DATA SHEET

RM4/ILP

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

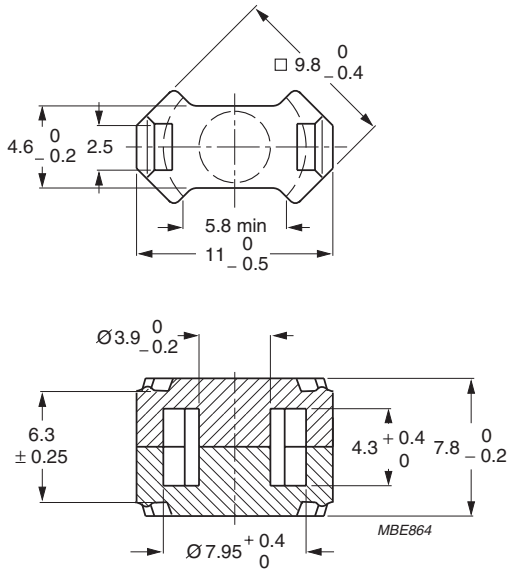
Supersedes data of September 2004 2008 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
Σ(l/A)	core factor (C1)	1.19	mm^{-1}
V_e	effective volume	251	mm^3
l_e	effective length	17.3	mm
A_e	effective area	14.5	mm^2
A_{min}	minimum area	11.3	mm^2
m	mass of set	≈ 1.3	g



Dimensions in mm.

Fig.1 RM4/ILP 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	1400 ±25%	≈ 1330	≈ 0	RM4/ILP-3C90
3C94	1400 ±25%	≈ 1330	≈ 0	RM4/ILP-3C94
3C95 des	1610 ±25%	≈ 1535	≈ 0	RM4/ILP-3C95
3C96 des	1250 ±25%	≈ 1190	≈ 0	RM4/ILP-3C96
3F3	1200 ±25%	≈ 1140	≈ 0	RM4/ILP-3F3
3F35 prot	1000 ±25%	≈ 950	≈ 0	RM4/ILP-3F35
3F4 des	750 ±25%	≈ 710	≈ 0	RM4/ILP-3F4
3F45 prot	750 ±25%	≈ 710	≈ 0	RM4/ILP-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	1900 ± 25 %	≈ 1800	≈ 0	RM4/ILP-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	5000 +40/−30%	≈ 4750	≈ 0	RM4/ILP-3E5
3E6	6000 +40/−30%	≈ 5700	≈ 0	RM4/ILP-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; $\hat{B}$ = 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	–	≤ 0.024	–	≤ 0.13	–
3C95	≥320	–	–	≤ 0.14	≤ 0.13	–
3C96	≥340	–	≤ 0.018	–	≤ 0.1	≤ 0.06
3F3	≥300	–	≤ 0.04	–	–	≤ 0.06
3F35	≥300	–	–	–	–	≤ 0.03
3F4	≥250	–	–	–	–	–

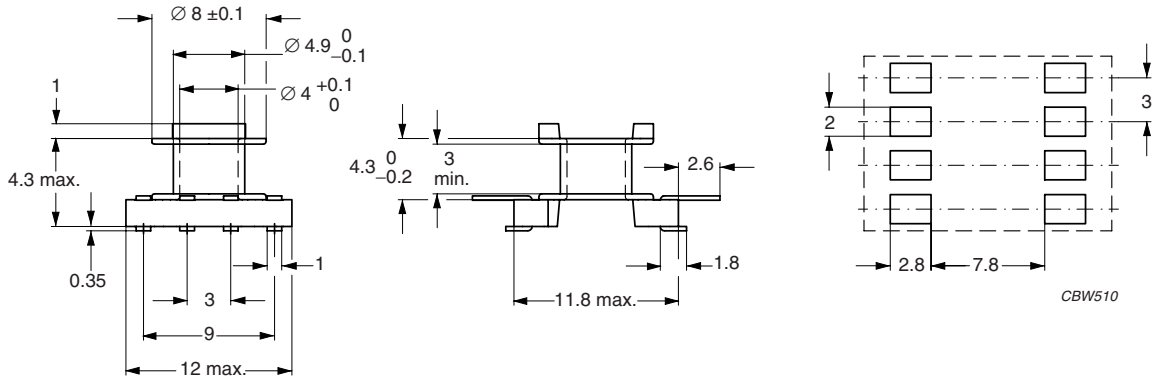
Properties of core sets under power conditions (continued)

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	≤ 0.1	–	–	–	–
3F3	≥300	–	–	–	–	–
3F35	≥300	≤ 0.04	≤ 0.3	–	–	–
3F4	≥250	–	–	≤ 0.08	–	≤ 0.12
3F45	≥250	–	–	≤ 0.058	≤ 0.22	≤ 0.1

COIL FORMERS

General data SMD coil former

PARAMETER	SPECIFICATION
Coil former material	phenolformaldehyde (PF), glass-reinforced, flame retardant in accordance with *"UL 94V-0"*; UL file number E41429 (M)
Solder pad material	copper-clad steel, 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



Dimensions in mm.

Fig.2 SMD coil former for RM4/ILP.

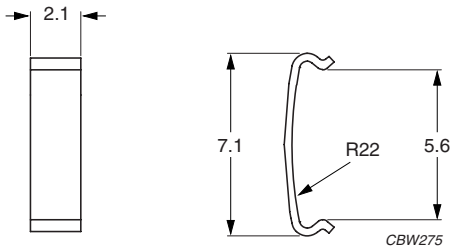
Winding data and area product for RM4/ILP coil former (SMD)

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
1	8	3.75	3.0	20.7	54.4	CSVS-RM4/LP-1S-8PL

MOUNTING PARTS

General data

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



Dimensions in mm.

Fig.3 Mounting clip for RM4/ILP.

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.