



Mn-Zn

Ferrite Cores for Switching Power Supplies

EPC series



REMINDERS FOR USING THESE PRODUCTS

Please be sure to read this manual thoroughly before using the products.

The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

When using the products for specific purposes, please first make confirmations in areas such as safety, reliability, and quality.

Please understand that we are not in a position to be held responsible for any damage or the like caused by any use exceeding the range or conditions of this specification sheet or by any use in the specific applications.

- | | |
|---|--|
| (1) Aerospace/Aviation equipment | (8) Public information-processing equipment |
| (2) Transportation equipment (electric trains, ships, etc.) | (9) Military equipment |
| (3) Medical equipment | (10) Electric heating apparatus, burning equipment |
| (4) Power-generation control equipment | (11) Disaster prevention/crime prevention equipment |
| (5) Atomic energy-related equipment | (12) Safety equipment |
| (6) Seabed equipment | (13) Other applications that are not considered general-purpose applications |
| (7) Transportation control equipment | |

When using this product in general-purpose standard applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc to ensure higher safety.

Ferrite Cores for Switching Power Supplies

Product compatible with RoHS directive
Halogen-free

Overview of the EPC Series

FEATURES

- TDK's original shapes
- The EPC Cores have low profiles, and so are useful in situations where mounting is subject to restrictions.

APPLICATION

Transformers and coils for Switched-mode power supplies (High Mounting Density, Low Profile)

PART NUMBER CONSTRUCTION

PC47	EPC10	Z	-	1	2
Material	Size of EPC core	AL-value (Z: without air gap)		Type	Number of lead slot
PC47	EPC10			1 Without air gap	
PC90	EPC13			2 With air gap	
PC95	EPC17				
	EPC19				
	EPC25				
	EPC25B				
	EPC27				
	EPC30				

RANGE OF USE AND STORAGE TEMPERATURE

Temperature range	
Operating temperature (°C)	Storage temperature (°C)
-30 to +105	-30 to +85

○ RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. <http://www.tdk.co.jp/rohs/>

○ Halogen-free: Indicates that Cl content is less than 900ppm, Br content is less than 900ppm, and that the total Cl and Br content is less than 1500ppm.

• All specifications are subject to change without notice.

Mn-Zn EPC Core

SHAPES AND DIMENSIONS

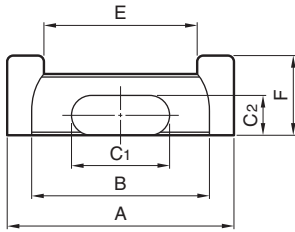


Fig. 1

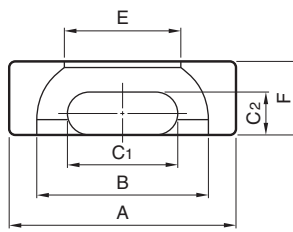
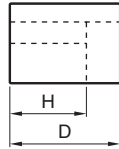
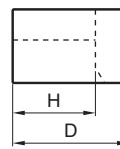


Fig. 2



PC47	EPC10	Z	-	1	2
Material	Size of EPC core	AL-value (Z: without air gap)		Type	Number of lead slot
				1 Without air gap	
				2 With air gap	

Part No.	Core	Dimensions (mm)							
		A	B min.	C1	C2	D	E min.	F	H
PC47EPC10-Z PC90EPC10-Z PC95EPC10-Z	Fig.2	10.2±0.2	7.6	5.0±0.1	1.9±0.1	4.05±0.10	5.3	3.4±0.1	2.65±0.10
PC47EPC13-Z PC90EPC13-Z PC95EPC13-Z	Fig.1	13.25±0.3	10.5	5.60±0.15	2.05±0.10	6.6±0.2	8.3	4.60±0.15	4.5±0.2
PC47EPC17-Z PC90EPC17-Z PC95EPC17-Z	Fig.1	17.6±0.4	14.3	7.70±0.15	2.8±0.1	8.55±0.20	11.5	6.00±0.15	6.05±0.20
PC47EPC19-Z PC90EPC19-Z PC95EPC19-Z	Fig.1	19.1±0.4	15.8	8.50±0.15	2.5±0.1	9.75±0.20	13.1	6.00±0.15	7.25±0.20

Part No.	Effective parameter					Electrical characteristics						
	Core factor	Effective cross-sectional area	Effective magnetic path length	Effective core volume	Weight	AL-value		Core loss				
	C ₁ (mm ⁻¹)	A _e (mm ²)	ℓ _e (mm)	V _e (mm ³)	(g)	(nH/N ²) 1kHz 0.5mA 100Ts		(W)max. 100kHz 200mT				
PC47EPC10-Z PC90EPC10-Z PC95EPC10-Z	1.89	9.39	17.8	167	1.1	1000±25% 900±25% 1040±25%	Without air gap With air gap	0.067 0.090 —	— — 0.100	— — 0.080	— — 0.100	—
PC47EPC13-Z PC90EPC13-Z PC95EPC13-Z	2.45	12.5	30.6	382	2.1	870±25% 800±25% 1060±25%	Without air gap With air gap	0.14 0.17 —	— — 0.17	— — 0.15	— — 0.17	—
PC47EPC17-Z PC90EPC17-Z PC95EPC17-Z	1.76	22.8	40.2	917	4.5	1150±25% 1100±25% 1500±25%	Without air gap With air gap	0.34 0.45 —	— — 0.45	— — 0.35	— — 0.45	—
PC47EPC19-Z PC90EPC19-Z PC95EPC19-Z	2.03	22.7	46.1	1050	5.3	940±25% 940±25% 1400±25%	Without air gap With air gap	0.39 0.5 —	— — 0.5	— — 0.4	— — 0.5	—

Mn-Zn EPC Cores

SHAPES AND DIMENSIONS

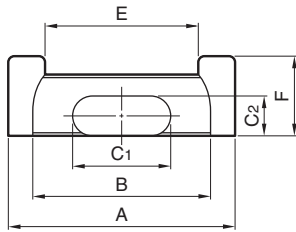


Fig. 1

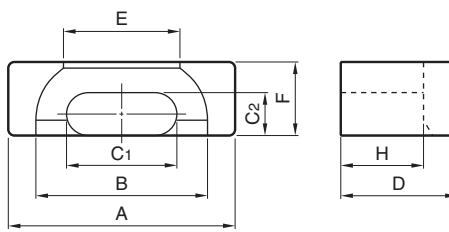


Fig. 2

PC47	EPC25	Z	-	1	2
Material	Size of EPC core	AL-value (Z: without air gap)		Type	Number of lead slot
				1 Without air gap	
				2 With air gap	

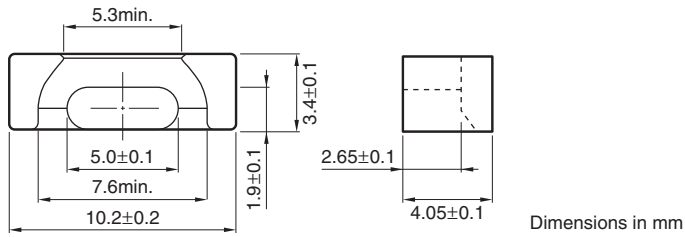
Part No.	Core	Dimensions (mm)							
		A	B min.	C1	C2	D	E min.	F	H
PC47EPC25-Z PC90EPC25-Z PC95EPC25-Z	Fig.1	25.1±0.5	20.65	11.5±0.2	4.0±0.1	12.5±0.2	17.1	8.0±0.2	9.0±0.3
PC47EPC25B-Z PC90EPC25B-Z PC95EPC25B-Z	Fig.2	25.1±0.5	20.4	13.8±0.2	2.50±0.15	11.43±0.15	16.5	6.5±0.2	8.78±0.15
PC47EPC27-Z PC90EPC27-Z PC95EPC27-Z	Fig.1	27.1±0.5	21.6	13.0±0.3	4.0±0.1	16.0±0.2	18.5	8.0±0.2	12.0±0.3
PC47EPC30-Z PC90EPC30-Z PC95EPC30-Z	Fig.1	30.1±0.5	23.6	15.0±0.3	4.0±0.1	17.5±0.2	20.0	8.0±0.2	13.0±0.3

Part No.	Effective parameter					Electrical characteristics						
	Core factor C _i (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		Core loss				
						(nH/N ²) 1kHz 0.5mA 100Ts		(W)max. 100kHz 200mT				
PC47EPC25-Z PC90EPC25-Z PC95EPC25-Z	1.40	40.4	56.3	2280	13	Without air gap	With air gap	100°C	25°C	80°C	120°C	
						1560±25%	125±5%	1.08	—	—	—	
						1400±25%	200±7%	1.4	—	—	—	
						2200±25%		—	1.4	1.2	1.4	
PC47EPC25B-Z PC90EPC25B-Z PC95EPC25B-Z	1.39	33.3	46.2	1540	11	1560±25%	80±5%	0.64	—	—	—	
						1400±25%	125±7%	0.8	—	—	—	
						2200±25%		—	0.8	0.65	0.8	
PC47EPC27-Z PC90EPC27-Z PC95EPC27-Z	1.43	48.6	69.4	3370	18	1540±25%	125±5%	1.53	—	—	—	
						1400±25%	200±7%	2.0	—	—	—	
						2200±25%		—	2.0	1.7	2.0	
PC47EPC30-Z PC90EPC30-Z PC95EPC30-Z	1.35	55.6	75.3	4190	23	1570±25%	125±5%	1.99	—	—	—	
						1700±25%	200±7%	2.5	—	—	—	
						2300±25%		—	2.3	2.0	2.3	

• All specifications are subject to change without notice.

Mn-Zn EPC series **Part No.: PC47EPC10-Z**

■ SHAPES AND DIMENSIONS

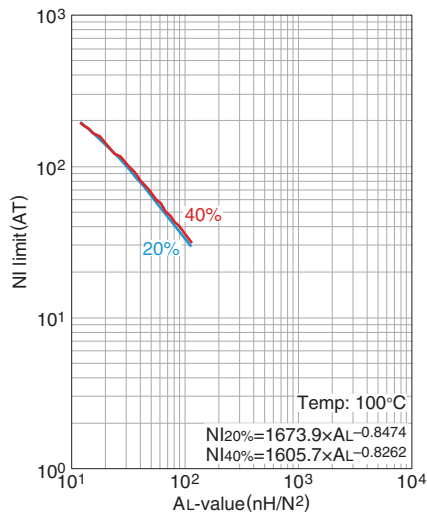


Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	Effective magnetic path length ℓ _e (mm)	Effective cross-sectional area A _e (mm ²)	Effective core volume V _e (mm ³)	Cross-sectional center pole area A _{cp} (mm ²)	Minimum cross-sectional center pole area A _{cp min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
1.89	17.8	9.39	167	8.73	8.13	7.69	1.1	1000±25%	0.067

* Coil : ø0.1 2UEW 100Ts

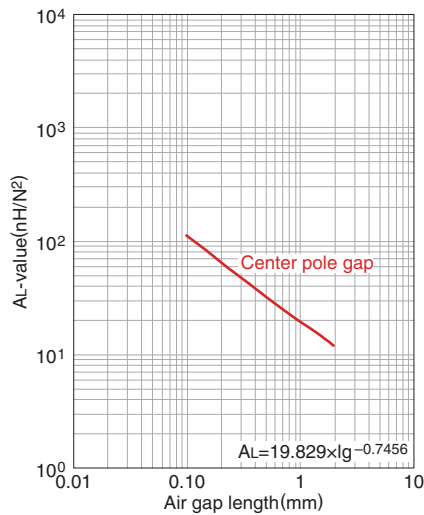
○ Calculated output power (forward converter mode): 5.8W (100kHz)

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.

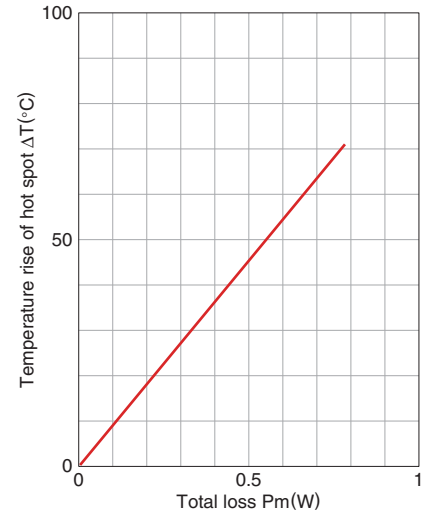
AL-value vs. Air gap length (Typ.)



Measuring conditions

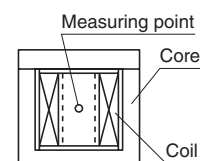
- Coil : ø0.1 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



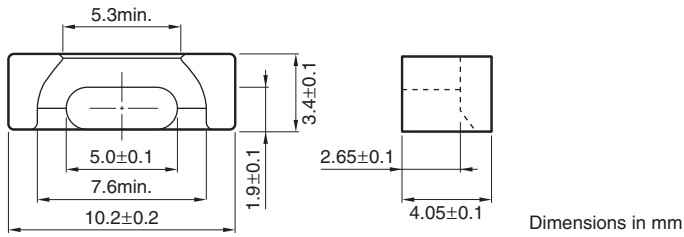
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC90EPC10-Z**

■ SHAPES AND DIMENSIONS

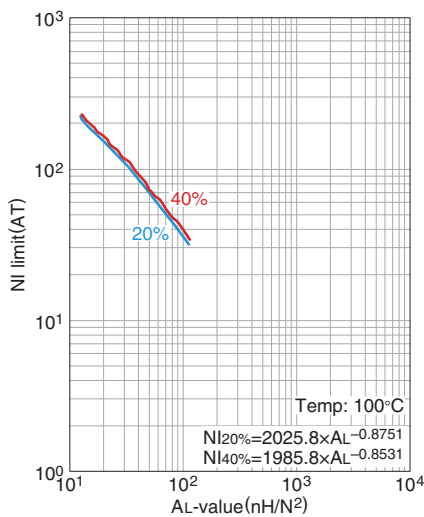


Effective parameter								Electrical characteristics	
Core factor	Effective magnetic path length ℓ_e	Effective cross-sectional area A_e	Effective core volume V_e	Cross-sectional center pole area A_{cp}	Minimum cross-sectional center pole area $A_{cp \text{ min.}}$	Cross-sectional winding area of core A_{cw}	Weight	AL-value *	Core loss
C_1 (mm ⁻¹)	(mm)	(mm ²)	(mm ³)	(mm ²)	(mm ²)	(mm ²)	(g/set)	(nH/N ²) 1kHz 0.5mA	(W)max. 100kHz 200mT 100°C
1.89	17.8	9.39	167	8.73	8.13	7.69	1.1	900±25%	0.090

*Coil : $\phi 0.1$ 2UEW 100Ts

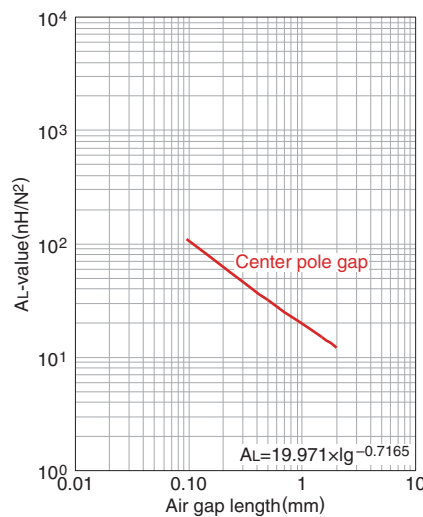
○ Calculated output power (forward converter mode): 5.4W

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.

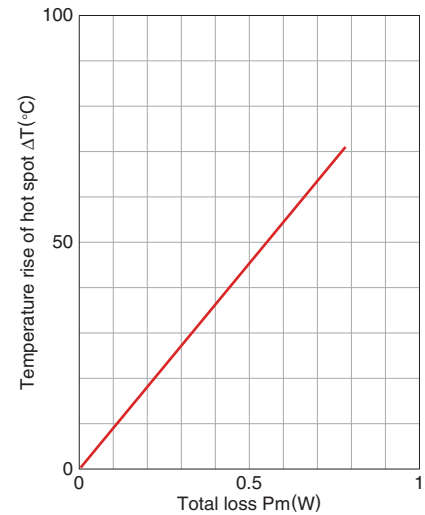
AL-value vs. Air gap length (Typ.)



Measuring conditions

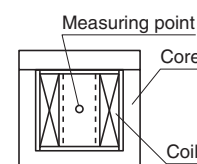
- Coil : $\phi 0.1$ 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



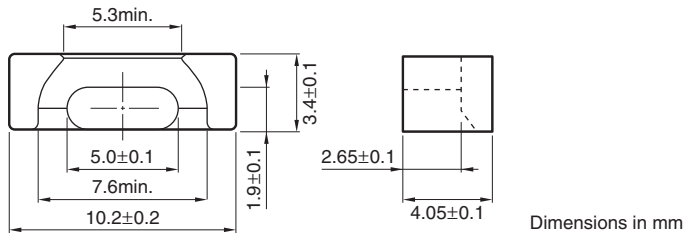
Measuring conditions

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



Mn-Zn EPC series Part No.: PC95EPC10-Z

SHAPES AND DIMENSIONS

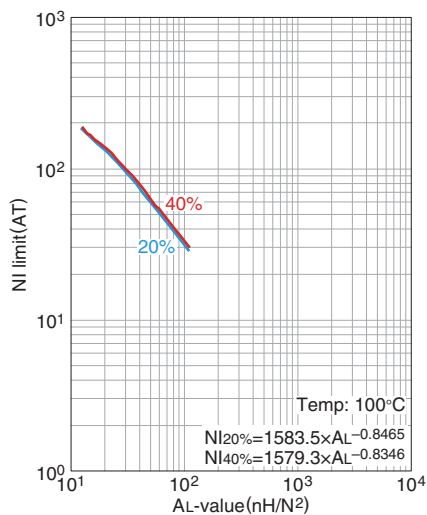


Effective parameter								Electrical characteristics			
Core factor	Effective magnetic path length ℓ_e	Effective cross-sectional area A_e	Effective core volume V_e	Cross-sectional center pole area A_{cp}	Minimum cross-sectional center pole are $A_{cp \text{ min.}}$	Cross-sectional winding area of core A_{cw}	Weigh	AL-value *	Core loss		
C ₁ (mm ⁻¹)	(mm)	(mm ²)	(mm ³)	(mm ²)	(mm ²)	(mm ²)	(g/set)	(nH/N ²) 1kHz 0.5mA	(W)max. 100kHz 200mT 25°C	80°C	120°C
1.89	17.8	9.39	167	8.73	8.13	7.69	1.1	1040±25%	0.100	0.080	0.100

*Coil : ø0.1 2UEW 100Ts

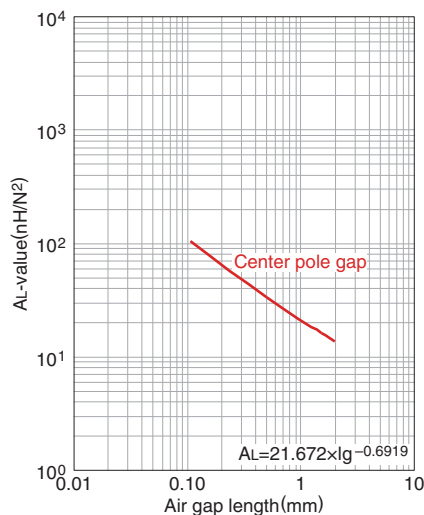
○ Calculated output power (forward converter mode): 5.6W

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.

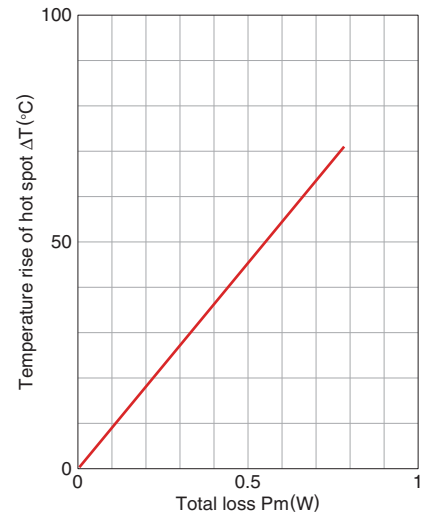
AL-value vs. Air gap length (Typ.)



Measuring conditions

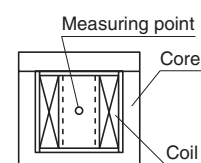
- Coil : ø0.1 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



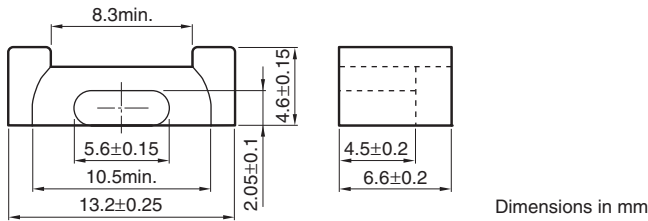
Measuring conditions

- Room space: approx. 400x300x300cm
- Ambient temperature : 25°C
- Humidity: 45(%)RH.



Mn-Zn EPC series **Part No.: PC47EPC13-Z**

■ SHAPES AND DIMENSIONS

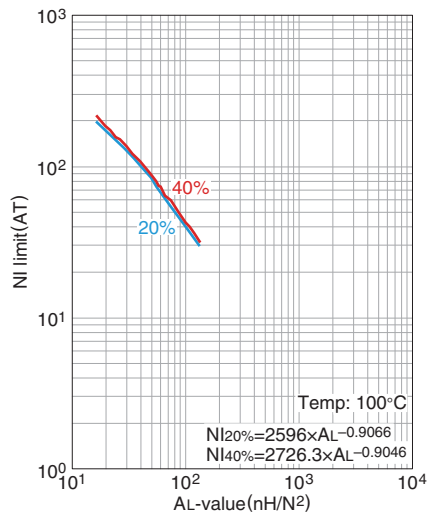


Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	Effective magnetic path length ℓ _e (mm)	Effective cross-sectional area A _e (mm ²)	Effective core volume V _e (mm ³)	Cross-sectional center pole area A _{cp} (mm ²)	Minimum cross-sectional center pole area A _{cp} min. (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
2.45	30.6	12.5	382	10.6	9.71	23.0	2.1	870±25%	0.14

* Coil : ø0.2 2UEW 100Ts

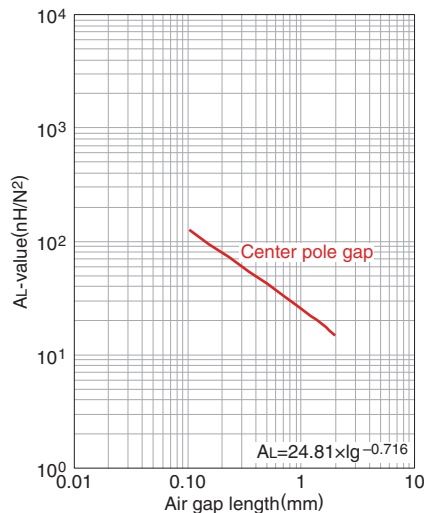
○ Calculated output power (forward converter mode): 9.1W (100kHz)

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.

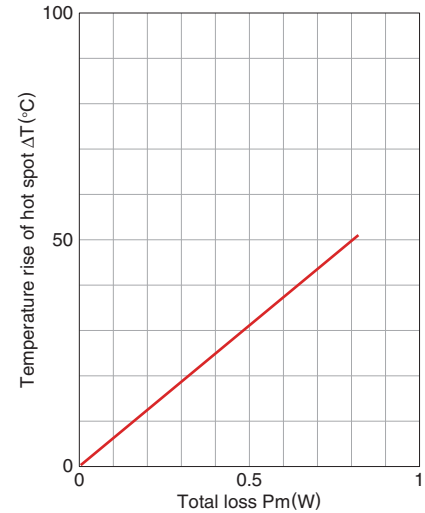
AL-value vs. Air gap length (Typ.)



Measuring conditions

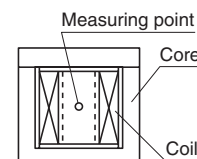
- Coil : ø0.2 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



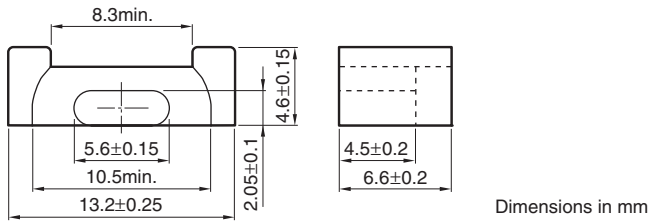
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC90EPC13-Z**

■ SHAPES AND DIMENSIONS

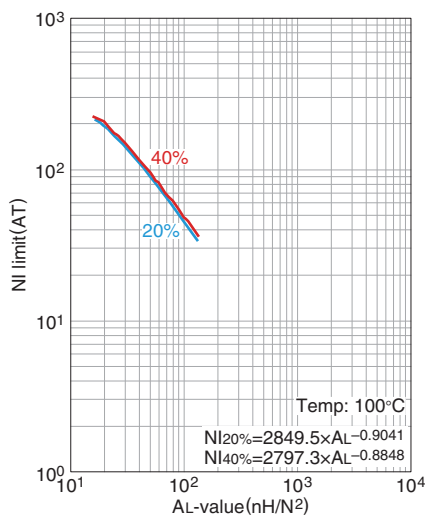


Effective parameter								Electrical characteristics	
Core factor C_1 (mm ⁻¹)	Effective magnetic path length ℓ_e (mm)	Effective cross-sectional area A_e (mm ²)	Effective core volume V_e (mm ³)	Cross-sectional center pole area A_{cp} (mm ²)	Minimum cross-sectional center pole area $A_{cp \text{ min.}}$ (mm ²)	Cross-sectional winding area of core A_{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
2.45	30.6	12.5	382	10.6	9.71	23.0	2.1	800±25%	0.17

* Coil : $\phi 0.2$ 2UEW 100Ts

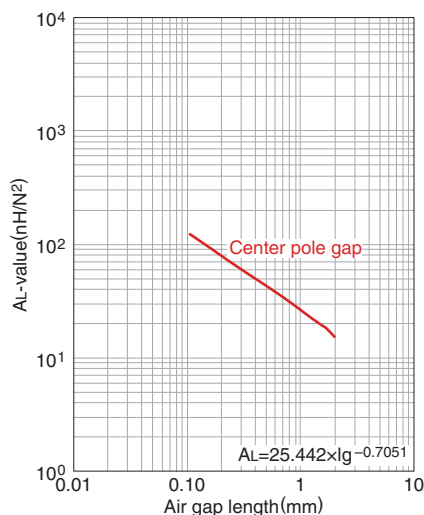
○ Calculated output power (forward converter mode): 8.6W

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.

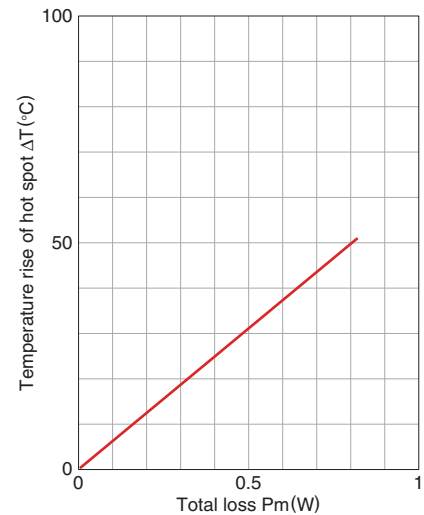
AL-value vs. Air gap length (Typ.)



Measuring conditions

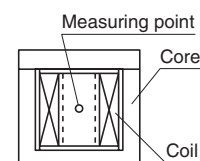
- Coil : $\phi 0.2$ 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



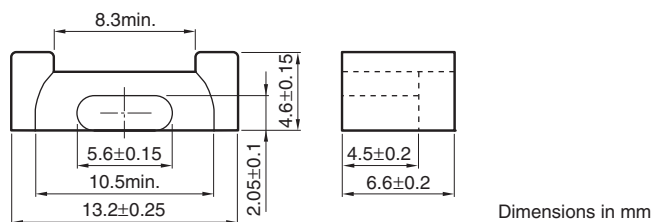
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC95EPC13-Z**

■ SHAPES AND DIMENSIONS

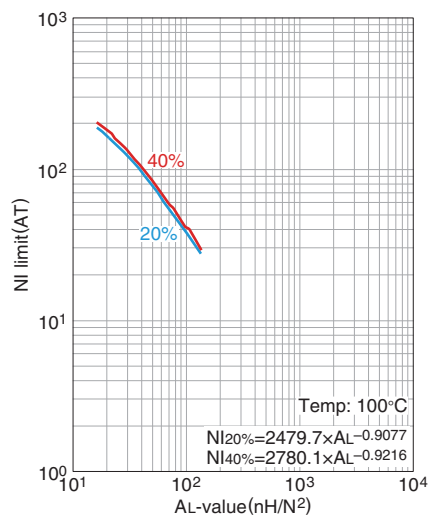


Effective parameter								Electrical characteristics				
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional center pole are	Cross-sectional winding area of core	Weigh	AL-value *		Core loss		
C ₁ (mm ⁻¹)	ℓ _e (mm)	A _e (mm ²)	V _e (mm ³)	A _{cp} (mm ²)	A _{cp} min. (mm ²)	A _{cw} (mm ²)	(g/set)	(nH/N ²) 1kHz 0.5mA		(W)max. 100kHz 200mT		
										25°C	80°C	120°C
2.45	30.6	12.5	382	10.6	9.71	23.0	2.1	1060±25%		0.17	0.15	0.17

* Coil : ø0.2 2UEW 100Ts

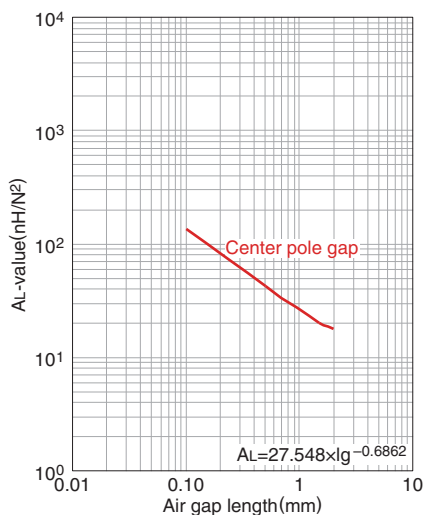
○ Calculated output power (forward converter mode): 8.8W

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.

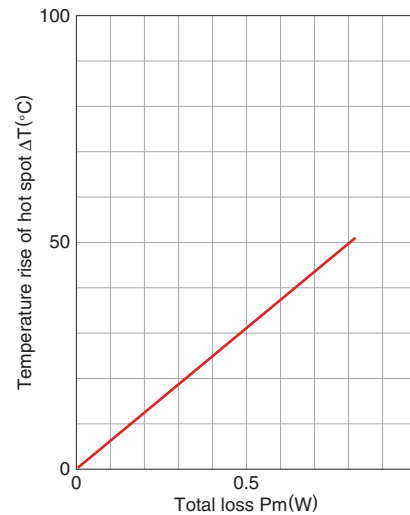
AL-value vs. Air gap length (Typ.)



Measuring conditions

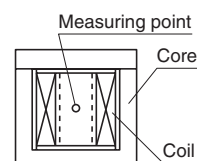
- Coil : ø0.2 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



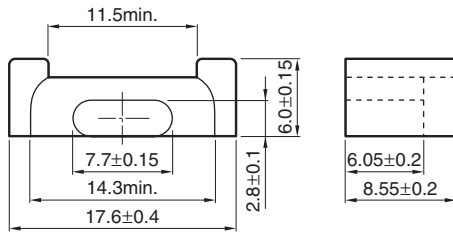
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC47EPC17-Z**

■ SHAPES AND DIMENSIONS



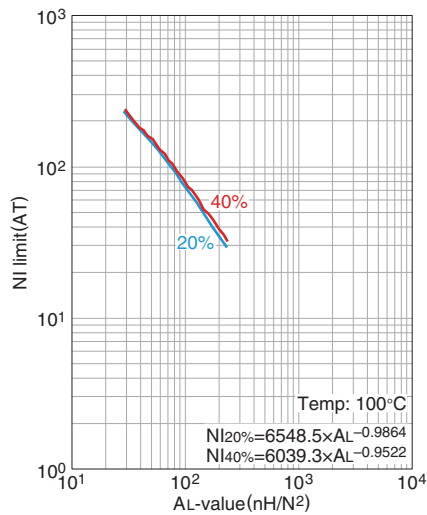
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C_1 (mm ⁻¹)	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
1.76	40.2	22.8	917	19.9	18.7	41.1	4.5	nH/N^2 1kHz 0.5mA 1150±25%	(W)max. 100kHz 200mT 100°C 0.34

* Coil : $\phi 0.2$ 2UEW 100Ts

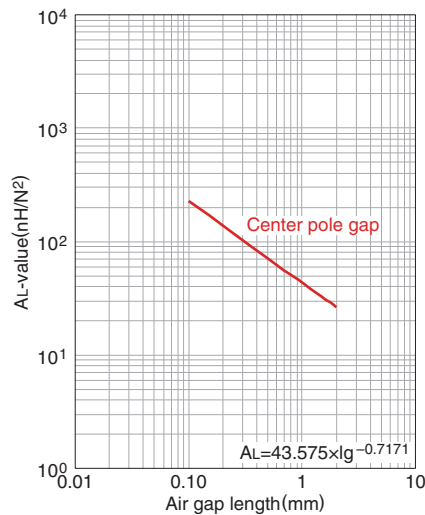
○ Calculated output power (forward converter mode): 21.9W (100kHz)

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.

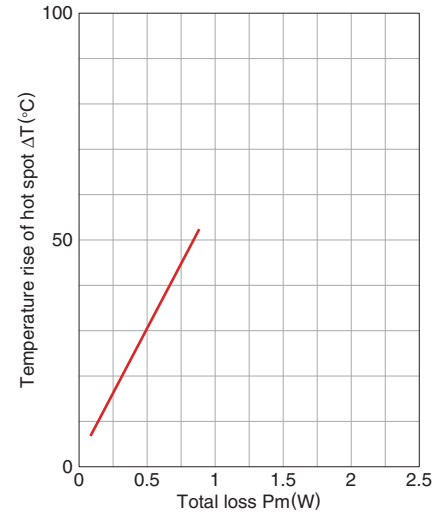
AL-value vs. Air gap length (Typ.)



Measuring conditions

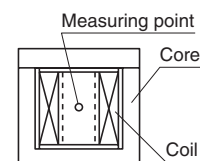
- Coil : $\phi 0.2$ 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



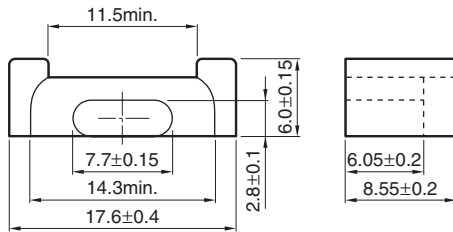
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC90EPC17-Z**

■ SHAPES AND DIMENSIONS



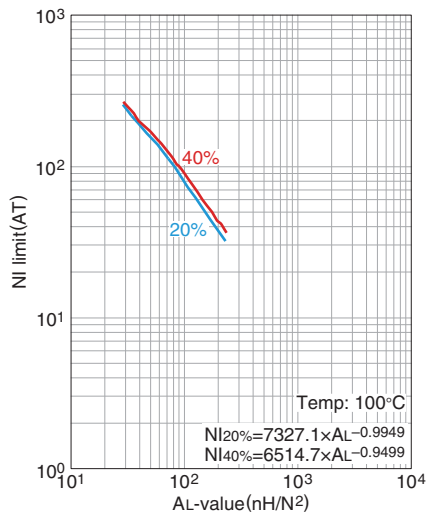
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	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 min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
1.76	40.2	22.8	917	19.9	18.7	41.1	4.5	1100±25%	0.45

* Coil : ø0.2 2UEW 100Ts

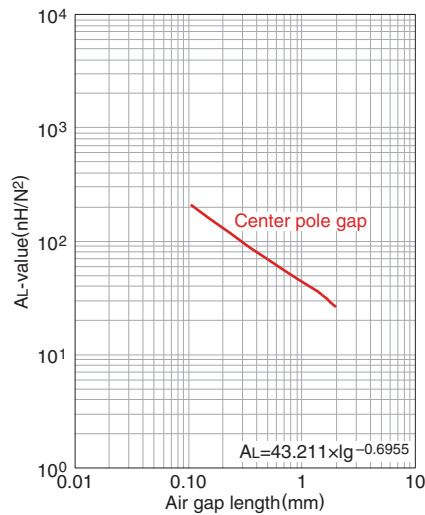
○ Calculated output power (forward converter mode): 20.5W

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.

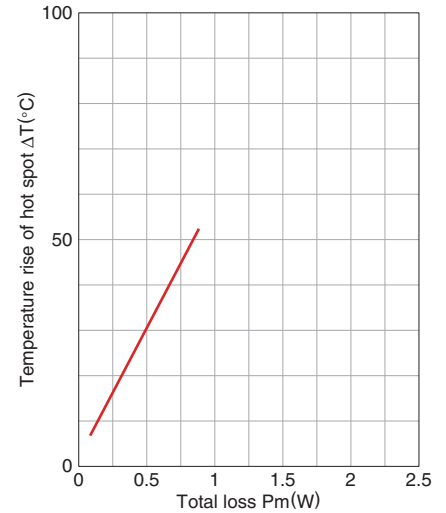
AL-value vs. Air gap length (Typ.)



Measuring conditions

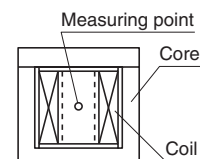
- Coil : ø0.2 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



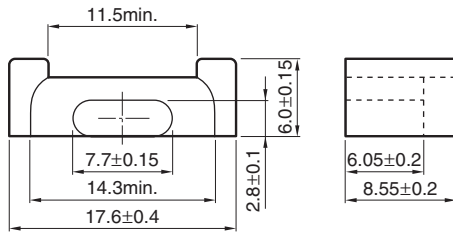
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC95EPC17-Z**

■ SHAPES AND DIMENSIONS



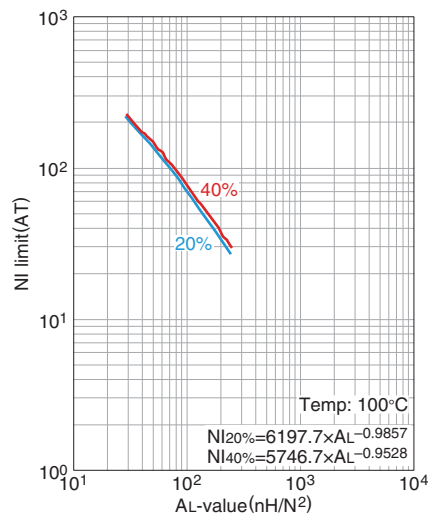
Dimensions in mm

Effective parameter								Electrical characteristics			
Core factor C ₁ (mm ⁻¹)	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 min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 25°C 80°C 120°C		
1.76	40.2	22.8	917	19.9	18.7	41.1	4.5	1500±25%	0.45	0.35	0.45

* Coil : ø0.2 2UEW 100Ts

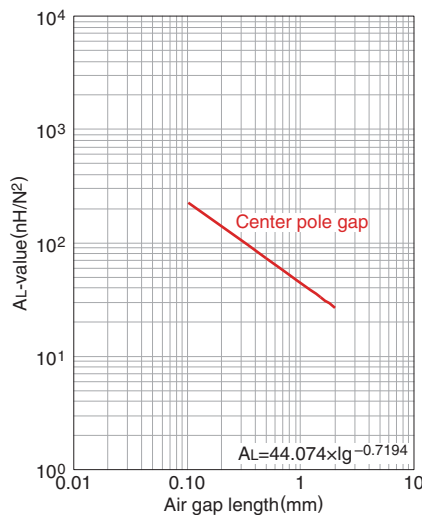
○ Calculated output power (forward converter mode): 21.1W

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.

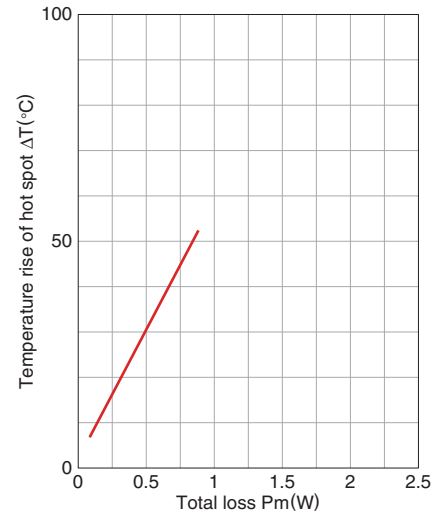
AL-value vs. Air gap length (Typ.)



Measuring conditions

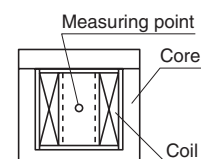
- Coil : ø0.2 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



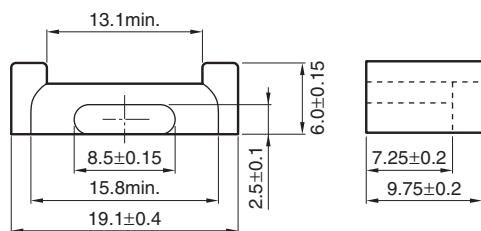
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC47EPC19-Z**

■ SHAPES AND DIMENSIONS



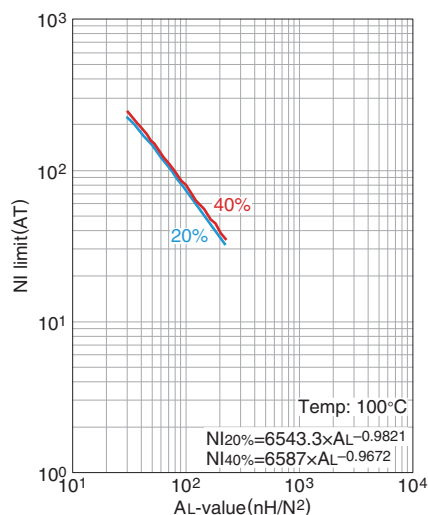
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	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 min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
2.03	46.1	22.7	1050	19.9	18.7	54.4	5.3	940±25%	0.39

*Coil : ø0.2 2UEW 100Ts

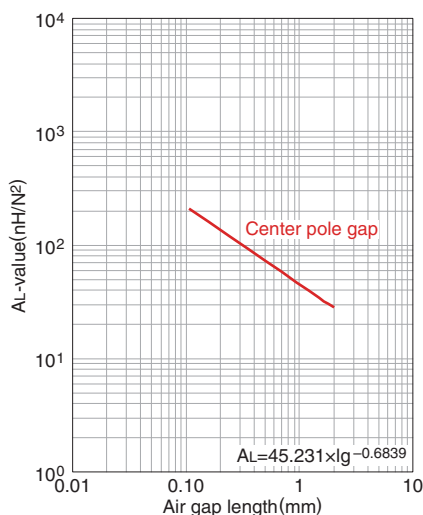
○ Calculated output power (forward converter mode): 29.9W (100kHz)

NI limit vs. AL-value (Typ.)



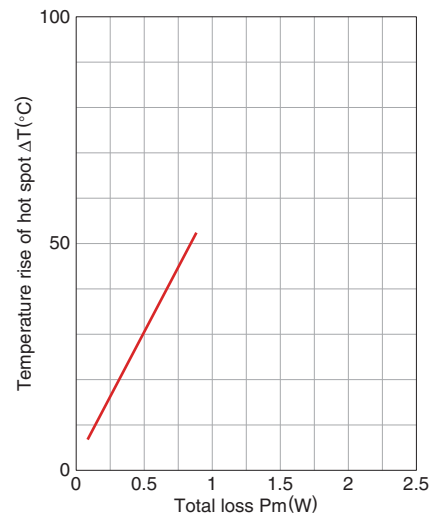
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

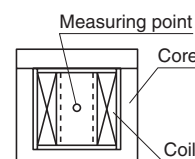


Measuring conditions
 • Coil : ø0.2 2UEW 100Ts
 • Frequency : 1kHz
 • Current level : 0.5mA
 • Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)

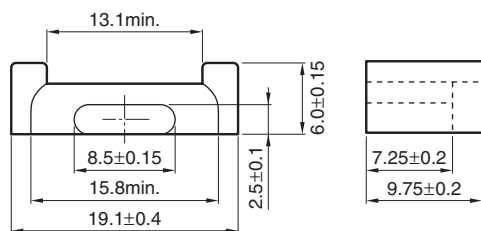


Measuring conditions
 • Room space: approx. 400x300x 300cm
 • Ambient temperature : 25°C
 • Humidity: 45(%)RH.



Mn-Zn EPC series **Part No.: PC90EPC19-Z**

■ SHAPES AND DIMENSIONS



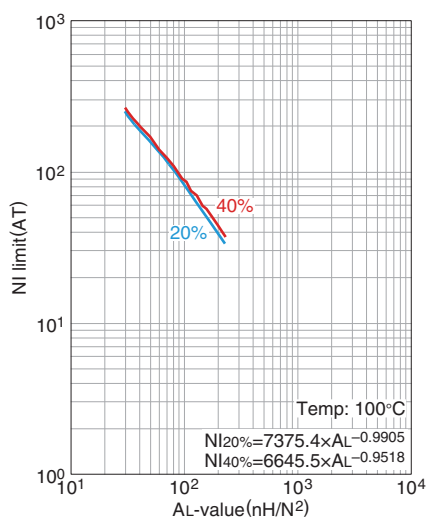
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	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 min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
2.03	46.1	22.7	1050	19.9	18.7	54.4	5.3	940±25%	0.5

*Coil : ø0.2 2UEW 100Ts

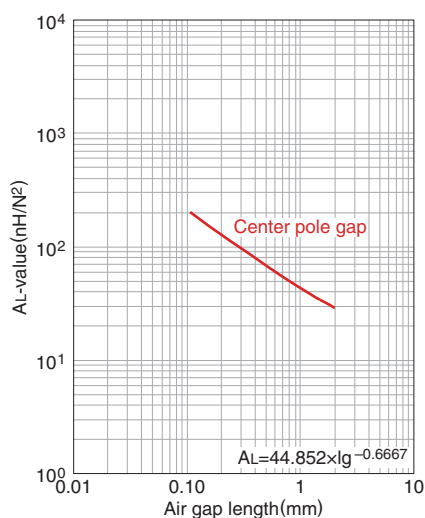
○ Calculated output power (forward converter mode): 28W

NI limit vs. AL-value (Typ.)



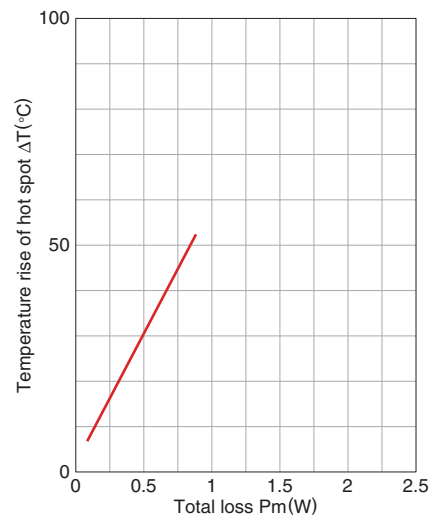
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

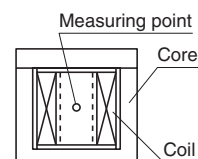


Measuring conditions
 • Coil : ø0.2 2UEW 100Ts
 • Frequency : 1kHz
 • Current level : 0.5mA
 • Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)

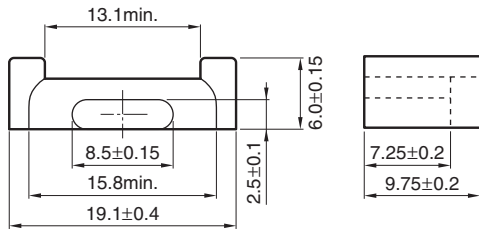


Measuring conditions
 • Room space: approx. 400x300x 300cm
 • Ambient temperature : 25°C
 • Humidity : 45(%)RH.



Mn-Zn EPC series Part No.: PC95EPC19-Z

SHAPES AND DIMENSIONS



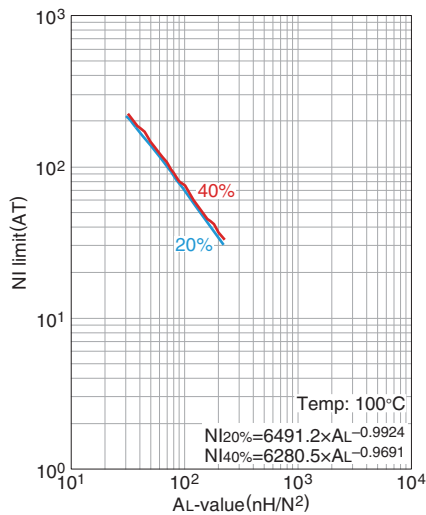
Dimensions in mm

Effective parameter								Electrical characteristics			
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional center pole are	Cross-sectional winding area of core	Weigh	AL-value *	Core loss		
C ₁ (mm ⁻¹)	ℓ _e (mm)	A _e (mm ²)	V _e (mm ³)	A _{cp} (mm ²)	A _{cp min.} (mm ²)	A _{cw} (mm ²)	(g/set)	(nH/N ²) 1kHz 0.5mA	(W)max. 100kHz 200mT		
									25°C	80°C	120°C
2.03	46.1	22.7	1050	19.9	18.7	54.4	5.3	1400±25%	0.5	0.4	0.5

*Coil : ø0.2 2UEW 100Ts

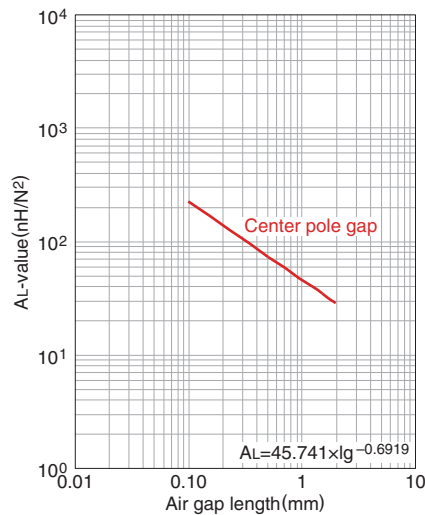
○ Calculated output power (forward converter mode): 28.7W

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.

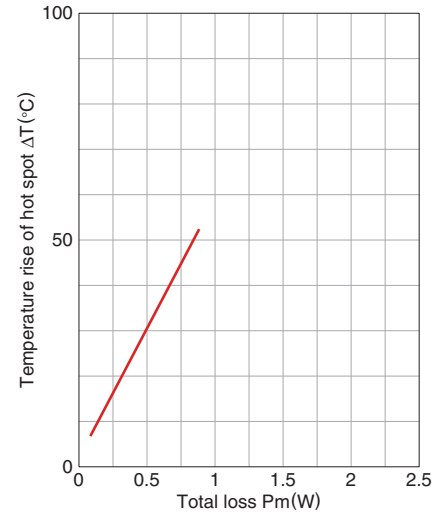
AL-value vs. Air gap length (Typ.)



Measuring conditions

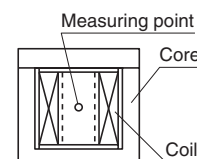
- Coil : ø0.2 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



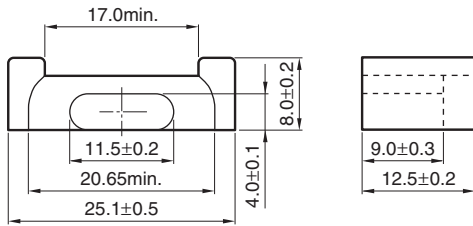
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC47EPC25-Z**

■ SHAPES AND DIMENSIONS



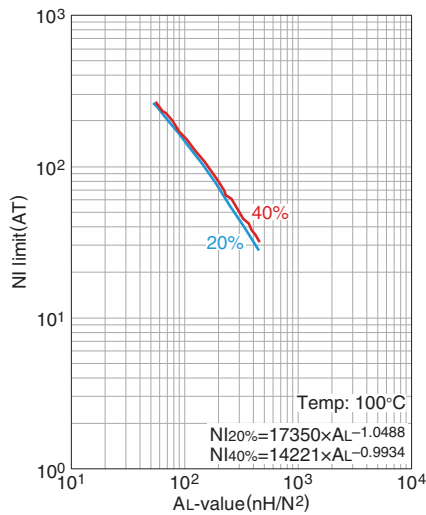
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	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 min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
1.40	56.3	40.4	2280	42.6	40.6	85.5	13	1560±25%	1.08

* Coil : ø0.2 2UEW 100Ts

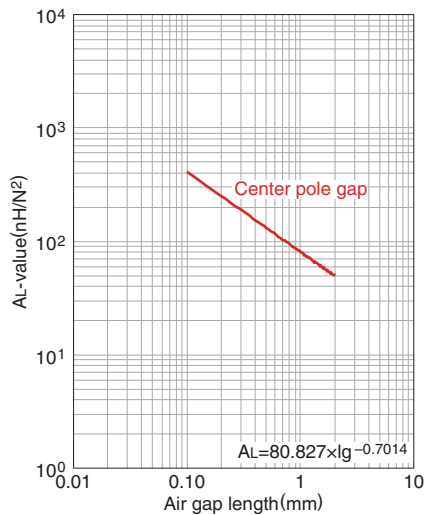
○ Calculated output power (forward converter mode): 71.6W (100kHz)

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.

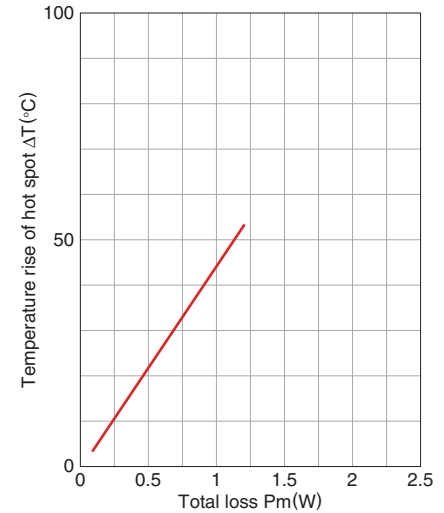
AL-value vs. Air gap length (Typ.)



Measuring conditions

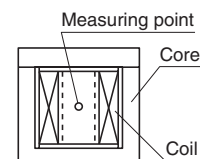
- Coil : ø0.2 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



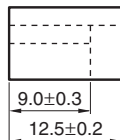
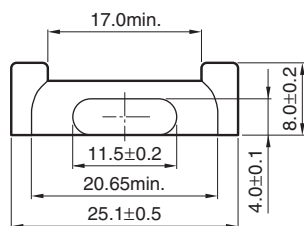
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC90EPC25-Z**

■ SHAPES AND DIMENSIONS



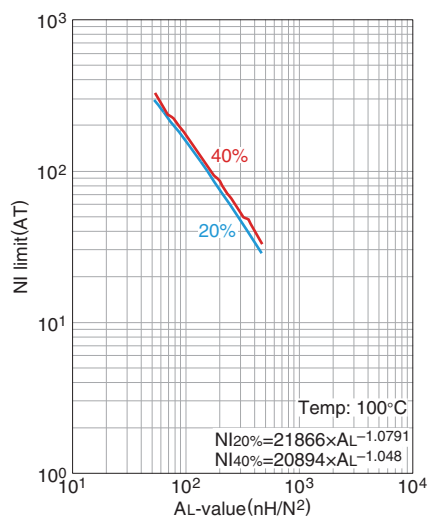
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	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 min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
1.40	56.3	40.4	2280	42.6	40.6	85.5	13	1400±25%	1.4

* Coil : ø0.2 2UEW 100Ts

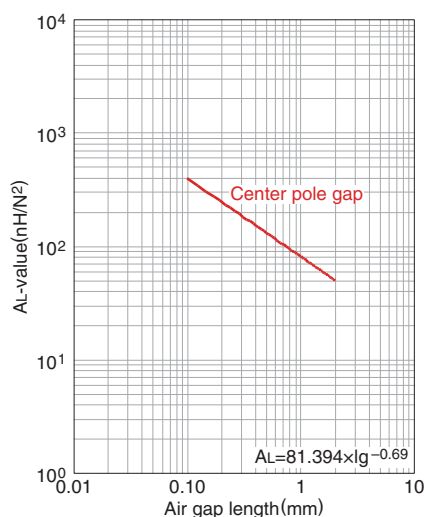
○ Calculated output power (forward converter mode): 64W

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.

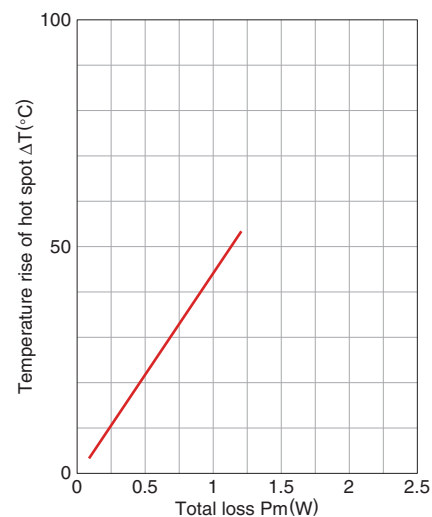
AL-value vs. Air gap length (Typ.)



Measuring conditions

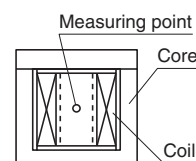
- Coil : ø0.2 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



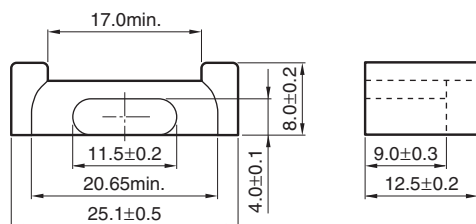
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC95EPC25-Z**

■ SHAPES AND DIMENSIONS



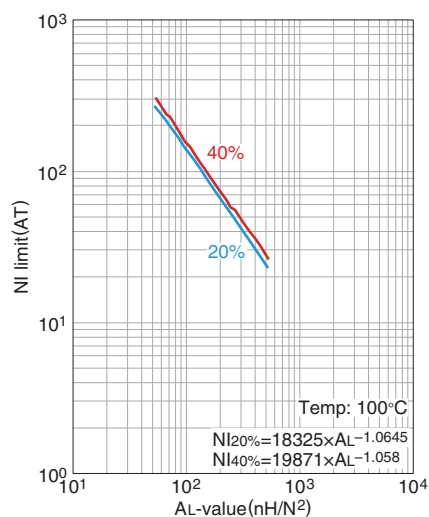
Dimensions in mm

Effective parameter								Electrical characteristics			
Core factor C ₁ (mm ⁻¹)	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 min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 25°C 80°C 120°C		
1.40	56.3	40.4	2280	42.6	40.6	85.5	13	2200±25%	1.4	1.2	1.4

* Coil : ø0.2 2UEW 100Ts

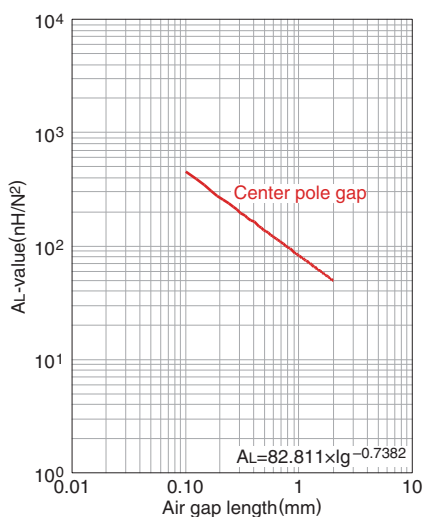
○ Calculated output power (forward converter mode): 66.9W

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.

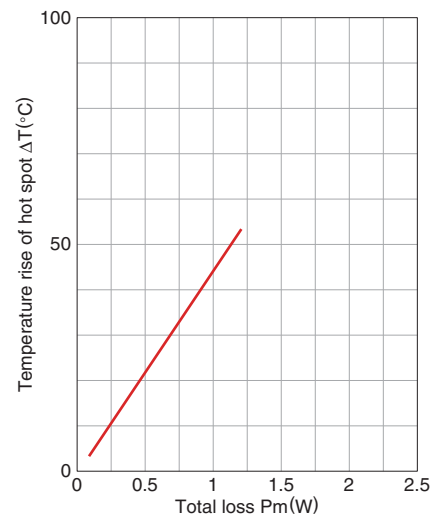
AL-value vs. Air gap length (Typ.)



Measuring conditions

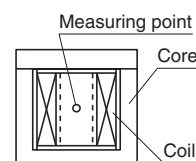
- Coil : ø0.2 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



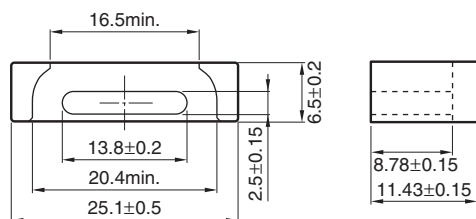
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC47EPC25B-Z**

■ SHAPES AND DIMENSIONS



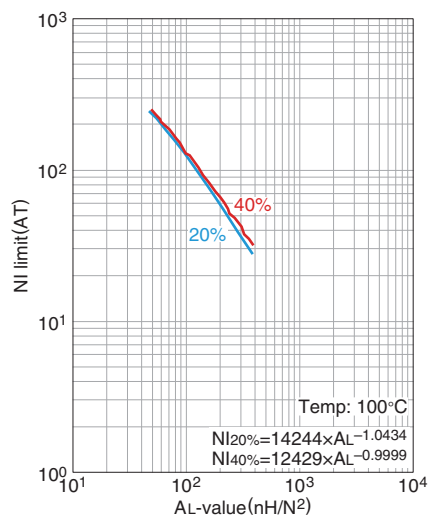
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	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 min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
1.39	46.2	33.3	1540	32.4	30.3	62.1	11	1560±25%	0.64

* Coil : ø0.23 2UEW 100Ts

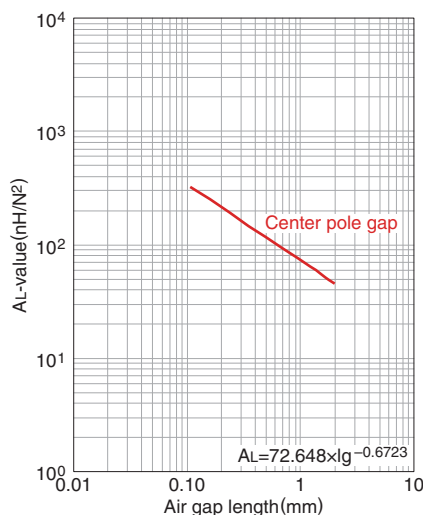
○ Calculated output power (forward converter mode): 50.3W (100kHz)

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.

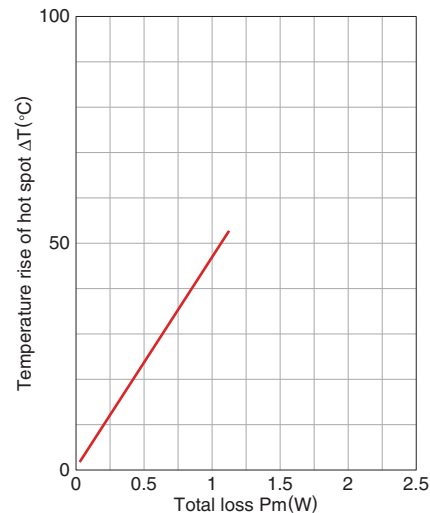
AL-value vs. Air gap length (Typ.)



Measuring conditions

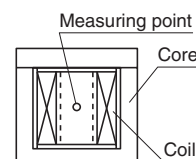
- Coil : ø0.23 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



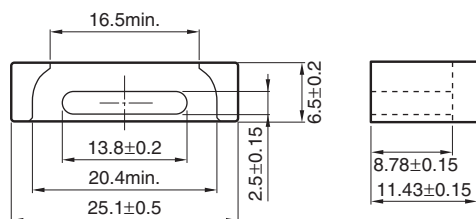
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC90EPC25B-Z**

■ SHAPES AND DIMENSIONS



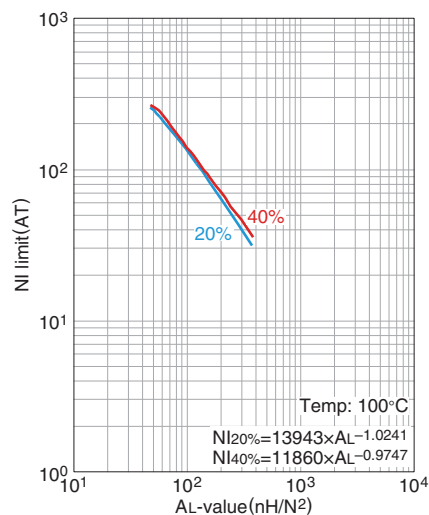
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C_1 (mm ⁻¹)	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 * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
1.39	46.2	33.3	1540	32.4	30.3	62.1	11	1400±25%	0.8

* Coil : ø0.23 2UEW 100Ts

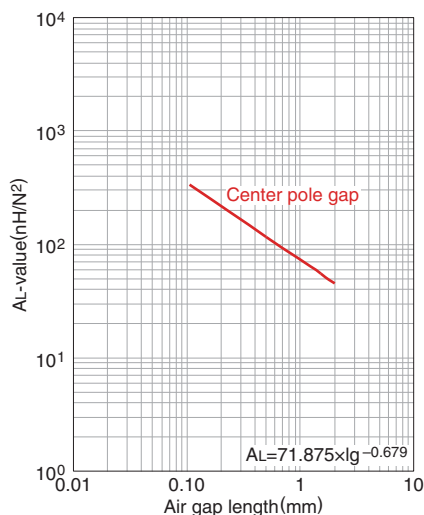
○ Calculated output power (forward converter mode): 46W

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.

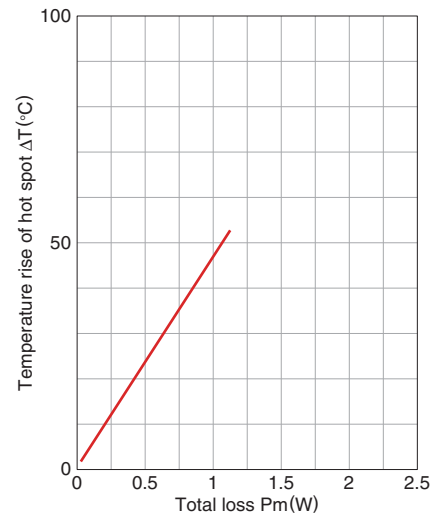
AL-value vs. Air gap length (Typ.)



Measuring conditions

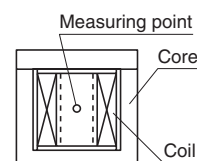
- Coil : ø0.23 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



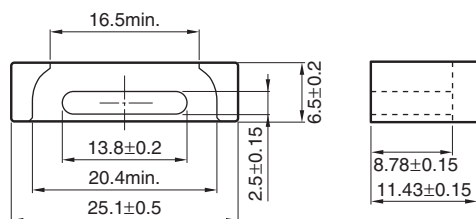
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC95EPC25B-Z**

■ SHAPES AND DIMENSIONS



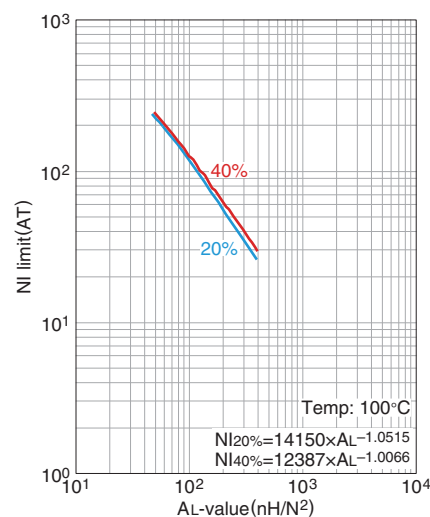
Dimensions in mm

Effective parameter								Electrical characteristics				
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional center pole are	Cross-sectional winding area of core	Weigh	AL-value *		Core loss		
C ₁ (mm ⁻¹)	ℓ _e (mm)	A _e (mm ²)	V _e (mm ³)	A _{cp} (mm ²)	A _{cp} min. (mm ²)	A _{cw} (mm ²)	(g/set)	(nH/N ²) 1kHz 0.5mA		(W)max. 100kHz 200mT		
										25°C	80°C	120°C
1.39	46.2	33.3	1540	32.4	30.3	62.1	11	2200±25%		0.8	0.65	0.8

* Coil : ø0.23 2UEW 100Ts

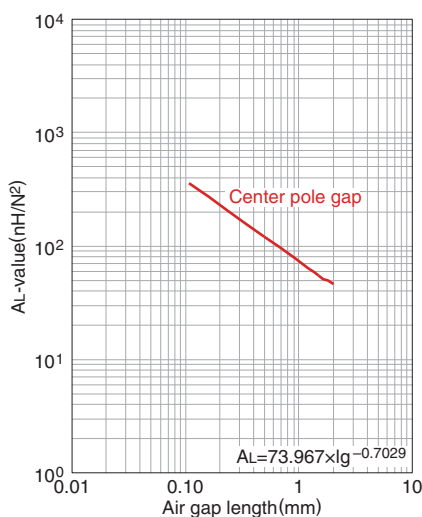
○ Calculated output power (forward converter mode): 47.6W

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.

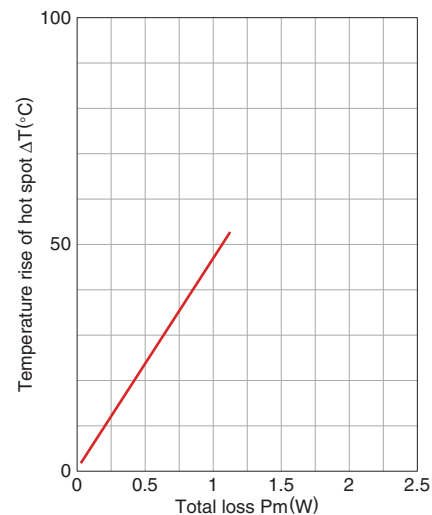
AL-value vs. Air gap length (Typ.)



Measuring conditions

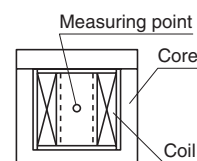
- Coil : ø0.23 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



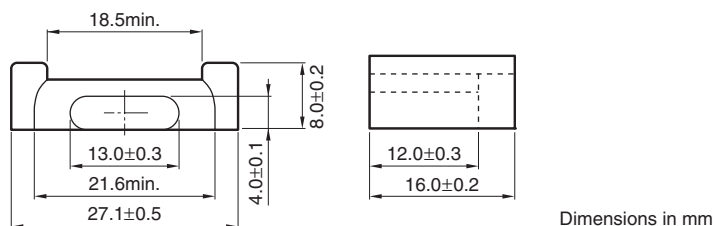
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC47EPC27-Z**

■ SHAPES AND DIMENSIONS

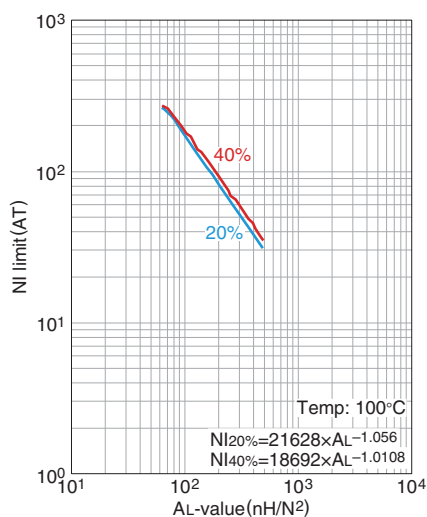


Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	Effective magnetic path length ℓ _e (mm)	Effective cross-sectional area A _e (mm ²)	Effective core volume V _e (mm ³)	Cross-sectional center pole area A _{cp} (mm ²)	Minimum cross-sectional center pole area A _{cp min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
1.43	69.4	48.6	3370	48.6	46.5	108	18	1540±25%	1.53

* Coil : ø0.3 2UEW 100Ts

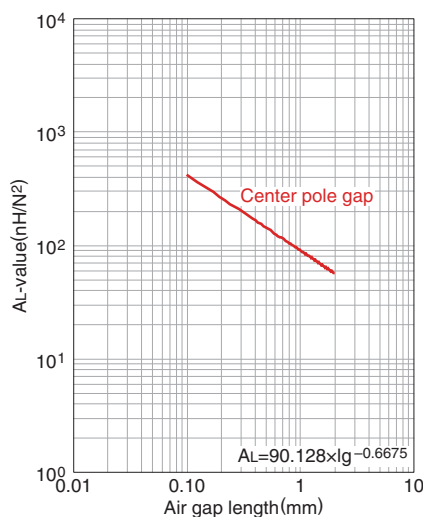
○ Calculated output power (forward converter mode): 88.7W (100kHz)

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.

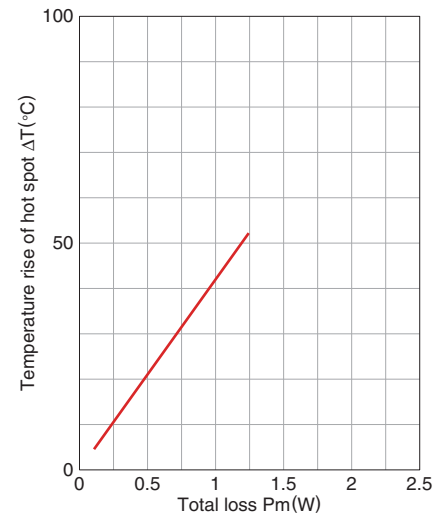
AL-value vs. Air gap length (Typ.)



Measuring conditions

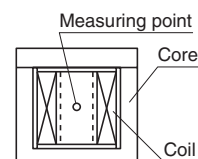
- Coil : ø0.3 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



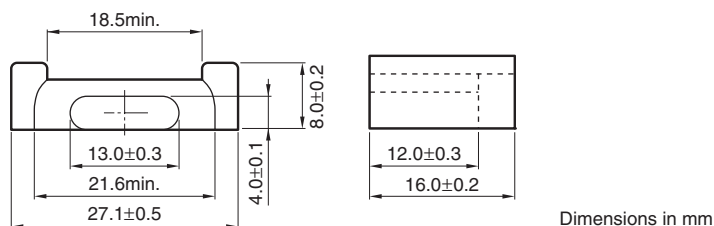
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC90EPC27-Z**

■ SHAPES AND DIMENSIONS

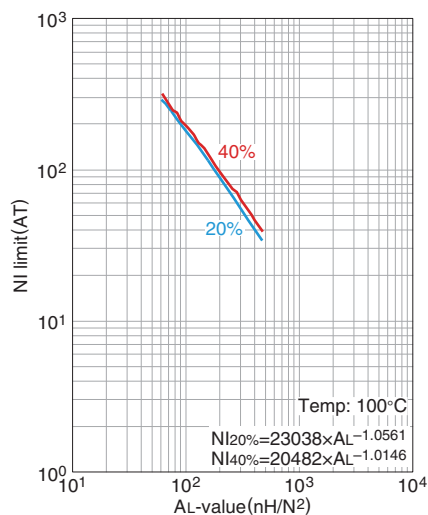


Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	Effective magnetic path length ℓ _e (mm)	Effective cross-sectional area A _e (mm ²)	Effective core volume V _e (mm ³)	Cross-sectional center pole area A _{cp} (mm ²)	Minimum cross-sectional center pole area A _{cp min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
1.43	69.4	48.6	3370	48.6	46.5	108	18	1400±25%	2.0

* Coil : ø0.3 2UEW 100Ts

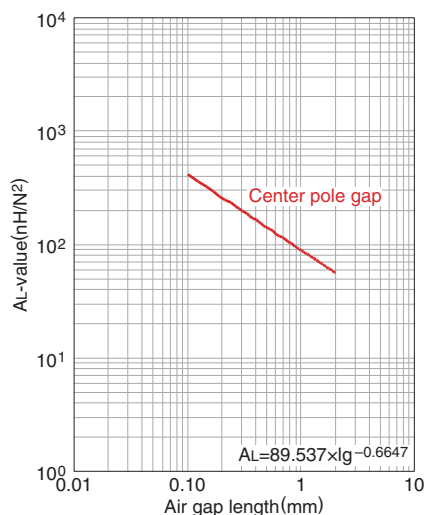
○ Calculated output power (forward converter mode): 80.5W

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.

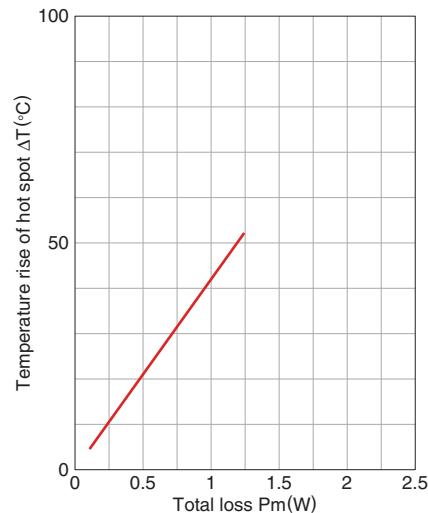
AL-value vs. Air gap length (Typ.)



Measuring conditions

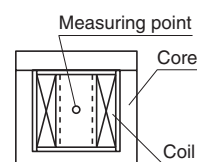
- Coil : ø0.3 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



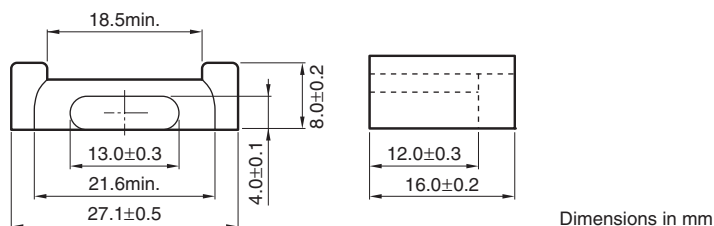
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC95EPC27-Z**

■ SHAPES AND DIMENSIONS

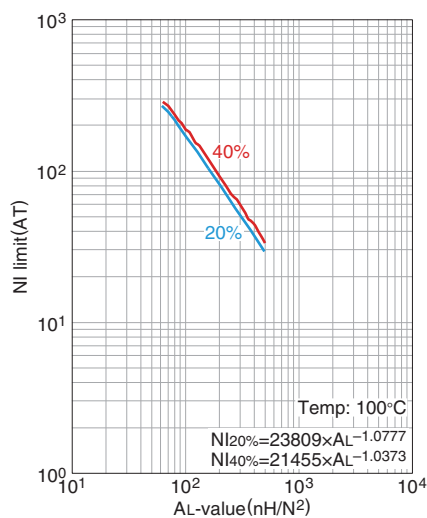


Effective parameter								Electrical characteristics				
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional center pole are	Cross-sectional winding area of core	Weigh	AL-value *		Core loss		
C ₁ (mm ⁻¹)	ℓ _e (mm)	A _e (mm ²)	V _e (mm ³)	A _{cp} (mm ²)	A _{cp min.} (mm ²)	A _{cw} (mm ²)	(g/set)	(nH/N ²) 1kHz 0.5mA		(W)max. 100kHz 200mT		
										25°C	80°C	120°C
1.43	69.4	48.6	3370	48.6	46.5	108	18	2200±25%		2.0	1.7	2.0

* Coil : ø0.3 2UEW 100Ts

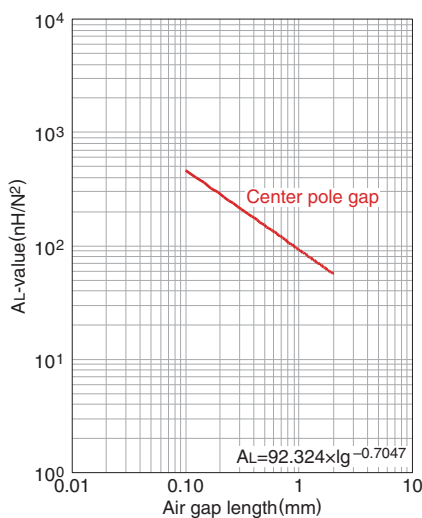
○ Calculated output power (forward converter mode): 84.8W

NI limit vs. AL-value (Typ.)



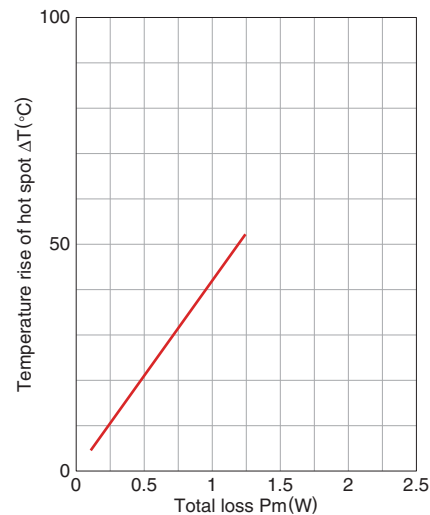
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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



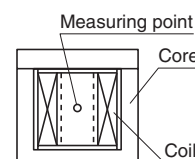
Measuring conditions

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



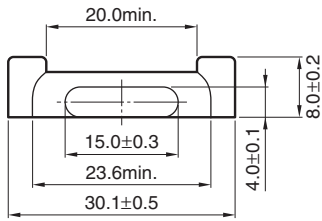
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC47EPC30-Z**

■ SHAPES AND DIMENSIONS



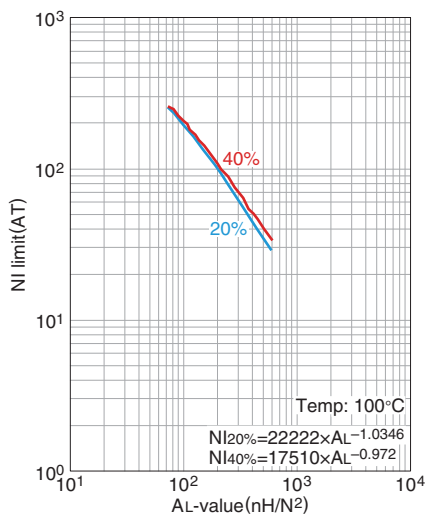
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	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 min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
1.35	75.3	55.6	4190	56.6	54.3	117	23	1570±25%	1.99

* Coil : ø0.3 2UEW 100Ts

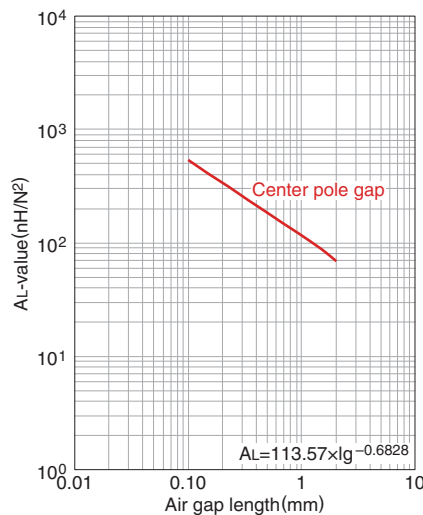
○ Calculated output power (forward converter mode): 95.7W (100kHz)

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.

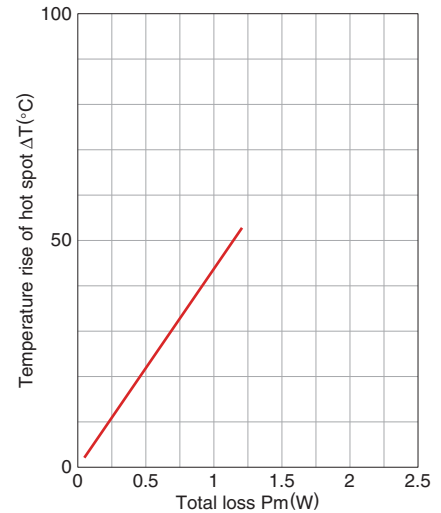
AL-value vs. Air gap length (Typ.)



Measuring conditions

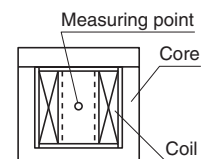
- Coil : ø0.3 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



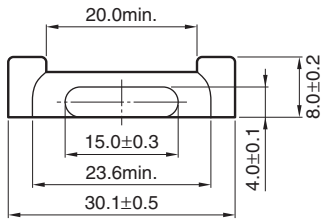
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC90EPC30-Z**

■ SHAPES AND DIMENSIONS



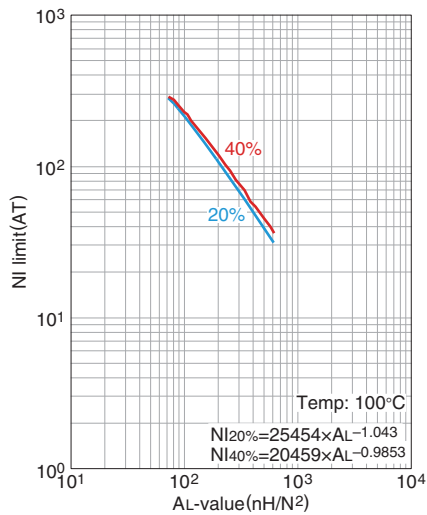
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C ₁ (mm ⁻¹)	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 min.} (mm ²)	Cross-sectional winding area of core A _{cw} (mm ²)	Weight (g/set)	AL-value * (nH/N ²) 1kHz 0.5mA	Core loss (W)max. 100kHz 200mT 100°C
1.35	75.3	55.6	4190	56.6	54.3	117	23	1700±25%	2.5

* Coil : ø0.3 2UEW 100Ts

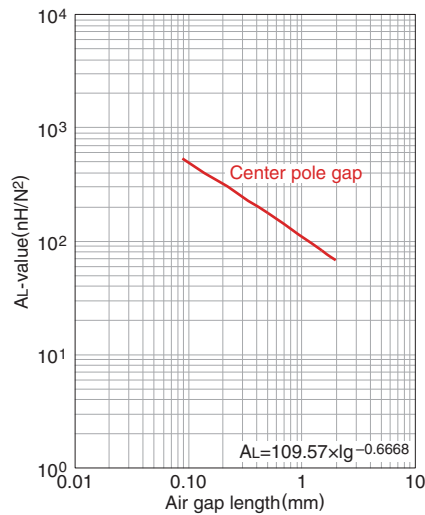
○ Calculated output power (forward converter mode): 85.5W

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.

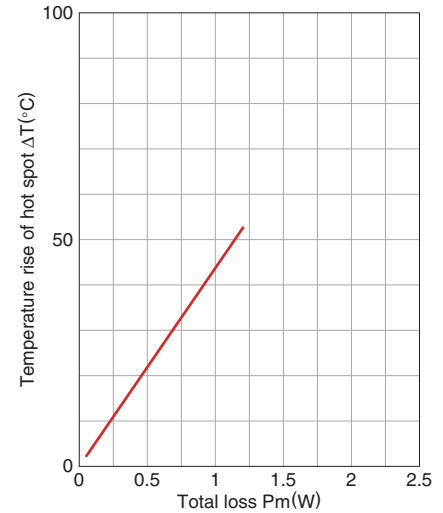
AL-value vs. Air gap length (Typ.)



Measuring conditions

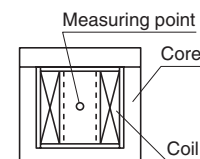
- Coil : ø0.3 2UEW 100Ts
- Frequency : 1kHz
- Current level : 0.5mA
- Ambient temperature : 25°C

Temperature rise vs. Total loss (Typ.)



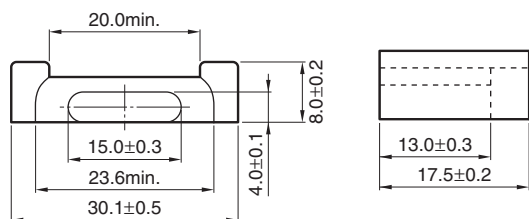
Measuring conditions

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



Mn-Zn EPC series **Part No.: PC95EPC30-Z**

■ SHAPES AND DIMENSIONS



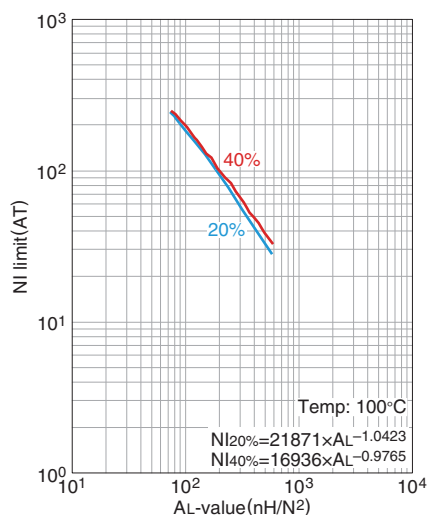
Dimensions in mm

Effective parameter								Electrical characteristics				
Core factor	Effective magnetic path length	Effective cross-sectional area	Effective core volume	Cross-sectional center pole area	Minimum cross-sectional center pole are	Cross-sectional winding area of core	Weigh	AL-value *		Core loss		
C ₁ (mm ⁻¹)	ℓ _e (mm)	A _e (mm ²)	V _e (mm ³)	A _{cp} (mm ²)	A _{cp min.} (mm ²)	A _{cw} (mm ²)	(g/set)	(nH/N ²) 1kHz 0.5mA		(W)max. 100kHz 200mT		
										25°C	80°C	120°C
1.35	75.3	55.6	4190	56.6	54.3	117	23	2300±25%		2.3	2.0	2.3

* Coil : ø0.3 2UEW 100Ts

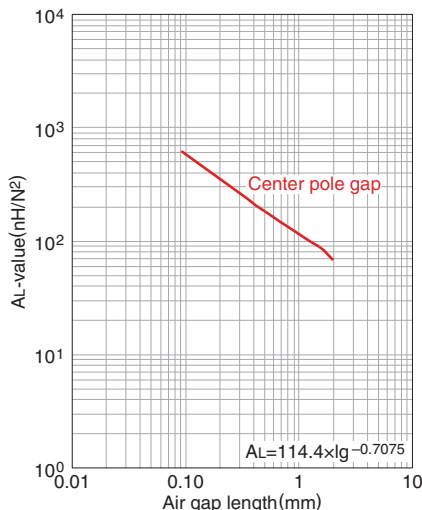
○ Calculated output power (forward converter mode): 90.1W

NI limit vs. AL-value (Typ.)



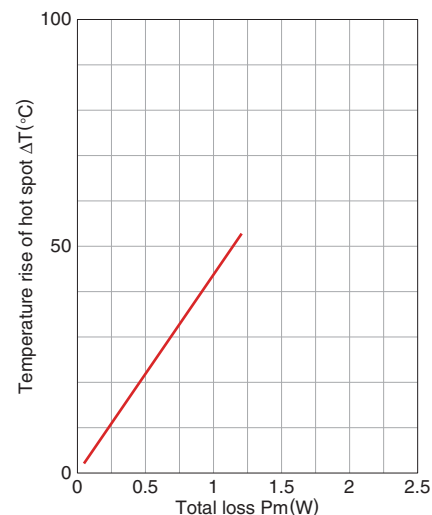
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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.

