DATA SHEET

RM8/I
RM cores and accessories

Product specification
Supersedes data of January 1999
File under Ferrite Ceramics, MA01

2000 Apr 20

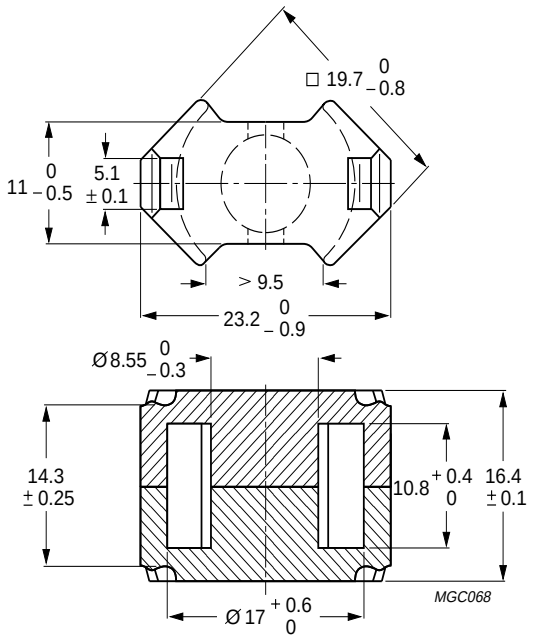
Philips
Components

PHILIPS

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
Σ(l/A)	core factor (C1)	0.604	mm^{-1}
V_e	effective volume	2440	mm^3
l_e	effective length	38.4	mm
A_e	effective area	63.0	mm^2
A_{min}	minimum area	55.4	mm^2
m	mass of set	≈12.0	g



Dimensions in mm.

Fig.1 RM8/I core set.

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
3C81	100 ±3%	≈50	≈1100	RM8/I-3C81-E100
	160 ±3%	≈77	≈550	RM8/I-3C81-A160
	250 ±3%	≈120	≈300	RM8/I-3C81-A250
	315 ±3%	≈151	≈250	RM8/I-3C81-A315
	400 ±3%	≈192	≈180	RM8/I-3C81-A400
	3400 ±25%	≈1630	≈0	RM8/I-3C81
3C90	100 ±3%	≈50	≈1100	RM8/I-3C90-A100
	160 ±3%	≈77	≈550	RM8/I-3C90-A160
	250 ±3%	≈120	≈300	RM8/I-3C90-A250
	315 ±3%	≈151	≈250	RM8/I-3C90-A315
	400 ±3%	≈192	≈180	RM8/I-3C90-A400
	3600 ±25%	≈1730	≈0	RM8/I-3C90
3C91 prot	3400 ±25%	≈1630	≈0	RM8/I-3C91

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C94 des	100 ±3%	≈50	≈1100	RM8/I-3C94-A100
	160 ±3%	≈77	≈550	RM8/I-3C94-A160
	250 ±3%	≈120	≈300	RM8/I-3C94-A250
	315 ±3%	≈151	≈250	RM8/I-3C94-A315
	400 ±3%	≈192	≈180	RM8/I-3C94-A400
	3600 ±25%	≈1730	≈0	RM8/I-3C94
3C96 prot	3250 ±25%	≈1560	≈0	RM8/I-3C96
3D3 des	250 ±3%	≈120	≈300	RM8/I-3D3-A250
	315 ±5%	≈151	≈250	RM8/I-3D3-A315
	400 ±5%	≈192	≈180	RM8/I-3D3-A400
	1400 ±25%	≈675	≈0	RM8/I-3D3
3F3	100 ±3%	≈50	≈1100	RM8/I-3F3-A100
	160 ±3%	≈77	≈550	RM8/I-3F3-A160
	250 ±3%	≈120	≈300	RM8/I-3F3-A250
	315 ±3%	≈151	≈250	RM8/I-3F3-A315
	400 ±3%	≈192	≈180	RM8/I-3F3-A400
	3000 ±25%	≈1440	≈0	RM8/I-3F3
3F35 prot	2400 ±25%	≈1150	≈0	RM8/I-3F35
3F4 des	100 ±3%	≈50	≈1100	RM8/I-3F4-A100
	160 ±3%	≈77	≈550	RM8/I-3F4-A160
	250 ±3%	≈120	≈300	RM8/I-3F4-A250
	315 ±3%	≈151	≈250	RM8/I-3F4-A315
	400 ±3%	≈192	≈180	RM8/I-3F4-A400
	1700 ±25%	≈820	≈0	RM8/I-3F4
3H3 des	400 ±3%	≈192	≈180	RM8/I-3H3-A400
	630 ±5%	≈302	≈115	RM8/I-3H3-A630
	1000 ±10%	≈480	≈70	RM8/I-3H3-A1000
	3250 ±25%	≈1560	≈0	RM8/I-3H3

Core sets of high permeability grades

Clamping force for A_L measurements, 30 ±10 N.

GRADE	A_L (nH)	μ_e	TYPE NUMBER
3E1 sup	5800 ±25%	≈2800	RM8/I-3E1
3E27	8000 ±25%	≈3800	RM8/I-3E27
3E4 sup	8000 +40/–30%	≈3800	RM8/I-3E4
3E5	12500 +40/–30%	≈6000	RM8/I-3E5
3E6	15500 +40/–30%	≈7450	RM8/I-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
3C81	≥315	≤0.56	–	–	≈0.17
3C90	≥320	≤0.30	≤0.31	–	–
3C91	≥315	–	≈0.25	≈1.5	–
3C94	≥320	–	≤0.23	≈1.1	≈0.51
3C96	≥320	–	≈0.16	≈0.8	≈0.35
3F3	≥315	–	≤0.27	–	≤0.47
3F35	≥315	–	–	–	≈0.25
3F4	≥250	–	–	–	–

Properties of core sets under power conditions (continued)

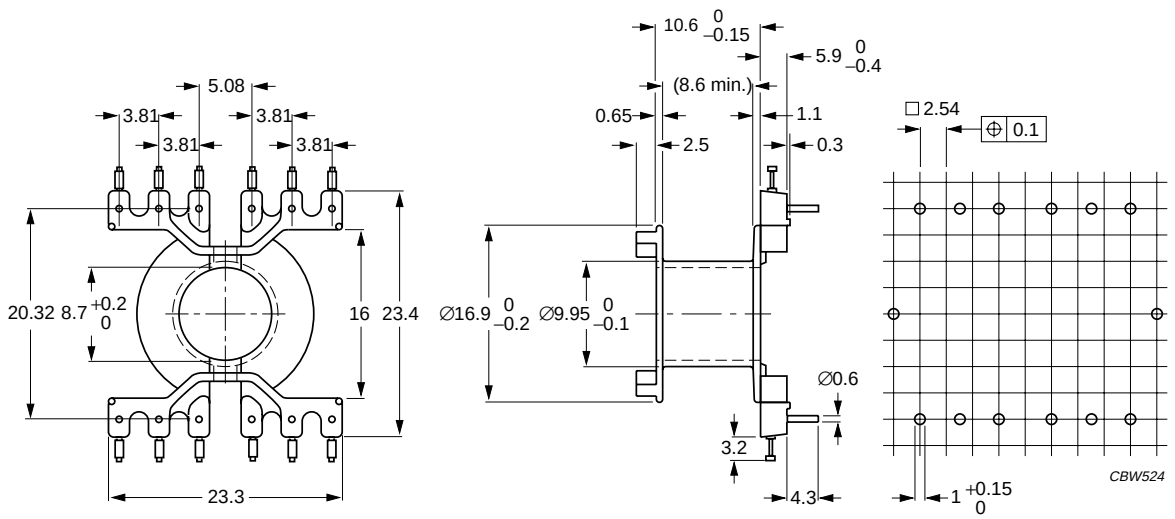
GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 25 kHz; T = 100 °C	f = 500 kHz; $\hat{B}$ = 50 mT; T = 100 °C	f = 500 kHz; $\hat{B}$ = 100 mT; T = 100 °C	f = 1 MHz; $\hat{B}$ = 30 mT; T = 100 °C	f = 3 MHz; $\hat{B}$ = 10 mT; T = 100 °C
3C81	≥315	–	–	–	–
3C90	≥320	–	–	–	–
3C91	≥315	–	–	–	–
3C94	≥320	–	–	–	–
3C96	≥320	–	–	–	–
3F3	≥315	–	–	–	–
3F35	≥315	≈0.4	≈3.0	–	–
3F4	≥250	–	–	≤0.49	≤0.78

COIL FORMER

General data

For the information on another coil former suitable for RM8/I, see *"Data sheet: RM8"*.

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-lead alloy (SnPb) 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 RM8/I coil former (DIL).

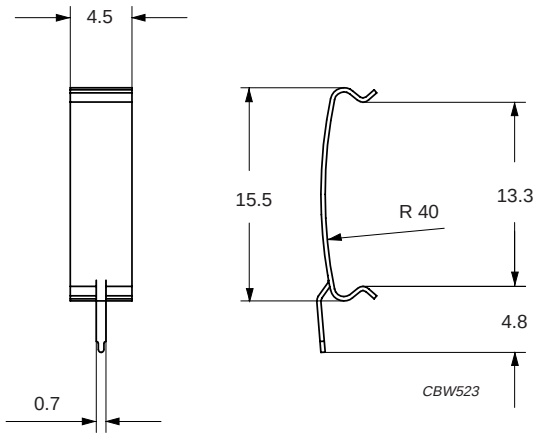
Winding data for RM8/I coil former (DIL)

NUMBER OF SECTIONS	AVERAGE LENGTH OF TURN (mm)	WINDING AREA (mm^2)	WINDING WIDTH (mm)	TYPE NUMBER
1	42	30.9	8.6	CPV-RM8/I-1S-12PD

MOUNTING PARTS

General data

ITEM	SPECIFICATION
Clamping force	≈15 N
Clip material	stainless steel
Clip plating	tin-lead alloy (SnPb)
Solderability	*"IEC 60068-2-20"*, Part 2, Test Ta, method 1
Type number	CLI/P-RM8/I

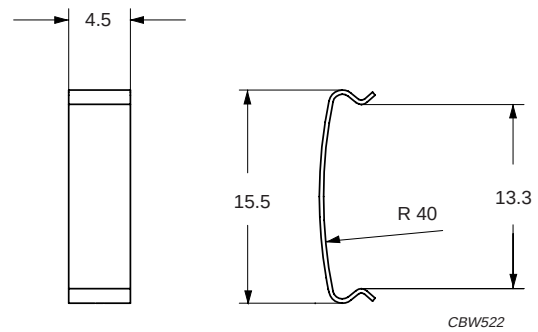


Dimensions in mm.

Fig.3 Mounting clip with earth pin for RM8/I.

General data

ITEM	SPECIFICATION
Clamping force	≈15 N
Clip material	stainless steel
Type number	CLI-RM8/I



Dimensions in mm.

Fig.4 Mounting clip without earth pin for RM8/I.

DATA SHEET STATUS DEFINITIONS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS
Preliminary specification	Development	This data sheet contains preliminary data. Philips Components 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. Philips Components 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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