

# DATA SHEET

**FRM20/5/15**

Frame and Bar cores and  
accessories

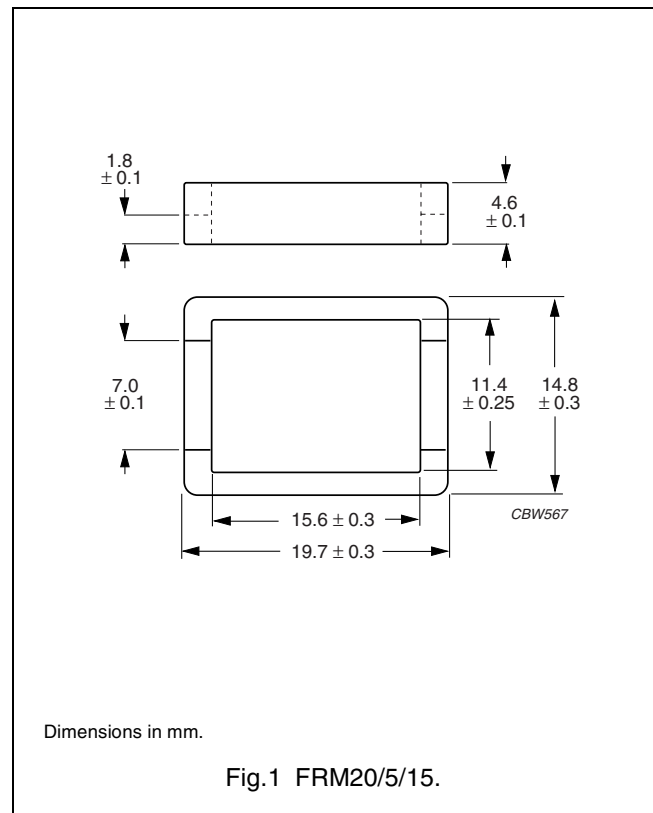
Supersedes data of September 2004

2008 Sep 01

**CORE SETS**

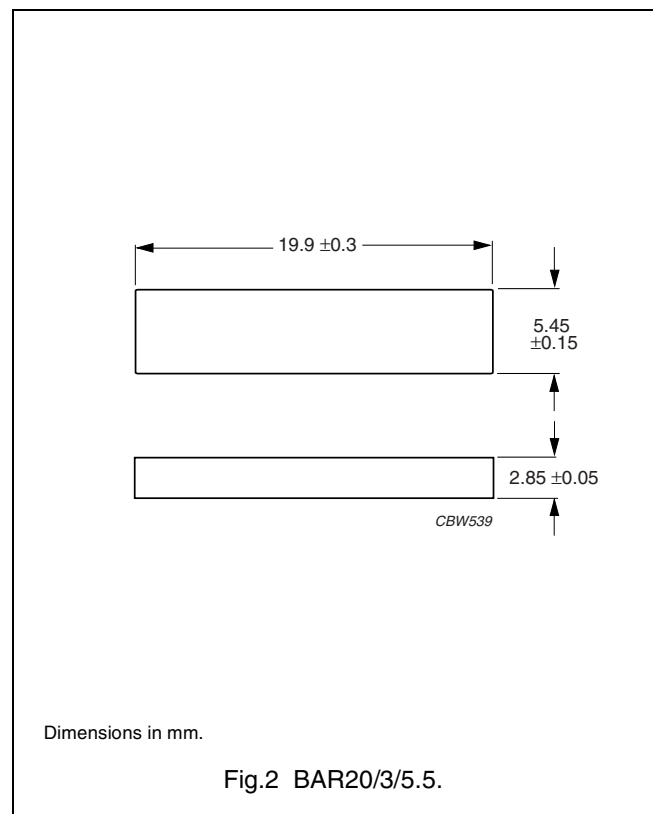
**Effective core parameters**

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	3.29	mm <sup>-1</sup>
$V_e$	effective volume	655	mm <sup>3</sup>
$l_e$	effective length	46	mm
$A_e$	effective area	14	mm <sup>2</sup>
$A_{min}$	minimum area	7.4	mm <sup>2</sup>
m	mass of frame	≈ 2.1	g
m	mass of bar	≈ 1.5	g



**Ordering information for bar cores**

GRADE	TYPE NUMBER
3C90	BAR20/3/5.5-3C90
3C91	BAR20/3/5.5-3C91



## Frame and Bar cores and accessories

FRM20/5/15

**Frame cores for use in combination with matching bar cores** $A_L$  measured in combination with bar core

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3C90	500 $\pm$ 25%	$\approx$ 1310	$\approx$ 0	FRM20/5/15-3C90
3C91	600 $\pm$ 25%	$\approx$ 1570	$\approx$ 0	FRM20/5/15-3C91

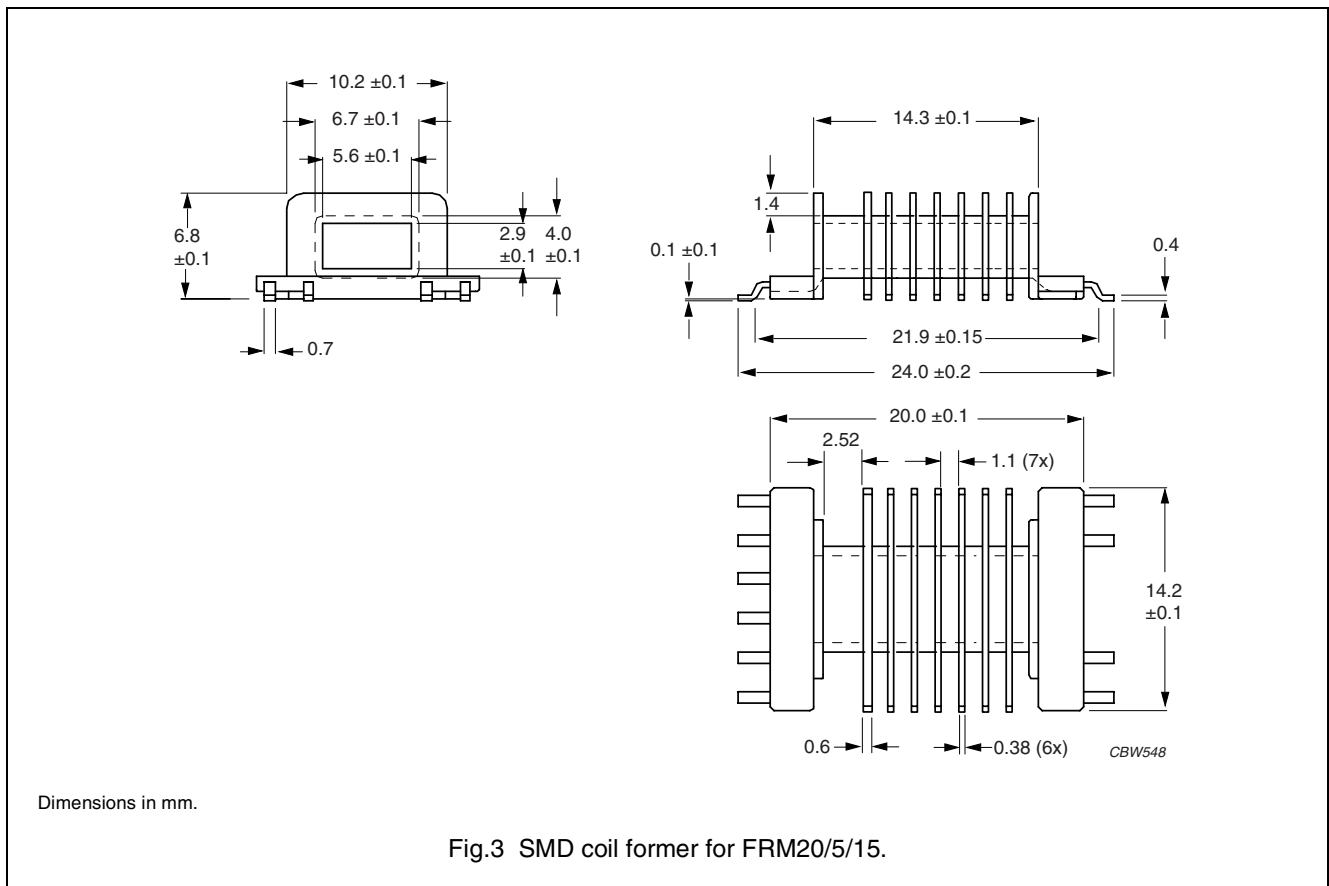
**Properties of Frame and Bar combinations under power conditions**

GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 10 kHz; T = 100 °C	f = 25 kHz; B = 200 mT; T = 100 °C	f = 100 kHz; B = 100 mT; T = 100 °C	f = 100 kHz; B = 100 mT; T = 60 °C	f = 100 kHz; B = 200 mT; T = 60 °C
3C90	$\geq$ 320	$\leq$ 0.073	$\leq$ 0.080	–	–
3C91	$\geq$ 320	–	–	$\leq$ 0.033	$\leq$ 0.26

**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



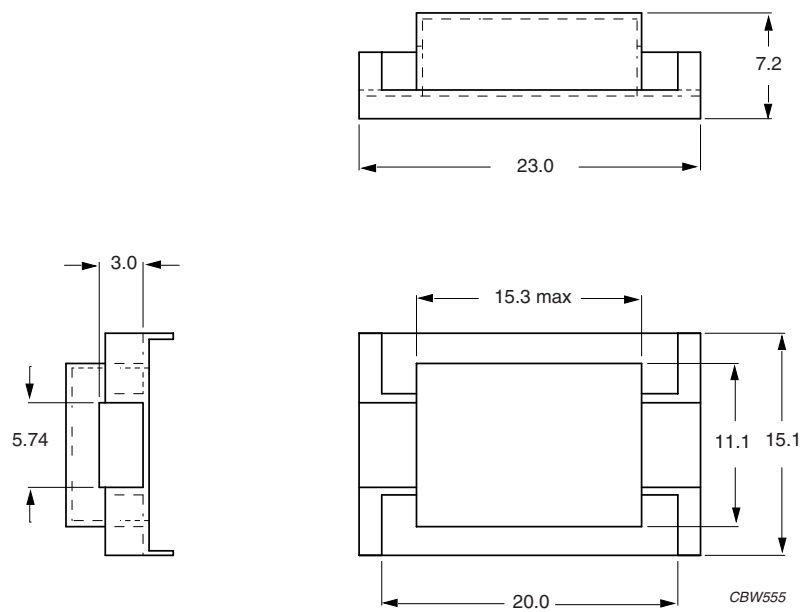
**Winding data and area product**

NUMBER OF SECTIONS	NUMBER OF SOLDER PADS	WINDING AREA (mm <sup>2</sup> )	WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm <sup>4</sup> )	TYPE NUMBER
8	10	3.5 + 7 × 1.5	2.52 + 7 × 1.1	27	25.9 + 7 × 11.1	CPHS-FRM20/15-8S-10P

**MOUNTING PARTS**

**General data**

PARAMETER	SPECIFICATION
Cover material	liquid crystal polymer (LCP), glass-reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E54705(M)
Maximum operating temperature	155 °C, "IEC 60085", class F



Dimensions in mm.

Fig.4 Cover for FRM20/5/15.




**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
<b>Prototype</b>		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.
<b>Design-in</b>		These products are recommended for new designs.
<b>Preferred</b>		These products are recommended for use in current designs and are available via our sales channels.
<b>Support</b>		These products are <b>not</b> recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability.