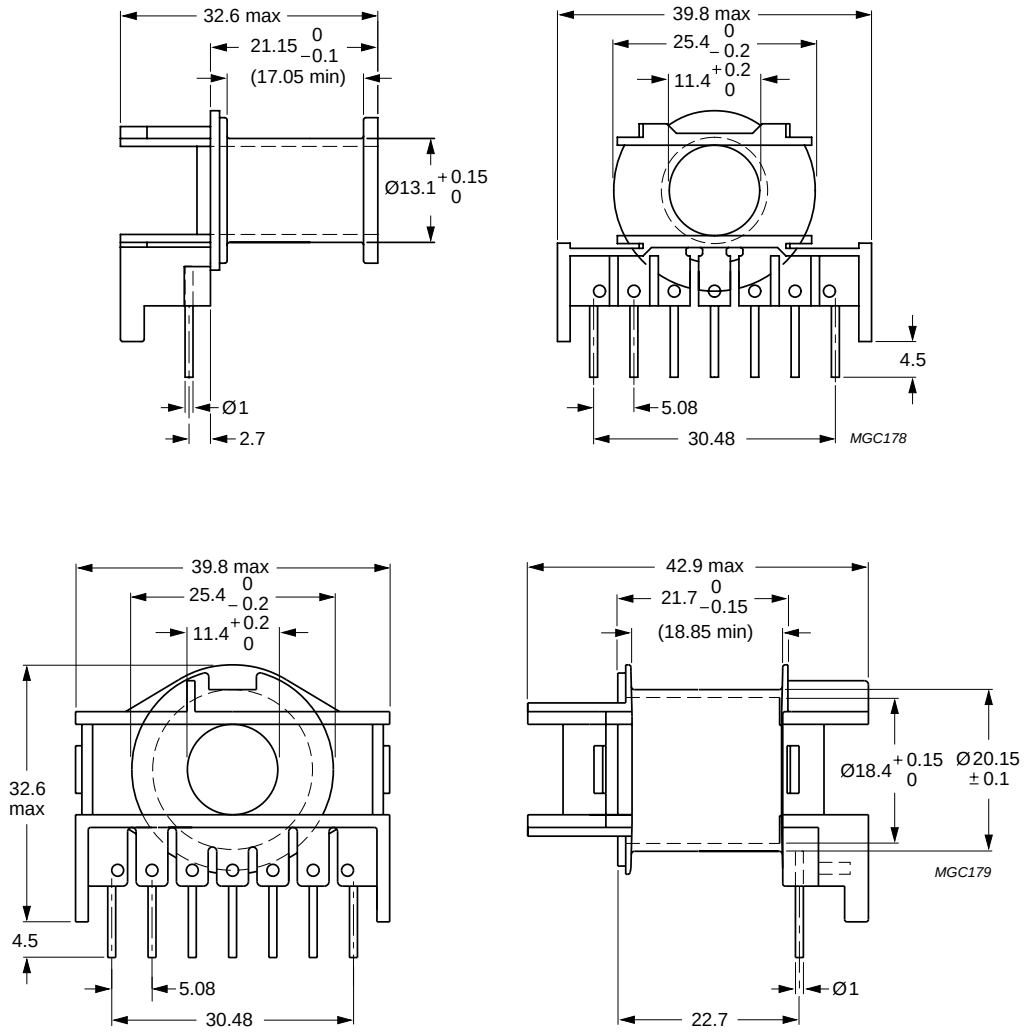
NUMBER OF SECTIONS	WINDING AREA (mm^2)	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	123	20.9	60	CPH-ETD34-1S-14P(1)

Note

1. Also available with ∅1.0 mm pins.

General data 14-pins coaxial ETD34 coil former

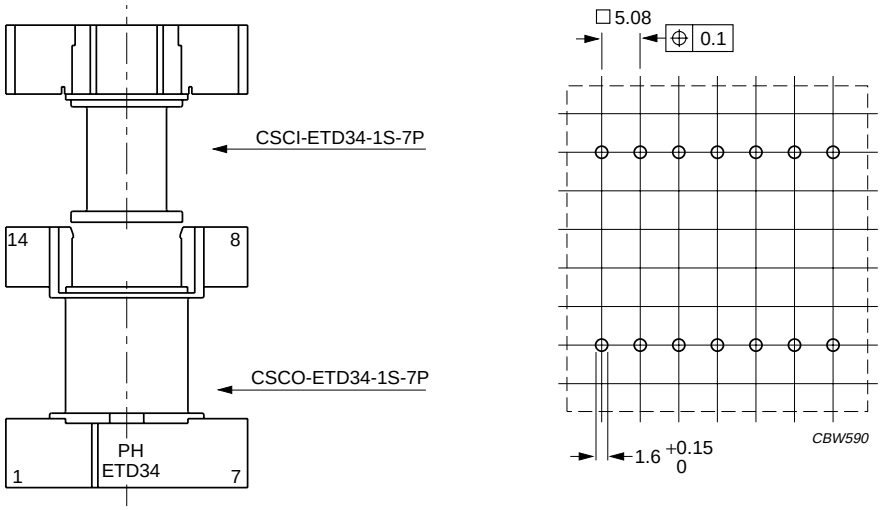
PARAMETER	SPECIFICATION
Coil former material	phenolformaldehyde (PF), glass-reinforced, flame retardant in accordance with *"UL 94V-0"*; UL file number E167521(M)
Pin material	copper-tin alloy (CuSn), tin-lead alloy (SnPb) plated
Maximum operating temperature	180 °C, *"IEC 60085"*, class H
Resistance 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



Dimensions in mm.

For mounting grid and method of fitting, see Fig.4.

Fig.3 Coaxial ETD34 coil former; 14-pins.



Dimensions in mm.

This coil former incorporates 8 mm creepage distance between primary and secondary windings, as well as between primary and all other conductive parts (in accordance with IEC 380 safety regulations).

Fig.4 Mounting grid and method of fitting.

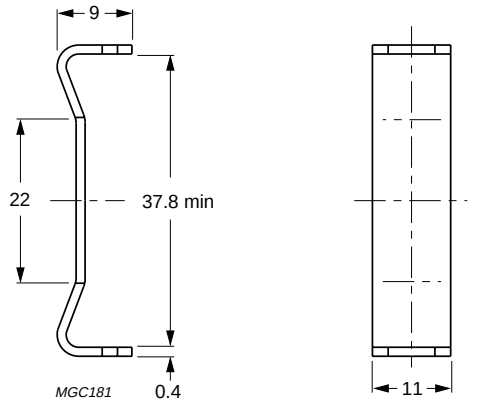
Winding data for coaxial ETD34 coil former

NUMBER OF SECTIONS	WINDING AREA (mm^2)	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	42.6	17.05	49.4	CSCI-ETD34-1S-7P
1	46.6	18.85	71.4	CSCO-ETD34-1S-7P

MOUNTING PARTS

General data

ITEM	REMARKS	FIGURE	TYPE NUMBER
Mounting clip	material: stainless steel	5	CLI-ETD34



Dimensions in mm.

Fig.5 Mounting clip for ETD34.

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
Prototype	prot	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	des	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	sup	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.