

# DATA SHEET

**RM14/I**  
RM, RM/I, RM/ILP cores and  
accessories

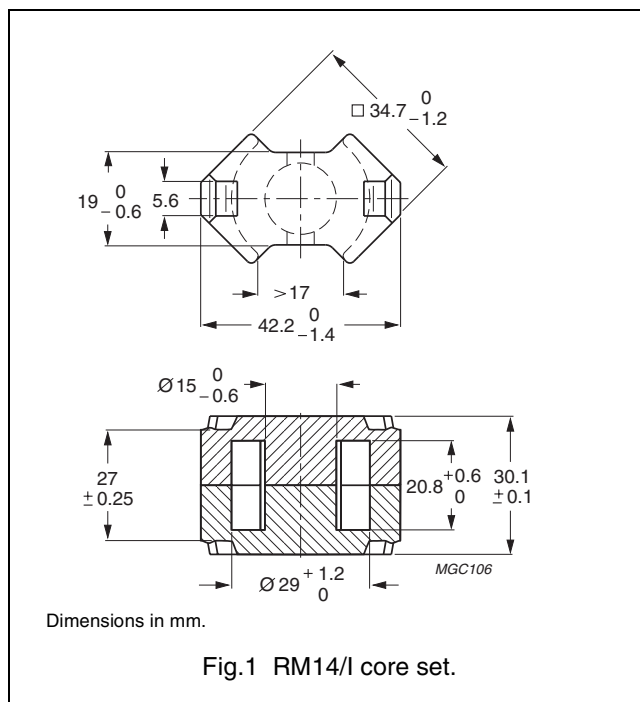
Supersedes data of September 2004

2008 Sep 01

**CORE SETS**

**Effective core parameters**

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	0.353	mm <sup>-1</sup>
$V_e$	effective volume	13900	mm <sup>3</sup>
$l_e$	effective length	70.0	mm
$A_e$	effective area	198	mm <sup>2</sup>
$A_{min}$	minimum area	168	mm <sup>2</sup>
m	mass of set	≈ 69	g



**Core sets for general purpose transformers and power applications**

Clamping force for  $A_L$  measurements, 80 ±20 N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu$ m)	TYPE NUMBER
3C90	250 ±3%	≈ 70	≈ 1270	RM14/I-3C90-A250
	315 ±3%	≈ 89	≈ 950	RM14/I-3C90-A315
	400 ±3%	≈ 113	≈ 710	RM14/I-3C90-A400
	630 ±5%	≈ 177	≈ 410	RM14/I-3C90-A630
	1000 ±5%	≈ 281	≈ 240	RM14/I-3C90-A1000
	6600 ±25%	≈ 1850	≈ 0	RM14/I-3C90
3C94	250 ±3%	≈ 70	≈ 1270	RM14/I-3C94-A250
	315 ±3%	≈ 89	≈ 950	RM14/I-3C94-A315
	400 ±3%	≈ 113	≈ 710	RM14/I-3C94-A400
	630 ±5%	≈ 177	≈ 410	RM14/I-3C94-A630
	1000 ±5%	≈ 281	≈ 240	RM14/I-3C94-A1000
	6600 ±25%	≈ 1850	≈ 0	RM14/I-3C94
3C95 des	8130 ±25%	≈ 2290	≈ 0	RM14/I-3C95
3C96 des	5700 ±25%	≈ 1600	≈ 0	RM14/I-3C96
3F3	250 ±3%	≈ 70	≈ 1270	RM14/I-3F3-A250
	315 ±3%	≈ 89	≈ 950	RM14/I-3F3-A315
	400 ±3%	≈ 113	≈ 710	RM14/I-3F3-A400
	630 ±5%	≈ 177	≈ 410	RM14/I-3F3-A630
	1000 ±5%	≈ 281	≈ 240	RM14/I-3F3-A1000
	5700 ±25%	≈ 1600	≈ 0	RM14/I-3F3

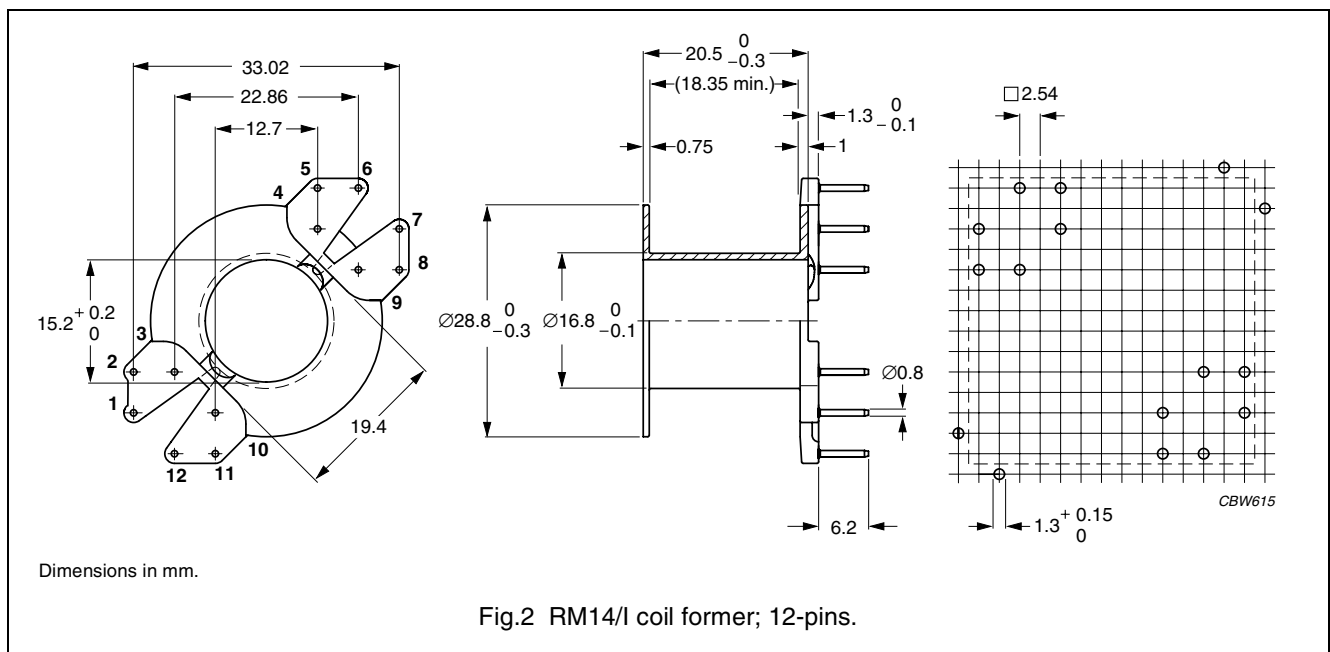
## Properties of core sets under power conditions

GRADE	B (mT) at	CORE LOSS (W) at					
	H = 250 A/m; f = 25 kHz; T = 100 °C	f̂ = 25 kHz; B̂ = 200 mT; T = 100 °C	f̂ = 100 kHz; B̂ = 100 mT; T = 100 °C	f̂ = 100 kHz; B̂ = 200 mT; T = 25 °C	f̂ = 100 kHz; B̂ = 200 mT; T = 100 °C	f̂ = 400 kHz; B̂ = 50 mT; T = 100 °C	f̂ = 500 kHz; B̂ = 50 mT; T = 100 °C
3C90	≥315	≤ 1.67	≤ 1.76	–	–	–	–
3C94	≥315	–	≤ 1.4	–	≤ 7.4	–	–
3C95	≥315	–	–	≤ 8.76	≤ 8.34	–	–
3C96	≥340	–	≤ 1.1	–	≤ 5.6	≤ 2.6	≤ 5.2
3F3	≥315	–	≤ 1.55	–	–	≤ 2.65	–

**COIL FORMERS**

**General data**

PARAMETER	SPECIFICATION
Coil former material	phenolformaldehyde (PF), glass reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E167521(M)
Pin material	copper-tin alloy (CuSn), tin (Sn) plated
Maximum operating temperature	180 °C, "IEC 60085", class H
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

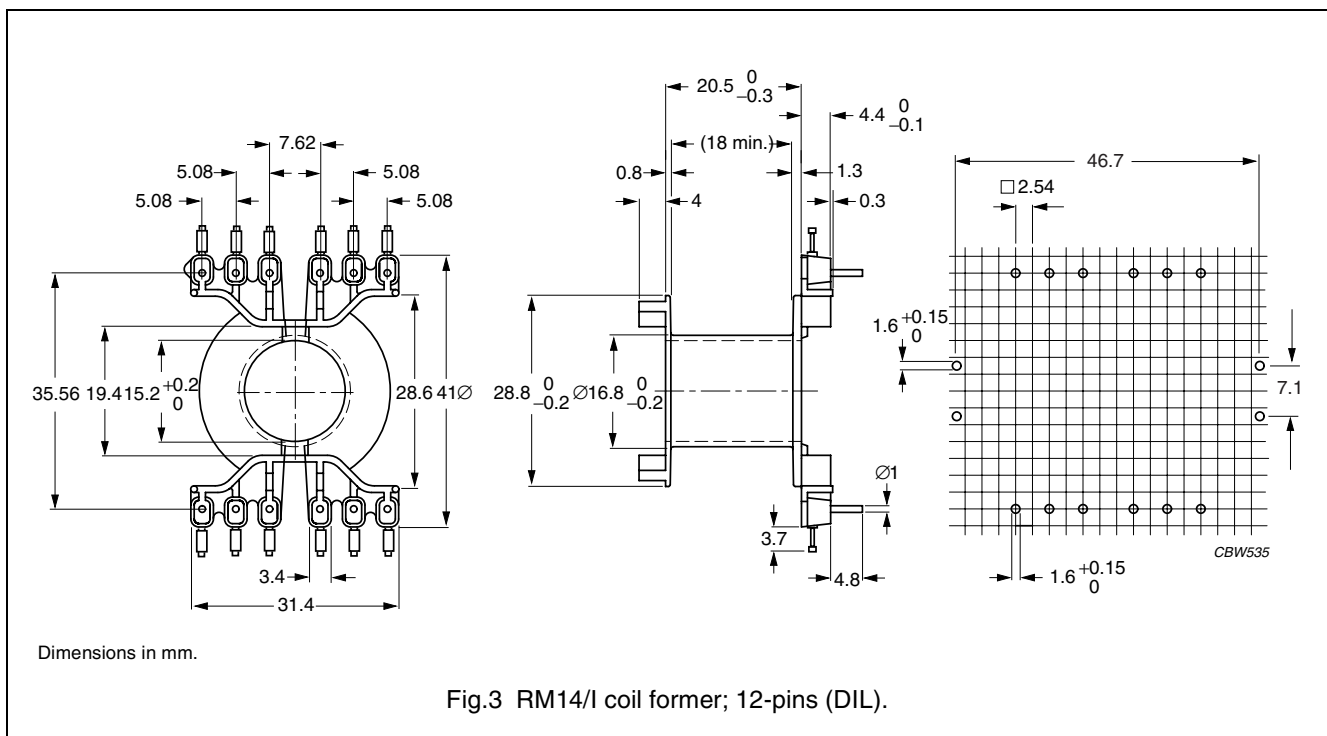


**Winding data and area product for 12-pins RM14/I coil former**

NUMBER OF SECTIONS	NUMBER OF PINS	PIN POSITIONS USED	AVERAGE LENGTH OF TURN (mm)	WINDING AREA (mm <sup>2</sup> )	WINDING WIDTH (mm)	AREA PRODUCT Ae x Aw (mm <sup>4</sup> )	TYPE NUMBER
1	10	1, 2, 3, 4, 6, 7, 9, 10, 11, 12	71	112	18.4	22200	CSV-RM14-1S-10P
1	12	all	71	112	18.4	22200	CSV-RM14-1S-12P

**General data**

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 (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



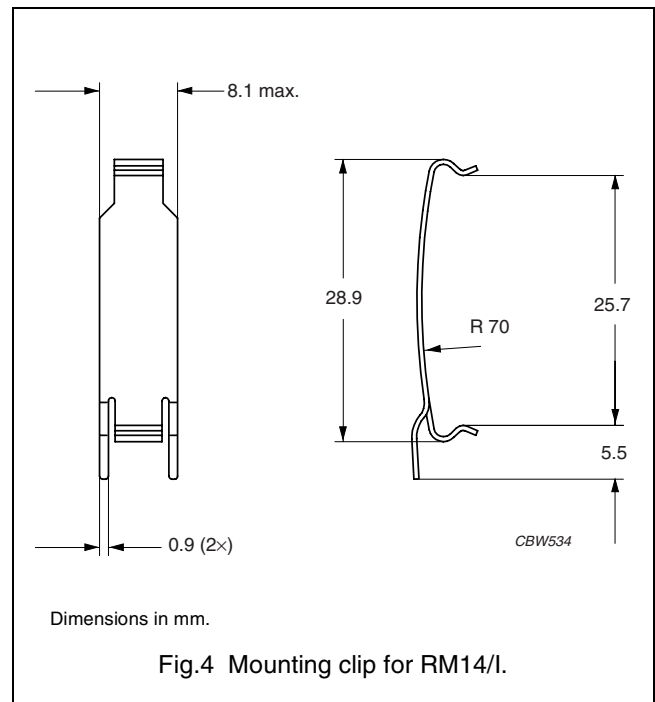
**Winding data and area product for 12-pins RM14/I coil former (DIL)**

NUMBER OF SECTIONS	AVERAGE LENGTH OF TURN (mm)	WINDING AREA (mm <sup>2</sup> )	WINDING WIDTH (mm)	AREA PRODUCT Ae x Aw (mm <sup>4</sup> )	TYPE NUMBER
1	71	111	18.0	22000	CPV-RM14/I-1S-12PD

**MOUNTING PARTS**

**General data mounting clip with earth pin**

ITEM	SPECIFICATION
Clamping force	≈40 N
Clip material	stainless steel
Clip plating	tin (Sn)
Solderability	"IEC 60068-2-20", Part 2, Test Ta, method 1
Type number	CLI/P-RM14/I






**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
<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.