



## RM Cores

**Series/Type:** RM 6

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B65808N1005D002	B65808N1006D002	2003-08-08	2004-02-29	2004-08-31
B65659F0001X101	B65659F0001X023	2004-01-23		
B65821C1008T002	B65821C1008T001	2003-08-08	2004-02-29	2004-08-31
B65807C0000R026	B65807C0000R048	2002-08-02	2002-12-31	2003-03-31
B65807J0000Y042	B65807J0000Y066	2002-08-02	2002-12-31	2003-03-31
B65808K1006D002	B65808N1006D002	2003-08-08	2004-02-29	2004-08-31

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**RM 6**
**Core**
**B65807**

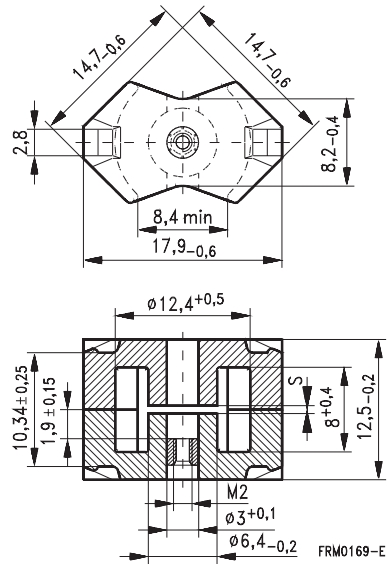
- In accordance with IEC 60431
- Core without center hole for transformer applications
- RM cores are supplied in sets

**Magnetic characteristics** (per set)

	with center hole	without center hole	
$\Sigma l/A$	0,86	0,78	mm <sup>-1</sup>
$l_e$	26,9	28,6	mm
$A_e$	31,3	36,6	mm <sup>2</sup>
$A_{min}$	—	31	mm <sup>2</sup>
$V_e$	840	1 050	mm <sup>3</sup>

**Approx. weight** (per set)

$m$	4,9	5,3	g


**Gapped**

Material	$A_L$ value nH	$s$ approx. mm	$\mu_e$	Ordering code <sup>1)</sup> -J without center hole -N with threaded sleeve -C with center hole
K1	40 ± 3 %	0,80	27,4	B65807-+40-A1
M33	63 ± 3 %	0,60	43,2	B65807-+63-A33
	100 ± 3 %	0,38	68,5	B65807-+100-A33
N48	160 ± 3 %	0,22	110	B65807-+160-A48
	250 ± 3 %	0,12	171	B65807-+250-A48
	315 ± 3 %	0,08	216	B65807-+315-A48
	400 ± 3 %	0,05	274	B65807-+400-A48
N41	250 ± 3 %	0,17	155	B65807-J250-A41

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

**Ungapped**

Material	$A_L$ value nH	$\mu_e$	$A_{L1min}$ nH	$P_V$ W/set	Ordering code -C with center hole -J w/o center hole
N26	2200 + 30/- 20 %	1500			B65807-C-R26
N30	4300 + 30/- 20 %	2670			B65807-J-R30
T57 <sup>1)</sup>	3500 + 30/- 20 %	2180			B65807-J-R57
T38	8600 + 40/- 30 %	5340			B65807-J-Y38
T42	12300 + 40/- 30 %	7630			B65807-J-Y42
N49	1700 + 30/- 20 %	1060	960	< 0,15 (50 mT, 500 kHz, 100 °C)	B65807-J-R49
N87	2400 + 30/- 20 %	1490	1450	< 0,51 (200 mT, 100 kHz, 100 °C)	B65807-J-R87
N97 <sup>1)</sup>	2400 + 30/- 20 %	1490	1450	< 0,39 (200 mT, 100 kHz, 100 °C)	B65807-J-R97
N41	3100 + 30/- 20 %	1920	1450	< 0,16 (200 mT, 25 kHz, 100 °C)	B65807-J-R41

1) Preliminary data

**Coil former, squared pins**

Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085: H  $\geq$  max. operating temperature 180 °C), color code black

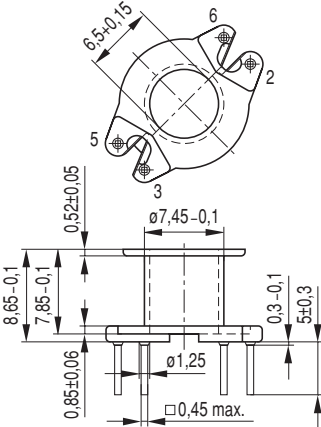
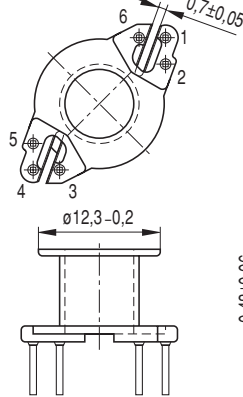
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

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

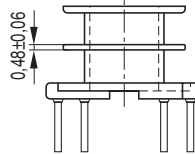
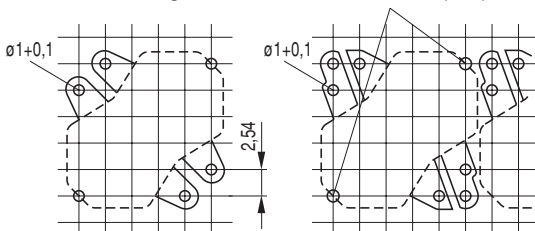
Winding: see "Processing Notes", page 153

For matching clamp and insulating washers see page 210.

Sections	$A_N$ mm <sup>2</sup>	$l_N$ mm	$A_R$ value $\mu\Omega$	Pins	Ordering code
1	15	30	69	4 5 6 6	B65808-N1004-D1 B65808-N1005-D1 B65808-N1006-D1 B65808-W1006-D1
2	14	30	73	5 6	B65808-N1005-D2 B65808-N1006-D2

**4 pins**

**5 + 6 pins**


Pin 4 is omitted  
in 5-pin version


**Hole arrangement**
**View in mounting direction**


FRM0267.4

50°±10°

**Coil former, pins squared in the start-of-winding area**

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

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

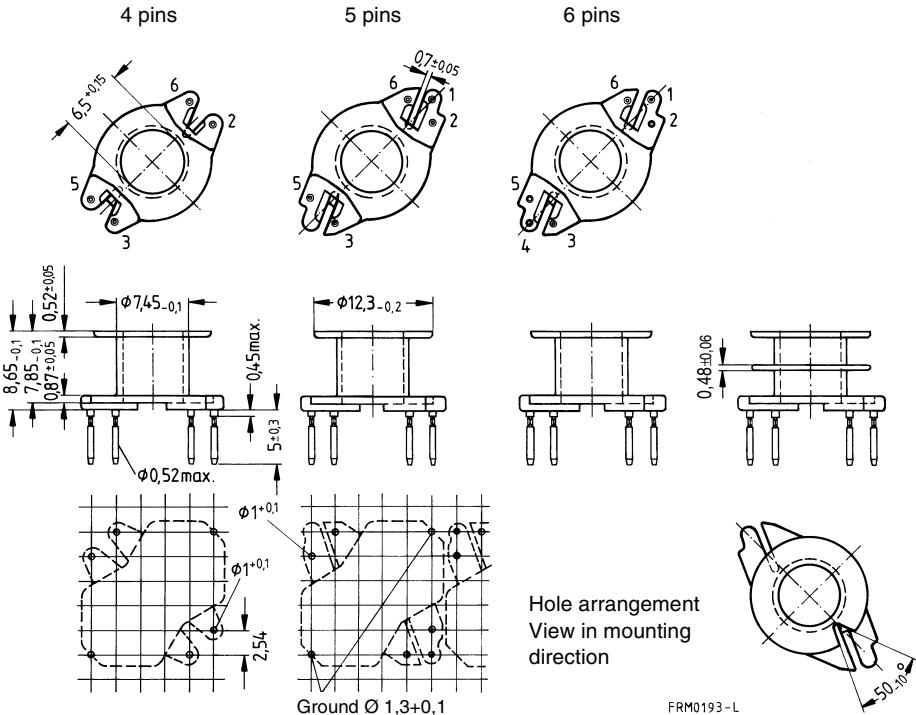
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

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

Winding: see "Processing Notes", page 153

For matching clamp and insulating washers see page 210.

Sections	$A_N$ mm <sup>2</sup>	$l_N$ mm	$A_R$ value $\mu\Omega$	Pins	Ordering code
1	15	30	69	4	B65808-K1004-D1
				5	B65808-K1005-D1
				6	B65808-K1006-D1
2	14	30	73	4	B65808-K1004-D2
				6	B65808-K1006-D2



**Coil former for SMPS transformers with line isolation**

The creepage distances and clearances are designed such that the coil former is suitable for use in SMPS transformers with line isolation.

- Closed center flange with external wire guide
- Pins squared in the start-of-winding area
- Optimized for use with automatic winding machines

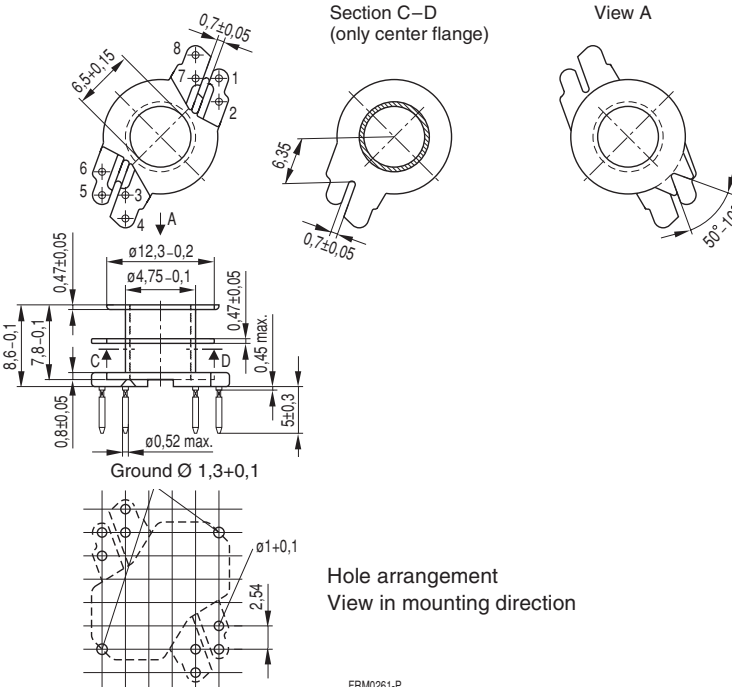
Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085:  
F  $\triangleq$  max. operating temperature 155 °C), color code green

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

Sections	$A_N$ mm <sup>2</sup>	$l_N$ mm	$A_R$ value $\mu\Omega$	Pins	Ordering code
2	14	30	73	8	B65808-X1108-D2



**Coil former for power applications with angled pins**

Optimized for automatic winding

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

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

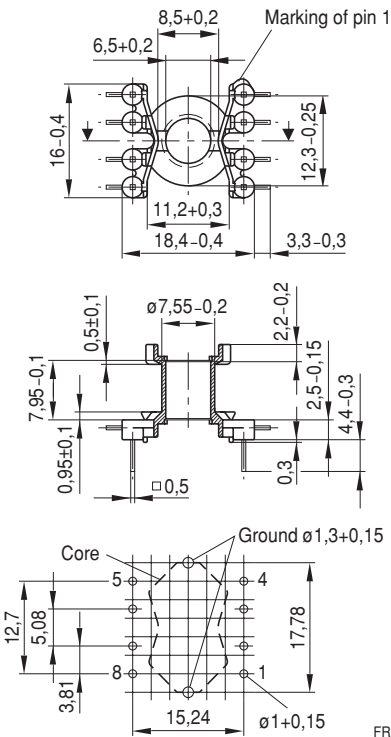
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

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

Winding: see "Processing Notes", page 153

For matching clamp and insulating washer 1 see page 210

Sections	$A_N$ mm <sup>2</sup>	$l_N$ mm	$A_R$ value $\mu\Omega$	Pins	Ordering code
1	15	30	69	8	B65808-E1508-T1



FRM0298-Y

**Coil former for power applications with straight pins**

Optimized for automatic winding

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

 $H \triangleq$  max. operating temperature 180 °C), color code black

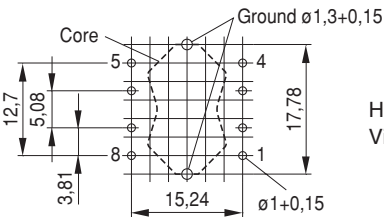
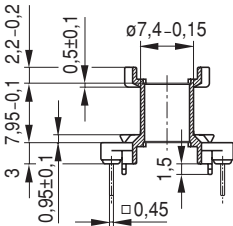
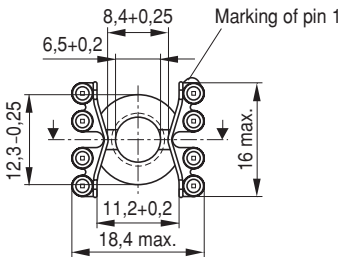
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

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

Winding: see "Processing Notes", page 153

For matching clamp and insulating washer 1 see page 210

Sections	$A_N$ mm <sup>2</sup>	$l_N$ mm	$A_R$ value $\mu\Omega$	Pins	Ordering code
1	15	30	69	8	B65808-W1508-T1


 Hole arrangement  
View in mounting direction

FRM0299-7



**Clamp**

- With ground terminal, made of stainless spring steel (tinned), 0,435 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

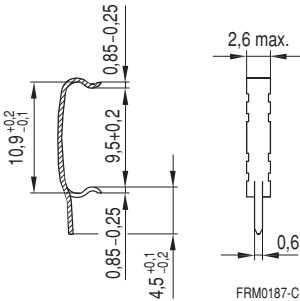
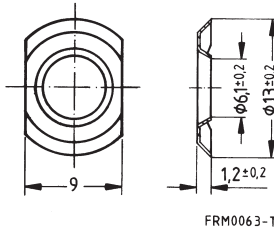
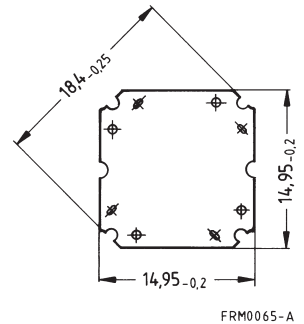
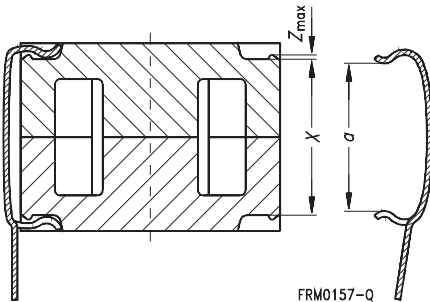
**Insulating washer 1 between core and coil former**

- For tolerance compensation and for insulation
- Made of polycarbonate (UL 94 V-0, insulation class to IEC 60085: E  $\triangleq$  120 °C), 0,08 mm thick

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

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

	Ordering code
Clamp (ordering code per piece, 2 are required)	B65808-A2203
Insulating washer 1 (reel packing, PU = 1 reel)	B65808-A5000
Insulating washer 2 (bulk)	B65808-C2005

**Clamp**

**Insulating washer 1**

**Insulating washer 2**

**Clamping forces for RM 6**


$F_{\min}$ : 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)	9,5 + 0,2	
Core nose $Z_{\max}$ (mm)	0,22	
Height of core pair $X$ (mm)	$X_{\min}$	10,1
	$X_{\max}$	10,6
Clamping force $F$ (N)	$F_{\min}$	7
	$F_{\max}$	50



### 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

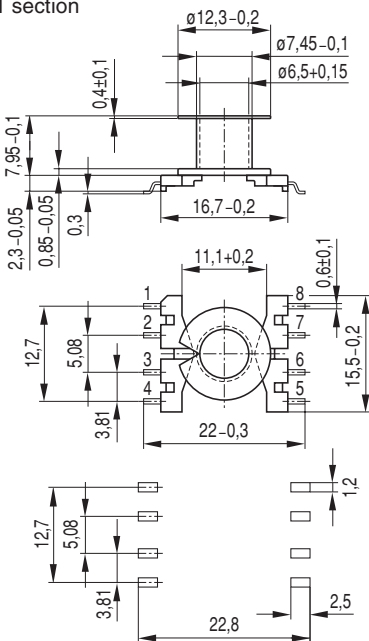
### Clamp

- Without ground terminal, made of stainless spring steel, 0,435 mm thick
- Also available as strip clamp (each carton containing 2 reels) on request

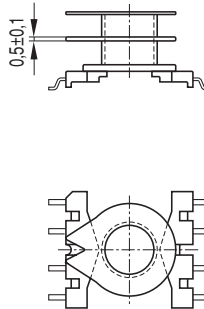
Sections	$A_N$ mm <sup>2</sup>	$l_N$ mm	$A_R$ value $\mu\Omega$	Terminals	Ordering code
1	16,2	31	66	8	B65821-C1008-T1
2	15,2	31	69	8	B65821-C1008-T2
Clamp	(ordering code per piece, 2 are required)				B65808-J2204

### Coil former

1 section



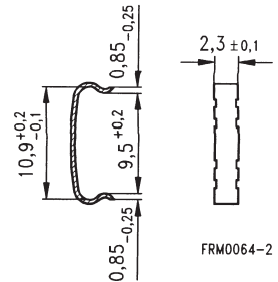
2 sections



Recommended  
PCB layout

FRM0238-Q

### Clamp



FRM0064-2

## 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

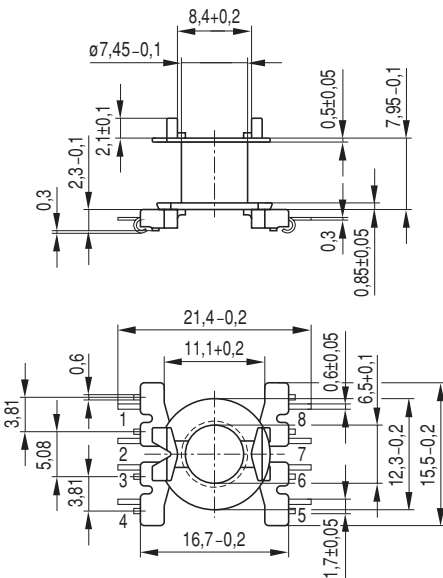
Winding: see "Processing Notes", page 160

### Clamp

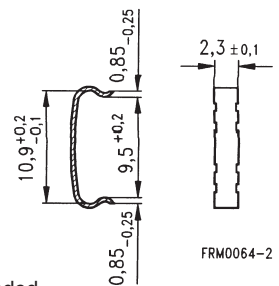
- Without ground terminal, made of stainless spring steel, 0,435 mm thick
- Also available as strip clamp (each carton containing 2 reels) on request

Sections	$A_N$ mm <sup>2</sup>	$l_N$ mm	$A_R$ value $\mu\Omega$	Terminals	Ordering code
1	16,2	31	66	8	B65821-J1008-T1
Clamp	(ordering code per piece, 2 are required)				B65808-J2204

### Coil former

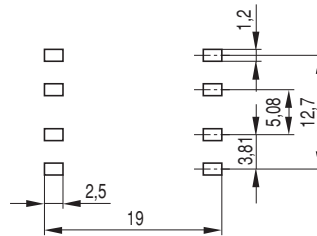


### Clamp



FRM0064-2

### Recommended PCB layout



FRM0239-Y

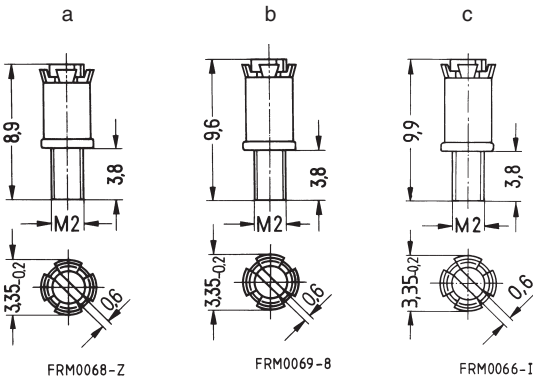
<b>RM 6</b>	<b>B65659</b>
<b>Accessories</b>	<b>B63399</b>

### 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 6		Adjusting screw				Min. adjusting range %	Ordering code
Material	A <sub>L</sub> value nH	Fig.	Tube core Ø × length mm	Material	Color code		
K 1	40	a	2,62 × 3,7	Si 1	white	15	B65659-F1-X101
M 33	63	a	2,62 × 3,7	Si 1	white	17	B65659-F1-X101
	100	c	2,82 × 4,4	Si 1	brown	16	B65659-F4-X101
N 48	160	a	2,62 × 3,7	K 1	green	17	B65659-F1-X1
	250	a	2,62 × 3,7	N 22	red	11	B65659-F1-X23
	315	b	2,75 × 4,4	N 22	black	13	B65659-F3-X23
	400	c	2,82 × 4,4	N 22	yellow	11	B65659-F4-X23
<b>Adjusting screwdriver</b>							B63399-B4
<b>Handle</b>							B63399-B5

### Adjusting screws



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