DATA SHEET

RM12/I
RM cores and accessories

Product specification
Supersedes data of November 1997
File under Ferrite Ceramics, MA01

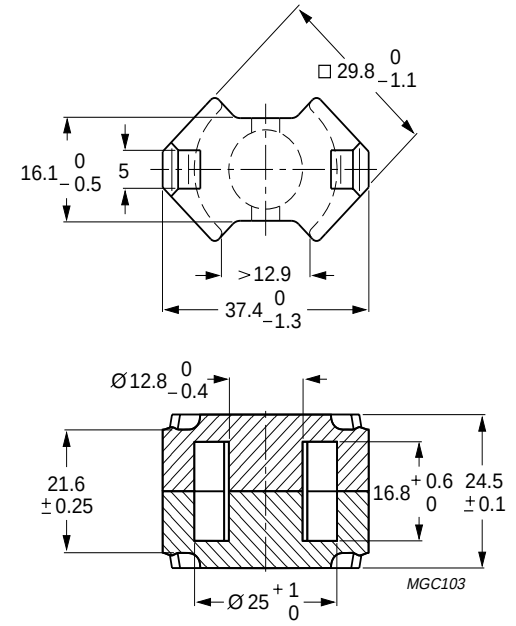
1999 Dec 23

Philips Components

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
Σ(l/A)	core factor (C1)	0.388	mm^{-1}
V_e	effective volume	8340	mm^3
l_e	effective length	56.6	mm
A_e	effective area	146	mm^2
A_{min}	minimum area	125	mm^2
m	mass of set	≈45	g



Dimensions in mm.

Fig.1 RM12/I core set.

Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 70 ±20 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	160 ±3%	≈49	≈1400	RM12/I-3C90-A160
	250 ±3%	≈77	≈800	RM12/I-3C90-A250
	315 ±5%	≈97	≈550	RM12/I-3C90-A315
	400 ±5%	≈123	≈450	RM12/I-3C90-A400
	630 ±5%	≈196	≈300	RM12/I-3C90-A630
	6200 ±25%	≈1910	≈0	RM12/I-3C90
3C94 des	160 ±3%	≈49	≈1400	RM12/I-3C94-A160
	250 ±3%	≈77	≈800	RM12/I-3C94-A250
	315 ±5%	≈97	≈550	RM12/I-3C94-A315
	400 ±5%	≈123	≈450	RM12/I-3C94-A400
	630 ±5%	≈196	≈300	RM12/I-3C94-A630
	6200 ±25%	≈1910	≈0	RM12/I-3C94
3C96 prot	5500 ±25%	≈1510	≈0	RM12/I-3C96

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3F3	160 ±3%	≈49	≈1400	RM12/I-3F3-A160
	250 ±3%	≈77	≈800	RM12/I-3F3-A250
	315 ±5%	≈97	≈550	RM12/I-3F3-A315
	400 ±5%	≈123	≈450	RM12/I-3F3-A400
	630 ±5%	≈196	≈300	RM12/I-3F3-A630
	5050 ±25%	≈1560	≈0	RM12/I-3F3

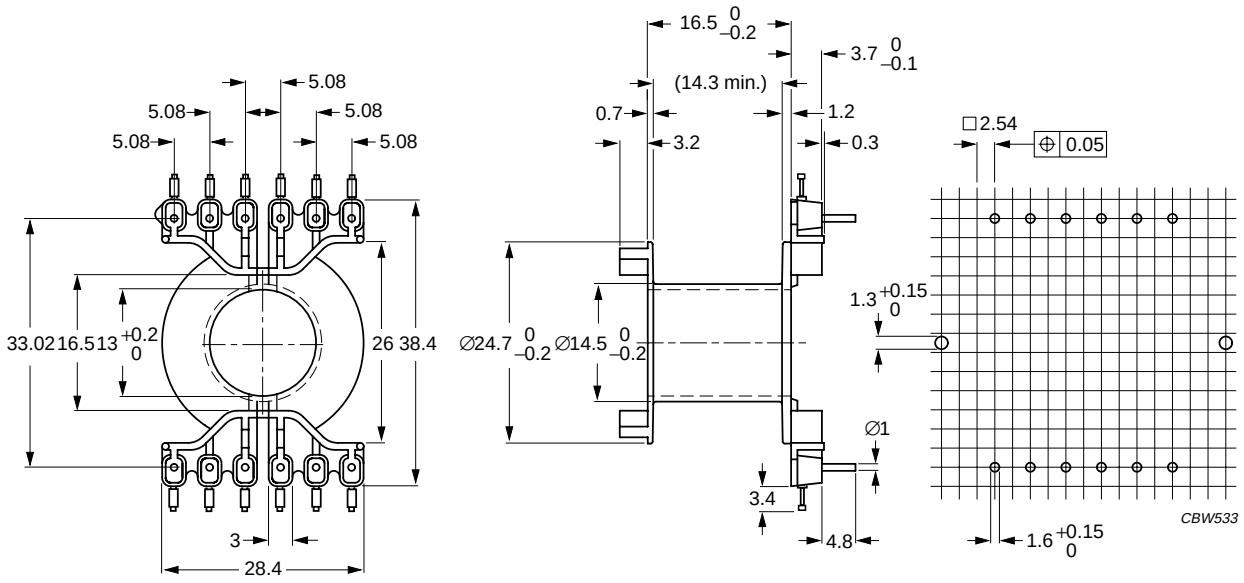
Properties of core sets under power conditions

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	≥315	≤1.00	≤1.06	–	–
3C94	≥315	–	≤0.8	≈3.5	≈1.8
3C96	≥320	–	≈0.55	≈2.5	≈1.3
3F3	≥315	–	≤0.92	–	≤1.60

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
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 RM12/I coil former (DIL).

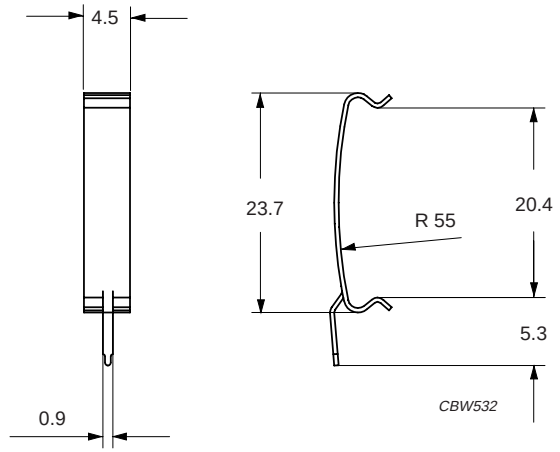
Winding data for RM12/I coil former (DIL)

NUMBER OF SECTIONS	AVERAGE LENGTH OF TURN (mm)	WINDING AREA (mm^2)	WINDING WIDTH (mm)	TYPE NUMBER
1	61	75.0	14.3	CPV-RM12/I-1S-12PD

MOUNTING PARTS

General data

ITEM	SPECIFICATION
Clamping force	≈35 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-RM12/I



Dimensions in mm.

Fig.3 Mounting clip for RM12/I.