DATA SHEET

RM8/ILP
RM cores and accessories

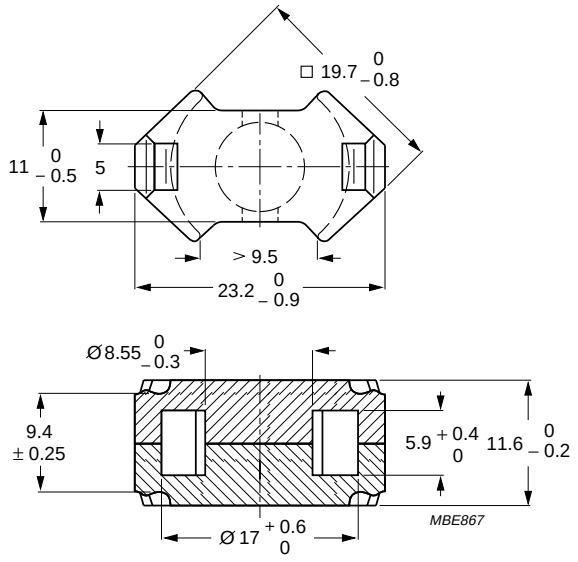
Supersedes data of February 2002 2004 Sep 01

FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

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



Dimensions in mm.

Fig.1 RM8/ILP core set.

Core sets for filter applications

Clamping force for A_L measurements, 30 ±10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3B46 des	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)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	4100 ±25%	≈ 1440	≈ 0	RM8/ILP-3C90
3C94	4100 ±25%	≈ 1440	≈ 0	RM8/ILP-3C94
3C96 des	3800 ±25%	≈ 1330	≈ 0	RM8/ILP-3C96
3F3	3800 ±25%	≈ 1330	≈ 0	RM8/ILP-3F3
3F35 prot	3100 ±25%	≈ 1090	≈ 0	RM8/ILP-3F35
3F4 des	2200 ±25%	≈ 770	≈ 0	RM8/ILP-3F4
3F45 prot	2200 ±25%	≈ 770	≈ 0	RM8/ILP-3F45

Core sets of high permeability grades

Clamping force for A_L measurements, 30 ±10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3E5 des	16000 +40/–30%	≈ 5600	≈ 0	RM8/ILP-3E5
3E6 des	19500 +40/–30%	≈ 6800	≈ 0	RM8/ILP-3E6

Properties of core sets under power conditions

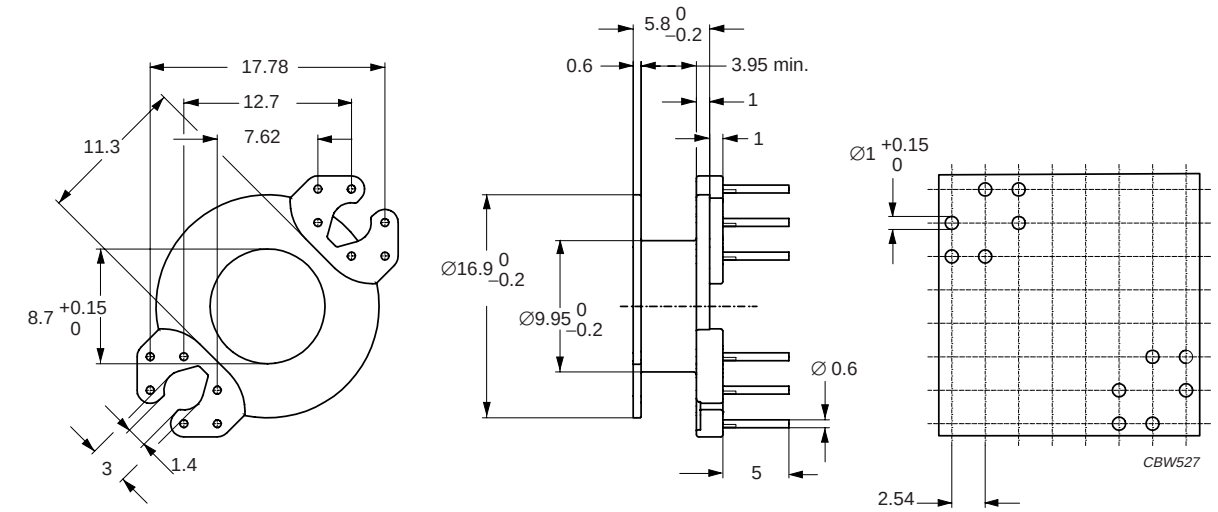
GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 25 kHz; T = 100 °C	$\hat{B}$ = 200 mT; f = 25 kHz; T = 100 °C	$\hat{B}$ = 100 mT; f = 100 kHz; T = 100 °C	$\hat{B}$ = 200 mT; f = 100 kHz; T = 100 °C	$\hat{B}$ = 50 mT; f = 400 kHz; T = 100 °C
3C90	≥320	≤ 0.23	≤ 0.24	–	–
3C94	≥320	–	≤ 0.18	≤ 0.92	–
3C96	≥340	–	≤ 0.14	≤ 0.73	≤ 0.32
3F3	≥315	–	≤ 0.21	–	≤ 0.36
3F35	≥300	–	–	–	≤ 0.2
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	$\hat{B}$ = 50 mT; f = 500 kHz; T = 100 °C	$\hat{B}$ = 100 mT; f = 500 kHz; T = 100 °C	$\hat{B}$ = 30 mT; f = 1 MHz; T = 100 °C	$\hat{B}$ = 50 mT; f = 1 MHz; T = 100 °C	$\hat{B}$ = 10 mT; f = 3 MHz; T = 100 °C
3C90	≥320	–	–	–	–	–
3C94	≥320	–	–	–	–	–
3C96	≥340	≤ 0.7	–	–	–	–
3F3	≥315	–	–	–	–	–
3F35	≥300	≤ 0.3	≤ 2.2	–	–	–
3F4	≥250	–	–	≤ 0.55	–	≤ 0.9
3F45	≥250	–	–	≤ 0.37	≤ 0.93	≤ 0.65

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



Dimensions in mm.

Fig.2 Coil former for RM8/ILP; 12 pins.

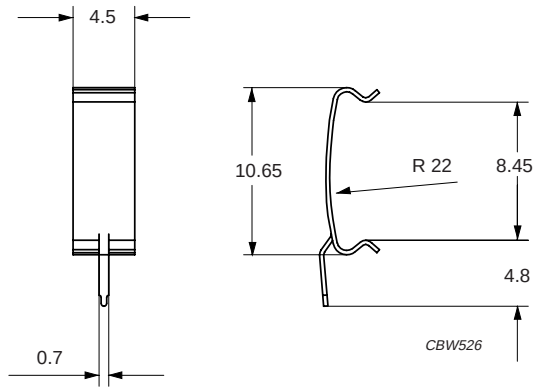
Winding data for RM8/ILP coil former

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

MOUNTING PARTS

General data

ITEM	SPECIFICATION
Clamping force	≈15 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-RM8/ILP



Dimensions in mm.

Fig.3 Mounting clip for 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
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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.