DATA SHEET

EP5
EP cores and accessories

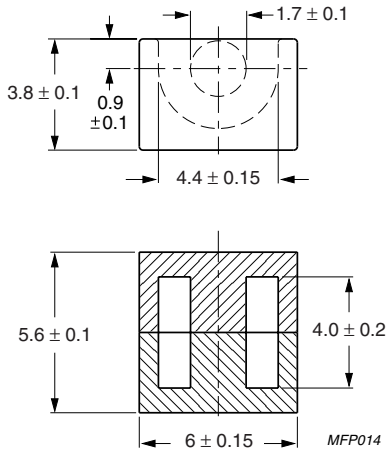
Supersedes data of September 2004 2008 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
Σ(l/A)	core factor (C1)	3.20	mm^{-1}
V_e	effective volume	28.7	mm^3
l_e	effective length	9.70	mm
A_e	effective area	3.00	mm^2
A_{min}	minimum area	2.27	mm^2
m	mass of core set	≈ 0.5	g



Dimensions in mm.

Fig. 1 EP5 core set.

Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 10 ± 5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C94	16 ± 3 %	≈ 41	≈ 320	EP5-3C94-A16
	25 ± 3 %	≈ 64	≈ 170	EP5-3C94-A25
	40 ± 5 %	≈ 102	≈ 90	EP5-3C94-A40
	63 ± 8 %	≈ 160	≈ 50	EP5-3C94-A63
	400 ± 25 %	≈ 1020	≈0	EP5-3C94
3C96 des	380 ± 25 %	≈ 970	≈0	EP5-3C96
3F35 des	16 ± 3 %	≈ 41	≈ 320	EP5-3F35-A16
	25 ± 3 %	≈ 64	≈ 170	EP5-3F35-A25
	40 ± 5 %	≈ 102	≈ 90	EP5-3F35-A40
	63 ± 8 %	≈ 160	≈ 50	EP5-3F35-A63
	320 ± 25 %	≈ 815	≈0	EP5-3F35

Core sets for filter applications

Clamping force for A_L measurements, 10 ± 5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3B46 des	500 ± 25 %	≈ 1280	≈ 0	EP5-3B46

Core sets of high permeability grades

Clamping force for A_L measurements, 10 ± 5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3E55 des	16 ± 3 %	≈ 41	≈ 320	EP5-3E55-A16
	25 ± 3 %	≈ 64	≈ 170	EP5-3E55-A25
	40 ± 5 %	≈ 102	≈ 90	EP5-3E55-A40
	63 ± 8 %	≈ 160	≈ 50	EP5-3E55-A63
	$2000 + 40 / - 30$ %	≈ 5100	≈ 0	EP5-3E55
3E6	$2200 + 40 / - 30$ %	≈ 5600	≈ 0	EP5-3E6

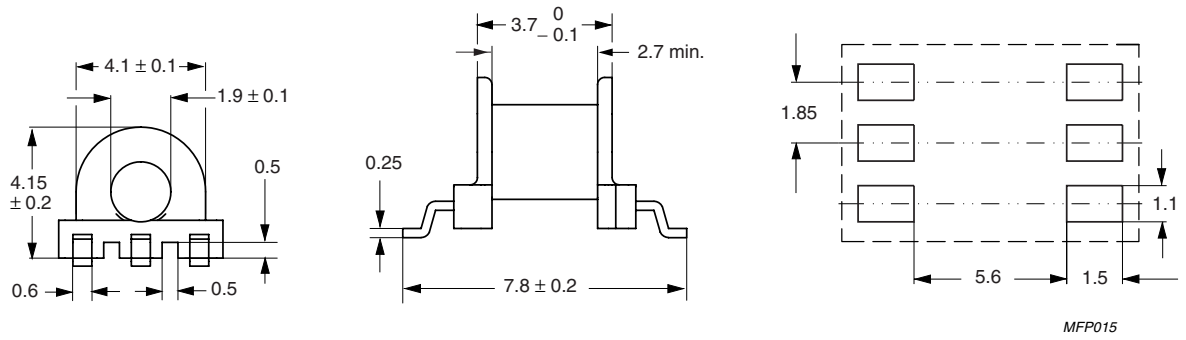
Properties of core sets under power conditions

GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 10 kHz; T = 100 °C	f = 100 kHz; $\hat{B}$ = 100 mT; T = 100 °C	f = 100 kHz; $\hat{B}$ = 200 mT; T = 100 °C	f = 500 kHz; $\hat{B}$ = 50 mT; T = 100 °C	f = 500 kHz; $\hat{B}$ = 100 mT; T = 100 °C
3C94	≥ 320	≤ 0.002	≤ 0.014	–	–
3C96	≥ 340	–	≤ 0.011	≤ 0.009	–
3F35	≥ 300	–	–	≤ 0.003	≤ 0.025

COIL FORMERS

General data

PARAMETER	SPECIFICATION
Coil former material	Liquid crystal polymer (LCP), glass-reinforced, flame retardant in accordance with *"UL 94V-0";* UL file number E54705(M)
Pin material	copper-tin alloy (CuSn), tin (Sn) 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, 235 °C, 2 s



Dimensions in mm.

Fig. 2 EP5 coil former: 6-pads.

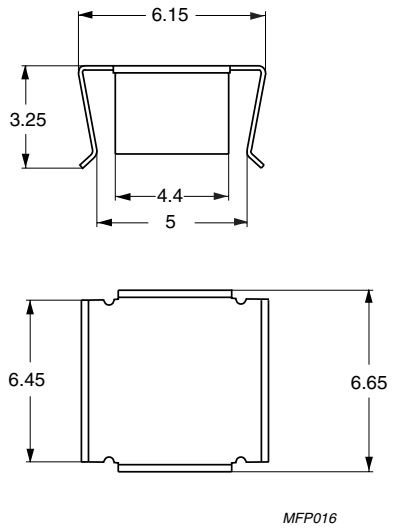
Winding data and area product for 6-pads EP5 coil former

NUMBER OF SECTIONS	WINDING AREA (mm^2)	NOMINAL WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm^4)	TYPE NUMBER
1	1.89	2.7	10.5	5.67	CPHS-EP5-1S-6P

MOUNTING PARTS

General data

ITEM	REMARKS	FIGURE	TYPE NUMBER
Mounting clip	stainless steel (CrNi); to be used in combination with CPHS-EP5-1S-6P	3	CLI-EP5/6



Dimensions in mm.

Fig. 3 Mounting clip CLI-EP5/6.

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
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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.