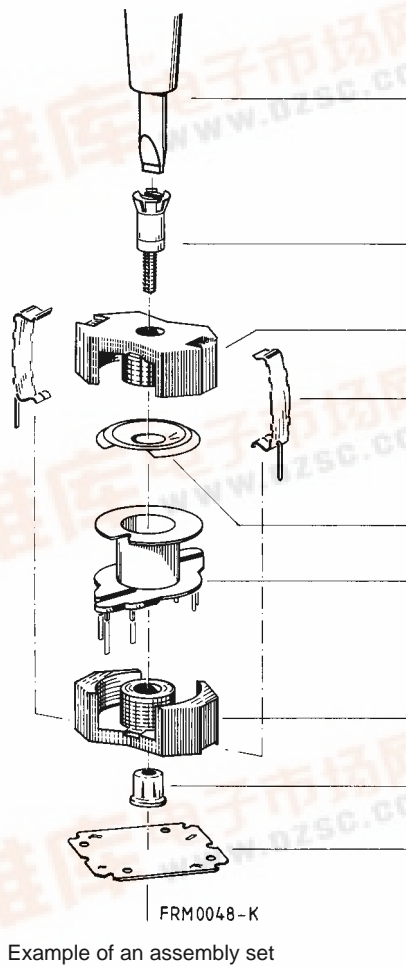


**RM 6
Core and Accessories**



Individual parts	Part no.	Page
Adjusting screwdriver (for assembly only)	B63399	220
Matching handle	B63399	220
Adjusting screw	B65659	220
Core	B65807	212
Clamps	B65808	217
Insulating washer 1	B65808	217
Coil former	B65808	214
Core	B65807	212
Threaded sleeve (glued-in)		
Insulating washer 2	B65808	217

FRM0048-K
Example of an assembly set

Also available:

Coil former for SMPS transf.	B65808	215
Coil former for power applications	B65808	216
SMD coil former	B65821	218, 219
RM 6 low profile:		
Core	B65807-P	225
SMD coil former	B65821	226
Clamp	B65808	226



**RM 6
Core**

B65807

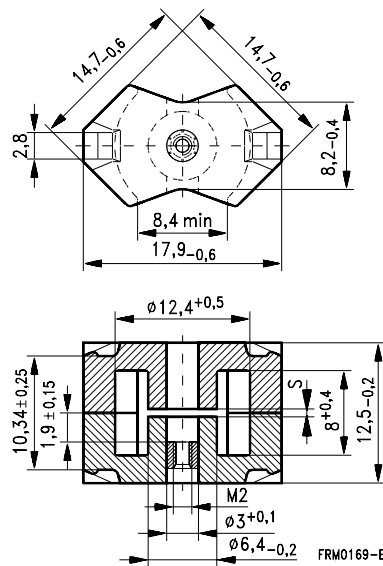
- In accordance with IEC 60431
- Core without center hole for transformer applications
- RM cores are supplied in sets

Magnetic characteristics (per set)

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

Approx. weight (per set)

m	4,9	5,3	g



Gapped

Material	A_L value nH	s approx. mm	μ_e	Ordering code ¹⁾ -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 ± 2 %	0,22	110	B65807-+160-G48
	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
N26	1000 ± 10 %	0,03	685	B65807-+1000-K26

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



**RM 6
Core**

B65807

Ungapped

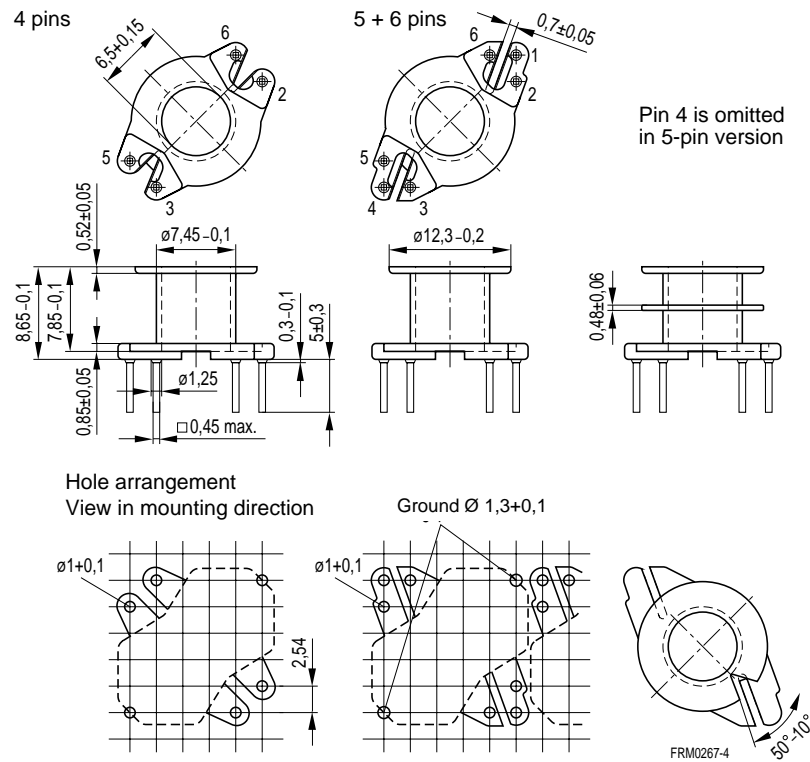
Material	A_L value	μ_e	A_{L1min}	P_V	Ordering code -C with center hole -J w/o center hole
	nH				
N26	2200 + 30/- 20 %	1500			B65807-C-R26
N30	4300 + 30/- 20 %	2670			B65807-J-R30
T35	6200 + 30/- 20 %	3850			B65807-J-R35
T38	8600 + 40/- 30 %	5340			B65807-J-Y38
T42	12300 + 40/- 30 %	7630			B65807-J-Y42
N49	1700 + 30/- 20 %	1060	960	0,15 (50 mT, 500 kHz, 100 °C)	B65807-J-R49
N67	2200 + 30/- 20 %	1490	1450	0,64 (200 mT, 100 kHz, 100 °C)	B65807-J-R67
N87	2400 + 30/- 20 %	1490	1450	0,51 (200 mT, 100 kHz, 100 °C)	B65807-J-R87
N41	3100 + 30/- 20 %	1920	1450	0,16 (200 mT, 25 kHz, 100 °C)	B65807-J-R41



Coil former

Material: GFR thermosetting plastic (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 page 152
 Squared pins. For matching clamp and insulating washers see page 217.

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

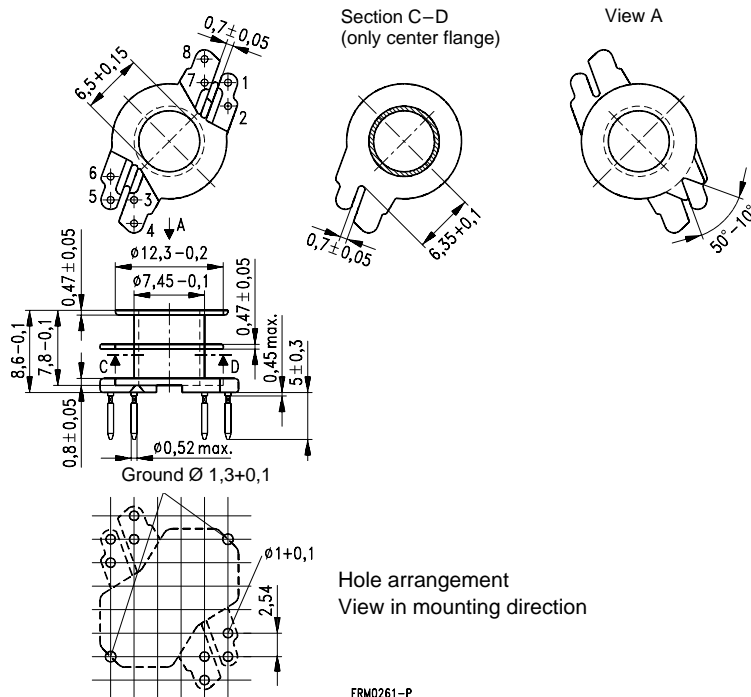
Material: GFR thermosetting plastic (UL 94 V-0, insulation class to IEC 60085: F \geq max. operating temperature 155 °C), color code green

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 page 152

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



**RM 6
Accessories**

B65808

Coil former for power applications

Optimized for automatic winding

Material: GFR polyterephthalate (UL 94 V-0, insulation class to IEC 60085:
F $\hat{=}$ max. operating temperature 155 °C), color code black

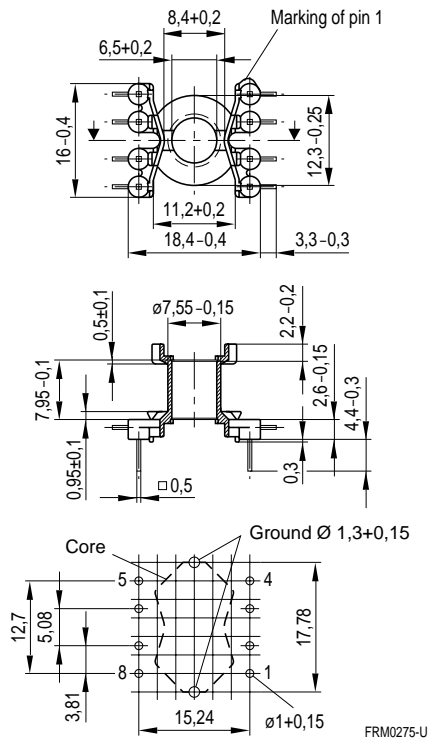
Solderability: to IEC 60068-2-20, test Ta, method 1 (aging 3): 235 °C, 2 s

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

Winding: see page 152

For matching clamp and insulating washer 1 see page 217

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



**RM 6
Accessories**

B65808

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

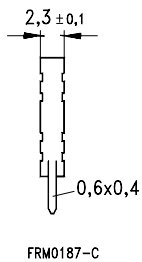
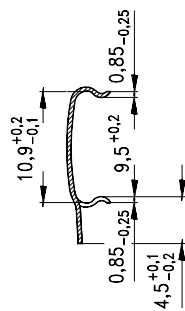
- For tolerance compensation and for insulation
- Made of polycarbonate (UL 94 V-0, insulation class to IEC 60085: E \geq 120 °C), 0,06 mm thick

Insulating washer 2 for double-clad PCBs

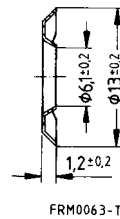
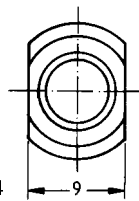
- Made of polycarbonate (UL 94 V-0, insulation class to IEC 60085: E \geq 120 °C), 0,3 mm thick

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

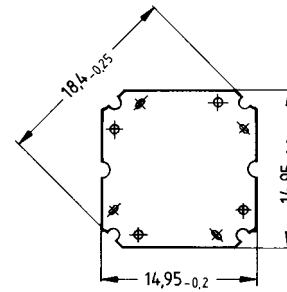
Clamp



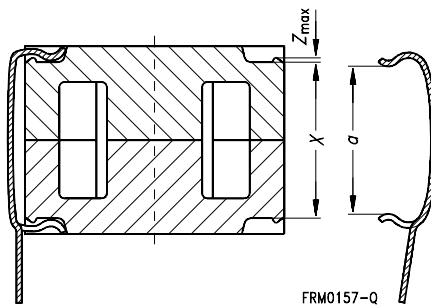
Insulating washer 1



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 $\hat{=}$ 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
permissible soldering temperature for wire-wrap connection on coil former: 400 °C, 1 s

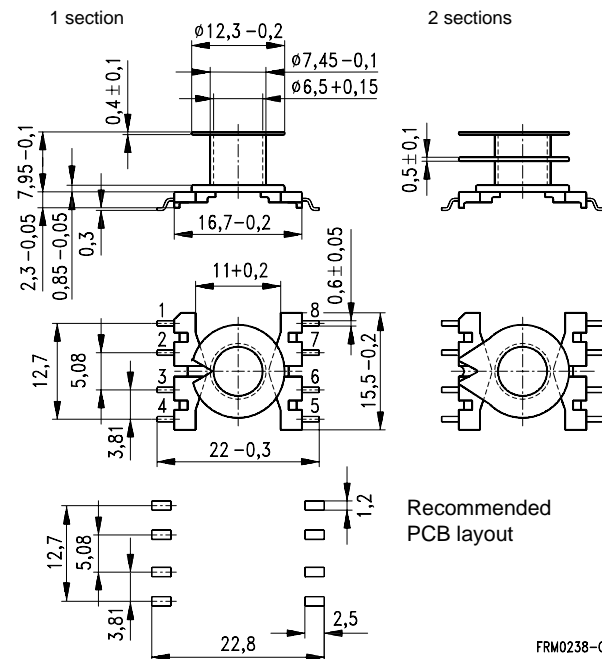
Winding: see page 160

Clamp

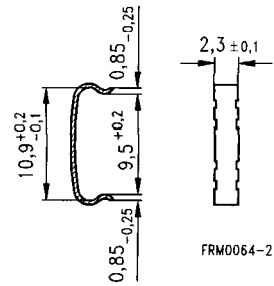
- Without ground terminal, made of stainless spring steel, 0,3 mm thick
- Also available as strip clamp (each carton containing 2 reels)
- Also available on a reel on request

Sections	A_N mm ²	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



Clamp



SMD coil former with J terminals

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

F $\hat{=}$ 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

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

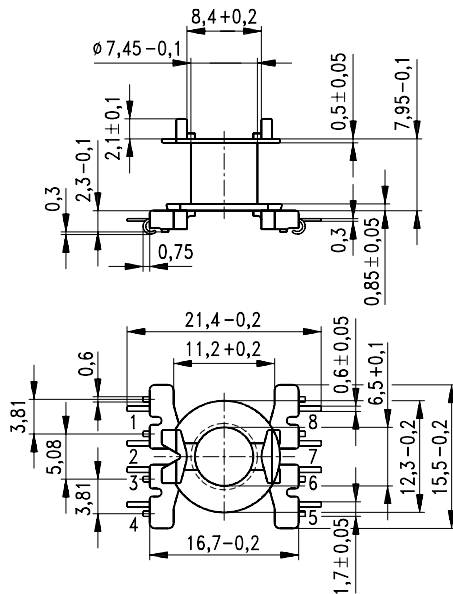
Winding: see page 160

Clamp

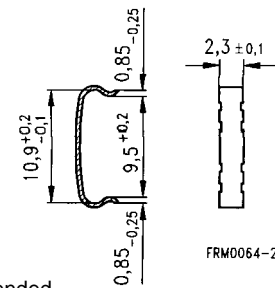
- Without ground terminal, made of stainless spring steel, 0,3 mm thick
- Also available as strip clamp (each carton containing 2 reels)
- Also available on a reel on request

Sections	A_N mm ²	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

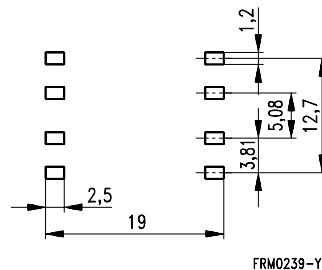
Coil former



Clamp



Recommended PCB layout



**RM 6
Accessories**

**B65659
B63399**

Adjusting screw

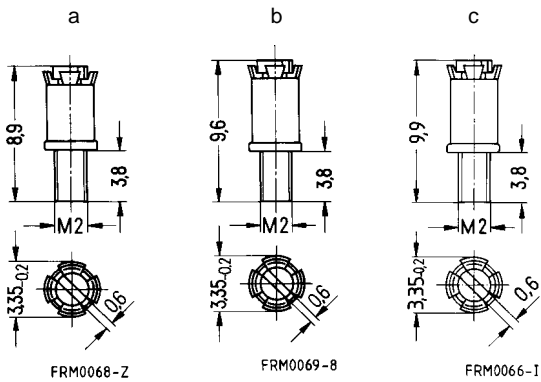
- Tube core with thread and core brake made of GFR polyterephthalate

Plastic **adjusting screwdriver** (not shown)

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

Core RM 6		Adjusting screw				Min. adjusting range %	Ordering code
Material	A _L 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
	200	a	2,62 × 3,7	N 22	red	16	B65659-F1-X23
	250						
	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	
Adjusting screwdriver							B63399-B4
Handle							B63399-B5

Adjusting screws

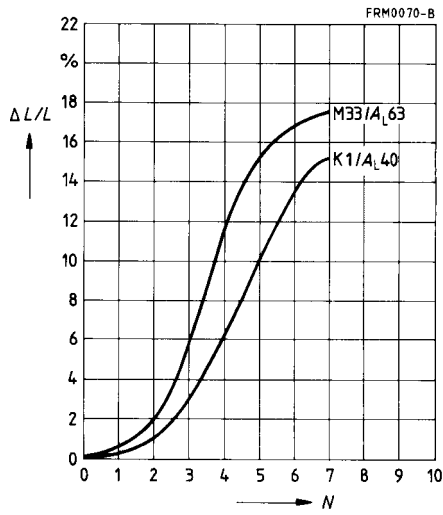


RM 6

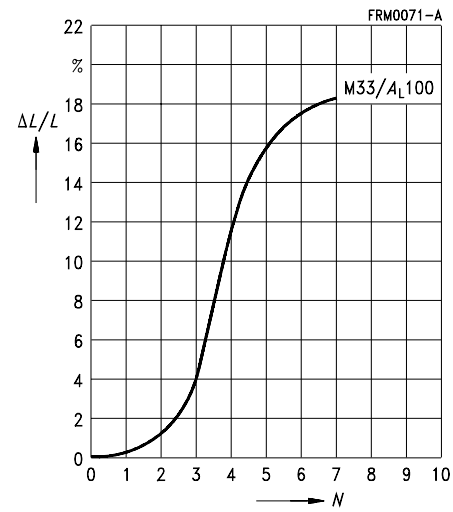
Inductance adjustment curves (nominal values)

Relative inductance change $\Delta L/L$ versus turns N of adjusting screw.
 $0 \cong$ at least 1 turn engaged.

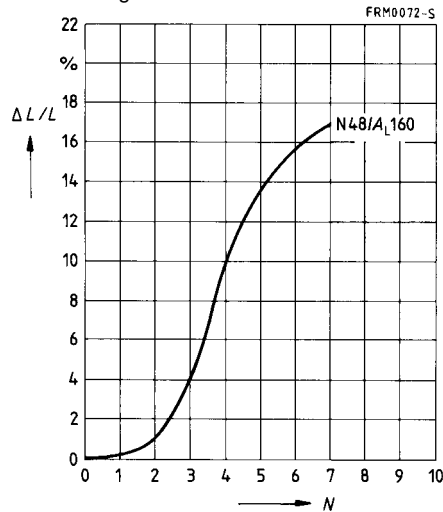
Adjusting screw B65659-F1-X101
 Color code white



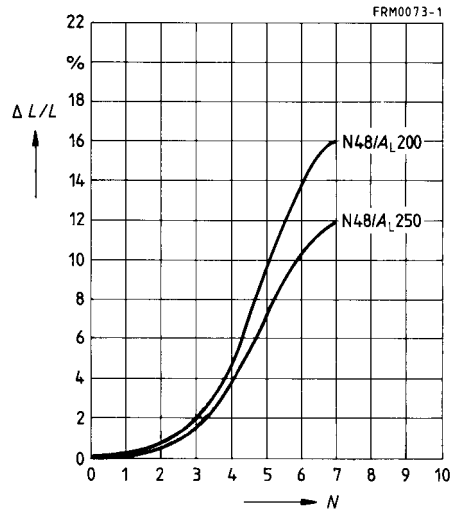
Adjusting screw B65659-F4-X101
 Color code brown



Adjusting screw B65659-F1-X1
 Color code green



Adjusting screw B65659-F1-X23
 Color code red



RM 6

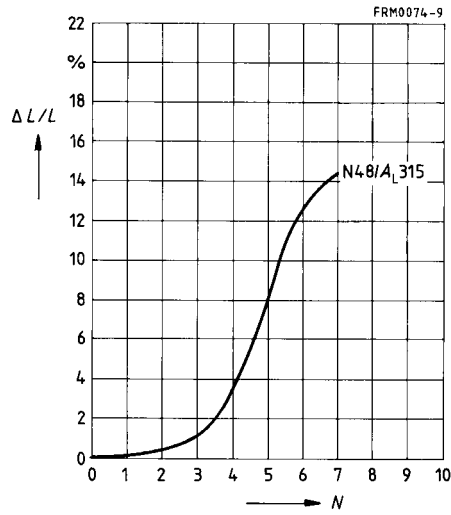
Inductance adjustment curves (nominal values)

Relative inductance change $\Delta L/L$ versus turns N of adjusting screw.

0 $\hat{=}$ at least 1 turn engaged.

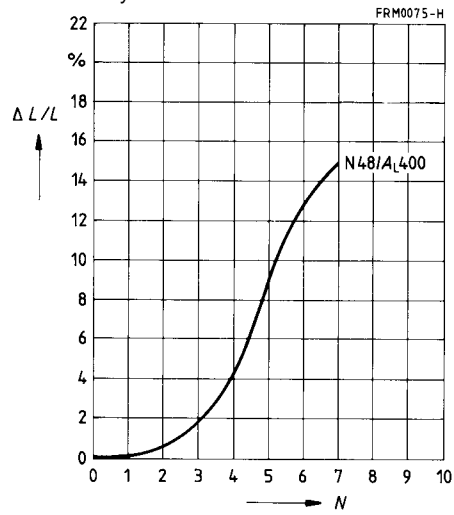
Adjusting screw B65659-F3-X23

Color code black



Adjusting screw B65659-F4-X23

Color code yellow

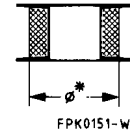


RM 6

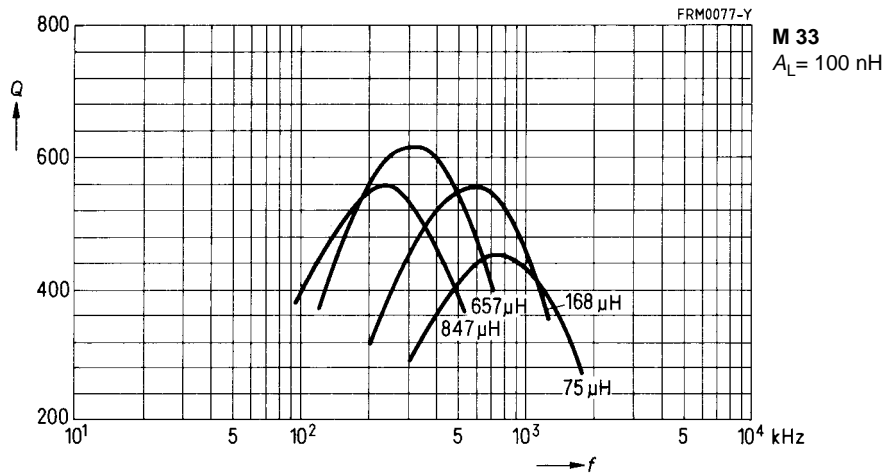
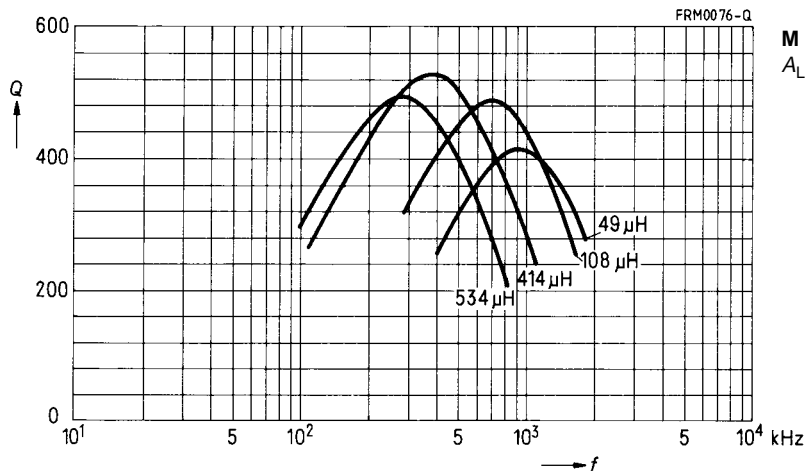
Q factor characteristics (typical values)

Flux density in the core $\hat{B} < 2 \text{ mT}$

Material	L (μH) for		Turns	RF litz wire	Sec-tions	\varnothing^* mm
	$A_L = 63 \text{ nH}$	$A_L = 100 \text{ nH}$				
M 33	534	847	92	45 \times 0,04 CuLS	1	—
	414	657	81	45 \times 0,04 CuLS	2	—
	108	168	41	45 \times 0,04 CuLS	2	9,8
	49	75	27	45 \times 0,04 CuLS	2	10,6



* Pad of polystyrene tape up to diameter \varnothing

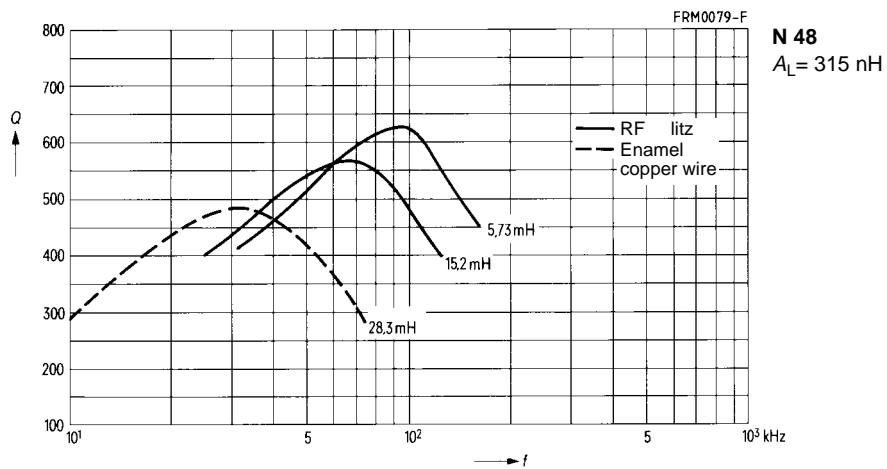
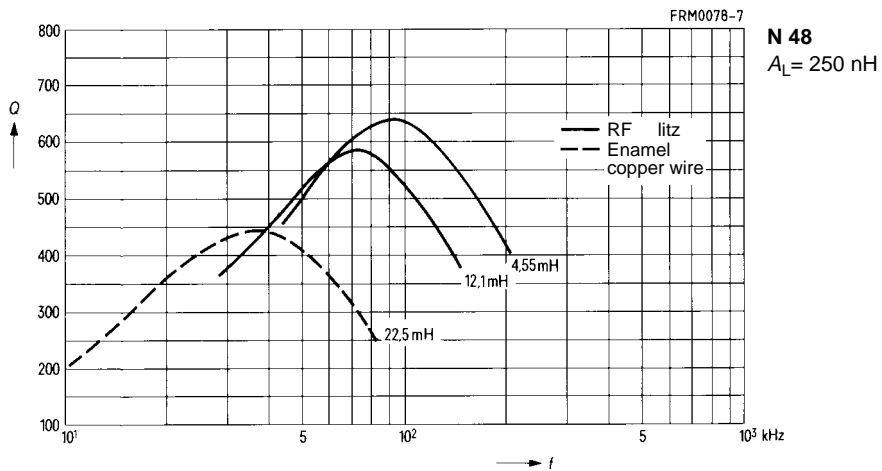


RM 6

Q factor characteristics (typical values)

Flux density in the core $\hat{B} < 2$ mT

Material	L (mH) for		Turns	Wire; RF litz wire	Sections
	$A_L = 250$ nH	$A_L = 315$ nH			
N 48	22,5	28,3	300	0,20 CuL	1
	12,1	15,2	220	6 × 0,07 CuLS	1
	4,55	5,73	135	20 × 0,05 CuLS	1



**RM 6 »Low Profile«
Core**

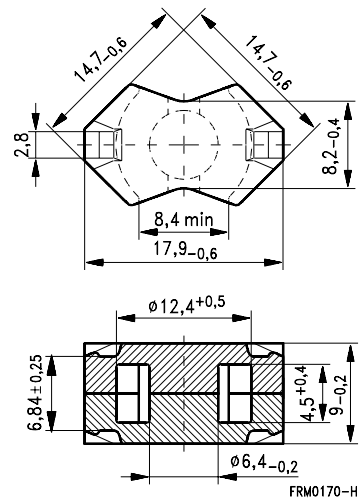
B65807-P

- For compact transformers
- Without center hole
- RM cores are supplied in sets

Magnetic characteristics (per set)

$\Sigma l/A = 0,58 \text{ mm}^{-1}$
 $l_e = 21,8 \text{ mm}$
 $A_e = 37,5 \text{ mm}^2$
 $A_{\min} = 31,2 \text{ mm}^2$
 $V_e = 820 \text{ mm}^3$

Approx. weight 4,0 g/set



Ungapped

Material	A_L value nH	μ_e	$A_{L1\min}$	P_V W/set	Ordering code
T38	10500 + 40/- 30 %	4830			B65807-P-Y38
N49	2200 + 30/- 20 %	1020	1500	0,14 (50 mT, 500 kHz, 100 °C)	B65807-P-R49
N87	3000 + 30/- 20 %	1380	1950	0,40 (200 mT, 100 kHz, 100 °C)	B65807-P-R87



SMD coil former with gullwing terminals

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

F $\hat{=}$ 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

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

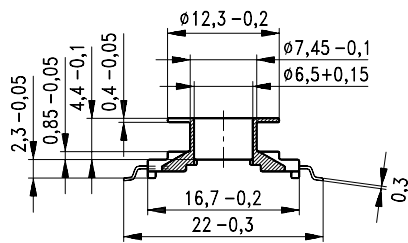
Winding: see page 160

Clamp

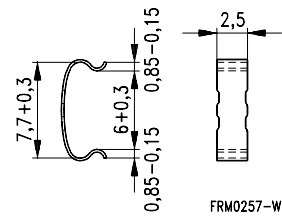
- Without ground terminal, made of stainless spring steel, 0,3 mm thick
- Also available as strip clamp (each carton containing 2 reels)
- Also available on a reel on request

Sections	A_N mm ²	l_N mm	A_R value $\mu\Omega$	Terminals	Ordering code
1	7,6	31	66	8	B65821-A6008-T1
Clamp	(ordering code per piece, 2 are required)				B65808-P2204

Coil former



Clamp



Recommended PCB layout

