

DATA SHEET

FRM24/3.9/10

Frame and Bar cores and
accessories

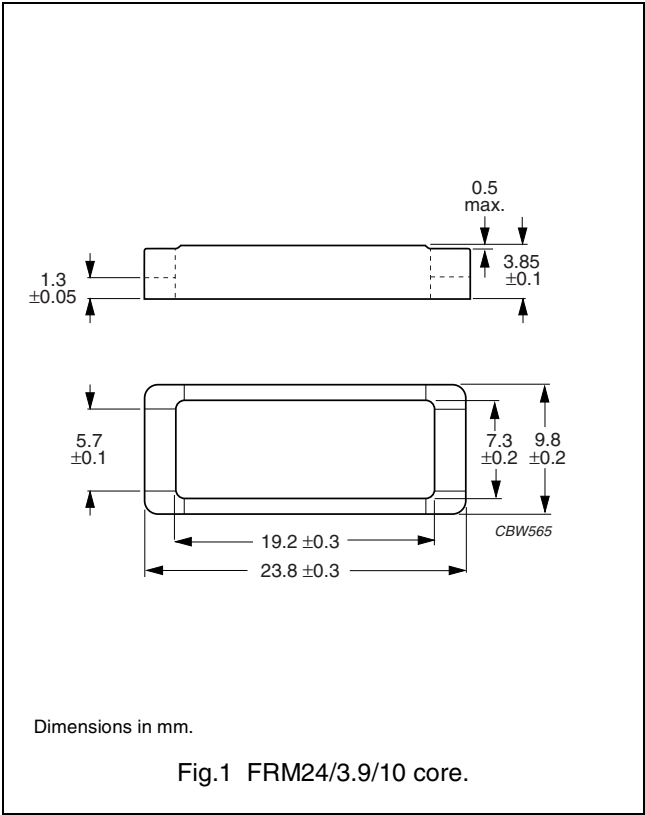
Supersedes data of September 2004

2008 Sep 01

CORE SETS

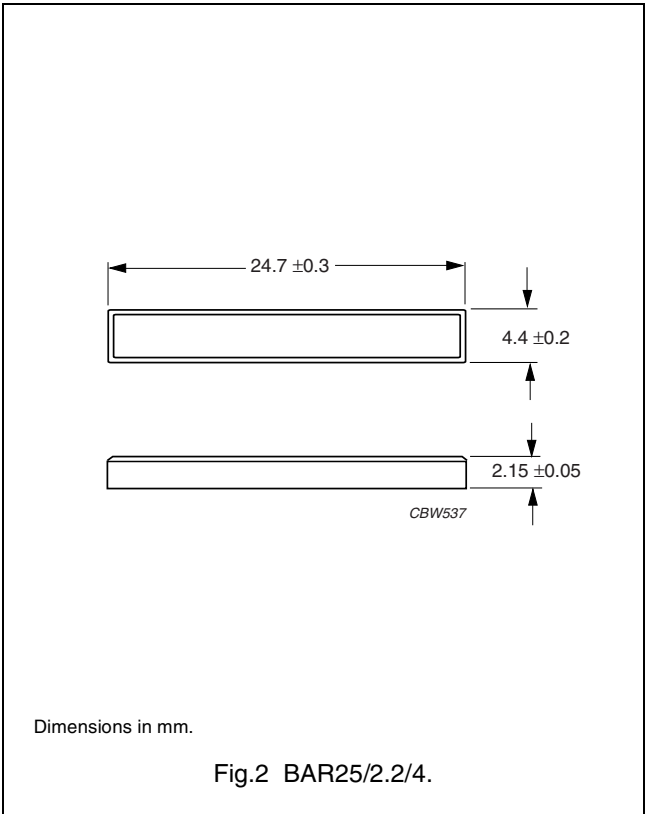
Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	5.65	mm^{-1}
V_e	effective volume	370	mm^3
l_e	effective length	45.8	mm
A_e	effective area	8.1	mm^2
A_{\min}	minimum area	6.0	mm^2
m	mass of frame	≈ 1.3	g
m	mass of bar	≈ 1.2	g



Ordering information for bar cores

GRADE	TYPE NUMBER
3C90	BAR25/2.2/4-3C90
3C91	BAR25/2.2/4-3C91



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Frame cores for use in combination with matching bar cores

AL measured in combination with bar core.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	$370 \pm 25\%$	≈ 1660	≈ 0	FRM24/3.9/10-3C90
3C91	$440 \pm 25\%$	≈ 1970	≈ 0	FRM24/3.9/10-3C91

Properties of Frame and Bar combinations under power conditions

GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 10 kHz; T = 100 °C	f = 25 kHz; $\hat{B} = 200 \text{ mT}$; T = 100 °C	f = 100 kHz; $\hat{B} = 100 \text{ mT}$; T = 100 °C	f = 100 kHz; $\hat{B} = 100 \text{ mT}$; T = 60 °C	f = 100 kHz; $\hat{B} = 200 \text{ mT}$; T = 60 °C
3C90	≥ 320	≤ 0.041	≤ 0.044	–	–
3C91	≥ 320	–	–	≤ 0.019	≤ 0.15

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

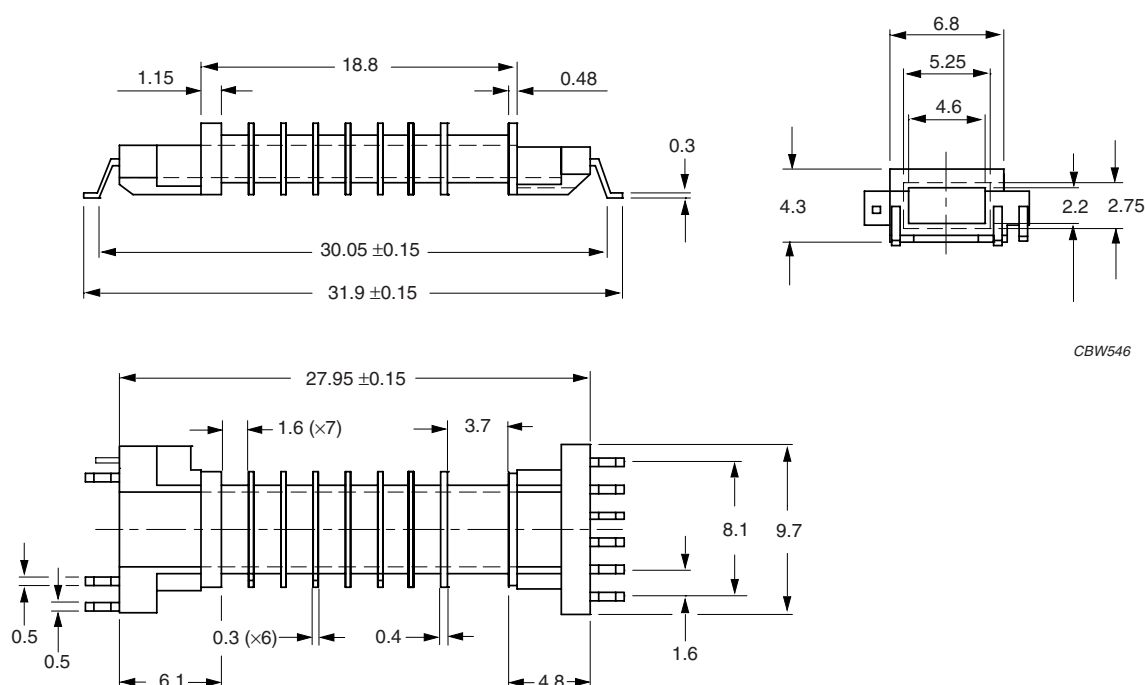


Fig.3 SMD coil former for FRM24/3.9/10.

Winding data and area product

NUMBER OF SECTIONS	NUMBER OF SOLDER PADS	WINDING AREA (mm ²)	WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm ⁴)	TYPE NUMBER
8	9	2.9 + 7 × 1.24	3.7 + 7 × 1.6	17.3	23.5 + 7 × 10.0	CPHS-FRM24/10-8S-9P

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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.

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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.