

DATA SHEET

EFD10/5/3

EFD cores and accessories

Supersedes data of February 2002

2004 Sep 01

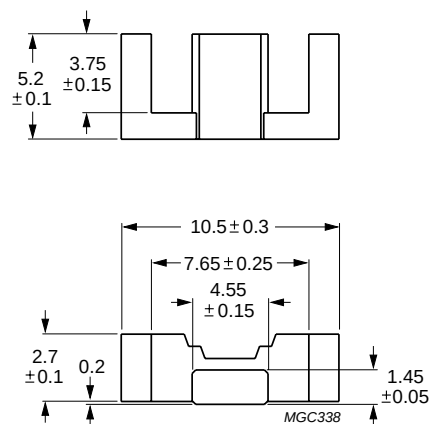
EFD cores and accessories

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CORES

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	3.29	mm ⁻¹
V_e	effective volume	171	mm ³
l_e	effective length	23.7	mm
A_e	effective area	7.2	mm ²
A_{min}	minimum area	6.5	mm ²
m	mass of core half	≈ 0.45	g



Dimensions in mm.

Fig.1 EFD10/5/3 core half.

Core sets

Clamping force for A_L measurements, 10 ± 5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μ m)	TYPE NUMBER
3C90	25 $\pm 5\%$	≈ 66	≈ 610	EFD10/5/3-3C90-A25-S
	40 $\pm 8\%$	≈ 105	≈ 310	EFD10/5/3-3C90-A40-S
	63 $\pm 10\%$	≈ 165	≈ 170	EFD10/5/3-3C90-A63-S
	585 $\pm 25\%$	≈ 1510	≈ 0	EFD10/5/3-3C90-S
3C94	25 $\pm 5\%$	≈ 66	≈ 610	EFD10/5/3-3C94-A25-S
	40 $\pm 8\%$	≈ 105	≈ 310	EFD10/5/3-3C94-A40-S
	63 $\pm 10\%$	≈ 165	≈ 170	EFD10/5/3-3C94-A63-S
	585 $\pm 25\%$	≈ 1510	≈ 0	EFD10/5/3-3C94-S
3C96 des	525 $\pm 25\%$	≈ 1360	≈ 0	EFD10/5/3-3C96-S
3F3	25 $\pm 5\%$	≈ 66	≈ 610	EFD10/5/3-3F3-A25-S
	40 $\pm 8\%$	≈ 105	≈ 310	EFD10/5/3-3F3-A40-S
	63 $\pm 10\%$	≈ 165	≈ 170	EFD10/5/3-3F3-A63-S
	500 $\pm 25\%$	≈ 1290	≈ 0	EFD10/5/3-3F3-S
3F35 prot	400 $\pm 25\%$	≈ 1030	≈ 0	EFD10/5/3-3F35-S
3F4 des	25 $\pm 5\%$	≈ 66	≈ 570	EFD10/5/3-3F4-A25-S
	40 $\pm 8\%$	≈ 105	≈ 280	EFD10/5/3-3F4-A40-S
	63 $\pm 10\%$	≈ 165	≈ 150	EFD10/5/3-3F4-A63-S
	280 $\pm 25\%$	≈ 730	≈ 0	EFD10/5/3-3F4-S
3F45 prot	280 $\pm 25\%$	≈ 730	≈ 0	EFD10/5/3-3F45-S

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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 = 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	f = 500 kHz; $\hat{B}$ = 50 mT; T = 100 °C
3C90	≥320	≤ 0.019	–	–	–
3C94	≥320	≤ 0.015	≤ 0.09	–	–
3C96	≥340	≤ 0.01	≤ 0.07	≤ 0.03	≤ 0.06
3F35	≥300	–	–	≤ 0.015	≤ 0.03
3F3	≥315	≤ 0.020	–	≤ 0.035	–
3F4	≥250	–	–	–	–

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; $\hat{B}$ = 100 mT; T = 100 °C	f = 1 MHz; $\hat{B}$ = 30 mT; T = 100 °C	f = 1 MHz; $\hat{B}$ = 50 mT; T = 100 °C	f = 3 MHz; $\hat{B}$ = 10 mT; T = 100 °C
3C90	≥320	–	–	–	–
3C94	≥320	–	–	–	–
3C96	≥320	–	–	–	–
3F35	≥300	≤ 0.2	–	–	–
3F3	≥315	–	–	–	–
3F4	≥250	–	≤ 0.05	–	≤ 0.08
3F45	≥250	–	≤ 0.034	≤ 0.086	≤ 0.06

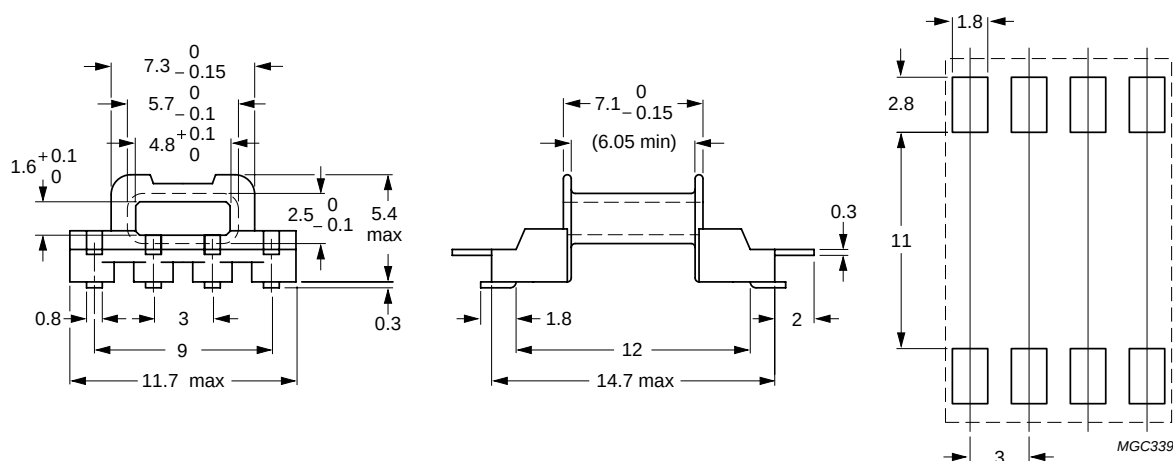
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COIL FORMERS

General data

PARAMETER	SPECIFICATION
Coil former material	liquid crystal polymer (LCP), glass reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E83005(M)
Solder pad material	copper-tin alloy (CuSn), tin-lead alloy (SnPb) plated, transition to lead-free (Sn) ongoing.
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 EFD10/5/3 coil former (SMD); 8-solder pads.

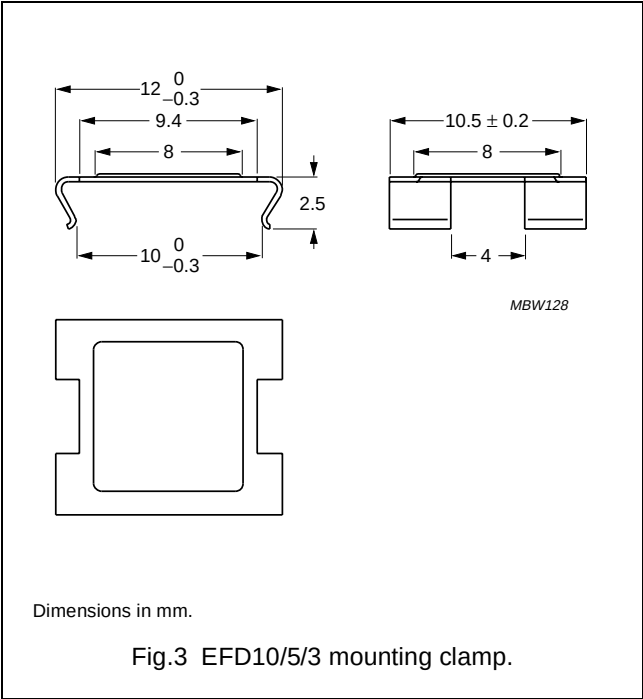
Winding data for EFD10/5/3 coil former (SMD) with 8-solder pads

NUMBER OF SECTIONS	NUMBER OF SOLDER PADS	MINIMUM WINDING AREA (mm ²)	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	8	4.2	6.05	14.8	CPHS-EFD10-1S-8P

MOUNTING PARTS

General data

ITEM	REMARKS	FIGURE	TYPE NUMBER
Clamp	stainless steel (CrNi); clamping force ≈ 15 N	3	CLM-EFD10



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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

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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.



Description by Part Number List

FERROXCUBE PART NUMBERS

12NC BREAKDOWN

43	12	020	5593	0
Magnetic for 3 rd party	Factory code	Pairs Halves Accessories	Drawing no.	Issue no. (changes with packaging at factory)

FACTORY CODES

35 = Saugerties
12 = Ferpol (mostly)
22 = Eindhoven
27 = Ferpol
30 = Hispafer

SET CODES

018 = single
020 = single
021 = accessory
022 = pair
025 = pair
030 = single

CLEAR TEXT CODING

E 32 / 16 / 9 – 3E25

Core Shape Size Material

- 1) Shape
- 2) Size – width, length, thickness
- 3) Material

3
3 = MnZn (Manganese Zinc)
4 = NiZn (Nickel Zinc)

E
C = Power
F = High frequency
H = Telecom
S = Suppression
E = High permeability with a 3 prefix
A = High permeability with a 4 prefix

25
Just a number

Ferroxcube Accessories

Issue A, Issue date 27/07/00. These tables are for reference only: Part Numbers should be checked using the Lotus Notes Databases or the most recent Data Handbook.

CLM: Clamp
CLI: Clip
COV: Cover
CON: Container
CLA: Clasp
SPR: Spring
TGP: Tag Plate

