DATA SHEET

RM5/ILP
RM cores and accessories

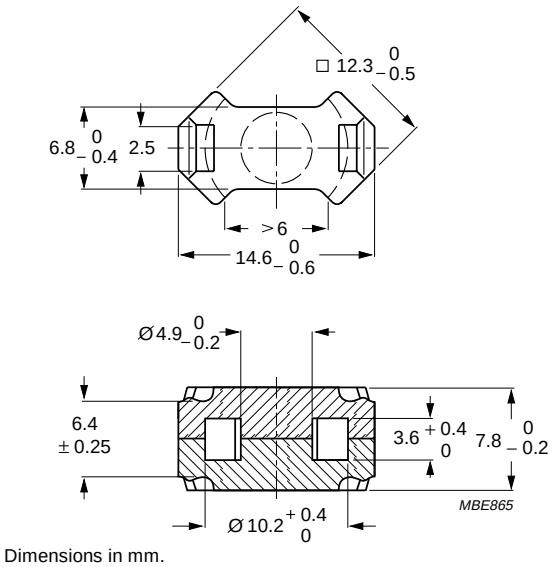
Supersedes data of February 2002 2004 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.710	mm^{-1}
V_e	effective volume	430	mm^3
l_e	effective length	17.5	mm
A_e	effective area	24.5	mm^2
A_{min}	minimum area	18.1	mm^2
m	mass of set	≈ 2.6	g



Dimensions in mm.

Fig.1 RM5/ILP core set.

Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 20 ±10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	2350 ±25%	≈ 1340	≈ 0	RM5/ILP-3C90
3C94	2350 ±25%	≈ 1340	≈ 0	RM5/ILP-3C94
3C96 des	2100 ±25%	≈ 1190	≈ 0	RM5/ILP-3C96
3F3	2000 ±25%	≈ 1140	≈ 0	RM5/ILP-3F3
3F35 prot	1700 ±25%	≈ 970	≈ 0	RM5/ILP-3F35
3F4 des	1250 ±25%	≈ 710	≈ 0	RM5/ILP-3F4
3F45 prot	1250 ±25%	≈ 710	≈ 0	RM5/ILP-3F45

Core sets for filter applications

Clamping force for A_L measurements, 20 ±10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3B46 des	3200 ± 25 %	≈ 1810	≈ 0	RM5/ILP-3B46

Core sets of high permeability grades

Clamping force for A_L measurements, 20 ±10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3E5	8500 +40/–30%	≈ 4830	≈ 0	RM5/ILP-3E5
3E6	10000 +40/–30%	≈ 5680	≈ 0	RM5/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 = 100 °C	f = 400 kHz; $\hat{B}$ = 50 mT; T = 100 °C
3C90	≥320	≤ 0.06	≤ 0.06	–	–
3C94	≥320	–	≤ 0.04	≤ 0.26	–
3C96	≥340	–	≤ 0.03	≤ 0.2	≤ 0.08
3F3	≥300	–	≤ 0.06	–	≤ 0.08
3F35	≥300	–	–	–	≤ 0.06
3F4	≥250	–	–	–	–

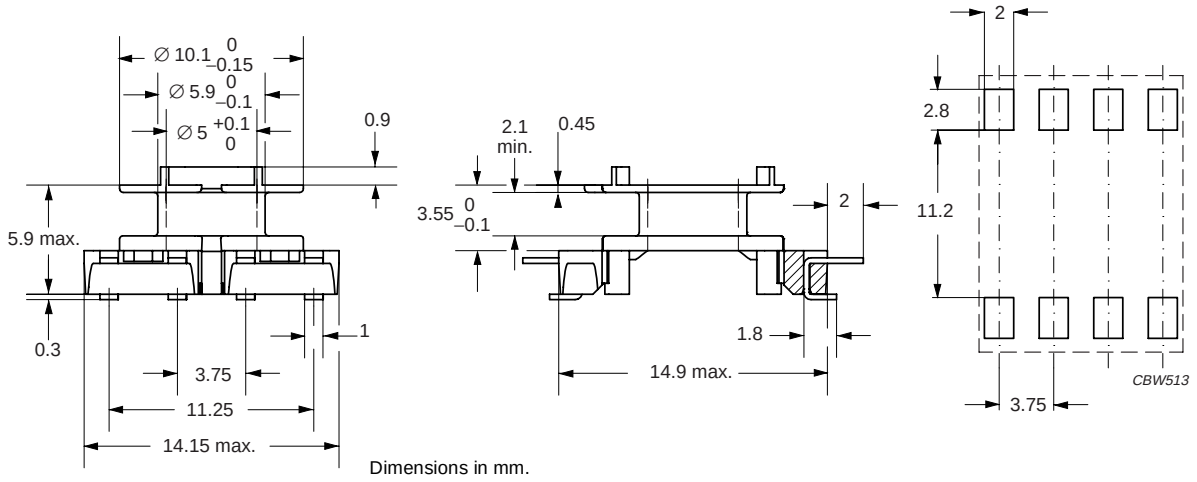
Properties of core sets under power conditions (continued)

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	–	–	–	–	–
3C96	≥340	≤ 0.16	–	–	–	–
3F3	≥300	–	–	–	–	–
3F35	≥300	≤ 0.09	≤ 0.6	–	–	–
3F4	≥250	–	–	≤ 0.12	–	≤ 0.2
3F45	≥250	–	–	≤ 0.086	≤ 0.22	≤ 0.15

COIL FORMERS

General data

PARAMETER	SPECIFICATION
Coil former material	phenolformaldehyde (PF), glass reinforced, flame retardant in accordance with *"UL 94V-0"*; UL file number: E41429 (M)
Pin material	copper-clad steel, 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: 235 °C, 2 s



Dimensions in mm.

Fig.2 RM5/ILP SMD coil former.

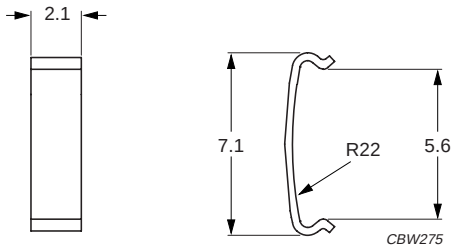
Winding data for 8-pads RM5/ILP SMD coil former

NUMBER OF SECTIONS	WINDING AREA (mm^2)	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	4.6	2.1	24.9	CSVS-RM5/LP-1S-8P

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 RM5/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
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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.