

DATA SHEET

RM5/I RM cores and accessories

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

1999 Dec 23

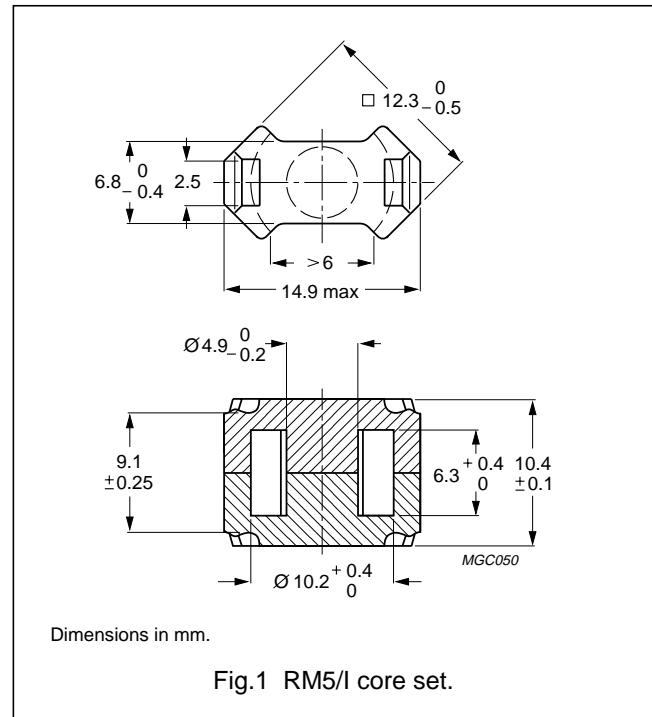
RM cores and accessories

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CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	0.935	mm^{-1}
V_e	effective volume	574	mm^3
l_e	effective length	23.2	mm
A_e	effective area	24.8	mm^2
A_{\min}	minimum area	18.1	mm^2
m	mass of set	≈ 3.3	g





Core sets for general purpose

Clamping force for A_L measurements, 12 ± 5 N.

GRADE	A (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C90	$63 \pm 3\%$	≈ 47	≈ 640	RM5/I-3C90-A63
	$100 \pm 3\%$	≈ 74	≈ 300	RM5/I-3C90-A100
	$160 \pm 3\%$	≈ 119	≈ 200	RM5/I-3C90-A160
	$250 \pm 3\%$	≈ 186	≈ 130	RM5/I-3C90-A250
	$315 \pm 5\%$	≈ 234	≈ 100	RM5/I-3C90-A315
	$2000 \pm 25\%$	≈ 1490	≈ 0	RM5/I-3C90
3C94 des	$63 \pm 3\%$	≈ 47	≈ 640	RM5/I-3C94-A63
	$100 \pm 3\%$	≈ 74	≈ 300	RM5/I-3C94-A100
	$160 \pm 3\%$	≈ 119	≈ 200	RM5/I-3C94-A160
	$250 \pm 3\%$	≈ 186	≈ 130	RM5/I-3C94-A250
	$315 \pm 5\%$	≈ 234	≈ 100	RM5/I-3C94-A315
	$2000 \pm 25\%$	≈ 1490	≈ 0	RM5/I-3C94
3C96 prot	$1800 \pm 25\%$	≈ 1340	≈ 0	RM5/I-3C96
3F3	$63 \pm 3\%$	≈ 47	≈ 640	RM5/I-3F3-A63
	$100 \pm 3\%$	≈ 74	≈ 300	RM5/I-3F3-A100
	$160 \pm 3\%$	≈ 119	≈ 200	RM5/I-3F3-A160
	$250 \pm 3\%$	≈ 186	≈ 130	RM5/I-3F3-A250
	$315 \pm 5\%$	≈ 234	≈ 100	RM5/I-3F3-A315
	$1700 \pm 25\%$	≈ 1270	≈ 0	RM5/I-3F3



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GRADE	A (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3F35 	1400 $\pm 25\%$	≈ 1050	≈ 0	RM5/I-3F35
3F4 	100 $\pm 3\%$	≈ 74	≈ 300	RM5/I-3F4-A100
	160 $\pm 3\%$	≈ 119	≈ 200	RM5/I-3F4-A160
	250 $\pm 3\%$	≈ 186	≈ 130	RM5/I-3F4-A250
	1000 $\pm 25\%$	≈ 750	≈ 0	RM5/I-3F4

Core sets of high permeability grades

Clamping force for A_L measurements, 12 ± 5 N.

GRADE	A_L (nH)	μ_e	TYPE NUMBER
3E1 	3150 $\pm 25\%$	≈ 2350	RM5/I-3E1
3E4 	4500 +40/-30%	≈ 3350	RM5/I-3E4
3E27	4975 $\pm 25\%$	≈ 3700	RM5/I-3E27
3E5	6700 +40/-30%	≈ 4980	RM5/I-3E5
3E6	8500 +40/-30%	≈ 6300	RM5/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
3C90	≥ 320	≤ 0.07	≤ 0.08	–	–
3C94	≥ 320	–	≤ 0.055	≈ 0.25	≤ 0.12
3C96	≥ 320	–	≈ 0.04	≈ 0.18	≈ 0.09
3F3	≥ 315	–	≤ 0.08	–	≤ 0.11
3F35	≥ 300	–	–	–	≈ 0.06
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	≥ 320	–	–	–	–
3F3	≥ 315	–	–	–	–
3F35	≥ 300	≈ 0.09	≈ 0.7	–	–
3F4	≥ 250	–	–	≤ 0.11	≤ 0.20

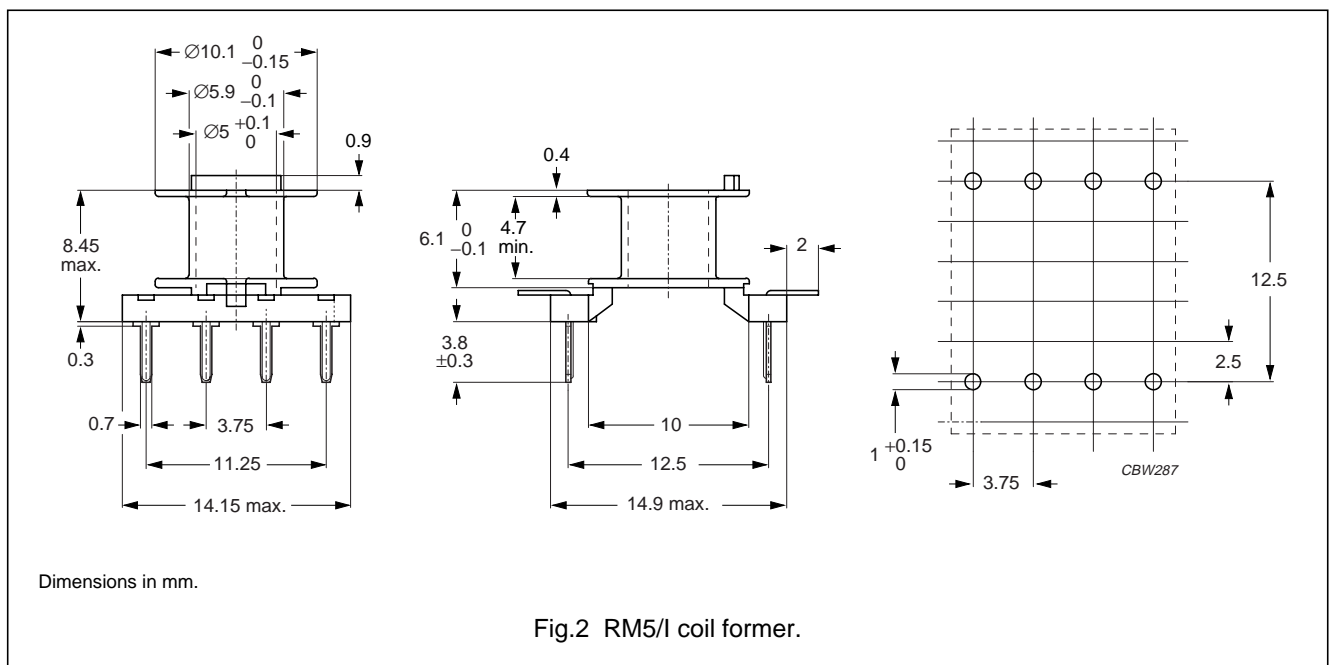
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COIL FORMERS

General data

PARAMETER	SPECIFICATION
Coil former material	liquid crystal polymer (LCP), glass-reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E83005(M)
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 RM5/I coil former

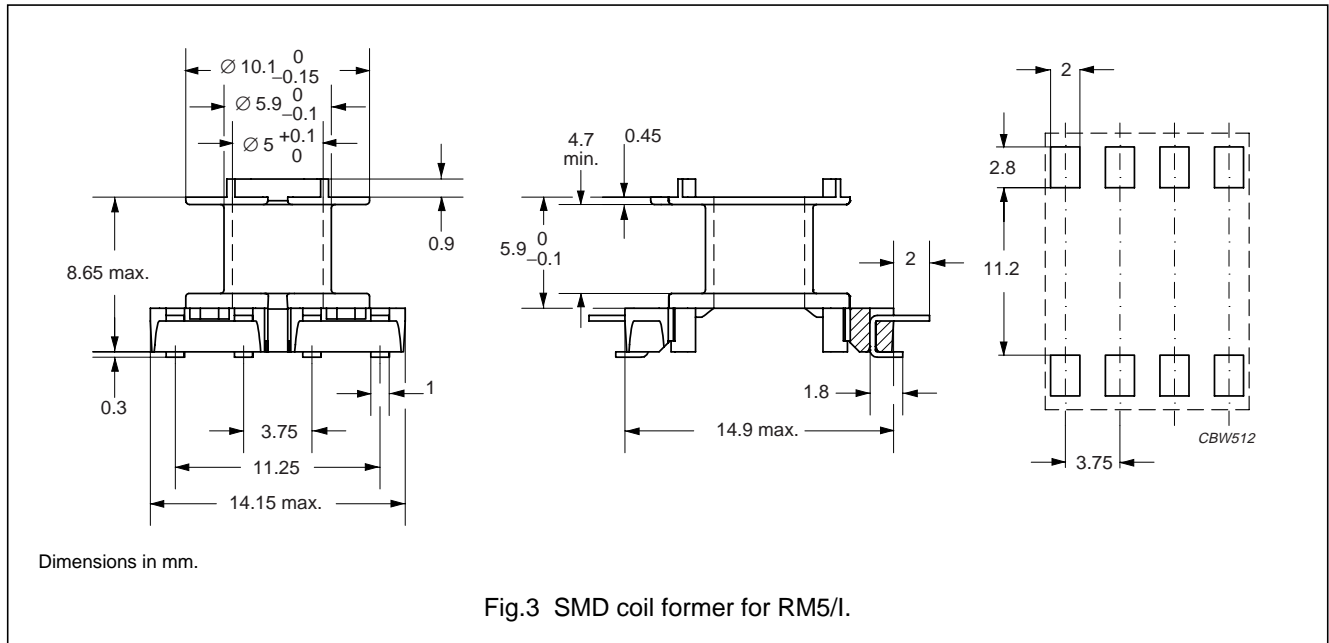
NUMBER OF SECTIONS	WINDING AREA (mm ²)	WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	9.8	4.7	24.9	CPV-RM5-1S-8PD

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General data SMD coil former

PARAMETER	SPECIFICATION
Coil former material	phenolformaldehyde (PF), glass-reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E41429 (M)
Solder pad material	copper-clad steel, 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 RM5/I coil former (SMD)

NUMBER OF SECTIONS	NUMBER OF SOLDER PADS	WINDING AREA (mm ²)	WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	8	9.5	4.7	24.9	CSV5-RM5-1S-8P

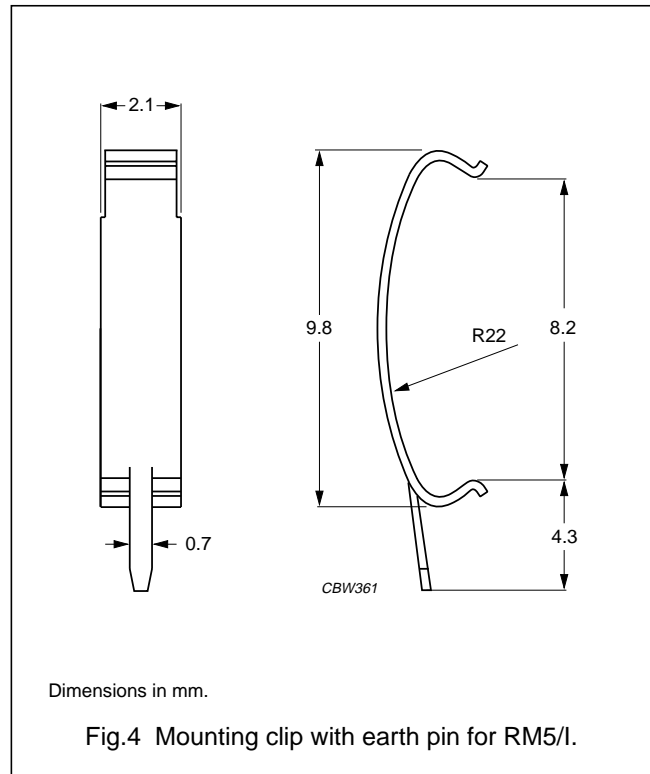
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MOUNTING PARTS

General data mounting clip with earth pin

ITEM	SPECIFICATION
Clamping force	≈6 N
Clip material	stainless steel (CrNi)
Clip plating	tin-lead alloy (SnPb)
Solderability	"IEC 60068-2-20", Part 2, Test Ta, method 1
Type number	CLI/P-RM4/5/I



General data mounting clip without earth pin

ITEM	SPECIFICATION
Clamping force	≈5 N
Clip material	stainless steel (CrNi)
Type number	CLI-RM4/5/I

