



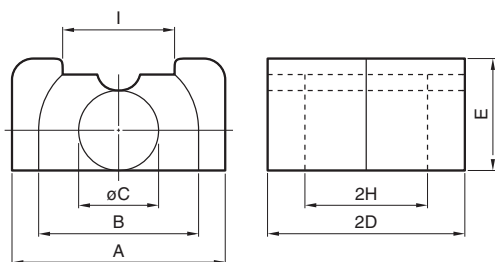
Mn-Zn

Ferrite Cores for Switching Power Supplies

LP series

Mn-Zn LP Cores

SHAPES AND DIMENSIONS



LP	LP23/8	Z	1	2
Material	Size of LP core	AL-value (Z: without air gap)	Type	Number of lead slot
			1 Without air gap	
			2 With air gap	

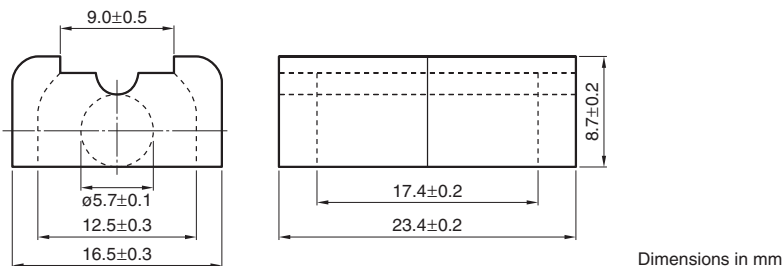
Part No.	Dimensions (mm)						
	A	B	øC	2D	E	2H	I
PC47LP23/8Z-12	16.5±0.3	12.5±0.3	5.7±0.1	23.4±0.2	8.7±0.2	17.4±0.2	9.0±0.5
PC47LP22/13Z-12	25.0±0.4	19.0±0.3	8.6±0.2	22.4±0.2	12.9±0.3	16.4±0.3	13.5±0.5
PC47LP32/13Z-12	25.0±0.4	19.0±0.3	8.6±0.2	31.8±0.2	12.9±0.3	24.1±0.3	13.5±0.5

Part No.	Effective parameter					Electrical characteristics		
	Core factor C ₁ (mm ⁻¹)	Effective cross-sectional area A _e (mm ²)	Effective magnetic path length ℓ _e (mm)	Effective core volume V _e (mm ³)	Weight (g)	AL-value (nH/N ²) 1kHz 0.5mA 100Ts		Core loss (W) max. 100kHz 200mT 100°C
						Without air gap	With air gap	
PC47LP23/8Z-12	1.41	31.3	44.1	1380	9.6	1600±25%	63±5% 100±7% 250±13%	0.48
PC47LP22/13Z-12	0.721	67.9	49.0	3330	21	3310±25%	100±5% 200±7% 400±10%	1.22
PC47LP32/13Z-12	0.909	70.3	64.0	4500	30	2630±25%	100±5% 200±7% 400±10%	1.60

• All specifications are subject to change without notice.

Mn-Zn LP series Part No.: PC47LP23/8Z-12

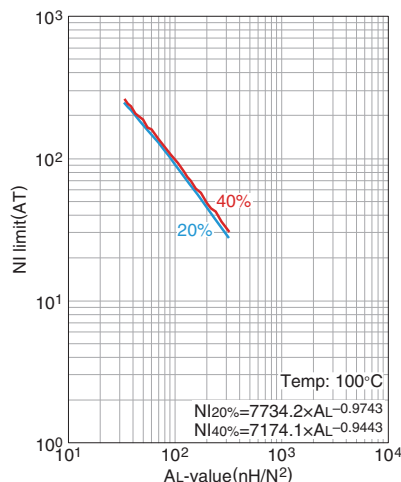
SHAPES AND DIMENSIONS



Effective parameter								Electrical characteristics		
Core factor	Effective magnetic path length ℓ_e (mm)	Effective cross-sectional area A_e (mm ²)	Effective core volume V_e (mm ³)	Cross-sectional center pole area A_{cp} (mm ²)	Minimum cross-sectional center pole area $A_{cp \text{ min}}$ (mm ²)	Cross-sectional winding area of core A_{cw} (mm ²)	Weight (g/set)	AL-value *		Core loss
C_1 (mm ⁻¹)								(nH/N ²) 1kHz 0.5mA	100kHz 200mT	(W)max. 100kHz 200mT 100°C
1.41	44.1	31.3	1380	25.5	24.6	59.2	9.6	1600±25%	2230 min.	0.48

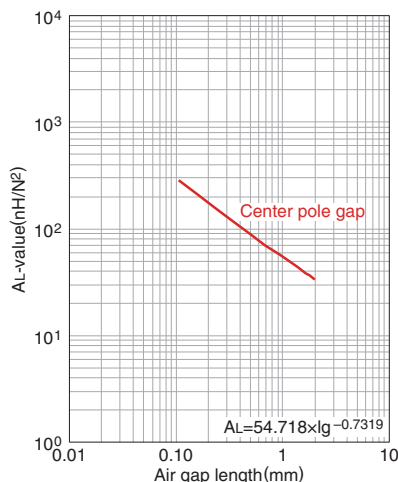
* Coil : ø0.3 2UEW 100Ts
 ○ Calculated output power (forward converter mode): 54W (100kHz)

NI limit vs. AL-value (Typ.)



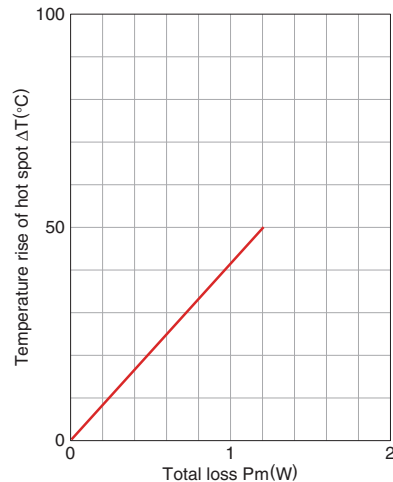
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

AL-value vs. Air gap length (Typ.)

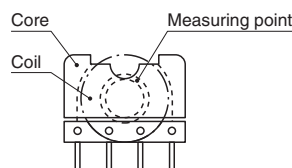


Measuring conditions
 • Coil : ø0.3 2UEW 100Ts
 • Frequency : 1kHz
 • Current level : 0.5mA
 • Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



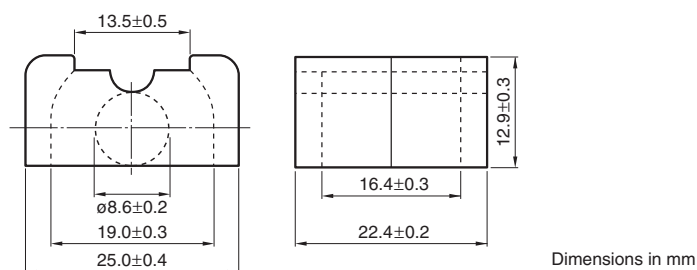
Measuring conditions
 • Room space: approx. 400x300x 300cm
 • Ambient temperature : 25°C
 • Humidity : 45%(%)RH.



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Mn-Zn LP series Part No.: PC47LP22/13Z-12

SHAPES AND DIMENSIONS

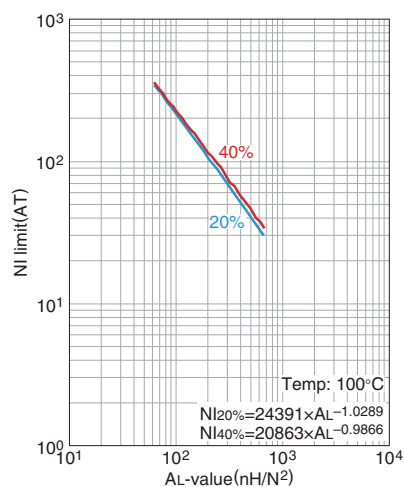


Effective parameter								Electrical characteristics		
Core factor	Effective magnetic path length ℓ_e (mm)	Effective cross-sectional area A_e (mm ²)	Effective core volume V_e (mm ³)	Cross-sectional center pole area A_{cp} (mm ²)	Minimum cross-sectional center pole area $A_{cp \text{ min.}}$ (mm ²)	Cross-sectional winding area of core A_{cw} (mm ²)	Weight (g/set)	AL-value *		Core loss
C_1 (mm ⁻¹)								(nH/N ²) 1kHz 0.5mA	100kHz 200mT	(W)max. 100kHz 200mT 100°C
0.721	49.0	67.9	3330	58.1	55.4	84.2	21	3310±25%	4700 min.	1.22

* Coil : ø0.35 2UEW 100Ts

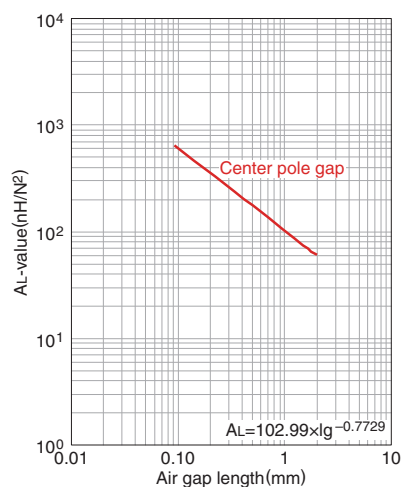
○ Calculated output power (forward converter mode): 135W (100kHz)

NI limit vs. AL-value (Typ.)



The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

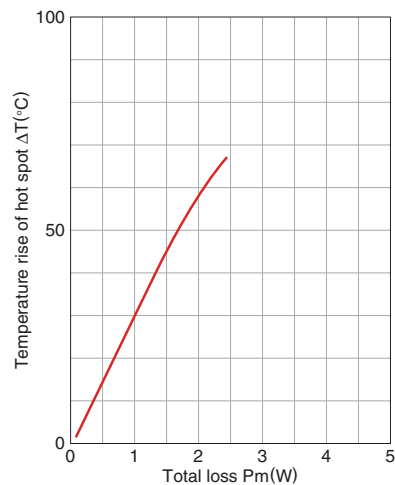
AL-value vs. Air gap length (Typ.)



Measuring conditions

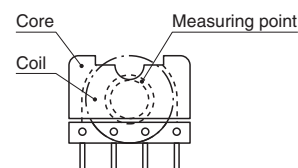
- Coil : ø0.35 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



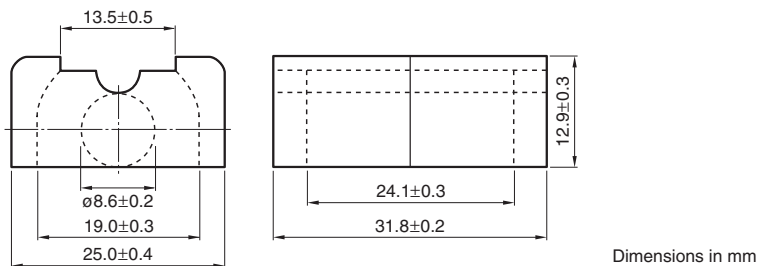
Measuring conditions

- Room space: approx. 400x300x 300cm
- Ambient temperature : 25°C
- Humidity: 45%(%)RH.



Mn-Zn LP series Part No.: PC47LP32/13Z-12

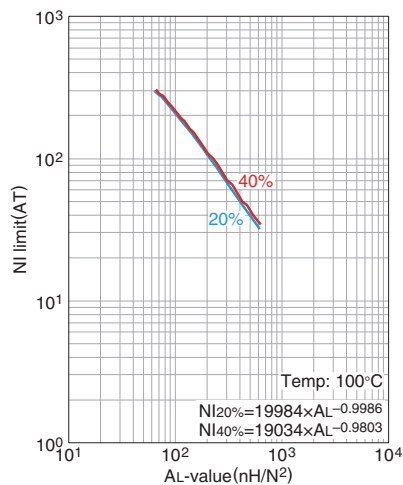
SHAPES AND DIMENSIONS



Effective parameter								Electrical characteristics		
Core factor	Effective magnetic path length ℓ_e (mm)	Effective cross-sectional area A_e (mm ²)	Effective core volume V_e (mm ³)	Cross-sectional center pole area A_{cp} (mm ²)	Minimum cross-sectional center pole area $A_{cp \text{ min.}}$ (mm ²)	Cross-sectional winding area of core A_{cw} (mm ²)	Weight (g/set)	AL-value *		Core loss
C_1 (mm ⁻¹)								(nH/N ²)		(W)max.
0.909	64.0	70.3	4500	58.1	55.4	125.3	30	1kHz 0.5mA	100kHz 200mT	100kHz 200mT 100°C
								2630±25%	3730 min.	1.60

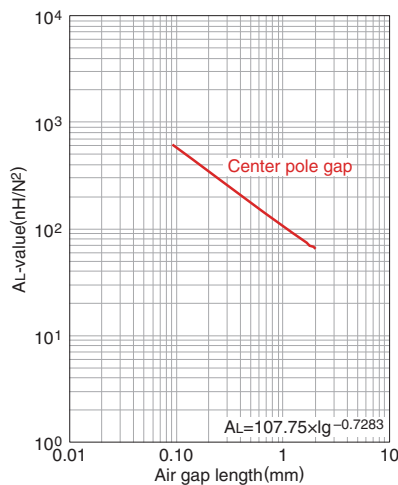
* Coil : ø0.35 2UEW 100Ts
 ○ Calculated output power (forward converter mode): 182W (100kHz)

NI limit vs. AL-value (Typ.)



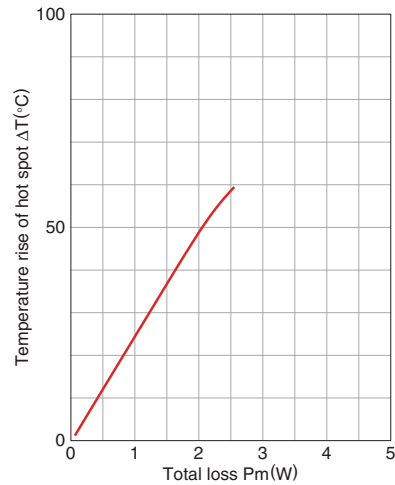
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

AL-value vs. Air gap length (Typ.)

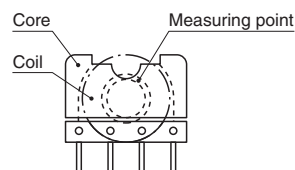


Measuring conditions
 • Coil : ø0.35 2UEW 100Ts
 • Frequency : 1kHz
 • Current level : 0.5mA
 • Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



Measuring conditions
 • Room space: approx. 400x300x 300cm
 • Ambient temperature : 25°C
 • Humidity: 45%(%)RH.



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