DATA SHEET

RM10/ILP
RM cores and accessories

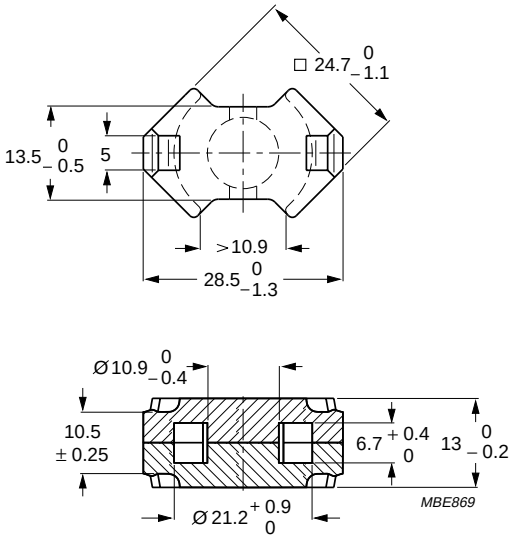
Supersedes data of February 2002 2004 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parametersRM10/ILP

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



Dimensions in mm.

Fig.1 RM10/ILP core set.

Core sets for filter applications

Clamping force for A_L measurements, 60 ±20 N.

GRADE	A_L (nH)	μ_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)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	5600 ±25%	≈ 1510	≈ 0	RM10/ILP-3C90
3C94	5600 ±25%	≈ 1510	≈ 0	RM10/ILP-3C94
3C96 des	5200 ±25%	≈ 1400	≈ 0	RM10/ILP-3C96
3F3	5200 ±25%	≈ 1410	≈ 0	RM10/ILP-3F3
3F35 prot	4000 ±25%	≈ 1080	≈ 0	RM10/ILP-3F35
3F4 des	3000 ±25%	≈ 810	≈ 0	RM10/ILP-3F4

Core sets of high permeability grades

Clamping force for A_L measurements, 60 ±20 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3E5 des	22000 +40/– 30%	≈ 5950	≈ 0	RM10/ILP-3E5
3E6 des	27000 +40/– 30%	≈ 7300	≈ 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; $\hat{B}$ = 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	≤ 0.41	≤ 0.43	–	–
3C94	≥320	–	≤ 0.32	≤ 1.7	–
3C96	≥340	–	≤ 0.24	≤ 1.4	≤ 0.6
3F3	≥300	–	≤ 0.37	–	≤ 0.64
3F35	≥300	–	–	–	–
3F4	≥250	–	–	–	–

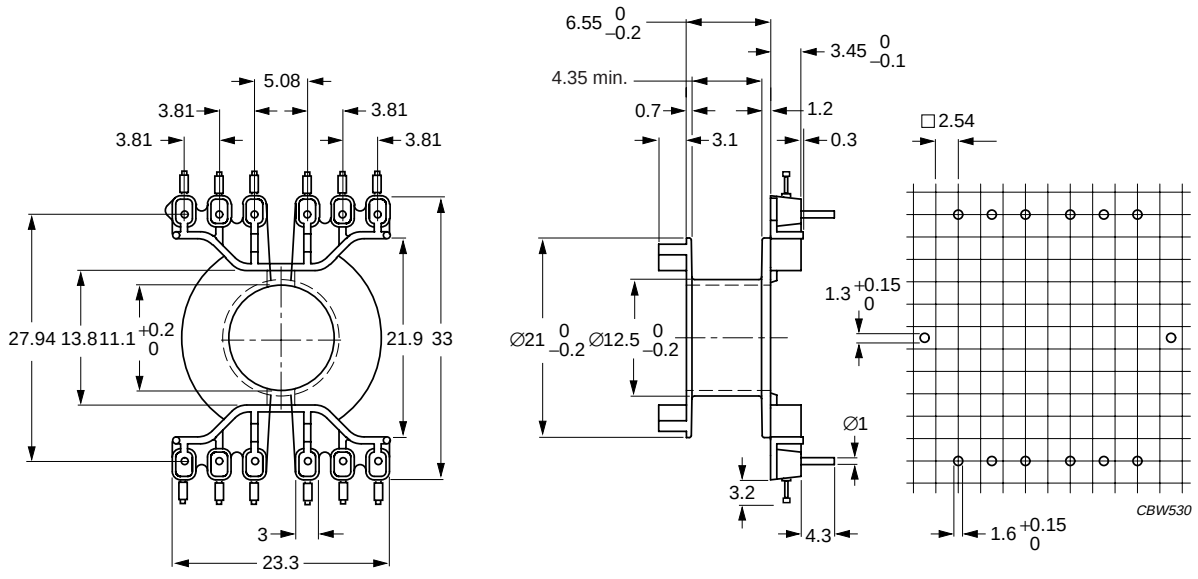
Properties of core sets under power conditions (continued)

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 = 3 MHz; $\hat{B}$ = 10 mT; T = 100 °C
3C90	≥320	–	–	–	–
3C94	≥320	–	–	–	–
3C96	≥340	≤ 1.2	–	–	–
3F3	≥300	–	–	–	–
3F35	≥300	≤ 0.45	≤ 3.5	–	–
3F4	≥250	–	–	≤ 1.0	≤ 1.6

COIL FORMER

General data

PARAMETER	SPECIFICATION
Coil former material	polybutyleneterephtalate (PBT), glass-reinforced, flame retardant in accordance with UL 94V-0; UL file number E45329(R)
Pin material	copper-tin alloy (CuSn), 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



Dimensions in mm.

Fig.2 RM10/ILP coil former (DIL).

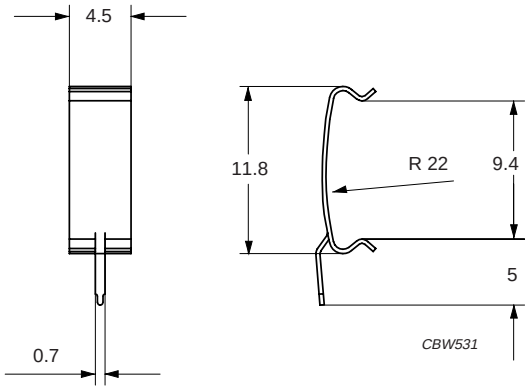
Winding data for RM10/I coil former (DIL)

NUMBER OF SECTIONS	AVERAGE LENGTH OF TURN (mm)	WINDING AREA (mm^2)	WINDING WIDTH (mm)	TYPE NUMBER
1	52	21.0	4.35	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-lead alloy (SnPb), transition to lead-free (Sn) ongoing
Solderability	*"IEC 60068-2-20"*, Part 2, Test Ta, method 1
Type number	CLI/P-RM10/ILP



Dimensions in mm.

Fig.3 Mounting clip for 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.

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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.