

DATA SHEET

RM6S/I RM cores and accessories

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

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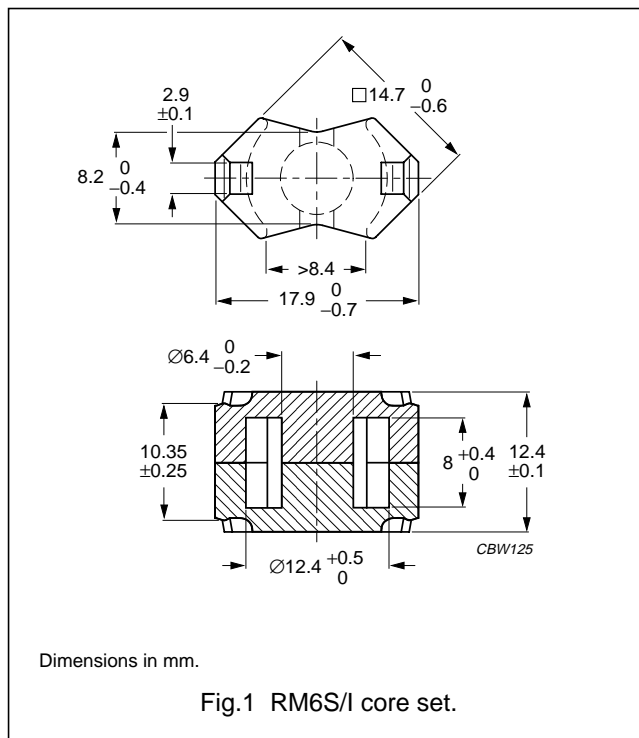
RM cores and accessories

RM6S/I

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	≈4.9	g



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%	≈39	≈950	RM6S/I-3C81-E63
	100 ±3%	≈62	≈500	RM6S/I-3C81-A100
	160 ±3%	≈100	≈300	RM6S/I-3C81-A160
	250 ±3%	≈156	≈200	RM6S/I-3C81-A250
	315 ±3%	≈197	≈150	RM6S/I-3C81-A315
	3000 ±25%	≈1870	≈0	RM6S/I-3C81
3C90	63 ±3%	≈39	≈950	RM6S/I-3C90-A63
	100 ±3%	≈62	≈500	RM6S/I-3C90-A100
	160 ±3%	≈100	≈300	RM6S/I-3C90-A160
	250 ±3%	≈156	≈200	RM6S/I-3C90-A250
	315 ±3%	≈197	≈150	RM6S/I-3C90-A315
	400 ±3%	≈250	≈120	RM6S/I-3C90-A400
	630 ±5%	≈390	≈70	RM6S/I-3C90-A630
	2600 ±25%	≈1630	≈0	RM6S/I-3C90
3C91	3000 ±25%	≈1870	≈0	RM6S/I-3C91

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GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C94 des	63 $\pm 3\%$	≈ 39	≈ 950	RM6S/I-3C94-A63
	100 $\pm 3\%$	≈ 62	≈ 500	RM6S/I-3C94-A100
	160 $\pm 3\%$	≈ 100	≈ 300	RM6S/I-3C94-A160
	250 $\pm 3\%$	≈ 156	≈ 200	RM6S/I-3C94-A250
	315 $\pm 3\%$	≈ 197	≈ 150	RM6S/I-3C94-A315
	400 $\pm 3\%$	≈ 250	≈ 120	RM6S/I-3C94-A400
	630 $\pm 5\%$	≈ 390	≈ 70	RM6S/I-3C94-A630
	2600 $\pm 25\%$	≈ 1630	≈ 0	RM6S/I-3C94
3C96 prot	2350 $\pm 3\%$	≈ 1470	≈ 950	RM6S/I-3C96
3D3 des	160 $\pm 3\%$	≈ 100	≈ 300	RM6S/I-3D3-A160
	250 $\pm 5\%$	≈ 156	≈ 200	RM6S/I-3D3-A250
	315 $\pm 8\%$	≈ 197	≈ 150	RM6S/I-3D3-A315
	1050 $\pm 25\%$	≈ 655	≈ 0	RM6S/I-3D3
3F3	63 $\pm 3\%$	≈ 39	≈ 950	RM6S/I-3F3-A63
	100 $\pm 3\%$	≈ 62	≈ 500	RM6S/I-3F3-A100
	160 $\pm 3\%$	≈ 100	≈ 300	RM6S/I-3F3-A160
	250 $\pm 3\%$	≈ 156	≈ 200	RM6S/I-3F3-A250
	315 $\pm 3\%$	≈ 197	≈ 150	RM6S/I-3F3-A315
	2150 $\pm 25\%$	≈ 1350	≈ 0	RM6S/I-3F3
3F35 prot	1750 $\pm 25\%$	≈ 1100	≈ 0	RM6S/I-3F35
3F4 des	63 $\pm 3\%$	≈ 39	≈ 950	RM6S/I-3F4-A63
	100 $\pm 3\%$	≈ 62	≈ 500	RM6S/I-3F4-A100
	160 $\pm 3\%$	≈ 100	≈ 300	RM6S/I-3F4-A160
	250 $\pm 3\%$	≈ 156	≈ 200	RM6S/I-3F4-A250
	315 $\pm 3\%$	≈ 197	≈ 150	RM6S/I-3F4-A315
	1250 $\pm 25\%$	≈ 780	≈ 0	RM6S/I-3F4
3H3 des	315 $\pm 3\%$	≈ 197	≈ 150	RM6S/I-3H3-A315
	400 $\pm 3\%$	≈ 250	≈ 120	RM6S/I-3H3-A400
	630 $\pm 5\%$	≈ 390	≈ 70	RM6S/I-3H3-A630
	2350 $\pm 25\%$	≈ 1470	≈ 0	RM6S/I-3H3

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Core sets of high permeability gradesClamping force for A_L measurements, 20 ± 10 N.

GRADE	A_L (nH)	μ_e	TYPE NUMBER
3E1 ^{sup}	4100 $\pm 25\%$	≈ 2600	RM6S/I-3E1
3E27	6000 $\pm 25\%$	≈ 3800	RM6S/I-3E27
3E4 ^{sup}	5750 +40/-30%	≈ 3590	RM6S/I-3E4
3E5	8600 +40/-30%	≈ 5370	RM6S/I-3E5
3E6	11000 +40/-30%	≈ 6850	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	–	≈ 0.11	≈ 0.65	–
3C94	≥ 320	–	≤ 0.11	≈ 0.47	≈ 0.23
3C96	≥ 320	–	≈ 0.08	≈ 0.33	≈ 0.16
3F3	≥ 315	–	≤ 0.14	–	≤ 0.20
3F35	≥ 315	–	–	–	≈ 0.11
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	≥ 320	–	–	–	–
3F3	≥ 315	–	–	–	–
3F35	≥ 315	≈ 0.18	≈ 1.3	–	–
3F4	≥ 250	–	–	≤ 0.22	≤ 0.35

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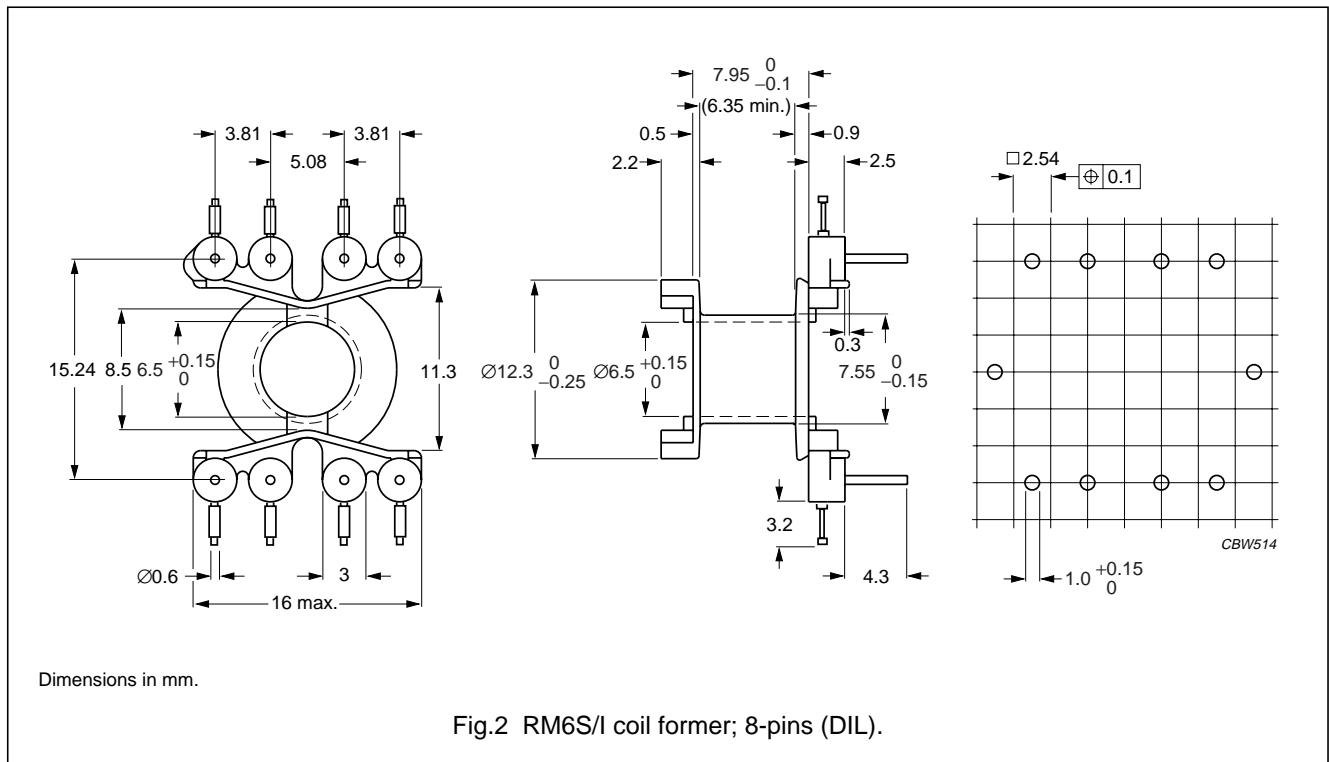
RM6S/I

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 60094V-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)

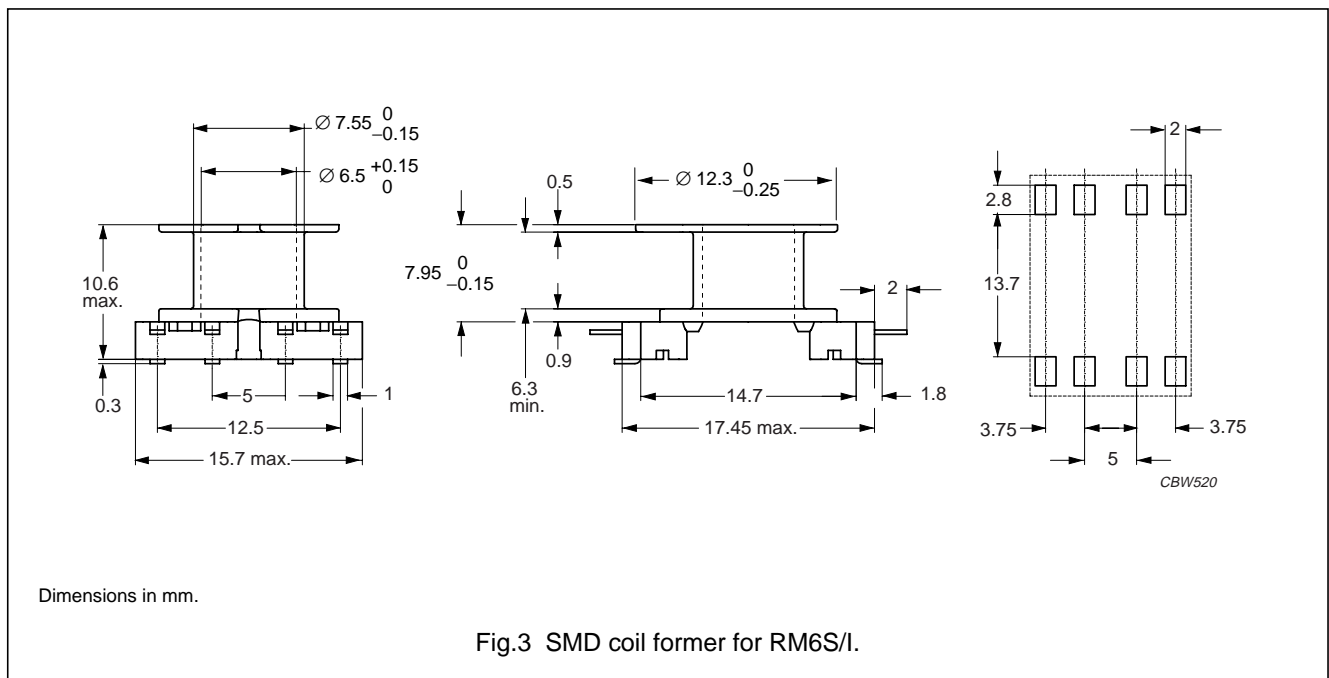
NUMBER OF SECTIONS	WINDING AREA (mm ²)	WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	15.7	6.2	31	CPV-RM6S/I-1S-8PD

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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-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 RM6S/I coil former (SMD)

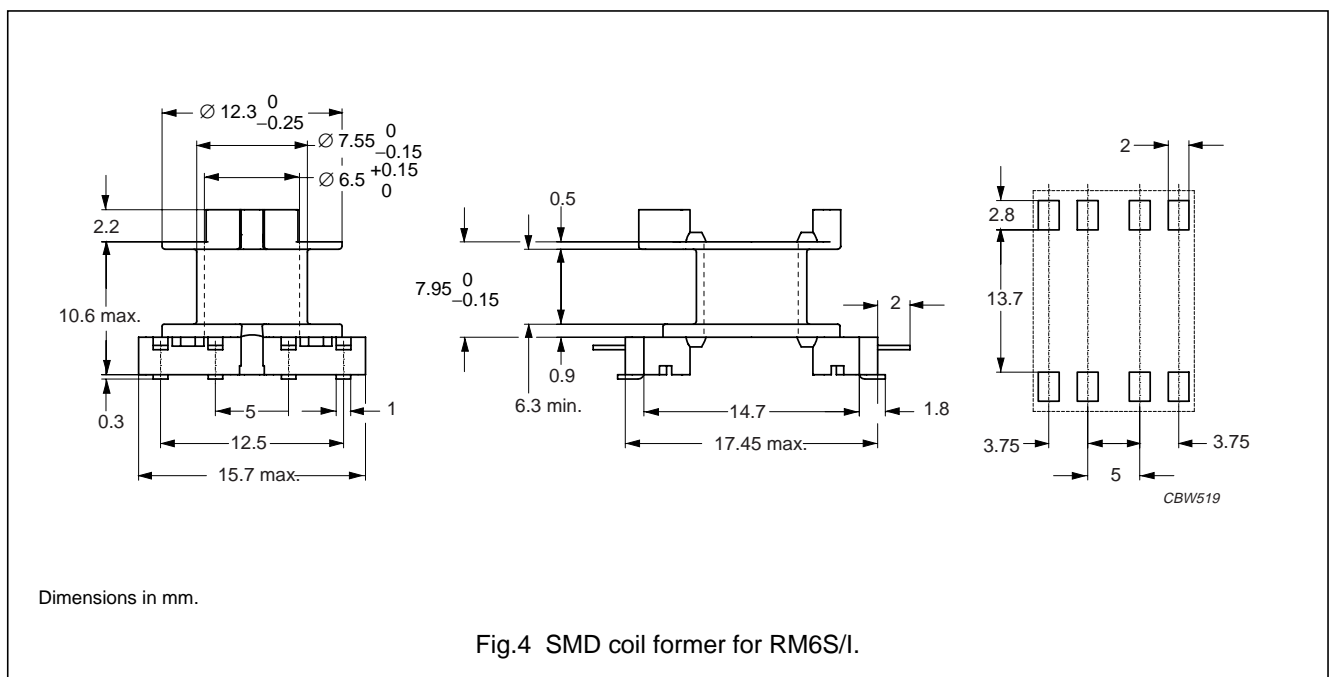
NUMBER OF SECTIONS	NUMBER OF SOLDER PADS	WINDING AREA (mm ²)	WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	TYPE NUMBER
1	8	14	6.3	31	CSV5-RM6S-1S-8P

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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-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 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	CSVS-RM6S-1S-8P-B

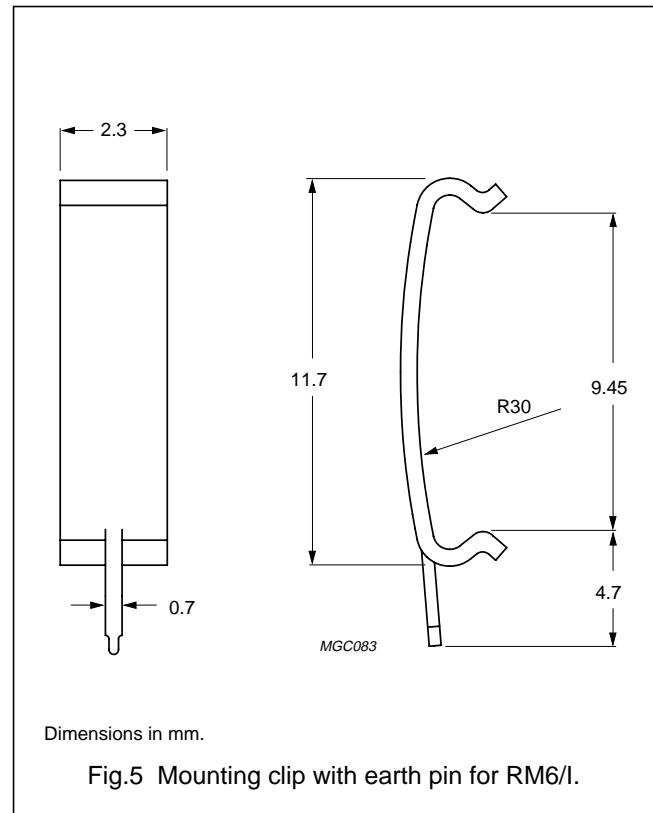
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MOUNTING PARTS

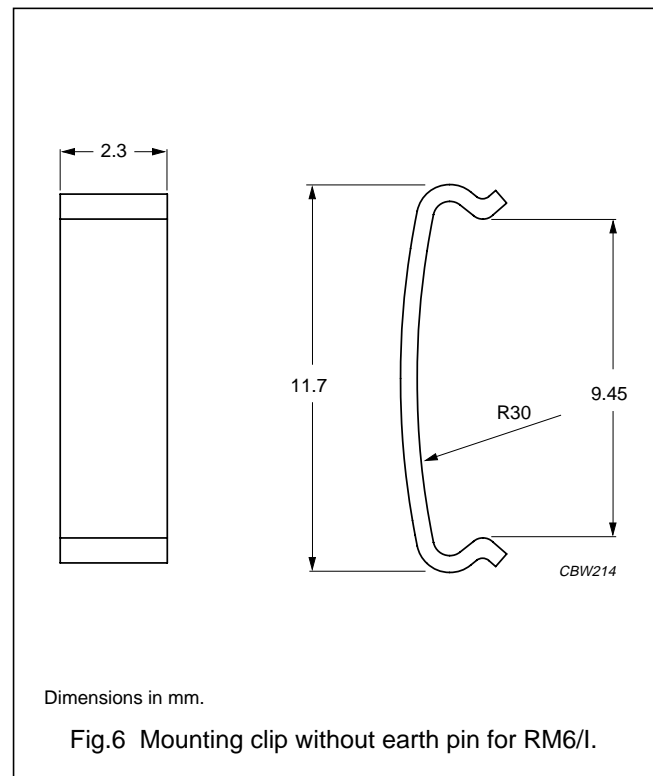
General data

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



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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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