

DATA SHEET

RM10/I RM cores and accessories

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

1999 Dec 23

RM cores and accessories

RM10/I

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.462	mm ⁻¹
V _e	effective volume	4310	mm ³
l _e	effective length	44.6	mm
A _e	effective area	96.6	mm ²
A _{min}	minimum area	89.1	mm ²
m	mass of set	≈22	g

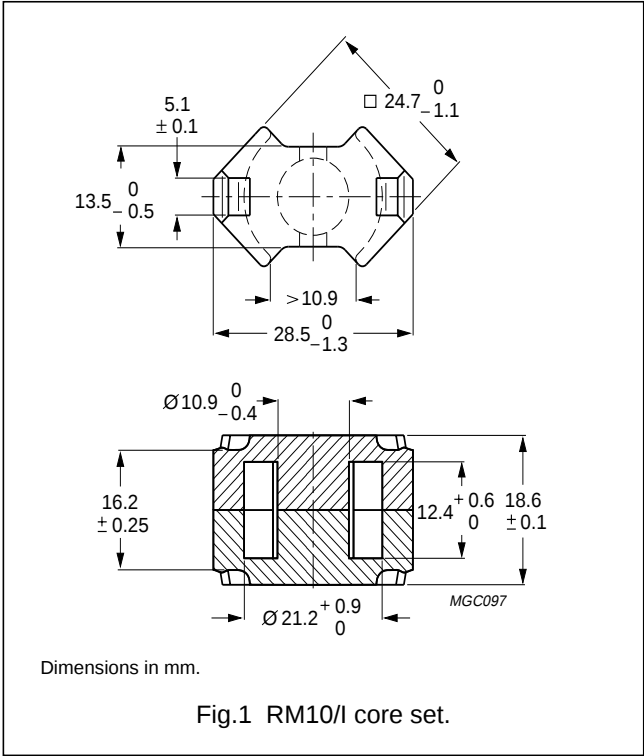


Fig.1 RM10/I core set.

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
3C81	160 ±3%	≈59	≈900	RM10/I-3C81-E160
	250 ±3%	≈92	≈500	RM10/I-3C81-A250
	315 ±3%	≈116	≈400	RM10/I-3C81-A315
	400 ±3%	≈147	≈300	RM10/I-3C81-A400
	630 ±3%	≈232	≈150	RM10/I-3C81-A630
	5400 ±25%	≈2000	≈0	RM10/I-3C81
3C90	160 ±3%	≈59	≈900	RM10/I-3C90-A160
	250 ±3%	≈92	≈500	RM10/I-3C90-A250
	315 ±3%	≈116	≈400	RM10/I-3C90-A315
	400 ±3%	≈147	≈300	RM10/I-3C90-A400
	630 ±3%	≈232	≈150	RM10/I-3C90-A630
	4950 ±25%	≈1820	≈0	RM10/I-3C90
3C91 prot	5400 ±25%	≈2000	≈0	RM10/I-3C91
3C94 des	160 ±3%	≈59	≈900	RM10/I-3C94-A160
	250 ±3%	≈92	≈500	RM10/I-3C94-A250
	315 ±3%	≈116	≈400	RM10/I-3C94-A315
	400 ±3%	≈147	≈300	RM10/I-3C94-A400
	630 ±3%	≈232	≈150	RM10/I-3C94-A630
	4950 ±25%	≈1820	≈0	RM10/I-3C94

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GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C96 prot	$4400 \pm 25\%$	≈ 1820	≈ 0	RM10/I-3C96
3D3	$315 \pm 3\%$	≈ 116	≈ 400	RM10/I-3D3-A315
	$400 \pm 5\%$	≈ 147	≈ 300	RM10/I-3D3-A400
	$630 \pm 8\%$	≈ 232	≈ 150	RM10/I-3D3-A630
	$1900 \pm 25\%$	≈ 700	≈ 0	RM10/I-3D3
3F3 des	$160 \pm 3\%$	≈ 59	≈ 900	RM10/I-3F3-A160
	$250 \pm 3\%$	≈ 92	≈ 500	RM10/I-3F3-A250
	$315 \pm 3\%$	≈ 116	≈ 400	RM10/I-3F3-A315
	$400 \pm 3\%$	≈ 147	≈ 300	RM10/I-3F3-A400
	$630 \pm 3\%$	≈ 232	≈ 150	RM10/I-3F3-A630
	$4050 \pm 25\%$	≈ 1490	≈ 0	RM10/I-3F3
3H3 sup	$400 \pm 3\%$	≈ 147	≈ 300	RM10/I-3H3-A400
	$630 \pm 3\%$	≈ 232	≈ 150	RM10/I-3H3-A630
	$1000 \pm 10\%$	≈ 368	≈ 120	RM10/I-3H3-A1000
	$4400 \pm 25\%$	≈ 1620	≈ 0	RM10/I-3H3

Core sets of high permeability grades

Clamping force for AL measurements, 60 ± 20 N.

GRADE	A_L^0 (nH)	μ_e	TYPE NUMBER
3E1 sup	$8000 \pm 25\%$	≈ 2900	RM10/I-3E1
3E27	$10700 \pm 25\%$	≈ 3880	RM10/I-3E27
3E4 sup	$11000 +40/-30\%$	≈ 4040	RM10/I-3E4
3E5	$16000 +40/-30\%$	≈ 5900	RM10/I-3E5

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	≤ 1.0	—	—	—
3C90	≥ 320	≤ 0.52	≤ 0.55	—	—
3C91	≥ 315	—	≈ 0.50	≈ 2.6	—
3C94	≥ 320	—	≤ 0.41	≈ 1.9	≈ 0.9
3C96	≥ 320	—	≈ 0.3	≈ 1.4	≈ 0.65
3F3	≥ 315	—	≤ 0.48	—	≤ 0.82

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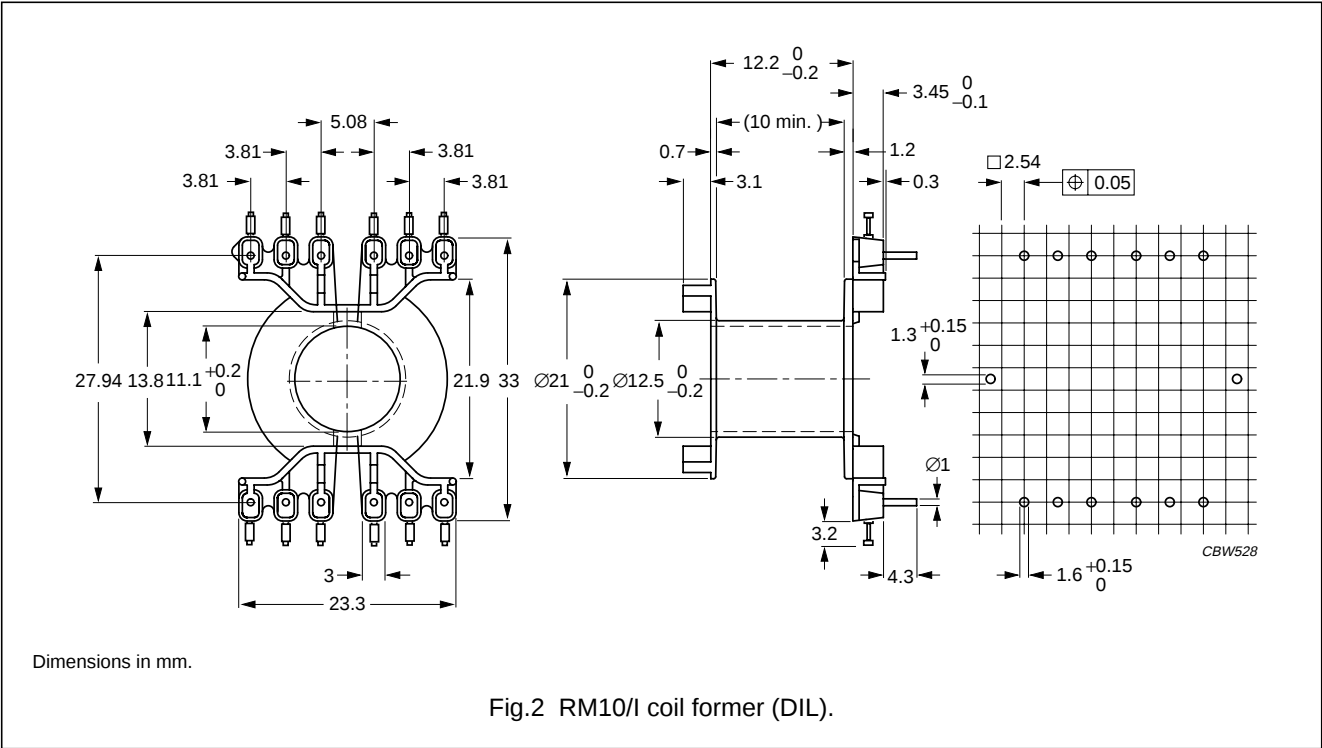
RM10/I

COIL FORMER

General data

For the information on another coil former suitable for RM10/I, see “Data sheet: RM10”.

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



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	44.2	10.0	CPV-RM10/I-1S-12PD

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MOUNTING PARTS

General data

ITEM	SPECIFICATION
Clamping force	≈30 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-RM10/I

