

# DATA SHEET

## **RM8/ILP**

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

Supersedes data of September 2004

2008 Sep 01

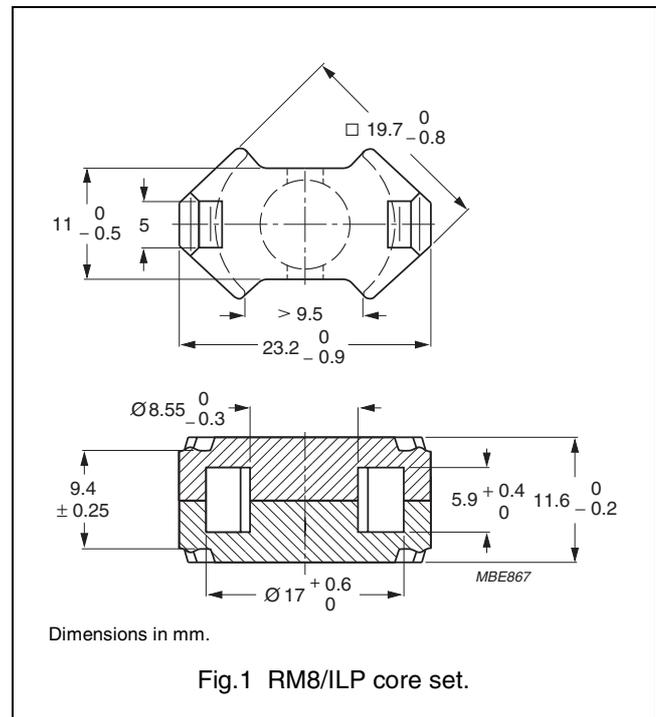


**FERROXCUBE**  
A YAGEO COMPANY

**CORE SETS**

**Effective core parameters**

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.440	mm <sup>-1</sup>
$V_e$	effective volume	1860	mm <sup>3</sup>
$l_e$	effective length	28.7	mm
$A_e$	effective area	64.9	mm <sup>2</sup>
$A_{min}$	minimum area	55.4	mm <sup>2</sup>
m	mass of set	≈ 10	g



**Core sets for filter applications**

Clamping force for  $A_L$  measurements, 30 ± 10 N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu$ m)	TYPE NUMBER
3B46 <b>des</b>	6500 ± 25%	≈ 2280	≈ 0	RM8/ILP-3B46
3D3	250 ± 3%	≈ 88	≈ 330	RM8/ILP-3D3-A250
	315 ± 3%	≈ 111	≈ 250	RM8/ILP-3D3-A315
	400 ± 5%	≈ 141	≈ 180	RM8/ILP-3D3-A400
	1850 ± 25%	≈ 650	≈ 0	RM8/ILP-3D3
3H3	400 ± 3%	≈ 141	≈ 210	RM8/ILP-3H3-A400
	630 ± 5%	≈ 222	≈ 120	RM8/ILP-3H3-A630
	1000 ± 8%	≈ 352	≈ 70	RM8/ILP-3H3-A1000
	4100 ± 25%	≈ 1440	≈ 0	RM8/ILP-3H3

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

Clamping force for  $A_L$  measurements, 30 ± 10 N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu$ m)	TYPE NUMBER
3C90	4100 ± 25%	≈ 1440	≈ 0	RM8/ILP-3C90
3C94	4100 ± 25%	≈ 1440	≈ 0	RM8/ILP-3C94
3C95 <b>des</b>	4800 ± 25%	≈ 1690	≈ 0	RM8/ILP-3C95
3C96 <b>des</b>	3800 ± 25%	≈ 1330	≈ 0	RM8/ILP-3C96
3F3	3800 ± 25%	≈ 1330	≈ 0	RM8/ILP-3F3
3F35 <b>prot</b>	3100 ± 25%	≈ 1090	≈ 0	RM8/ILP-3F35
3F4 <b>des</b>	2200 ± 25%	≈ 770	≈ 0	RM8/ILP-3F4
3F45 <b>prot</b>	2200 ± 25%	≈ 770	≈ 0	RM8/ILP-3F45

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

## RM8/ILP

**Core sets of high permeability grades**Clamping force for  $A_L$  measurements,  $30 \pm 10$  N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3E5 <small>des</small>	16000 +40/-30%	$\approx 5600$	$\approx 0$	RM8/ILP-3E5
3E6 <small>des</small>	19500 +40/-30%	$\approx 6800$	$\approx 0$	RM8/ILP-3E6

**Properties of core sets under power conditions**

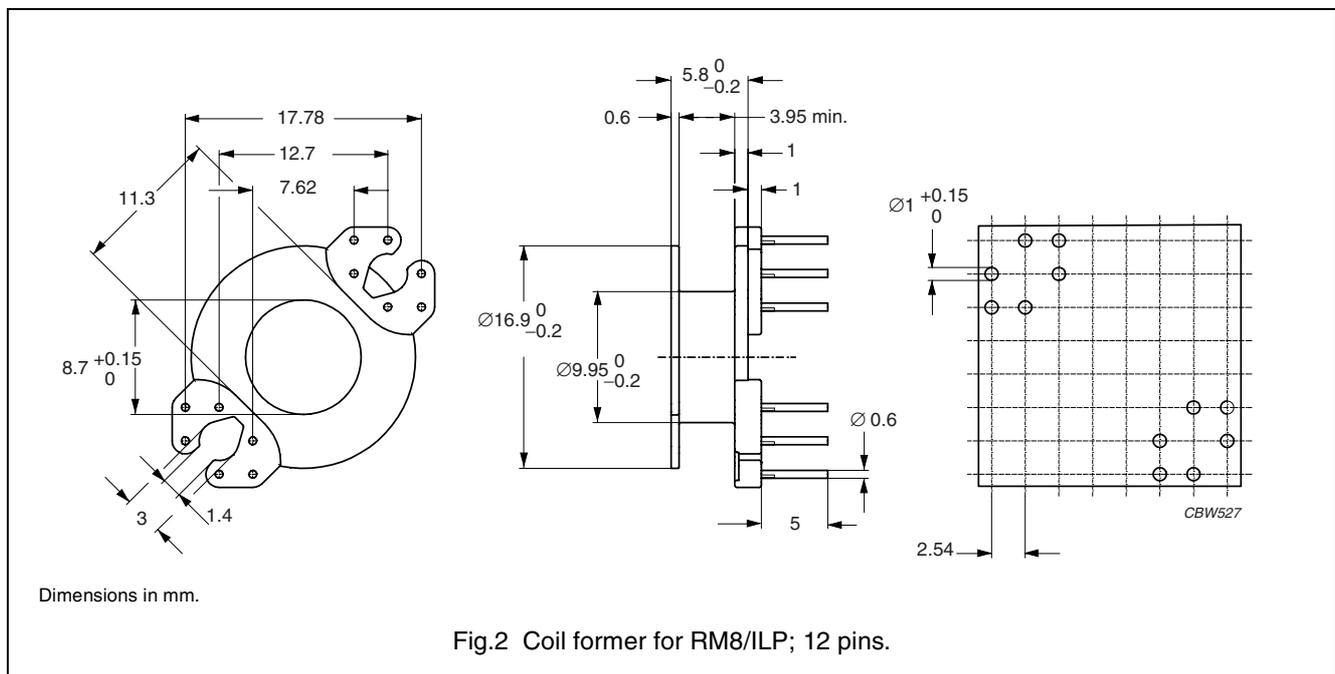
GRADE	B (mT) at	CORE LOSS (W) at				
	H = 250 A/m; f = 25 kHz; T = 100 °C	f = 25 kHz; B = 200 mT; T = 100 °C	f = 100 kHz; B = 100 mT; T = 100 °C	f = 100 kHz; B = 200 mT; T = 25 °C	f = 100 kHz; B = 200 mT; T = 100 °C	f = 400 kHz; B = 50 mT; T = 100 °C
3C90	$\geq 320$	$\leq 0.23$	$\leq 0.24$	–	–	–
3C94	$\geq 320$	–	$\leq 0.18$	–	$\leq 0.92$	–
3C95	$\geq 320$	–	–	$\leq 1.1$	$\leq 1.04$	–
3C96	$\geq 340$	–	$\leq 0.14$	–	$\leq 0.73$	$\leq 0.32$
3F3	$\geq 315$	–	$\leq 0.21$	–	–	$\leq 0.36$
3F35	$\geq 300$	–	–	–	–	$\leq 0.2$
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; B = 50 mT; T = 100 °C	f = 500 kHz; B = 100 mT; T = 100 °C	f = 1 MHz; B = 30 mT; T = 100 °C	f = 1 MHz; B = 50 mT; T = 100 °C	f = 3 MHz; B = 10 mT; T = 100 °C
3C90	$\geq 320$	–	–	–	–	–
3C94	$\geq 320$	–	–	–	–	–
3C95	$\geq 320$	–	–	–	–	–
3C96	$\geq 340$	$\leq 0.7$	–	–	–	–
3F3	$\geq 315$	–	–	–	–	–
3F35	$\geq 300$	$\leq 0.3$	$\leq 2.2$	–	–	–
3F4	$\geq 250$	–	–	$\leq 0.56$	–	$\leq 0.9$
3F45	$\geq 250$	–	–	$\leq 0.45$	$\leq 1.7$	$\leq 0.75$

General data coil former

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 (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



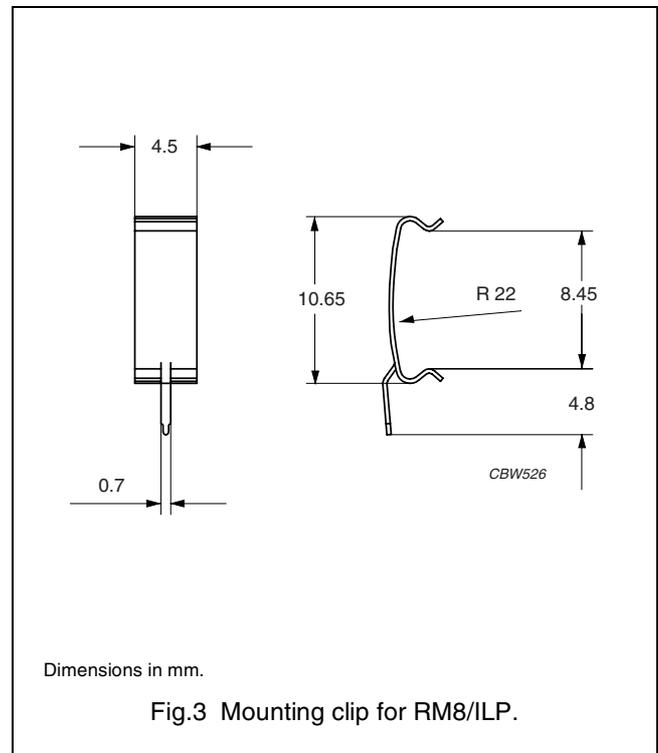
Winding data and area product for RM8/ILP coil former

NUMBER OF SECTIONS	NUMBER OF PINS	PIN POSITIONS USED	WINDING AREA (mm <sup>2</sup> )	WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm <sup>4</sup> )	TYPE NUMBER
1	12	all	13.3	3.95	41.8	863	CSV-RM8/ILP-1S-12P-Z
1	10	1, 2, 3, 4, 6, 7, 9, 10, 11, 12	13.3	3.95	41.8	863	CSV-RM8/ILP-1S-10P-Z
1	10	1, 2, 3, 4, 6, 8, 9, 10, 11, 12	13.3	3.95	41.8	863	CSV-RM8/ILP-1S-10P-ZA

**MOUNTING PARTS**

**General data**

ITEM	SPECIFICATION
Clamping force	≈15 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-RM8/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
<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.