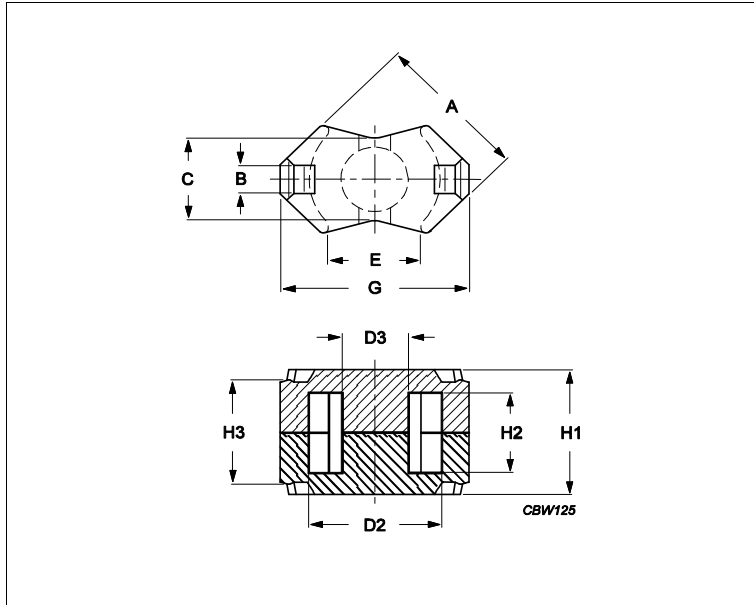


Core **RM6S/I**



Effective parameters			
	Parameter	Value	Unit
$\Sigma(I/A)$	core factor (C1)	0.784	mm ⁻¹
Ve	effective volume	1090	mm ³
Le	effective length	29.2	mm
Ae	effective area	37	mm ²
Amin	minimum area	31.2	mm ²
m	RM6S/I	≈ 5.5	g/set

Dimensions for product: RM6S/I						
	Nom	Tol +	Tol -	Max	Min	Unit
A	14.70	0.00	0.60	14.70	14.10	mm
B	2.90	0.10	0.10	3.00	2.80	mm
C	8.20	0.00	0.40	8.20	7.80	mm
D2	12.40	0.50	0.00	12.90	12.40	mm
D3	6.40	0.00	0.20	6.40	6.20	mm
E					8.40	mm
G	17.90	0.00	0.70	17.90	17.20	mm
H1	12.40	0.10	0.10	12.50	12.30	mm
H2	8.00	0.40	0.00	8.40	8.00	mm
H3	10.35	0.25	0.25	10.60	10.10	mm

Inductance factor				
Material	Value	Tol +	Tol -	Unit
3C94	2600	25%	25%	nH/turns ²
3C95	3000	25%	25%	nH/turns ²
3C96	2350	25%	25%	nH/turns ²
3D3	1050	25%	25%	nH/turns ²
3F36	1700	25%	25%	nH/turns ²
3F46	1100	25%	25%	nH/turns ²
3H3	2350	25%	25%	nH/turns ²

Power loss: 3C94				
Measuring conditions			Max	Unit
100 kHz	200 mT	100 °C	0.540	W/set

Core **RM6S/I**

Power loss: 3C95				
Measuring conditions			Max	Unit
100 kHz	200 mT	100 °C	0.520	W/set
100 kHz	200 mT	25 °C	0.570	W/set
Power loss: 3C96				
Measuring conditions			Max	Unit
100 kHz	200 mT	100 °C	0.490	W/set
400 kHz	50 mT	100 °C	0.200	W/set
Power loss: 3F36				
Measuring conditions			Max	Unit
500 kHz	50 mT	100 °C	0.160	W/set
500 kHz	100 mT	100 °C	1.300	W/set
Power loss: 3F46				
Measuring conditions			Max	Unit
1000 kHz	50 mT	100 °C	0.440	W/set
3000 kHz	10 mT	100 °C	0.180	W/set

Bsat					
Measuring conditions			Material	Min	Unit
25 kHz	250 A/m	100 °C	3C94	320	mT
25 kHz	250 A/m	100 °C	3C95	330	mT
25 kHz	250 A/m	100 °C	3C96	340	mT
25 kHz	250 A/m	100 °C	3F36	340	mT
25 kHz	250 A/m	100 °C	3F46	330	mT

Accessories		
Ordering name	Description	Ordering code
CLI/P-RM6/I	Clip, with ground pin	432202134301
CLI-RM6/I	Clip	432202134951
CPV-RM6S/I-1S-8PD	Coil former, termoplastic, vertical	432202134042
CPV-RM6S/I-1S-8PD-TZ	Coil former, termoplastic, vertical	432202106641
CSV-RM6S/R-1S-4P-IZ	Coil former, termoset, vertical	432202106891
CSV-RM6S/R-2S-4P-IZ	Coil former, termoset, vertical	432202106901
CSV-RM6S-1S-4P-TZ	Coil former, termoset, vertical	432202106241
CSV-RM6S-1S-6P-G	Coil former, termoset, vertical	432202100991
CSV-RM6S-1S-6P-TZ	Coil former, termoset, vertical	432202106261
CSV-RM6S-1S-8P	Coil former, termoset, vertical	432202100411
CSV-RM6S-2S-4P-C	Coil former, termoset, vertical	432202107401
CSV-RM6S-2S-6P	Coil former, termoset, vertical	432202134601
CSV-S-RM6S-1S-8P	Coil former, termoset, vertical, SMD	432202102901
CSV-S-RM6S-1S-8P-B	Coil former, termoset, vertical, SMD	432202103411
CSV-S-RM6S-1S-8P-T	Coil former, termoset, vertical, SMD	432202103991

DATA SHEET

RM6S/I

RM cores and accessories

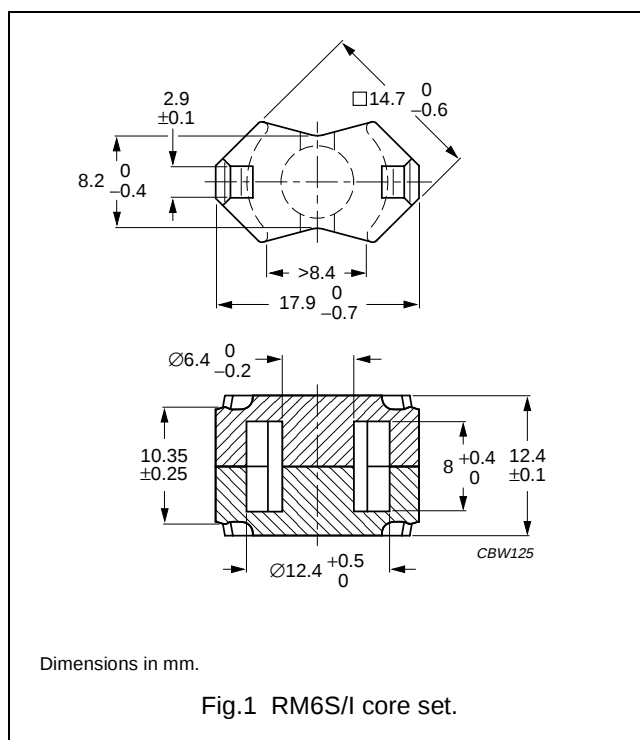
Supersedes data of November 2000

2003 July 24

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(I/A)$	core factor (C1)	0.784	mm ⁻¹
V_e	effective volume	1090	mm ³
l_e	effective length	29.2	mm
A_e	effective area	37.0	mm ²
$A_{\min}$	minimum area	31.2	mm ²
m	mass of set	≈ 5.5	g



Core sets for filter applications

Clamping force for A_1 measurements, 20 ± 10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3D3 des	160 $\pm 3\%$	≈ 100	≈ 300	RM6S/I-3D3-A160
	250 $\pm 5\%$	≈ 156	≈ 170	RM6S/I-3D3-A250
	315 $\pm 8\%$	≈ 197	≈ 120	RM6S/I-3D3-A315
	1050 $\pm 25\%$	≈ 655	≈ 0	RM6S/I-3D3
3H3 des	315 $\pm 3\%$	≈ 198	≈ 150	RM6S/I-3H3-A315
	400 $\pm 3\%$	≈ 251	≈ 110	RM6S/I-3H3-A400
	630 $\pm 5\%$	≈ 396	≈ 65	RM6S/I-3H3-A630
	2350 $\pm 25\%$	≈ 1470	≈ 0	RM6S/I-3H3

Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 20 ± 10 N.

GRADE	A _L (nH)	μ _e	AIR GAP (μm)	TYPE NUMBER
3C81	63 ±3%	≈ 40	≈ 1080	RM6S/I-3C81-E63
	100 ±3%	≈ 63	≈ 600	RM6S/I-3C81-A100
	160 ±3%	≈ 100	≈ 340	RM6S/I-3C81-A160
	250 ±3%	≈ 157	≈ 200	RM6S/I-3C81-A250
	315 ±3%	≈ 198	≈ 150	RM6S/I-3C81-A315
	3000 ±25%	≈ 1870	≈ 0	RM6S/I-3C81

RM cores and accessories

RM6S/I

GRADE	A _L (nH)	μ _e	AIR GAP (μm)	TYPE NUMBER
3C90	63 ±3%	≈ 40	≈ 1080	RM6S/I-3C90-A63
	100 ±3%	≈ 63	≈ 600	RM6S/I-3C90-A100
	160 ±3%	≈ 100	≈ 340	RM6S/I-3C90-A160
	250 ±3%	≈ 157	≈ 200	RM6S/I-3C90-A250
	315 ±3%	≈ 198	≈ 150	RM6S/I-3C90-A315
	400 ±3%	≈ 251	≈ 110	RM6S/I-3C90-A400
	630 ±5%	≈ 396	≈ 65	RM6S/I-3C90-A630
	2600 ±25%	≈ 1630	≈ 0	RM6S/I-3C90
3C91 prot	3000 ±25%	≈ 1880	≈ 0	RM6S/I-3C91
3C94	63 ±3%	≈ 40	≈ 1080	RM6S/I-3C94-A63
	100 ±3%	≈ 63	≈ 600	RM6S/I-3C94-A100
	160 ±3%	≈ 100	≈ 340	RM6S/I-3C94-A160
	250 ±3%	≈ 157	≈ 200	RM6S/I-3C94-A250
	315 ±3%	≈ 198	≈ 150	RM6S/I-3C94-A315
	400 ±3%	≈ 251	≈ 110	RM6S/I-3C94-A400
	630 ±5%	≈ 396	≈ 65	RM6S/I-3C94-A630
	2600 ±25%	≈ 1630	≈ 0	RM6S/I-3C94
3C96 des	2350 ±25%	≈ 1470	≈ 0	RM6S/I-3C96
3F3	63 ±3%	≈ 40	≈ 1080	RM6S/I-3F3-A63
	100 ±3%	≈ 63	≈ 600	RM6S/I-3F3-A100
	160 ±3%	≈ 100	≈ 340	RM6S/I-3F3-A160
	250 ±3%	≈ 157	≈ 200	RM6S/I-3F3-A250
	315 ±3%	≈ 198	≈ 150	RM6S/I-3F3-A315
	2150 ±25%	≈ 1350	≈ 0	RM6S/I-3F3
3F35 prot	1750 ±25%	≈ 1100	≈ 0	RM6S/I-3F35
3F4 des	63 ±3%	≈ 39	≈ 1040	RM6S/I-3F4-A63
	100 ±3%	≈ 62	≈ 570	RM6S/I-3F4-A100
	160 ±3%	≈ 100	≈ 310	RM6S/I-3F4-A160
	250 ±3%	≈ 156	≈ 170	RM6S/I-3F4-A250
	315 ±3%	≈ 197	≈ 130	RM6S/I-3F4-A315
	1250 ±25%	≈ 780	≈ 0	RM6S/I-3F4

RM cores and accessories

RM6S/I

Core sets of high permeability grades

Clamping force for A_L measurements, 20 ± 10 N.

GRADE	A_L (nH)	μ_e	TYPE NUMBER
3E27	6000 $\pm 25\%$	≈ 3770	RM6S/I-3E27
3E5	8600 +40/-30%	≈ 5400	RM6S/I-3E5
3E6	11000 +40/-30%	≈ 6910	RM6S/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	≥ 320	≤ 0.25	–	–	–
3C90	≥ 320	≤ 0.13	≤ 0.14	–	–
3C91	≥ 315	–	$\leq 0.08^{(1)}$	$\leq 0.4^{(1)}$	–
3C94	≥ 320	–	≤ 0.11	≤ 0.6	–
3C96	≥ 340	–	≤ 0.08	≤ 0.4	≤ 0.2
3F3	≥ 315	–	≤ 0.14	–	≤ 0.2
3F35	≥ 315	–	–	–	≤ 0.12
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	≥ 320	–	–	–	–
3C90	≥ 320	–	–	–	–
3C91	≥ 315	–	–	–	–
3C94	≥ 320	–	–	–	–
3C96	≥ 340	≤ 0.5	–	–	–
3F3	≥ 315	–	–	–	–
3F35	≥ 315	≤ 0.16	≤ 1.3	–	–
3F4	≥ 250	–	–	≤ 0.3	≤ 0.5

Note

1. Measured at 60 °C.

RM cores and accessories

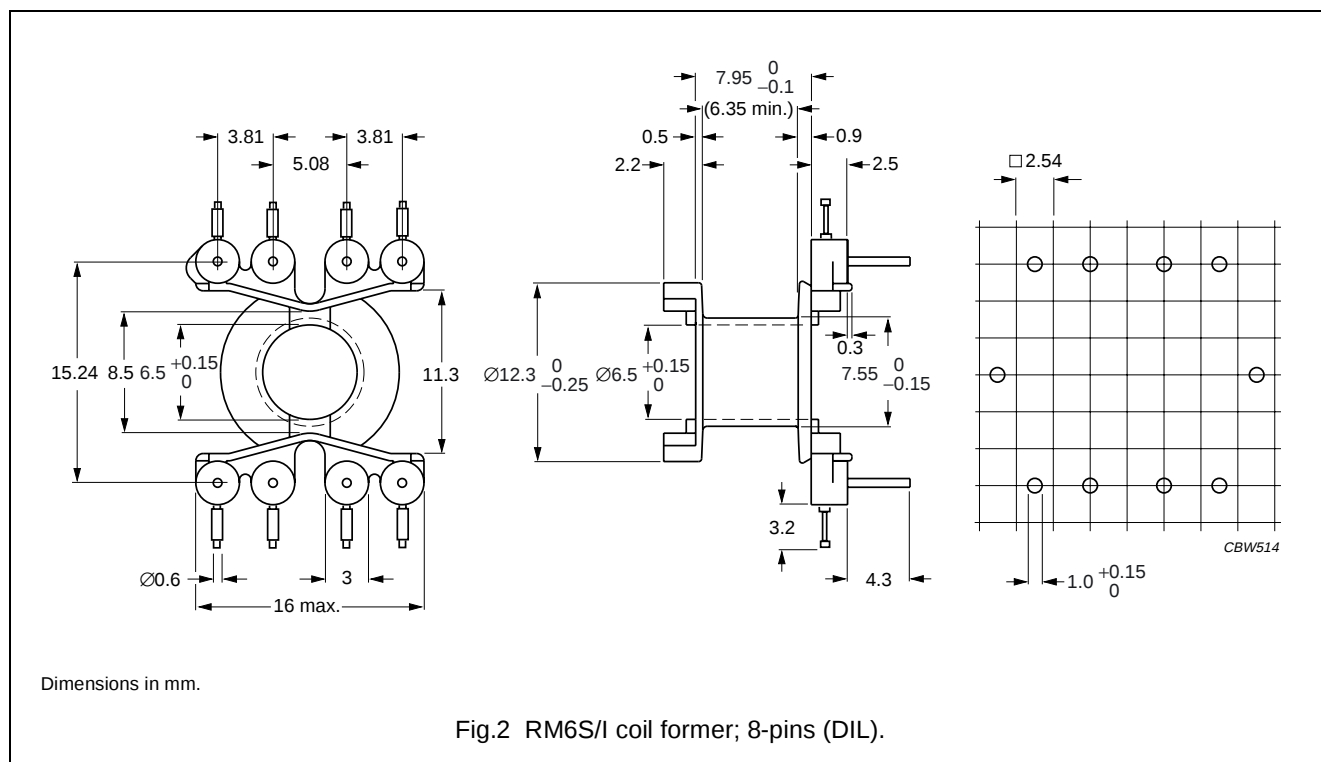
RM6S/I

COIL FORMERS

General data

For the information on other coil formers suitable for RM6S/I, see data sheet "RM6S".

PARAMETER	DESCRIPTION
Coil former material	polybutyleneterephthalate (PBT), glass-reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E45329(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 8-pins RM6S/I coil former (DIL)

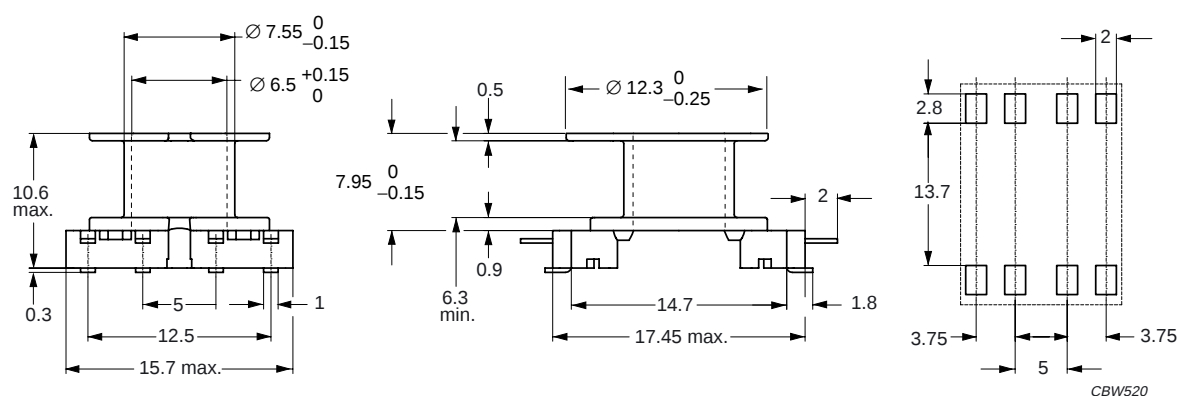
NUMBER OF SECTIONS	WINDING AREA (mm ²)	WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	15.7	6.2	31	CPV-RM6S/I-1S-8PD

RM cores and accessories

RM6S/I

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-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.3 SMD coil former for RM6S/I.

Winding data for RM6S/I coil former (SMD)

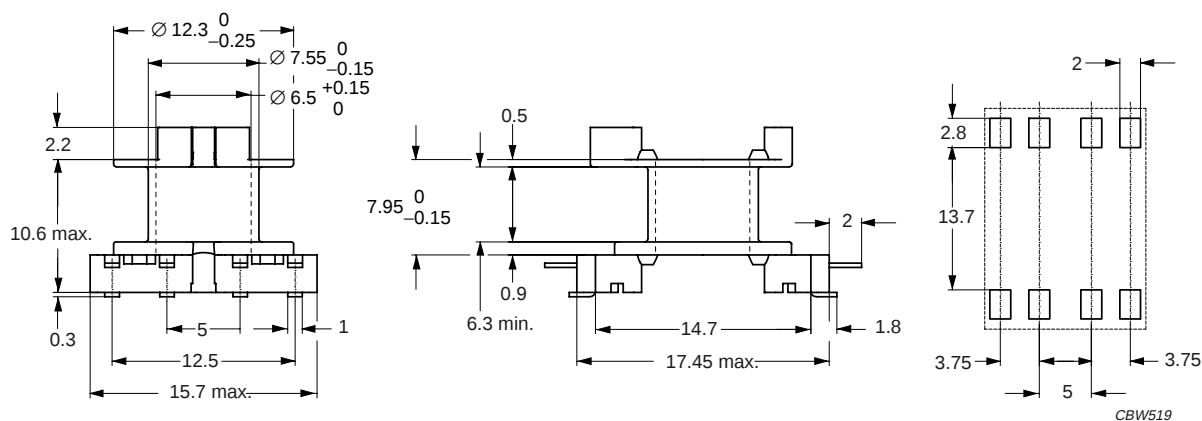
NUMBER OF SECTIONS	NUMBER OF SOLDER PADS	WINDING AREA (mm ²)	WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	8	14	6.3	31	CSV5-RM6S-1S-8P

RM cores and accessories

RM6S/I

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-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.4 SMD coil former for RM6S/I.

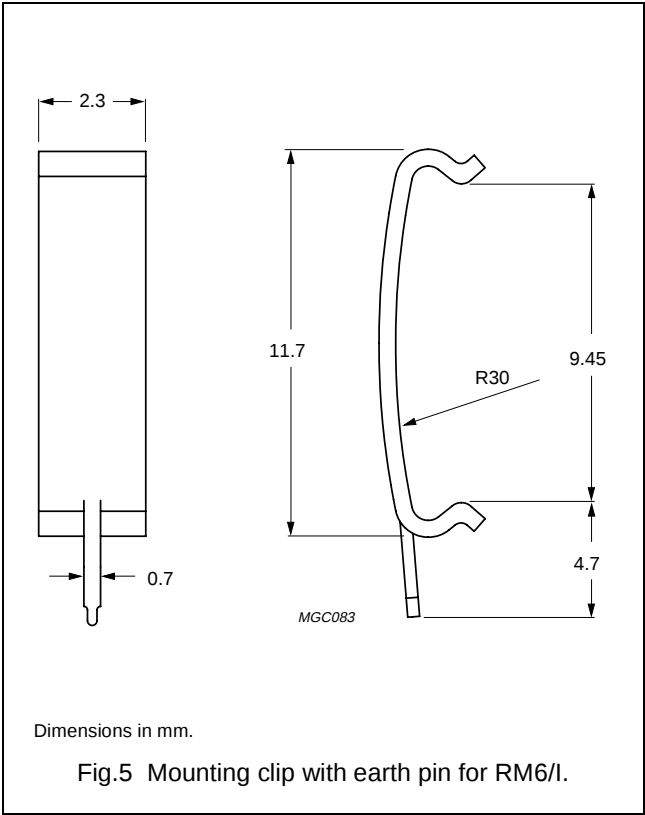
Winding data for RM6S/I coil former (SMD)

NUMBER OF SECTIONS	NUMBER OF SOLDER PADS	WINDING AREA (mm ²)	WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	8	14.2	6.3	31.4	CSV5-RM6S-1S-8P-B

MOUNTING PARTS

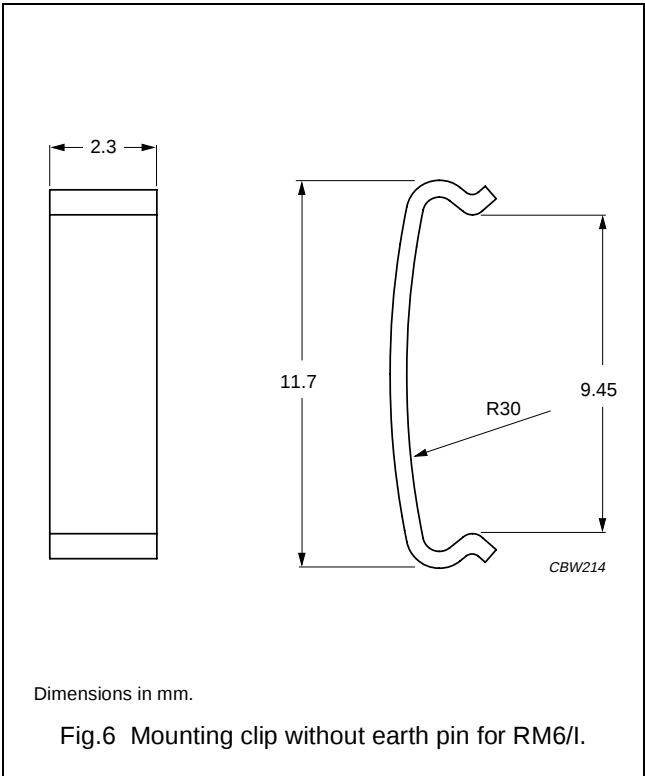
General data

ITEM	SPECIFICATION
Clamping force	≈ 10 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-RM6/I



General data mounting clip without earth pin

ITEM	SPECIFICATION
Clamping force	≈ 10 N
Clip material	stainless steel (CrNi)
Type number	CLI-RM6/I



RM cores and accessories

RM6S/I

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.

DISCLAIMER

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PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
Prototype		These are products that have been made as development samples for the purposes of technical evaluation only. The data for these types is provisional and is subject to change.
Design-in		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		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.