

DATA SHEET

RM7/I

RM, RM/I, RM/ILP cores and accessories

Supersedes data of September 2004

2008 Sep 01

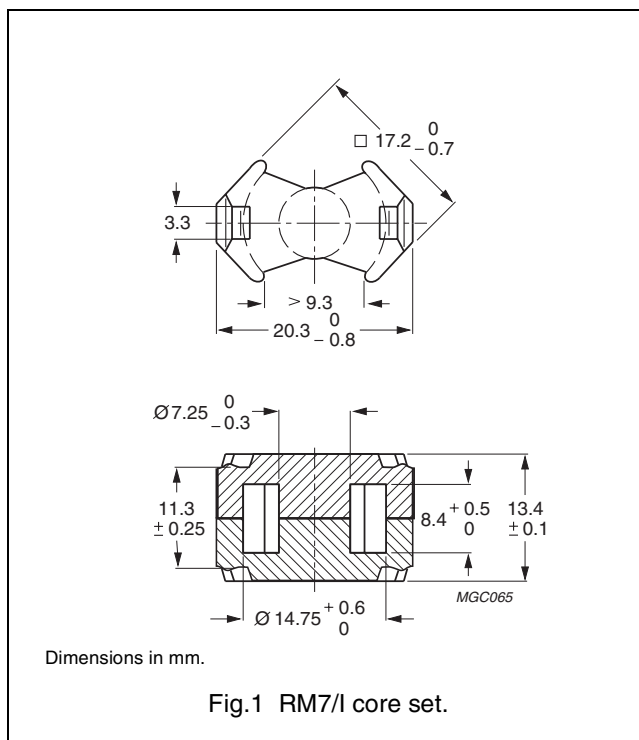


FERROXCUBE
A YAGEO COMPANY

CORE SETS

Effective core parameters

| SYMBOL | PARAMETER | VALUE | UNIT |
|---------------|------------------|-------|------------------|
| $\Sigma(l/A)$ | core factor (C1) | 0.680 | mm ⁻¹ |
| V_e | effective volume | 1325 | mm ³ |
| l_e | effective length | 30.0 | mm |
| A_e | effective area | 44.1 | mm ² |
| A_{min} | minimum area | 39.6 | mm ² |
| m | mass of set | ≈ 7.5 | g |



Core sets for general purpose transformers and power applications

Clamping force for A_L measurements 40 ±20 N.

| GRADE | A_L (nH) | μ_e | AIR GAP (μm) | TYPE NUMBER |
|---------------------|------------|---------|--------------|-----------------|
| 3C90 ^{sup} | 100 ±3% | ≈ 54 | ≈ 730 | RM7/I-3C90-A100 |
| | 160 ±3% | ≈ 87 | ≈ 410 | RM7/I-3C90-A160 |
| | 250 ±3% | ≈ 135 | ≈ 240 | RM7/I-3C90-A250 |
| | 3000 ±25% | ≈ 1620 | ≈ 0 | RM7/I-3C90 |
| 3F3 ^{sup} | 100 ±3% | ≈ 54 | ≈ 730 | RM7/I-3F3-A100 |
| | 160 ±3% | ≈ 87 | ≈ 410 | RM7/I-3F3-A160 |
| | 250 ±3% | ≈ 135 | ≈ 240 | RM7/I-3F3-A250 |
| | 2500 ±25% | ≈ 1350 | ≈ 0 | RM7/I-3F3 |

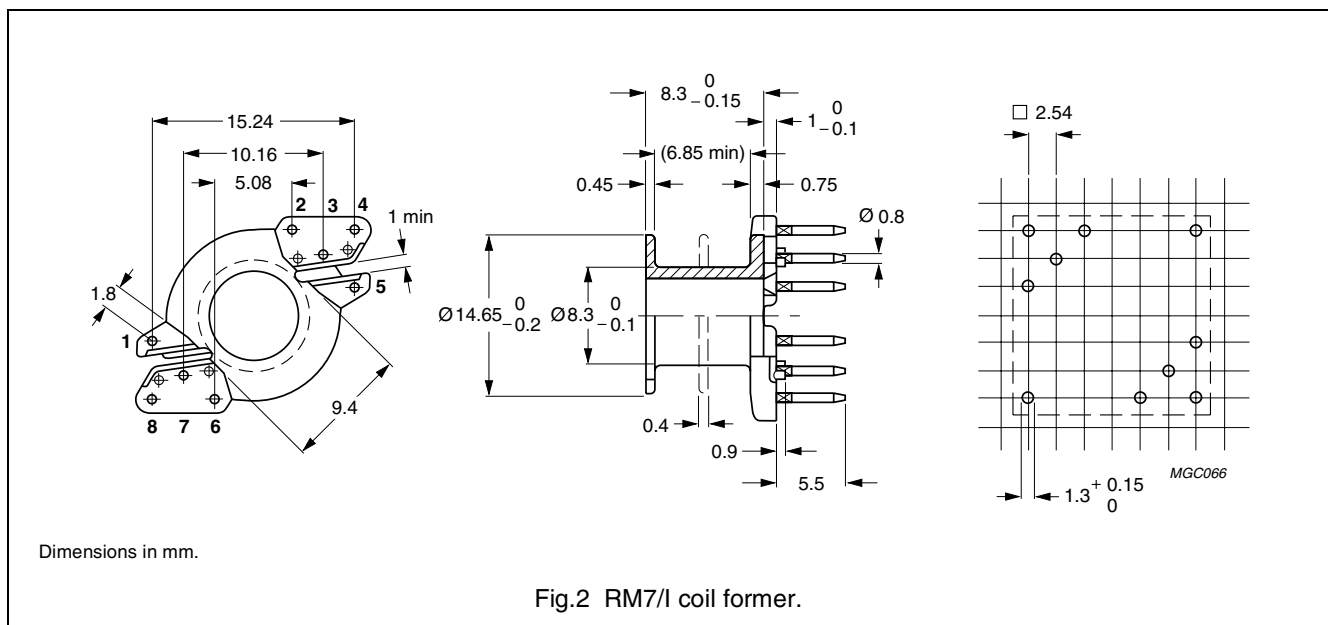
Properties of core sets under power conditions

| GRADE | B (mT) at | CORE LOSS (W) at | | |
|-------|---|--|---|--|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f = 25 kHz; B = 200 mT; T = 100 °C | f = 100 kHz; B = 100 mT; T = 100 °C | f = 400 kHz; B = 50 mT; T = 100 °C |
| 3C90 | ≥320 | ≤ 0.16 | ≤ 0.17 | — |
| 3F3 | ≥315 | — | ≤ 0.15 | ≤ 0.25 |

COIL FORMER

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 (Sn) 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 |



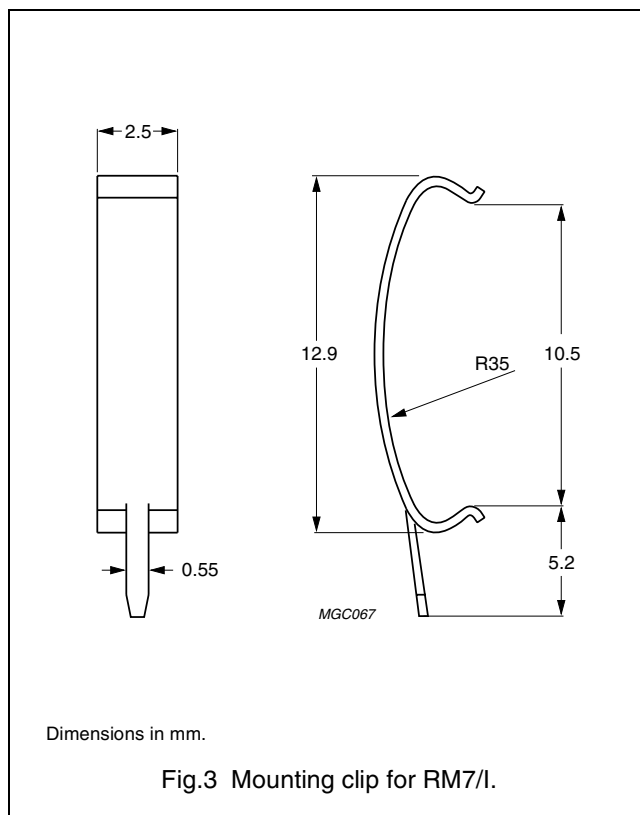
Winding data and area product for RM7/I coil former

| NUMBER OF SECTIONS | NUMBER OF PINS | PIN POSITIONS USED | AVERAGE LENGTH OF TURN (mm) | WINDING AREA (mm ²) | WINDING WIDTH (mm) | AREA PRODUCT Ae x Aw (mm ⁴) | TYPE NUMBER |
|--------------------|----------------|--------------------|-----------------------------|---------------------------------|--------------------|---|---------------|
| 1 | 4 | 1, 2, 5, 6 | 35 | 21 | 6.85 | 926 | CSV-RM7-1S-4P |
| 1 | 8 | all | 35 | 21 | 6.85 | 926 | CSV-RM7-1S-8P |
| 2 | 8 | all | 35 | 2 x 9.8 | 2 x 3.2 | 2 x 432 | CSV-RM7-2S-8P |
| 1 | 5 | 1, 2, 4, 5, 8 | 35 | 21 | 6.85 | 926 | CSV-RM7-1S-5P |
| 2 | 5 | 1, 2, 4, 5, 8 | 35 | 2 x 9.8 | 2 x 3.2 | 2 x 432 | CSV-RM7-2S-5P |

MOUNTING PARTS

General data

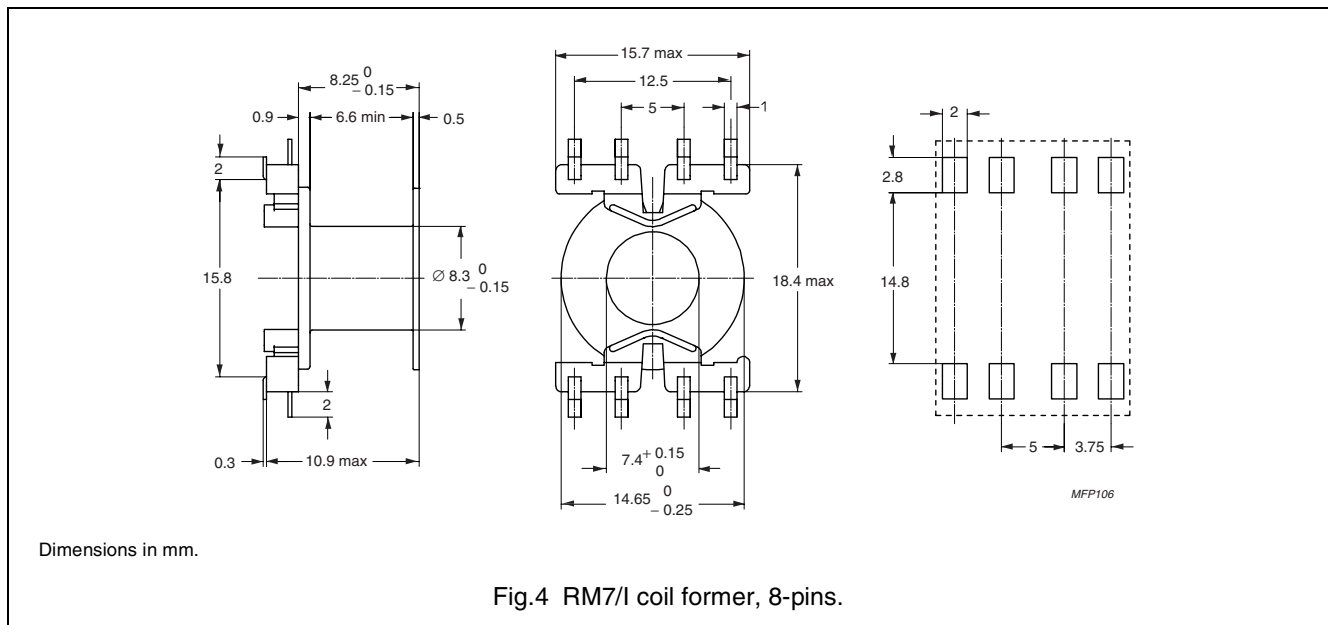
| ITEM | SPECIFICATION |
|----------------|--|
| Clamping force | ≈20 N |
| Clip material | steel |
| Clip plating | tin (Sn) |
| Solderability | "IEC 60068-2-20", Part 2, Test Ta, method 1 |
| Type number | CLI/P-RM7 |



COIL FORMER

General data

| PARAMETER | SPECIFICATION |
|-------------------------------|---|
| Coil former material | phenolformaldehyde (PF), glass-reinforced, flame retardant in accordance with UL 94V-0; UL file number E41429 (M) |
| Pin material | copper-tin alloy (CuSn), tin (Sn) 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 |



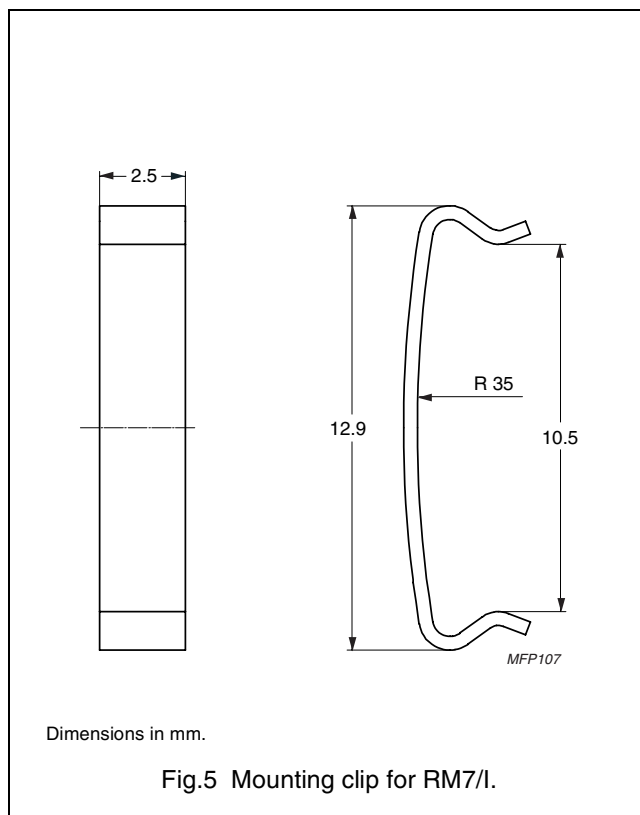
Winding data and area product for RM7/I coil former

| NUMBER OF SECTIONS | NUMBER OF PINS | PIN POSITIONS USED | AVERAGE LENGTH OF TURN (mm) | WINDING AREA (mm ²) | WINDING WIDTH (mm) | AREA PRODUCT Ae x Aw (mm ⁴) | TYPE NUMBER |
|--------------------|----------------|--------------------|-----------------------------|---------------------------------|--------------------|---|------------------|
| 1 | 8 | all | 35 | 20 | 6.6 | 882 | CSV5-RM7-1S-8P-Z |

MOUNTING PARTS

General data

| ITEM | SPECIFICATION |
|----------------|------------------------|
| Clamping force | ≈20 N |
| Clip material | stainless steel (CrNi) |
| Type number | CLI-RM7 |






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. |

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| STATUS | INDICATION | DEFINITION |
|------------------|---|--|
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| 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. |

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