

DATA SHEET

RM14/I RM cores and accessories

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

1999 Dec 23

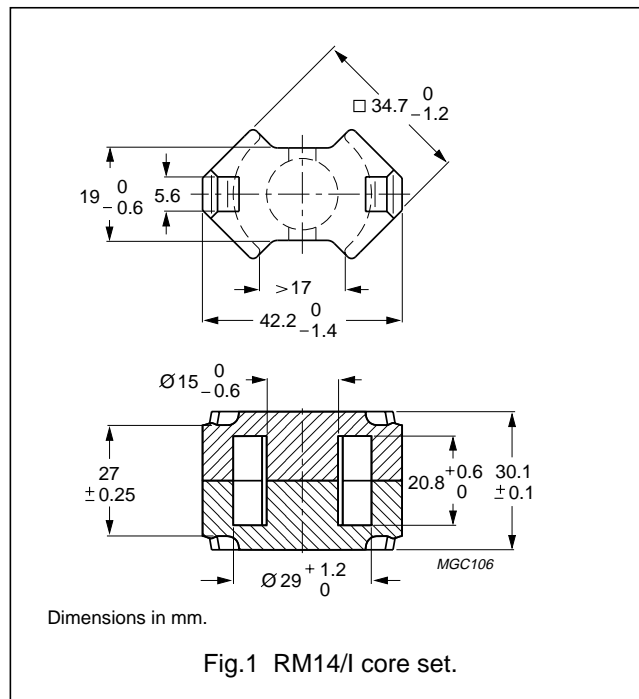
RM cores and accessories

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CORE SETS

Effective core parameters

| SYMBOL | PARAMETER | VALUE | UNIT |
|---------------|------------------|--------------|------------------|
| $\Sigma(I/A)$ | core factor (C1) | 0.353 | mm^{-1} |
| V_e | effective volume | 13900 | mm^3 |
| l_e | effective length | 70.0 | mm |
| A_e | effective area | 198 | mm^2 |
| A_{\min} | minimum area | 168 | mm^2 |
| m | mass of set | ≈ 74 | g |



Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 80 ± 20 N.

| GRADE | A_L (nH) | μ_e | AIR GAP (μm) | TYPE NUMBER |
|--------------------------|-----------------|----------------|------------------------------|-------------------|
| 3C90 | $250 \pm 3\%$ | ≈ 70 | ≈ 950 | RM14/I-3C90-A250 |
| | $315 \pm 3\%$ | ≈ 88 | ≈ 700 | RM14/I-3C90-A315 |
| | $400 \pm 3\%$ | 112 | ≈ 550 | RM14/I-3C90-A400 |
| | $630 \pm 5\%$ | ≈ 177 | ≈ 250 | RM14/I-3C90-A630 |
| | $1000 \pm 5\%$ | ≈ 281 | ≈ 150 | RM14/I-3C90-A1000 |
| | $7100 \pm 25\%$ | ≈ 1990 | ≈ 0 | RM14/I-3C90 |
| 3C94 <small>des</small> | $250 \pm 3\%$ | ≈ 70 | ≈ 950 | RM14/I-3C94-A250 |
| | $315 \pm 3\%$ | ≈ 88 | ≈ 700 | RM14/I-3C94-A315 |
| | $400 \pm 3\%$ | 112 | ≈ 550 | RM14/I-3C94-A400 |
| | $630 \pm 5\%$ | ≈ 177 | ≈ 250 | RM14/I-3C94-A630 |
| | $1000 \pm 5\%$ | ≈ 281 | ≈ 150 | RM14/I-3C94-A1000 |
| | $7100 \pm 25\%$ | ≈ 1990 | ≈ 0 | RM14/I-3C94 |
| 3C96 <small>prot</small> | $6200 \pm 25\%$ | ≈ 1740 | ≈ 0 | RM14/I-3C96 |
| 3F3 | $250 \pm 3\%$ | ≈ 70 | ≈ 950 | RM14/I-3F3-A250 |
| | $315 \pm 3\%$ | ≈ 88 | ≈ 700 | RM14/I-3F3-A315 |
| | $400 \pm 3\%$ | 112 | ≈ 550 | RM14/I-3F3-A400 |
| | $630 \pm 5\%$ | ≈ 177 | ≈ 250 | RM14/I-3F3-A630 |
| | $1000 \pm 5\%$ | ≈ 281 | ≈ 150 | RM14/I-3F3-A1000 |
| | $5700 \pm 25\%$ | ≈ 1600 | ≈ 0 | RM14/I-3F3 |

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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 | ≤1.67 | ≤1.76 | – | – |
| 3C94 | ≥315 | – | ≤1.55 | ≈6.0 | ≈3.5 |
| 3C96 | ≥315 | – | ≈1.2 | ≈4.5 | ≈2.5 |
| 3F3 | ≥315 | – | ≤1.55 | – | ≤2.65 |

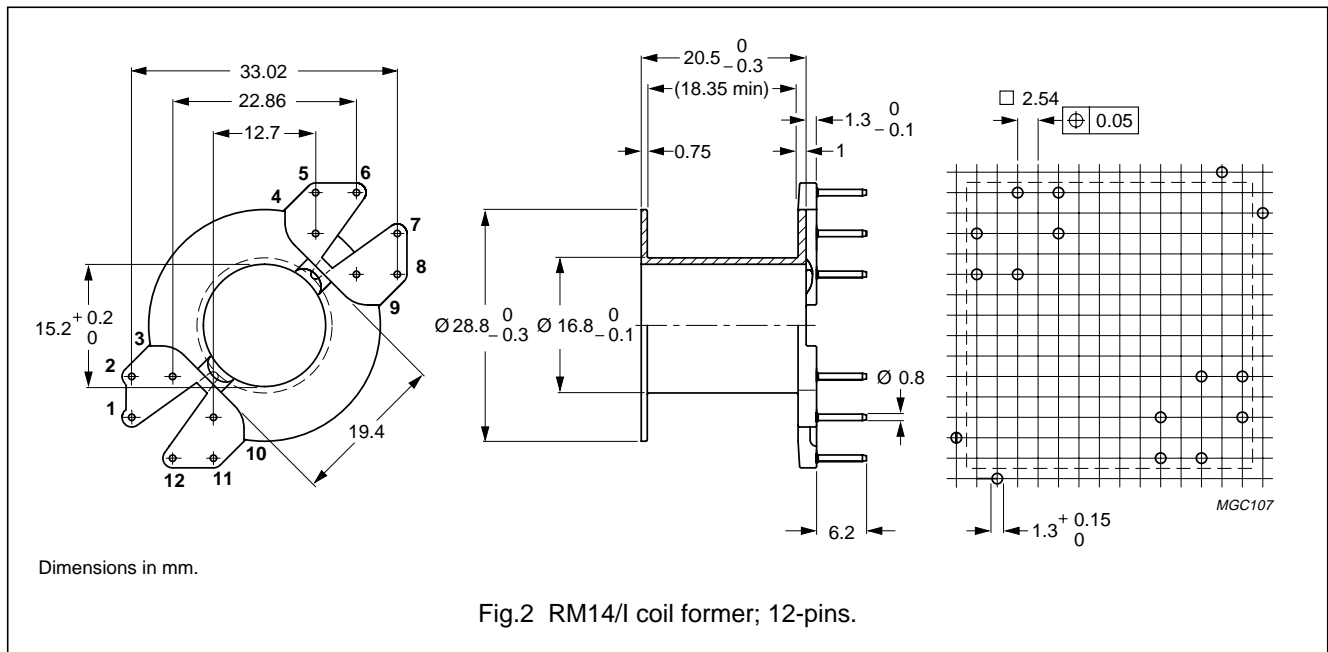
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COIL FORMERS

General data

| PARAMETER | SPECIFICATION |
|-------------------------------|---|
| Coil former material | phenolformaldehyde (PF), glass reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E167521(M) |
| Pin material | copper-tin alloy (CuSn), tin-lead alloy (SnPb) plated |
| Maximum operating temperature | 180 °C, "IEC 60085" class H |
| 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 12-pins RM14/I coil former

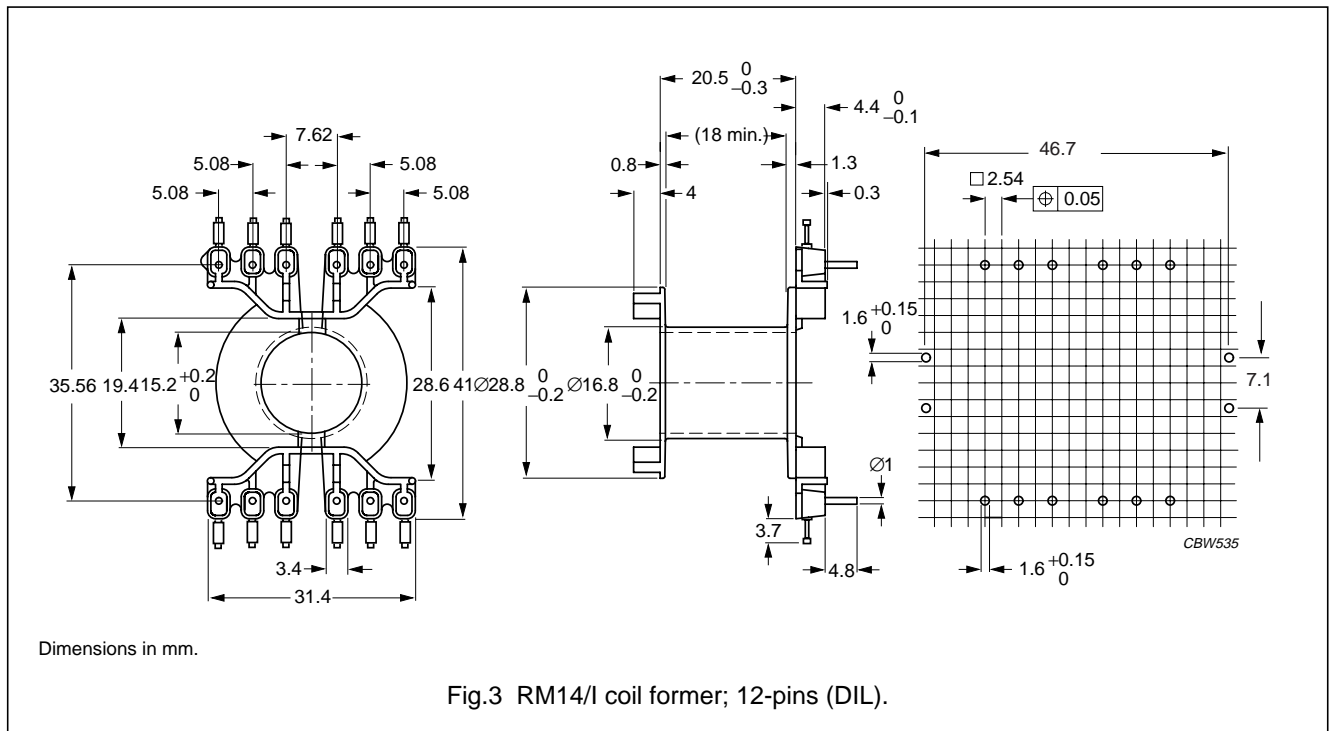
| NUMBER OF SECTIONS | NUMBER OF PINS | PIN POSITIONS USED | AVERAGE LENGTH OF TURN (mm) | WINDING AREA (mm ²) | WINDING WIDTH (mm) | TYPE NUMBER |
|--------------------|----------------|---------------------------------|-----------------------------|---------------------------------|--------------------|-----------------|
| 1 | 10 | 1, 2, 3, 4, 6, 7, 9, 10, 11, 12 | 71 | 112 | 18.4 | CSV-RM14-1S-10P |
| 1 | 12 | all | 71 | 112 | 18.4 | CSV-RM14-1S-12P |

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General data

| 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 12-pins RM14/I coil former (DIL)

| NUMBER OF SECTIONS | AVERAGE LENGTH OF TURN (mm) | WINDING AREA (mm ²) | WINDING WIDTH (mm) | TYPE NUMBER |
|--------------------|-----------------------------|---------------------------------|--------------------|--------------------|
| 1 | 71 | 111 | 18.0 | CPV-RM14/I-1S-12PD |

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MOUNTING PARTS

General data mounting clip with earth pin

| ITEM | SPECIFICATION |
|----------------|--|
| Clamping force | ≈40 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-RM14/I |

