

# DATA SHEET

## **RM10/ILP**

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

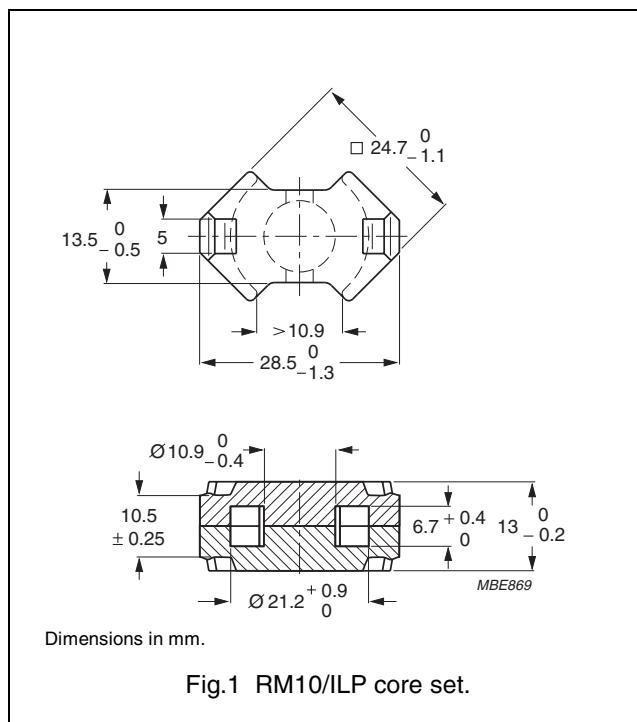
Supersedes data of September 2004

2008 Sep 01

**CORE SETS**

**Effective core parameters RM10/ILP**

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.340	mm <sup>-1</sup>
$V_e$	effective volume	3360	mm <sup>3</sup>
$l_e$	effective length	33.9	mm
$A_e$	effective area	99.1	mm <sup>2</sup>
$A_{min}$	minimum area	89.1	mm <sup>2</sup>
m	mass of set	≈ 17	g



**Core sets for filter applications**

Clamping force for  $A_L$  measurements, 60 ±20 N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP (μm)	TYPE NUMBER
3D3	315 ±3%	≈ 86	≈ 400	RM10/ILP-3D3-A315
	400 ±3%	≈ 109	≈ 300	RM10/ILP-3D3-A400
	630 ±5%	≈ 171	≈ 160	RM10/ILP-3D3-A630
	2500 ±25%	≈ 675	≈ 0	RM10/ILP-3D3
3H3	400 ±3%	≈ 109	≈ 330	RM10/ILP-3H3-A400
	630 ±3%	≈ 171	≈ 200	RM10/ILP-3H3-A630
	1000 ±5%	≈ 272	≈ 110	RM10/ILP-3H3-A1000
	5600 ±25%	≈ 1510	≈ 0	RM10/ILP-3H3

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

Clamping force for  $A_L$  measurements, 60 ±20 N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP (μm)	TYPE NUMBER
3C90	5600 ±25%	≈ 1510	≈ 0	RM10/ILP-3C90
3C94	5600 ±25%	≈ 1510	≈ 0	RM10/ILP-3C94
3C95 <small>des</small>	6620 ±25%	≈ 1800	≈ 0	RM10/ILP-3C95
3C96 <small>des</small>	5200 ±25%	≈ 1400	≈ 0	RM10/ILP-3C96
3F3	5200 ±25%	≈ 1410	≈ 0	RM10/ILP-3F3
3F35 <small>prot</small>	4000 ±25%	≈ 1080	≈ 0	RM10/ILP-3F35
3F4 <small>des</small>	3000 ±25%	≈ 810	≈ 0	RM10/ILP-3F4

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

## RM10/ILP

**Core sets of high permeability grades**Clamping force for  $A_L$  measurements,  $60 \pm 20$  N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu\text{m}$ )	TYPE NUMBER
3E5 <small>des</small>	22000 +40/- 30%	$\approx 5950$	$\approx 0$	RM10/ILP-3E5
3E6 <small>des</small>	27000 +40/- 30%	$\approx 7300$	$\approx 0$	RM10/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	$\geq 320$	$\leq 0.41$	$\leq 0.43$	–	–	–
3C94	$\geq 320$	–	$\leq 0.32$	–	$\leq 1.7$	–
3C95	$\geq 320$	–	–	$\leq 1.98$	$\leq 1.88$	–
3C96	$\geq 340$	–	$\leq 0.24$	–	$\leq 1.4$	$\leq 0.6$
3F3	$\geq 300$	–	$\leq 0.37$	–	–	$\leq 0.64$
3F35	$\geq 300$	–	–	–	–	–
3F4	$\geq 250$	–	–	–	–	–

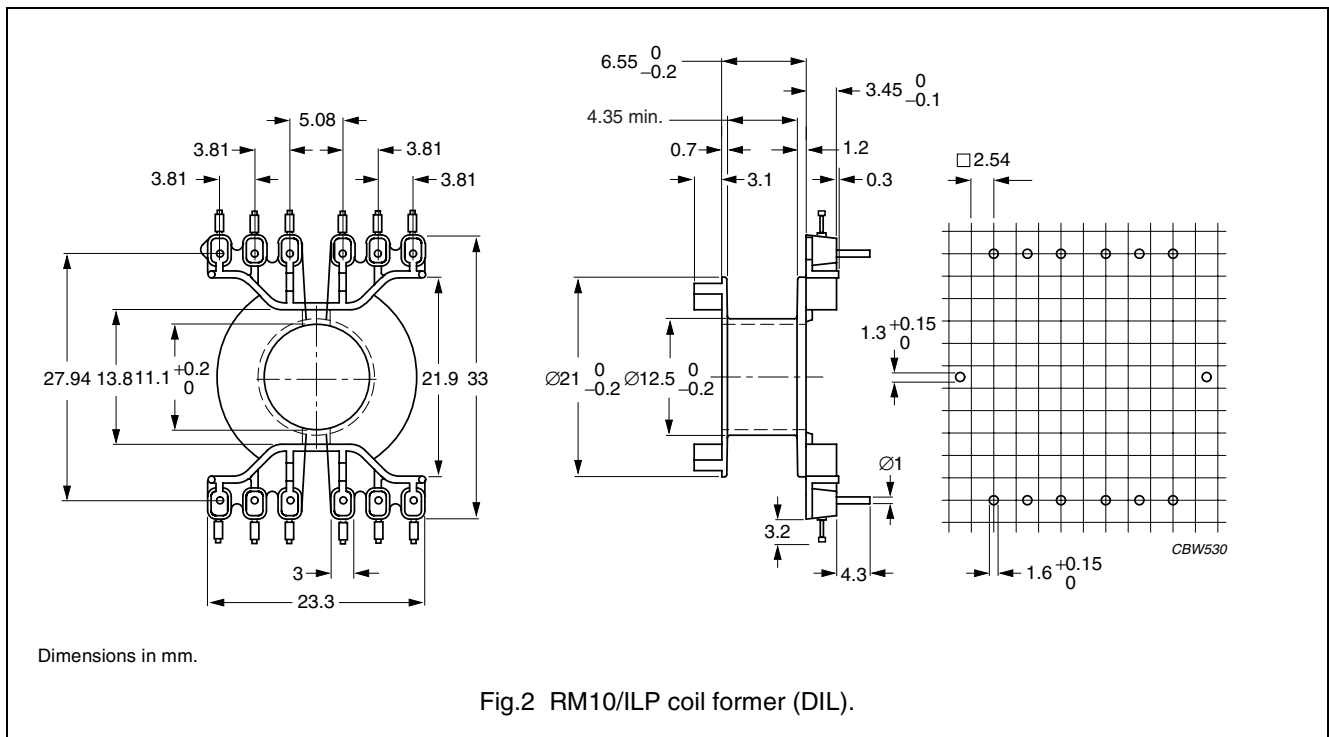
**Properties of core sets under power conditions (continued)**

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 = 3 MHz; B = 10 mT; T = 100 °C
3C90	$\geq 320$	–	–	–	–
3C94	$\geq 320$	–	–	–	–
3C95	$\geq 320$	–	–	–	–
3C96	$\geq 340$	$\leq 1.2$	–	–	–
3F3	$\geq 300$	–	–	–	–
3F35	$\geq 300$	$\leq 0.45$	$\leq 3.5$	–	–
3F4	$\geq 250$	–	–	$\leq 1.0$	$\leq 1.6$

**COIL FORMER**

**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



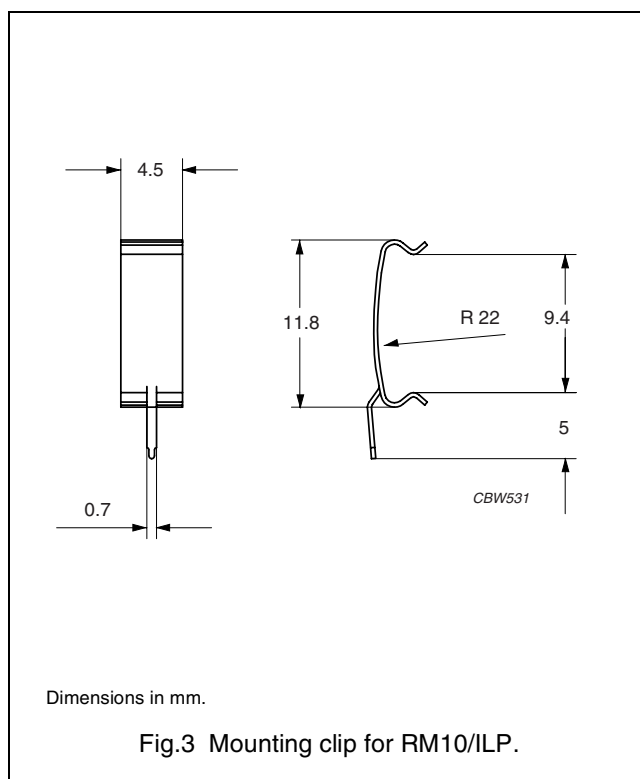
**Winding data and area product for RM10/I coil former (DIL)**

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	52	21.0	4.35	2080	CPV-RM10/ILP-1S-12PD

**MOUNTING PARTS**

**General data mounting clip with earth pin**

ITEM	SPECIFICATION
Clamping force	≈30 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-RM10/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.

**DISCLAIMER**

**Life support applications** — These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Ferroxcube customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Ferroxcube for any damages resulting from such application.

**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.