



## RM Cores

**Series/Type:** RM 5

The following products presented in this data sheet are being withdrawn.

| Ordering Code   | Substitute Product | Date of Withdrawal | Deadline Last Orders | Last Shipments |
|-----------------|--------------------|--------------------|----------------------|----------------|
| B65805C0000R026 | B65805C0000R048    | 2002-08-02         | 2002-12-31           | 2003-03-31     |
| B65805J0000Y042 | B65805J0000Y066    | 2002-08-02         | 2002-12-31           | 2003-03-31     |
| B65806K1004D002 | B65806K1006D002    | 2003-08-08         | 2004-02-29           | 2004-08-31     |
| B65539C1003X101 | B65539C1003X001    | 2004-01-23         |                      |                |
| B65806A50000000 |                    | 2004-10-18         | 2005-03-31           | 2005-09-30     |
| B65806A3002X022 | B65806C3001X022    | 2003-08-08         | 2004-02-29           | 2004-08-31     |
| B65539C1002X101 | B65539C1003X001    | 2003-08-08         | 2004-02-29           | 2004-08-31     |

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**RM 5**
**Core**
**B65805**

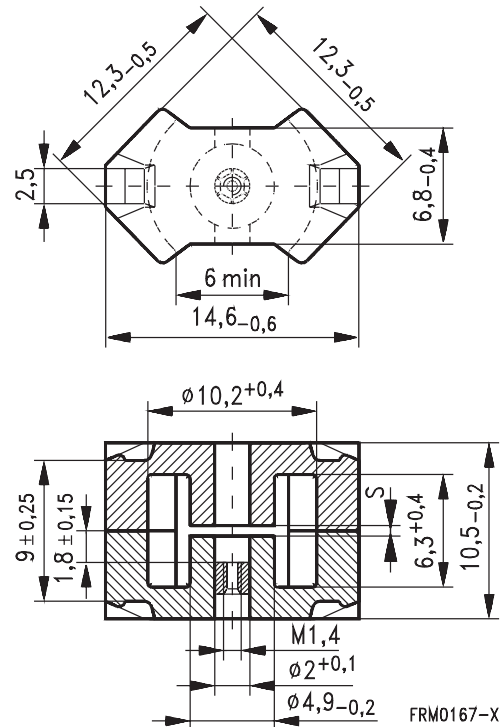
- In accordance with IEC 60431
- Core without center hole for transformer applications
- RM cores are supplied in sets

**Magnetic characteristics (per set)**

|              | with center hole | without center hole |                  |
|--------------|------------------|---------------------|------------------|
| $\Sigma l/A$ | 1,0              | 0,93                | mm <sup>-1</sup> |
| $l_e$        | 20,8             | 22,1                | mm               |
| $A_e$        | 20,8             | 23,8                | mm <sup>2</sup>  |
| $A_{min}$    | —                | 18                  | mm <sup>2</sup>  |
| $V_e$        | 430              | 526                 | mm <sup>3</sup>  |

**Approx. weight (per set)**

| $m$ | 2,9 | 3,0 | g |
|-----|-----|-----|---|
|     |     |     |   |


**Gapped**

| Material | $A_L$ value | $s$<br>approx.<br>mm | $\mu_e$ | Ordering code <sup>1)</sup><br>-C with center hole<br>-N with threaded sleeve |
|----------|-------------|----------------------|---------|---|
|          | nH          |                      |         |   |
| K1       | 25 ± 3 %    | 1,0                  | 19,9    | B65805-+25-A1   |
|          | 40 ± 3 %    | 0,40                 | 31,8    | B65805-+40-A1   |
| M33      | 63 ± 3 %    | 0,4                  | 50,2    | B65805-+63-A33  |
|          | 100 ± 3 %   | 0,2                  | 79,6    | B65805-+100-A33   |
| N48      | 160 ± 3 %   | 0,12                 | 128     | B65805-+160-A48   |
|          | 250 ± 3 %   | 0,06                 | 200     | B65805-+250-A48   |
|          | 315 ± 3 %   | 0,03                 | 255     | B65805-+315-A48   |

1) Replace the + by the code letter "C" or "N" for the required version.

**Ungapped**

| Material          | $A_L$ value<br>nH | $\mu_e$ | $A_{L1min}$<br>nH | $P_V$<br>W/set                      | Ordering code<br>-C with center hole<br>-J w/o center hole |
|-------------------|-------------------|---------|-------------------|-------------------------------------|--|
| N26               | 1800 + 30/- 20 %  | 1430    |                   |                                     | B65805-C-R26   |
| T57 <sup>1)</sup> | 2600 + 30/- 20 %  | 1920    |                   |                                     | B65805-J-R57   |
| N30               | 3500 + 30/- 20 %  | 2590    |                   |                                     | B65805-J-R30   |
| T38               | 6700 + 40/- 30 %  | 4960    |                   |                                     | B65805-J-Y38   |
| T42               | 9600 + 40/- 30 %  | 7090    |                   |                                     | B65805-J-Y42   |
| N49               | 1300 + 30/- 20 %  | 960     | 810               | < 0,06<br>(50 mT, 500 kHz, 100 °C)  | B65805-J-R49   |
| N87               | 2000 + 30/- 20 %  | 1470    | 1200              | < 0,32<br>(200 mT, 100 kHz, 100 °C) | B65805-J-R87   |
| N97 <sup>1)</sup> | 2000 + 30/- 20 %  | 1470    | 1200              | < 0,24<br>(200 mT, 100 kHz, 100 °C) | B65805-J-R97   |
| N41               | 2600 + 30/- 20 %  | 1920    | 1200              | < 0,10<br>(200 mT, 100 kHz, 100 °C) | B65805-J-R41   |

1) Preliminary data

**Coil former**

Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085:

$H \cong \max.$  operating temperature 180 °C), color code blue

Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

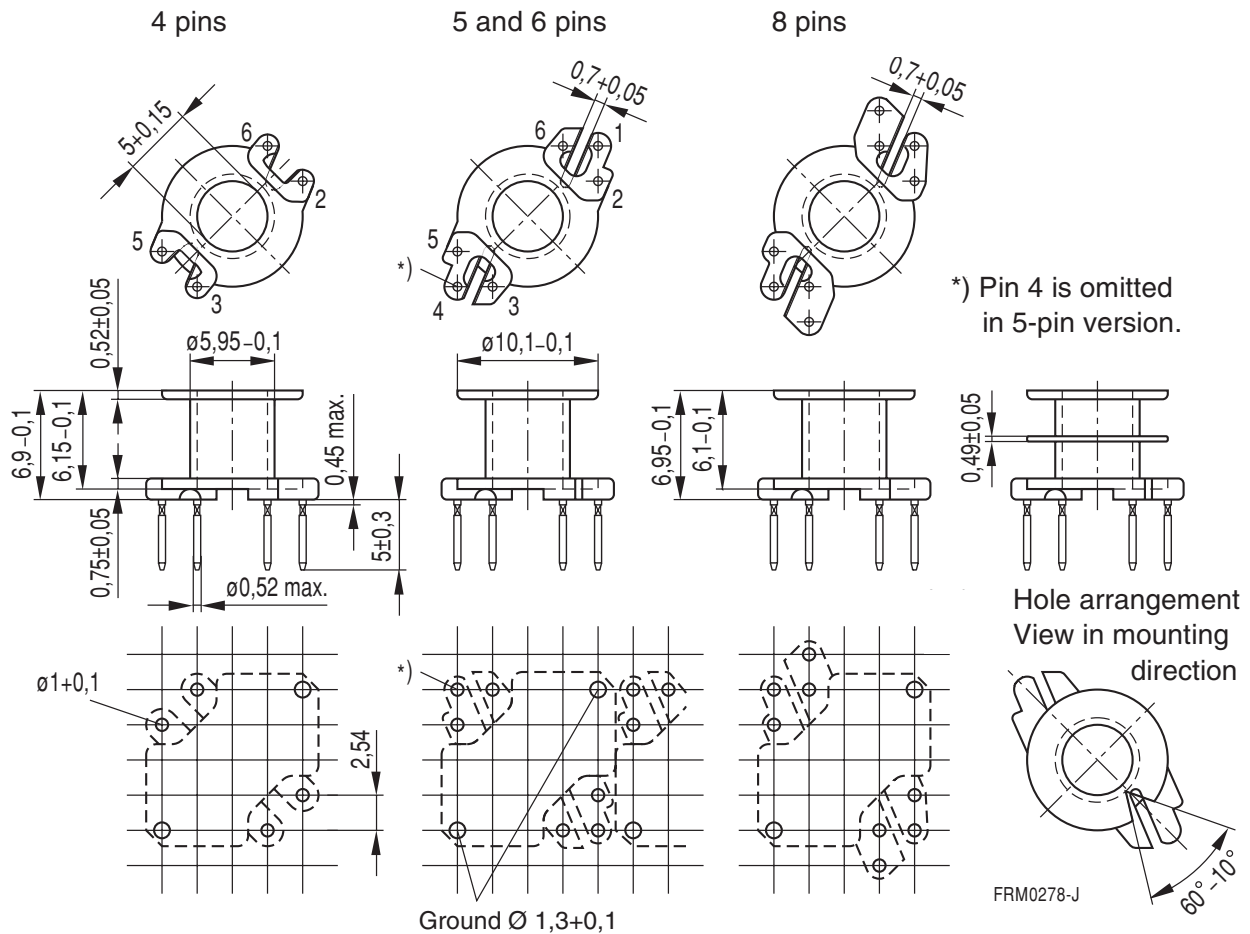
Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s

Winding: see "Processing Notes", page 153

Pins squared in the start-of-winding area

For matching clamps and insulating washers see page 197

| Sections | $A_N$<br>mm <sup>2</sup> | $l_N$<br>mm | $A_R$ value<br>$\mu\Omega$ | Pins             | Ordering code  |
|----------|--------------------------|-------------|----------------------------|------------------|--|
| 1        | 9,5                      | 25          | 90                         | 4<br>5<br>6<br>8 | B65806-K1004-D1<br>B65806-K1005-D1<br>B65806-K1006-D1<br>B65806-K1008-D1 |
| 2        | 8,7                      | 25          | 94                         | 4<br>5<br>6      | B65806-K1004-D2<br>B65806-K1005-D2<br>B65806-K1006-D2                    |



**Clamp**

- With ground terminal, made of stainless spring steel (tinned), 0,335 mm thick
- Solderability to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s
- Also available as strip clamp on reels

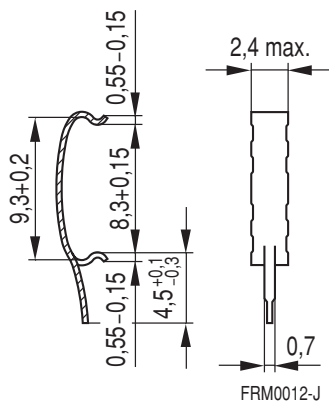
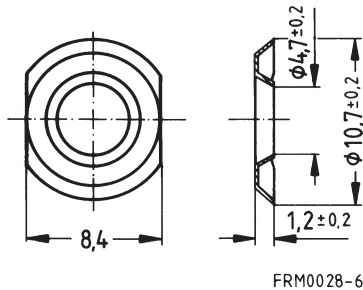
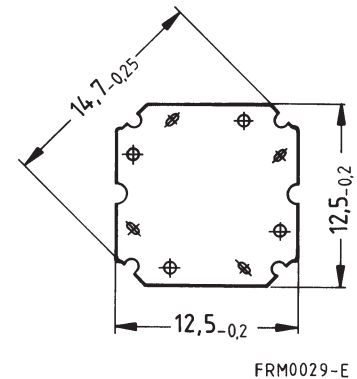
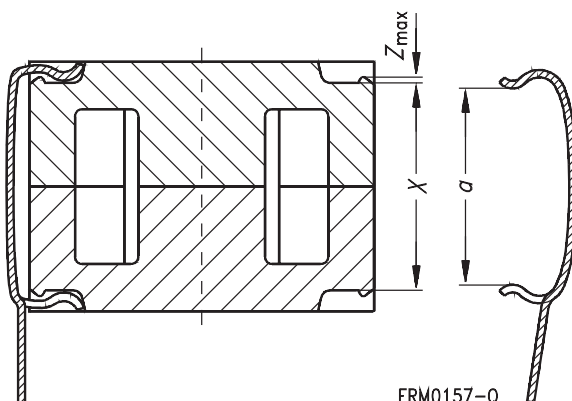
**Insulating washer 1** between core and coil former

- For tolerance compensation and for insulation
- Made of polycarbonate (UL 94 V-0, insulation class to IEC 60085: E  $\geq$  120 °C), 0,06 mm thick

**Insulating washer 2** for double-clad PCBs

- Made of polycarbonate (UL 94 V-0, insulation class to IEC 60085: E  $\geq$  120 °C), 0,3 mm thick

|   | Ordering code |
|---|---------------|
| Clamp (ordering code per piece, 2 are required) | B65806-A2203  |
| Insulating washer 1 (reel packing, PU = 1 reel) | B65806-A5000  |
| Insulating washer 2 (bulk)                      | B65806-D2005  |

**Clamp**

**Insulating washer 1**

**Insulating washer 2**

**Clamping forces for RM 5**


$F_{min}$ : Extension of clamp from  $a$  to  $a_2 = X_{min}$   
 $F_{max}$ : Extension of clamp from  $a$  to  $a_1 = X_{max}$

|                              |           |            |
|------------------------------|-----------|------------|
| Clamp opening $a$ (mm)       |           | 8,3 + 0,15 |
| Core nose $Z_{max}$ (mm)     |           | 0,15       |
| Height of core pair $X$ (mm) | $X_{min}$ | 8,75       |
|                              | $X_{max}$ | 9,25       |
| Clamping force $F$ (N)       | $F_{min}$ | 5          |
|                              | $F_{max}$ | 40         |

**SMD**
**SMD coil former with gullwing terminals**

Material: GFR liquid crystal polymer (UL 94 V-0, insulation class to IEC 60085:

F  $\triangleq$  max. operating temperature 155 °C), color code black

Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 350 °C, 1 s

Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s

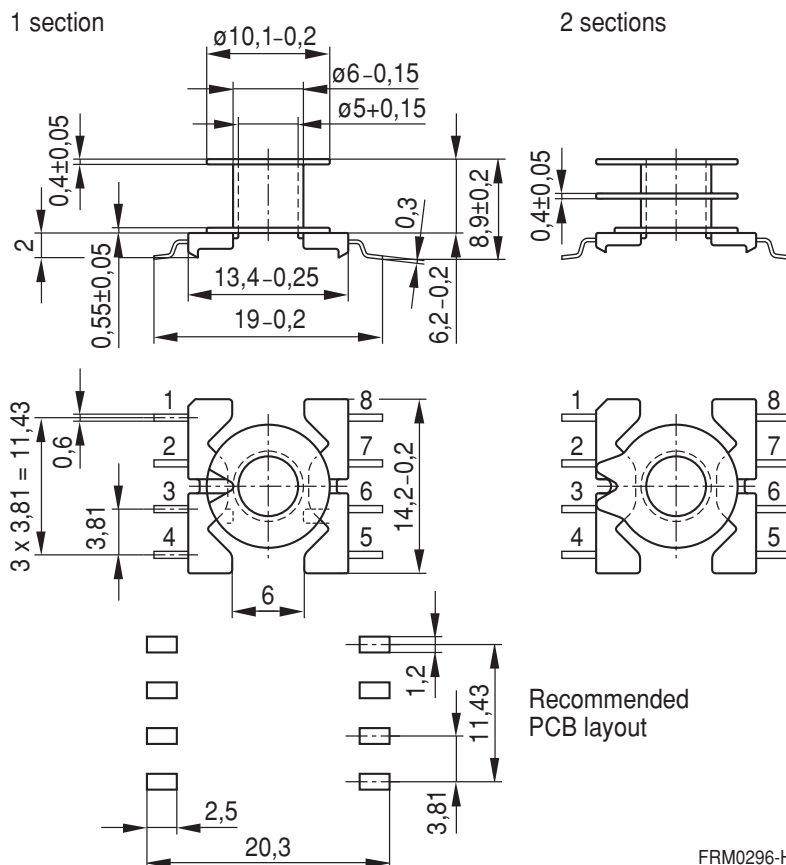
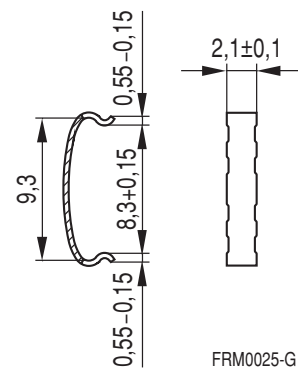
permissible soldering temperature for wire-wrap connection on coil former: 400 °C, 1 s

Winding: see "Processing Notes", page 160

**Clamp**

- Without ground terminal, made of stainless spring steel, 0,335 mm thick
- Also available as strip clamp (each carton containing 2 reels) on request

| Sections  | $A_N$<br>mm <sup>2</sup> | $l_N$<br>mm | $A_R$ value<br>$\mu\Omega$ | Terminals | Ordering code   |
|---|--------------------------|-------------|----------------------------|-----------|-----------------|
| 1   | 11,1                     | 25          | 77                         | 8         | B65822-F1008-T1 |
| 2   | 10,2                     | 25          | 85                         | 8         | B65822-F1008-T2 |
| Clamp (ordering code per piece, 2 are required) |                          |             |                            |           | B65806-J2204    |

**Coil former**

**Clamp**


**SMD**
**SMD coil former with J terminals**

Material: GFR liquid crystal polymer (UL 94 V-0, insulation class to IEC 60085:

F  $\triangleq$  max. operating temperature 155 °C), color code black

Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 350 °C, 1 s

Resistance to soldering heat: to IEC 60068-2-20, test Tb, method 1B: 350 °C, 3,5 s

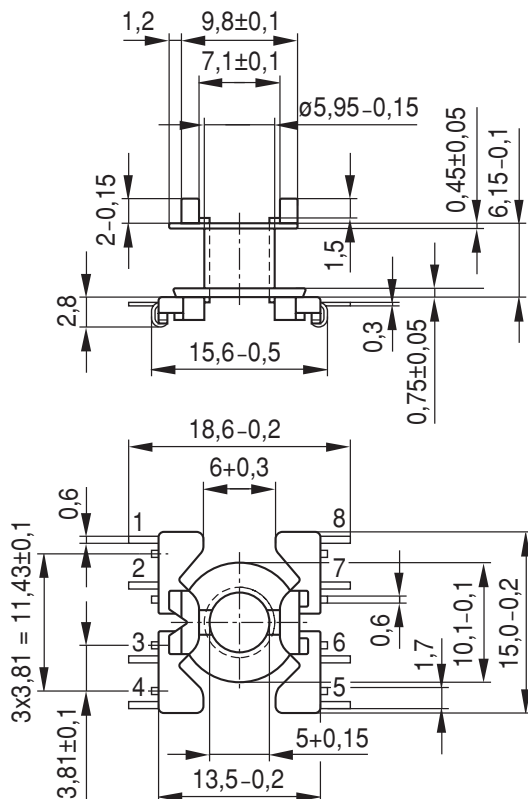
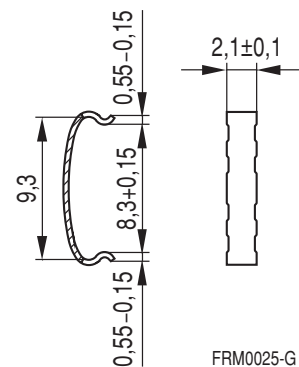
permissible soldering temperature for wire-wrap connection on coil former: 400 °C, 1 s

Winding: see "Processing Notes", page 160

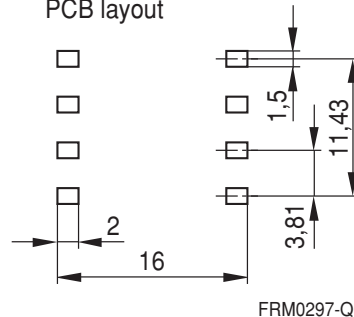
**Clamp**

- Without ground terminal, made of stainless spring steel, 0,335 mm thick
- Also available as strip clamp (each carton containing 2 reels) on request

| Sections | $A_N$<br>mm <sup>2</sup>                  | $l_N$<br>mm | $A_R$ value<br>$\mu\Omega$ | Terminals | Ordering code   |
|----------|---|-------------|----------------------------|-----------|-----------------|
| 1        | 11,1                                      | 25          | 73                         | 8         | B65822-J1008-T1 |
| Clamp    | (ordering code per piece, 2 are required) |             |                            |           | B65806-J2204    |

**Coil former**

**Clamp**


FRM0025-G

**Recommended PCB layout**


FRM0297-Q

### Adjusting screw

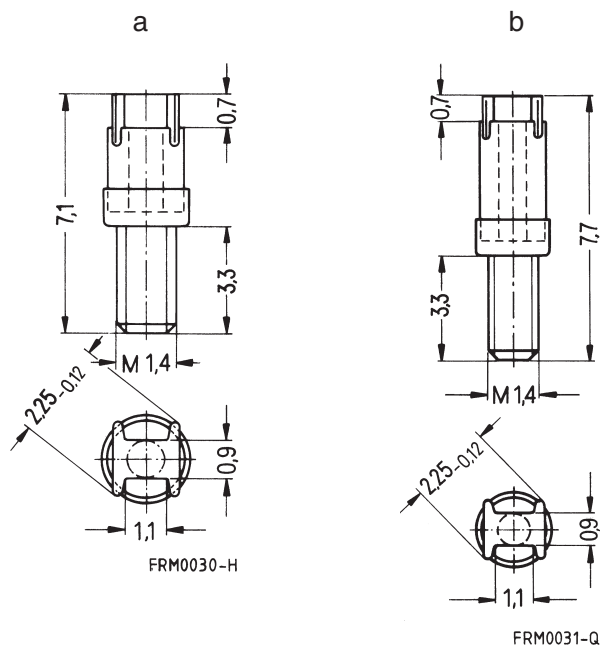
- Tube core with thread and core brake made of GFR polyterephthalate

Plastic **adjusting screwdriver** (not shown)

Plastic **handle** for adjusting screwdriver (not shown)

| Core RM 5                    |                         | Adjusting screw |                               |          |            | Min. adjusting range % | Ordering code     |
|------------------------------|-------------------------|-----------------|-------------------------------|----------|------------|------------------------|-------------------|
| Material                     | A <sub>L</sub> value nH | Fig.            | Tube core<br>∅ × length<br>mm | Material | Color code |                        |                   |
| K 1                          | 25                      | a               | 1,81 × 2,0                    | Si 1     | black      | 13                     | B65539-C1003-X101 |
|                              | 40                      | a               | 1,81 × 2,0                    | K 1      | yellow     | 16                     | B65539-C1003-X1   |
| M 33                         | 63                      | a               | 1,81 × 2,7                    | Si 1     | white      | 11                     | B65539-C1002-X101 |
|                              | 100                     | a               | 1,81 × 2,0                    | K 1      | yellow     | 14                     | B65539-C1003-X1   |
| N 48                         | 160                     | a               | 1,81 × 2,7                    | N 22     | red        | 15                     | B65539-C1002-X22  |
|                              | 250<br>315              | b               | 1,81 × 3,4                    | N 22     | green      | 13<br>9                | B65806-C3001-X22  |
|                              | 315                     | b               | 1,90 × 3,4                    | N 22     | blue       | 12                     | B65806-A3002-X22  |
| <b>Adjusting screwdriver</b> |                         |                 |                               |          |            |                        | B63399-B4         |
| <b>Handle</b>                |                         |                 |                               |          |            |                        | B63399-B5         |

### Adjusting screws





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