

# DATA SHEET

**RM8/I**

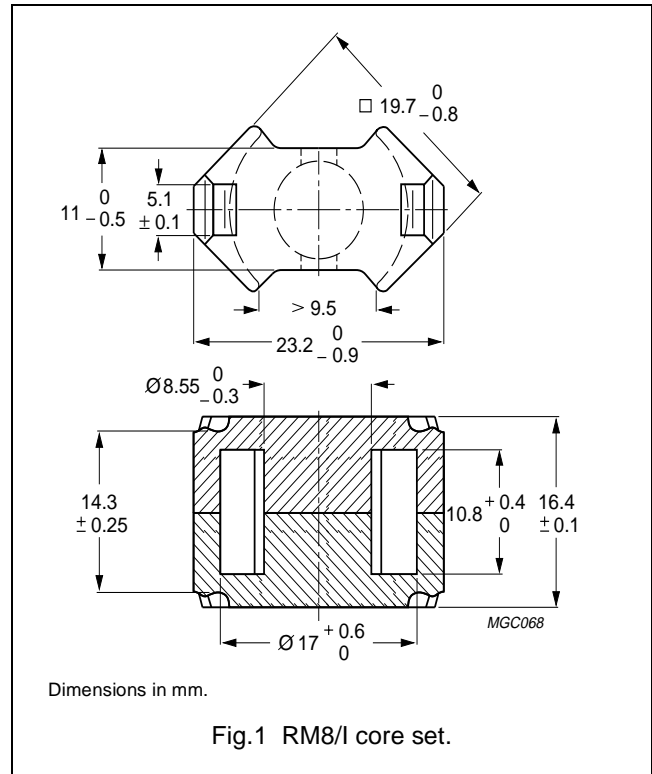
RM cores and accessories

Supersedes data of February 2002

2004 Sep 01

**CORE SETS****Effective core parameters**

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.604	mm <sup>-1</sup>
$V_e$	effective volume	2440	mm <sup>3</sup>
$l_e$	effective length	38.4	mm
$A_e$	effective area	63.0	mm <sup>2</sup>
$A_{min}$	minimum area	55.4	mm <sup>2</sup>
$m$	mass of set	≈ 13	g






**Core sets for filter applications**Clamping force for  $A_L$  measurements,  $30 \pm 10$  N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu$ m)	TYPE NUMBER
3B46 <small>des</small>	$5200 \pm 25 \%$	≈ 2500	≈ 0	RM8/I-3B46
3D3	$250 \pm 3\%$	≈ 121	≈ 360	RM8/I-3D3-A250
	$315 \pm 5\%$	≈ 153	≈ 270	RM8/I-3D3-A315
	$400 \pm 5\%$	≈ 194	≈ 200	RM8/I-3D3-A400
	$1400 \pm 25\%$	≈ 675	≈ 0	RM8/I-3D3
3H3	$400 \pm 3\%$	≈ 194	≈ 200	RM8/I-3H3-A400
	$630 \pm 5\%$	≈ 306	≈ 115	RM8/I-3H3-A630
	$1000 \pm 10\%$	≈ 485	≈ 65	RM8/I-3H3-A1000
	$3250 \pm 25\%$	≈ 1560	≈ 0	RM8/I-3H3

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**Core sets for general purpose transformers and power applications**Clamping force for  $A_L$  measurements,  $30 \pm 10$  N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3C81	$100 \pm 3\%$	$\approx 49$	$\approx 1100$	RM8/I-3C81-E100
	$160 \pm 3\%$	$\approx 78$	$\approx 610$	RM8/I-3C81-A160
	$250 \pm 3\%$	$\approx 121$	$\approx 360$	RM8/I-3C81-A250
	$315 \pm 3\%$	$\approx 153$	$\approx 270$	RM8/I-3C81-A315
	$400 \pm 3\%$	$\approx 194$	$\approx 200$	RM8/I-3C81-A400
	$4100 \pm 25\%$	$\approx 1990$	$\approx 0$	RM8/I-3C81
3C90	$100 \pm 3\%$	$\approx 49$	$\approx 1100$	RM8/I-3C90-A100
	$160 \pm 3\%$	$\approx 78$	$\approx 610$	RM8/I-3C90-A160
	$250 \pm 3\%$	$\approx 121$	$\approx 360$	RM8/I-3C90-A250
	$315 \pm 3\%$	$\approx 153$	$\approx 270$	RM8/I-3C90-A315
	$400 \pm 3\%$	$\approx 194$	$\approx 200$	RM8/I-3C90-A400
	$3300 \pm 25\%$	$\approx 1600$	$\approx 0$	RM8/I-3C90
3C91 	$4100 \pm 25\%$	$\approx 1990$	$\approx 0$	RM8/I-3C91
3C94	$100 \pm 3\%$	$\approx 49$	$\approx 1100$	RM8/I-3C94-A100
	$160 \pm 3\%$	$\approx 78$	$\approx 610$	RM8/I-3C94-A160
	$250 \pm 3\%$	$\approx 121$	$\approx 360$	RM8/I-3C94-A250
	$315 \pm 3\%$	$\approx 153$	$\approx 270$	RM8/I-3C94-A315
	$400 \pm 3\%$	$\approx 194$	$\approx 200$	RM8/I-3C94-A400
	$3300 \pm 25\%$	$\approx 1600$	$\approx 0$	RM8/I-3C94
3C96 	$3000 \pm 25\%$	$\approx 1440$	$\approx 0$	RM8/I-3C96
3F3	$100 \pm 3\%$	$\approx 49$	$\approx 1100$	RM8/I-3F3-A100
	$160 \pm 3\%$	$\approx 78$	$\approx 610$	RM8/I-3F3-A160
	$250 \pm 3\%$	$\approx 121$	$\approx 360$	RM8/I-3F3-A250
	$315 \pm 3\%$	$\approx 153$	$\approx 270$	RM8/I-3F3-A315
	$400 \pm 3\%$	$\approx 194$	$\approx 200$	RM8/I-3F3-A400
	$3000 \pm 25\%$	$\approx 1440$	$\approx 0$	RM8/I-3F3
3F35 	$2400 \pm 25\%$	$\approx 1150$	$\approx 0$	RM8/I-3F35
3F4 	$100 \pm 3\%$	$\approx 49$	$\approx 1100$	RM8/I-3F4-A100
	$160 \pm 3\%$	$\approx 78$	$\approx 610$	RM8/I-3F4-A160
	$250 \pm 3\%$	$\approx 121$	$\approx 360$	RM8/I-3F4-A250
	$315 \pm 3\%$	$\approx 153$	$\approx 270$	RM8/I-3F4-A315
	$400 \pm 3\%$	$\approx 194$	$\approx 200$	RM8/I-3F4-A400
	$1700 \pm 25\%$	$\approx 820$	$\approx 0$	RM8/I-3F4
3F45 	$1700 \pm 25\%$	$\approx 820$	$\approx 0$	RM8/I-3F45

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## Core sets of high permeability grades

Clamping force for  $A_L$  measurements,  $30 \pm 10$  N.

GRADE	$A_L$ (nH)	$\mu_e$	TYPE NUMBER
3E27	$8000 \pm 25\%$	$\approx 3880$	RM8/I-3E27
3E5	$12500 +40/-30\%$	$\approx 6060$	RM8/I-3E5
3E6	$15500 +40/-30\%$	$\approx 7520$	RM8/I-3E6

## 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; B̂ = 200 mT; T = 100 °C	f = 100 kHz; B̂ = 100 mT; T = 100 °C	f = 100 kHz; B̂ = 200 mT; T = 100 °C	f = 400 kHz; B̂ = 50 mT; T = 100 °C
3C81	$\geq 315$	$\leq 0.56$	–	–	–
3C90	$\geq 320$	$\leq 0.30$	$\leq 0.31$	–	–
3C91	$\geq 315$	–	$\leq 0.17^{(1)}$	$\leq 1.0^{(1)}$	–
3C94	$\geq 320$	–	$\leq 0.23$	$\leq 1.2$	–
3C96	$\geq 340$	–	$\leq 0.17$	$\leq 1.0$	$\leq 0.43$
3F3	$\geq 315$	–	$\leq 0.27$	–	$\leq 0.47$
3F35	$\geq 315$	–	–	–	$\leq 0.25$
3F4	$\geq 250$	–	–	–	–

## 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; B̂ = 50 mT; T = 100 °C	f = 500 kHz; B̂ = 100 mT; T = 100 °C	f = 1 MHz; B̂ = 30 mT; T = 100 °C	f = 1 MHz; B̂ = 50 mT; T = 100 °C	f = 3 MHz; B̂ = 10 mT; T = 100 °C
3C81	$\geq 315$	–	–	–	–	–
3C90	$\geq 320$	–	–	–	–	–
3C91	$\geq 315$	–	–	–	–	–
3C94	$\geq 320$	–	–	–	–	–
3C96	$\geq 340$	$\leq 0.9$	–	–	–	–
3F3	$\geq 315$	–	–	–	–	–
3F35	$\geq 315$	$\leq 0.37$	$\leq 2.6$	–	–	–
3F4	$\geq 250$	–	–	$\leq 0.7$	–	$\leq 1.1$
3F45	$\geq 250$	–	–	$\leq 0.5$	$\leq 1.2$	$\leq 0.86$

## Note

1. Measured at 60 °C.

## RM cores and accessories

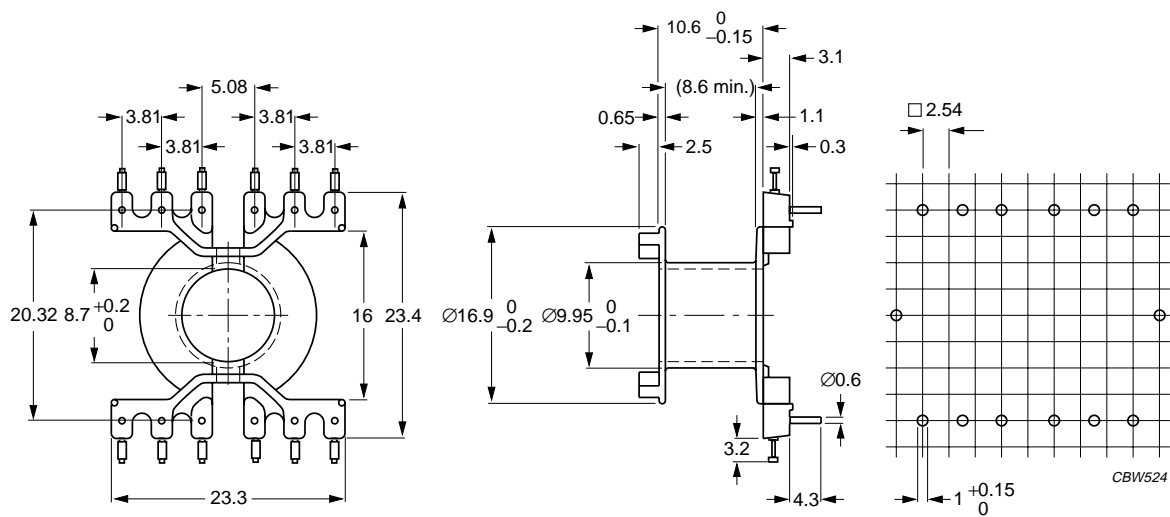
## RM8/I

## COIL FORMER

## General data

For the information on another coil former suitable for RM8/I, see "Data sheet: RM8".

PARAMETER	SPECIFICATION
Coil former material	polybutyleneterephthalate (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, 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



Dimensions in mm.

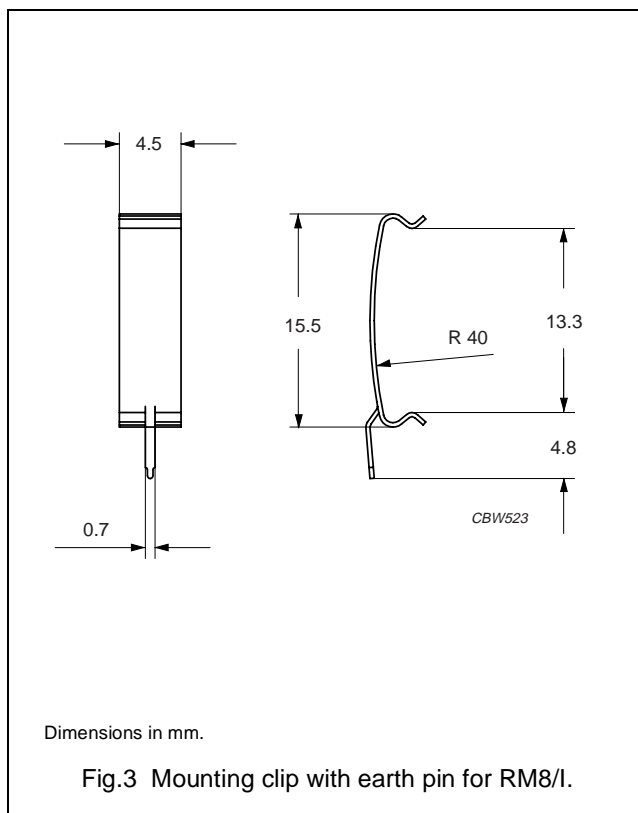
Fig.2 RM8/I coil former (DIL).

## Winding data for RM8/I coil former (DIL)

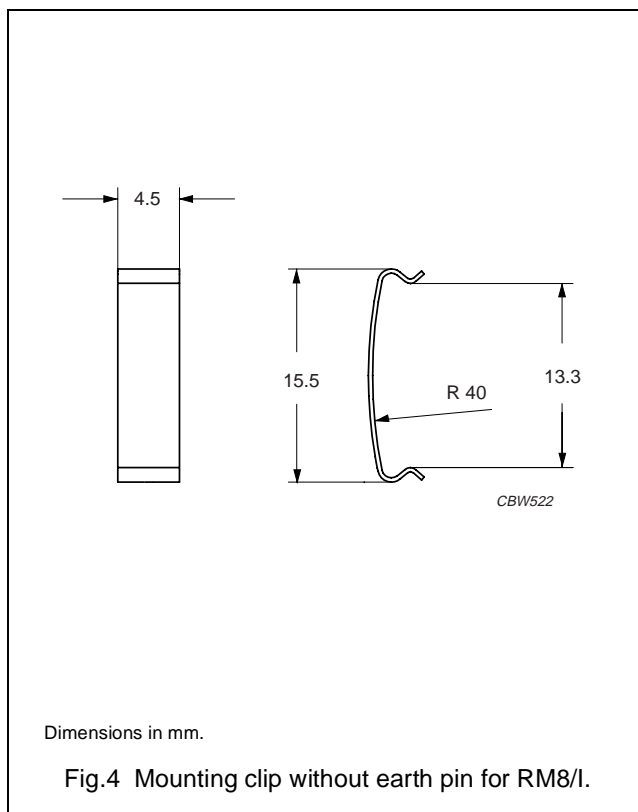
NUMBER OF SECTIONS	AVERAGE LENGTH OF TURN (mm)	WINDING AREA (mm <sup>2</sup> )	WINDING WIDTH (mm)	TYPE NUMBER
1	42	30.9	8.6	CPV-RM8/I-1S-12PD

**MOUNTING PARTS****General data**

ITEM	SPECIFICATION
Clamping force	≈15 N
Clip material	stainless steel
Clip plating	tin-lead alloy (SnPb), transition to lead-free (Sn) ongoing
Solderability	"IEC 60068-2-20", Part 2, Test Ta, method 1
Type number	CLI/P-RM8/I

**General data**

ITEM	SPECIFICATION
Clamping force	≈15 N
Clip material	stainless steel
Type number	CLI-RM8/I



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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

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<b>Preferred</b>		These products are recommended for use in current designs and are available via our sales channels.
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