

APÉNDICE D

Diseño de Bobinas

$$L = 680 \mu\text{H}$$

$$\hat{i} = 7.6 \text{ A}$$

$$f = 98 \text{ KHz}$$

$$S = 535 \text{ mm}^2, \text{ E65}$$

$$\hat{B} = 200 \text{ mT}, 3\text{F3}$$

$$\text{Vol. entrefer} = \frac{\mu_0 L \hat{i}^2}{\hat{B}^2} = \frac{(4\pi \times 10^{-7})(680 \times 10^{-6})(7.6)^2}{(0.2)^2} = 1233.917 \text{ mm}^3$$

$$e = \frac{\text{Vol. entrefer}}{S} = \frac{1233.917 \text{ mm}^3}{535 \text{ mm}^2} = 2.306 \text{ mm} \approx 2.3 \text{ mm}$$

$$n = \sqrt{\frac{Le}{\mu_0 S}} = \sqrt{\frac{(680 \times 10^{-6})(2.3 \times 10^{-3})}{(4\pi \times 10^{-7})(535 \times 10^{-6})}} = 48.232 \approx 48 \text{ espiras}$$

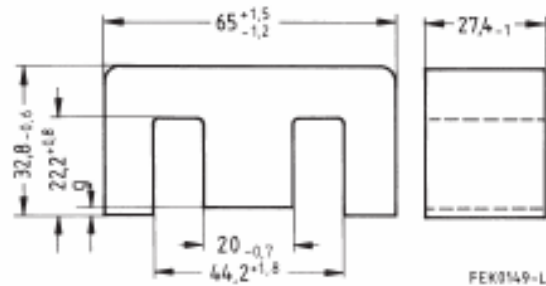
E 65/32/27
Core
B66387

■ E cores are supplied as single units

Magnetic characteristics (per set)

$\Sigma l/A = 0,27 \text{ mm}^{-1}$
 $l_e = 147 \text{ mm}$
 $A_e = 535 \text{ mm}^2$
 $A_{min} = 529 \text{ mm}^2$
 $V_e = 78\,600 \text{ mm}^3$

Approx. weight 394 g/set



Ungapped

Material	A_L value nH	μ_e	A_{L1min} nH	P_V W/set	Ordering code
N27	7200 + 30/- 20 %	1570	5730	< 14,60 (200 mT, 25 kHz, 100 °C)	B66387-G-X127
N87	7900 + 30/- 20 %	1700	5730	< 6,70 (100 mT, 100 kHz, 100 °C)	B66387-G-X187

Gapped

Material	g mm	A_L value approx. nH	μ_e	Ordering code ** = 27 (N27) = 87 (N87)
N27,	0,50 ± 0,05	1214	265	B66387-G500-X1**
N87	1,00 ± 0,05	716	156	B66387-G1000-X1**
	1,50 ± 0,05	526	115	B66387-G1500-X1**

The A_L value in the table applies to a core set comprising one ungapped core (dimension $g = 0$) and one gapped core (dimension $g > 0$).

Calculation factors (for formulas, see "E cores: general information", page 382)

Material	Relationship between air gap – A_L value		Calculation of saturation current			
	$K1$ (25 °C)	$K2$ (25 °C)	$K3$ (25 °C)	$K4$ (25 °C)	$K3$ (100 °C)	$K4$ (100 °C)
N27	716	- 0,762	1231	- 0,847	1154	- 0,865
N87	716	- 0,762	1168	- 0,796	1131	- 0,873

Validity range: $K1, K2: 0,20 \text{ mm} < s < 5,00 \text{ mm}$
 $K3, K4: 230 \text{ nH} < A_L < 2290 \text{ nH}$