DATA SHEET

RM4/I

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

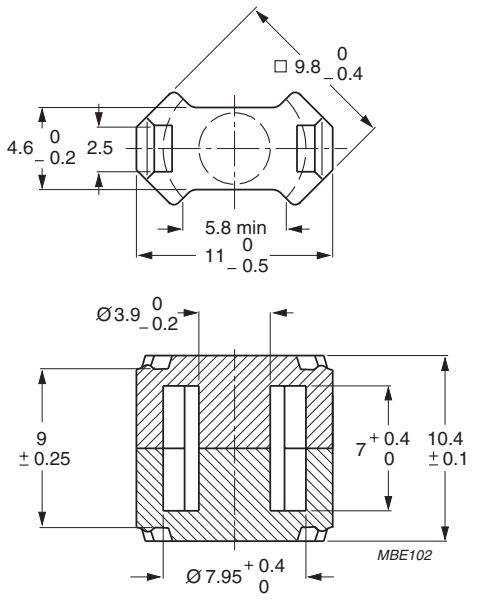
Supersedes data of September 2004 2008 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	1.69	mm^{-1}
V_e	effective volume	322	mm^3
l_e	effective length	23.3	mm
A_e	effective area	13.8	mm^2
A_{min}	minimum area	11.5	mm^2
m	mass of set	≈ 1.7	g



Dimensions in mm.

Fig.1 RM4/I core set.

Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 10 ±5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	1125 ±25%	≈ 1510	≈ 0	RM4/I-3C90
3C94	1125 ±25%	≈ 1510	≈ 0	RM4/I-3C94
3C95 des	1320 ±25%	≈ 1785	≈ 0	RM4/I-3C95
3C96 des	1000 ±25%	≈ 1340	≈ 0	RM4/I-3C96
3F3	100 ±3%	≈ 134	≈ 200	RM4/I-3F3-A100
	160 ±3%	≈ 215	≈ 110	RM4/I-3F3-A160
	250 ±10%	≈ 336	≈ 60	RM4/I-3F3-A250
	950 ±25%	≈ 1280	≈ 0	RM4/I-3F3
3F35 prot	800 ±25%	≈ 1080	≈ 0	RM4/I-3F35
3F4 des	100 ±3%	≈ 134	≈ 180	RM4/I-3F4-A100
	160 ±3%	≈ 215	≈ 95	RM4/I-3F4-A160
	250 ±10%	≈ 336	≈ 45	RM4/I-3F4-A250
	560 ±25%	≈ 750	≈ 0	RM4/I-3F4
3F45 prot	560 ±25%	≈ 750	≈ 0	RM4/I-3F45

Core sets for filter applications

Clamping force for A_L measurements, 10 ±5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3B46 des	1550 ± 25 %	≈ 2085	≈ 0	RM4/I-3B46

Core sets of high permeability grades

Clamping force for A_L measurements, 10 ±5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3E5	3500 +40/–30%	≈ 4700	≈ 0	RM4/I-3E5

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; $\hat{B}$ = 200 mT; T = 100 °C	f = 100 kHz; $\hat{B}$ = 100 mT; T = 100 °C	f = 100 kHz; $\hat{B}$ = 200 mT; T = 25 °C	f = 100 kHz; $\hat{B}$ = 200 mT; T = 100 °C	f = 400 kHz; $\hat{B}$ = 50 mT; T = 100 °C
3C90	≥320	≤ 0.04	≤ 0.04	–	–	–
3C94	≥320	–	≤ 0.03	–	≤ 0.2	–
3C95	≥320	–	–	≤ 0.18	≤ 0.17	–
3C96	≥340	–	≤ 0.025	–	≤ 0.15	≤ 0.07
3F3	≥300	–	≤ 0.05	–	–	≤ 0.07
3F35	≥300	–	–	–	–	≤ 0.04
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; $\hat{B}$ = 50 mT; 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	–	–	–	–	–
3C95	≥320	–	–	–	–	–
3C96	≥340	≤ 0.15	–	–	–	–
3F3	≥300	–	–	–	–	–
3F35	≥300	≤ 0.05	≤ 0.4	–	–	–
3F4	≥250	–	–	≤ 0.09	–	≤ 0.15
3F45	≥250	–	–	≤ 0.074	≤ 0.28	≤ 0.13

COIL FORMERS

Coil formers are equal to those of *"RM4", but "area product" is different.*

Winding data and area product (for RM4/I) for RM4 coil former

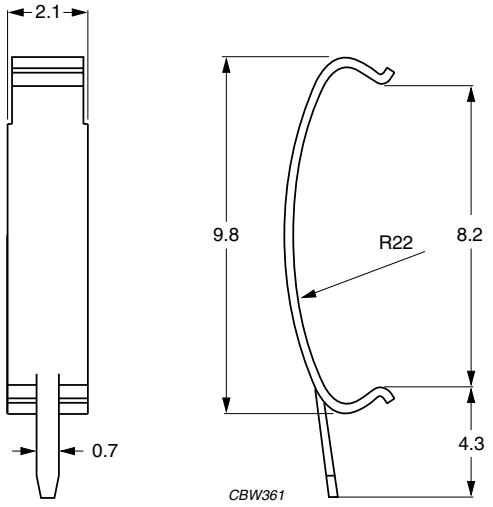
NUMBER OF SECTIONS	NUMBER OF PINS	PIN POSITIONS USED	AVERAGE LENGTH OF TURN (mm)	WINDING AREA (mm^2)	WINDING WIDTH (mm)	AREA PRODUCT Ae x Aw (mm^4)	TYPE NUMBER
1	6	all	20	7.4	5.55	102	CSV-RM4-1S-6P()
1	5	1, 2, 3, 5, 6	20	7.4	5.55	102	CSV-RM4-1S-5P()
2	5	1, 2, 3, 5, 6	20	7	2 x 2.55	96.6	CSV-RM4-2S-5P

Note : Also available with post-inserted pins.

MOUNTING PARTS

General data mounting clip with earth pin

ITEM	SPECIFICATION
Clamping force	≈ 5 N
Clip material	stainless steel (CrNi)
Clip plating	tin (Sn)
Solderability	*"IEC 60068-2-20"*, Part 2, Test Ta, method 1
Type number	CLI/P-RM4/5/I

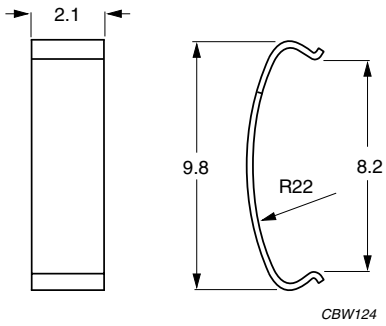


Dimensions in mm.

Fig.2 Mounting clip with earth pin for RM4/I.

General data mounting clip without earth pin

ITEM	SPECIFICATION
Clamping force	≈ 5 N
Clip material	stainless steel (CrNi)
Type number	CLI-RM4/5/I



Dimensions in mm.

Fig.3 Mounting clip without earth pin for RM4/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
Prototype	prot	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	des	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	sup	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.