TDK

March 2014

Mn-Zn

Ferrite Cores for Switching Power Supplies

EPC series

Mn-Zn EPC Core

SHAPES AND DIMENSIONS

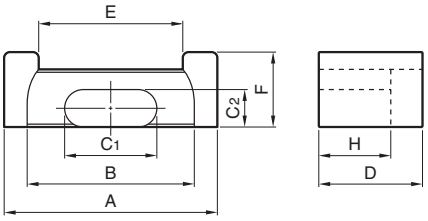


Fig. 1

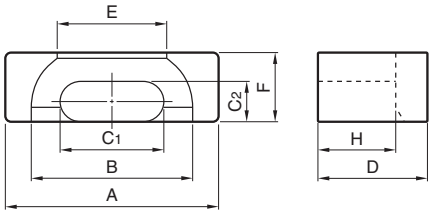


Fig. 2

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

Type	
1	Without air gap
2	With air gap

Part No.	Core	Dimensions (mm)							
		A	B min.	C_1	C_2	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 $C_1(mm^{-1})$	Effective cross-sectional area Ae(mm^2)	Effective magnetic path length ℓ e(mm)	Effective core volume Ve(mm^3)	Weigh (g)	AL-value (nH/N^2) 1kHz 0.5mA 100Ts		Core loss (W)max. 100kHz 200mT			
						Without air gap	With air gap	100°C	25°C	80°C	120°C
PC47EPC10-Z PC90EPC10-Z PC95EPC10-Z	1.89	9.39	17.8	167	1.1	1000±25% 900±25% 1040±25%	40±7% 63±10%	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%	40±4% 63±5%	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%	80±4% 125±5%	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%	80±4% 125±5%	0.39 0.5 —	— — 0.5	— — 0.4	— — 0.5

• All specifications are subject to change without notice.

Mn-Zn EPC Cores

SHAPES AND DIMENSIONS

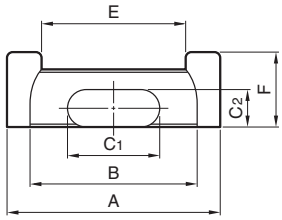


Fig. 1

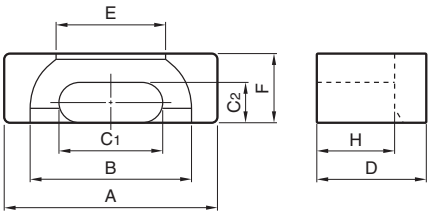


Fig. 2

PC47 | EPC25 | Z | - | 1 | 2

Material	Size of EPC core	AL-value (Z: without air gap)	Type	Number of lead slot

Type	
1	Without air gap
2	With air gap

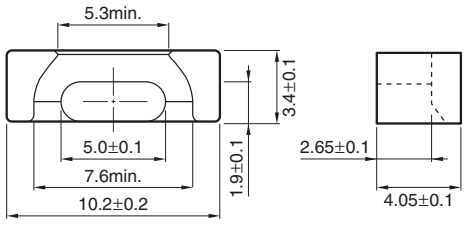
Part No.	Core	Dimensions (mm)							
		A	B min.	C_1	C_2	D	E min.	F	H
PC47EPC25-Z PC90EPC25-Z PC95EPC25-Z	Fig.1	25.1±0.5	20.65	11.5±0.2	4.0±0.1	12.5±0.2	17.1	8.0±0.2	9.0±0.3
PC47EPC25B-Z PC90EPC25B-Z PC95EPC25B-Z	Fig.2	25.1±0.5	20.4	13.8±0.2	2.50±0.15	11.43±0.15	16.5	6.5±0.2	8.78±0.15
PC47EPC27-Z PC90EPC27-Z 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 $C_1(mm^{-1})$	Effective cross-sectional area $Ae(mm^2)$	Effective magnetic path length $\ell e(mm)$	Effective core volume $Ve(mm^3)$	Weigh (g)	AL-value (nH/N^2) 1kHz 0.5mA 100Ts		Core loss (W)max. 100kHz 200mT			
						Without air gap	With air gap	100°C	25°C	80°C	120°C
PC47EPC25-Z PC90EPC25-Z PC95EPC25-Z	1.40	40.4	56.3	2280	13	1560±25% 1400±25% 2200±25%	125±5% 200±7%	1.08 1.4 —	— — 1.4	— — 1.2	— — 1.4
PC47EPC25B-Z PC90EPC25B-Z PC95EPC25B-Z	1.39	33.3	46.2	1540	11	1560±25% 1400±25% 2200±25%	80±5% 125±7%	0.64 0.8 —	— — 0.8	— — 0.65	— — 0.8
PC47EPC27-Z PC90EPC27-Z PC95EPC27-Z	1.43	48.6	69.4	3370	18	1540±25% 1400±25% 2200±25%	125±5% 200±7%	1.53 2.0 —	— — 2.0	— — 1.7	— — 2.0
PC47EPC30-Z PC90EPC30-Z PC95EPC30-Z	1.35	55.6	75.3	4190	23	1570±25% 1700±25% 2300±25%	125±5% 200±7%	1.99 2.5 —	— — 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



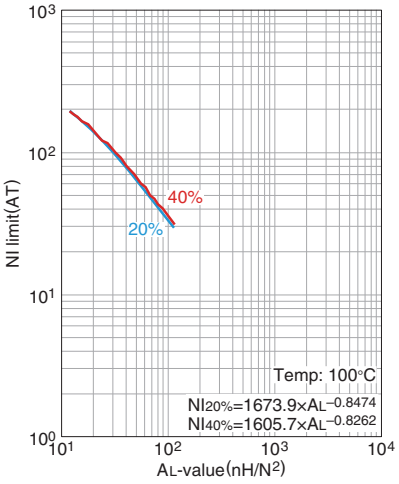
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

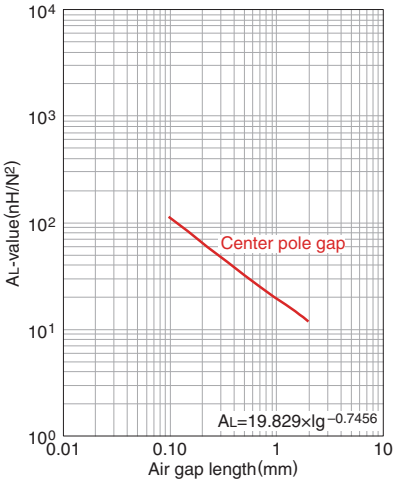
○ Calculated output power (forward converter mode): 5.8W (100kHz)

NI limit vs. AL-value (Typ.)



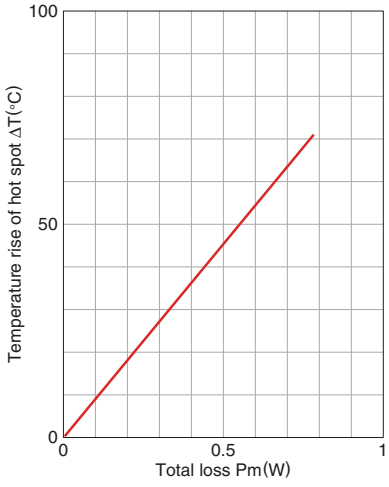
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

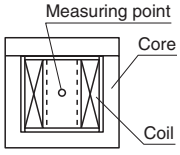


Measuring conditions
- Coil：ø0.1 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

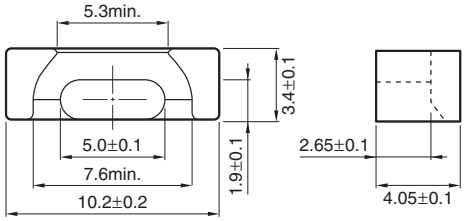


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



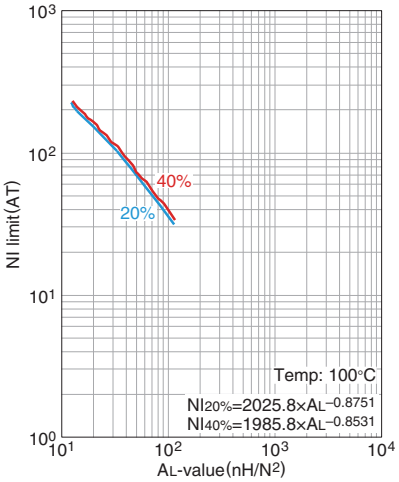
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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	900±25%	0.090

*Coil：ø0.1 2UEW 100Ts

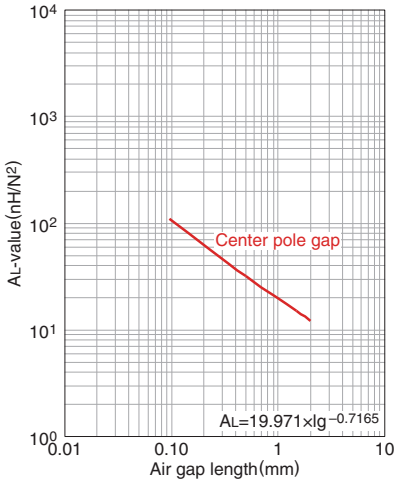
○ Calculated output power (forward converter mode): 5.4W

NI limit vs. AL-value (Typ.)



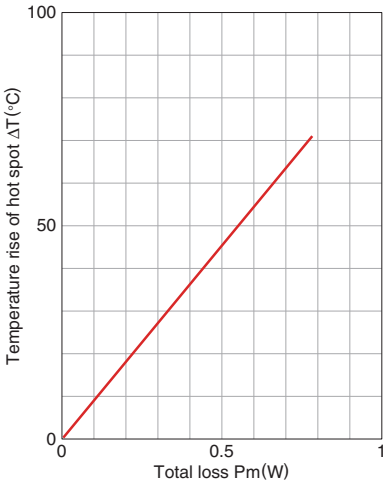
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

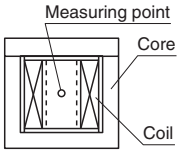


Measuring conditions
- Coil：ø0.1 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

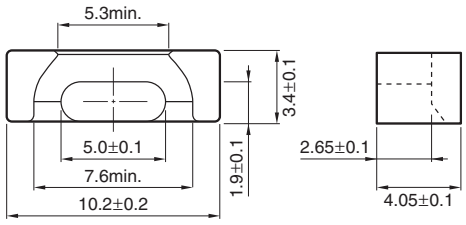


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



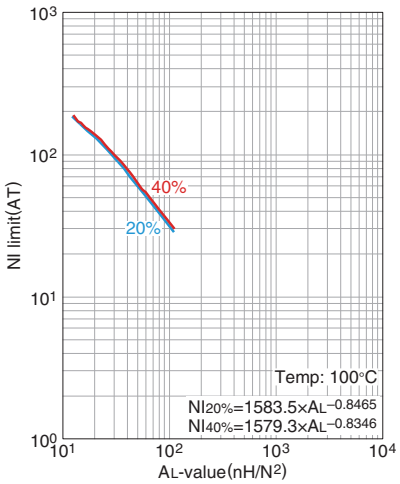
Dimensions in mm

Effective parameter								Electrical characteristics			
Core factor C_1 (mm^{-1})	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm^2)	Effective core volume Ve (mm^3)	Cross-sectional center pole area Acp (mm^2)	Minimum cross-sectional center pole are Acp min. (mm^2)	Cross-sectional winding area of core Acw (mm^2)	Weigh (g/set)	A_L-value * (nH/N^2) 1kHz 0.5mA	Core loss (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

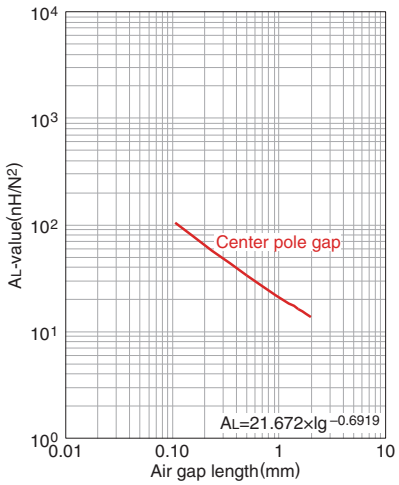
○ Calculated output power (forward converter mode): 5.6W

NI limit vs. A_L-value (Typ.)



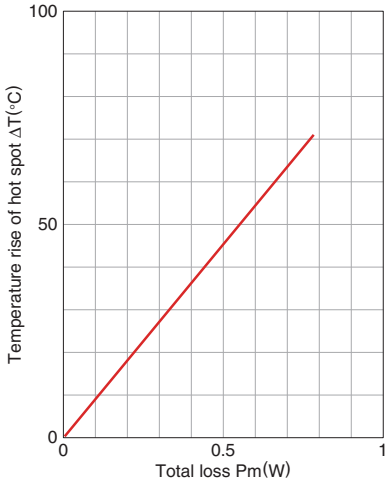
The 20% and 40% graph shows when a 20% and 40% drop from the initial A_L-value has been made due to the DC superimposition.

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

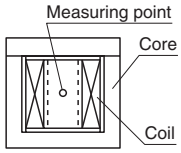


Measuring conditions
- Coil：ø0.1 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

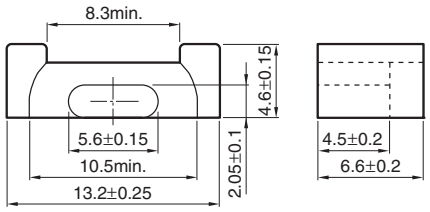


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



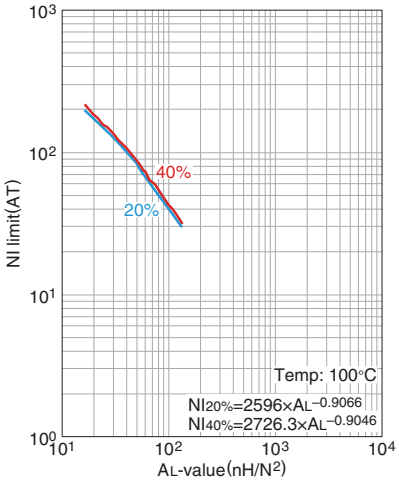
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

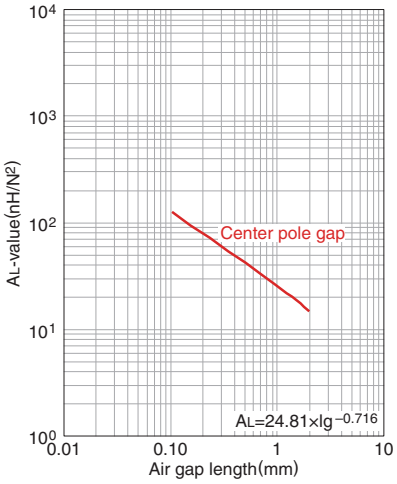
○ Calculated output power (forward converter mode): 9.1W (100kHz)

NI limit vs. AL-value (Typ.)



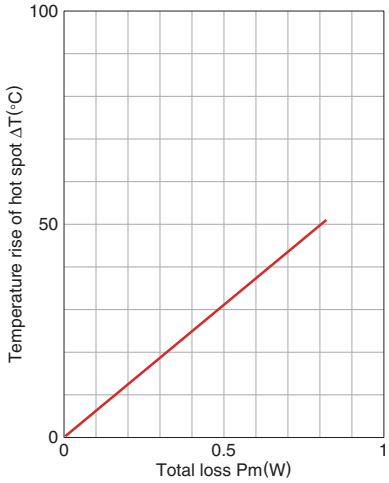
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

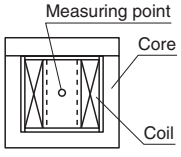


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

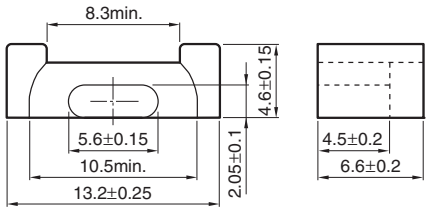


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



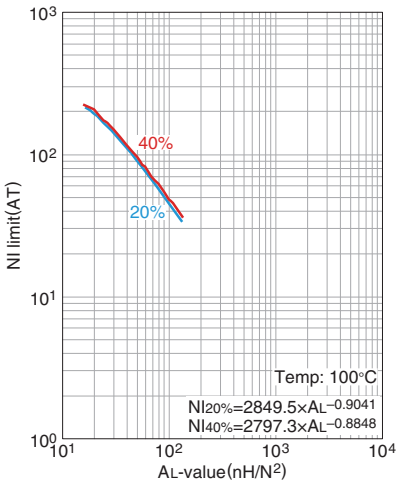
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm^{-1})	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm^2)	Effective core volume Ve (mm^3)	Cross-sectional center pole area Acp (mm^2)	Minimum cross-sectional center pole are Acp min. (mm^2)	Cross-sectional winding area of core Acw (mm^2)	Weigh (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：ø0.2 2UEW 100Ts

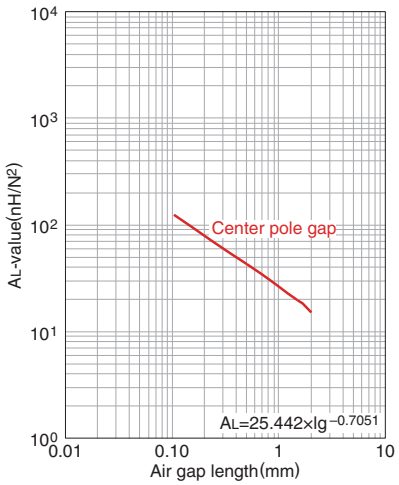
○ Calculated output power (forward converter mode): 8.6W

NI limit vs. AL-value (Typ.)



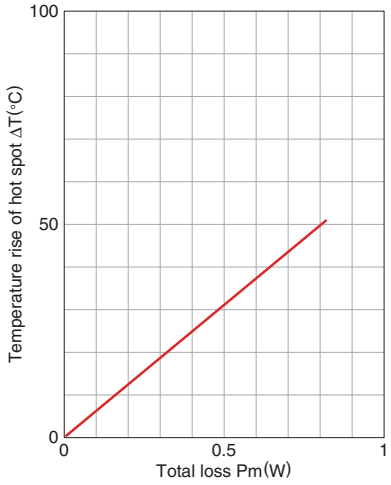
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

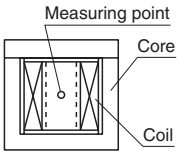


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

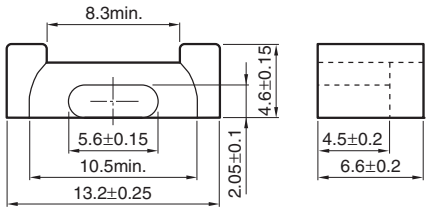


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



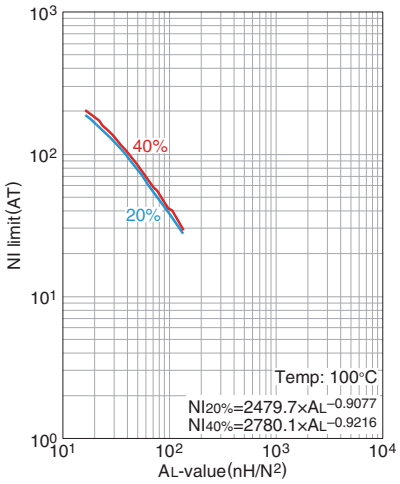
Dimensions in mm

Effective parameter								Electrical characteristics			
Core factor C_1 (mm^{-1})	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm^2)	Effective core volume Ve (mm^3)	Cross-sectional center pole area Acp (mm^2)	Minimum cross-sectional center pole are Acp min. (mm^2)	Cross-sectional winding area of core Acw (mm^2)	Weigh (g/set)	A_L-value * (nH/N^2) 1kHz 0.5mA	Core loss (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

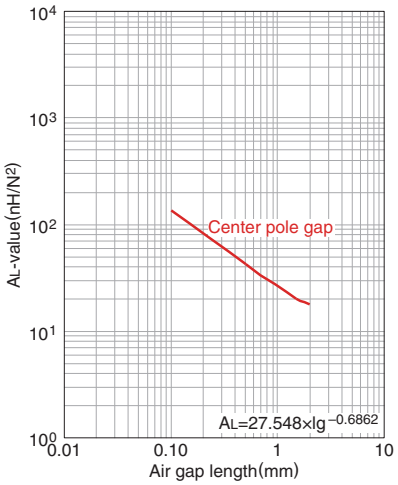
○ Calculated output power (forward converter mode): 8.8W

NI limit vs. A_L-value (Typ.)



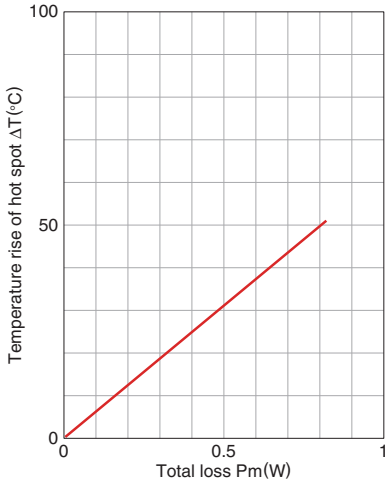
The 20% and 40% graph shows when a 20% and 40% drop from the initial A_L-value has been made due to the DC superimposition.

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

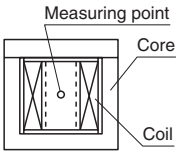


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

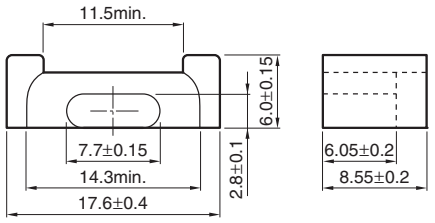


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



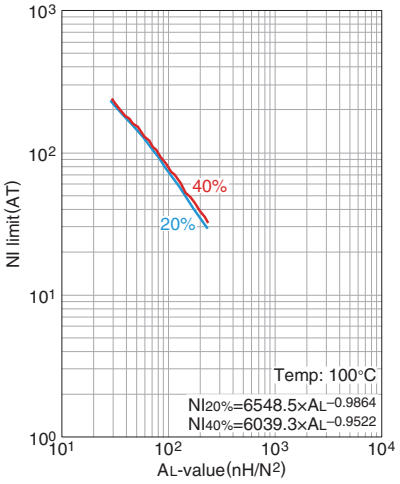
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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	1150±25%	0.34

* Coil：ø0.2 2UEW 100Ts

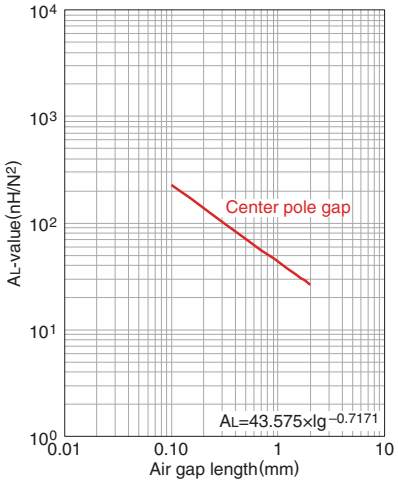
○ Calculated output power (forward converter mode): 21.9W (100kHz)

NI limit vs. AL-value (Typ.)



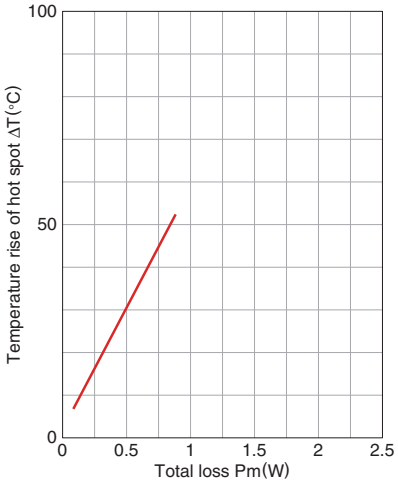
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

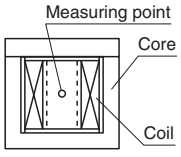


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

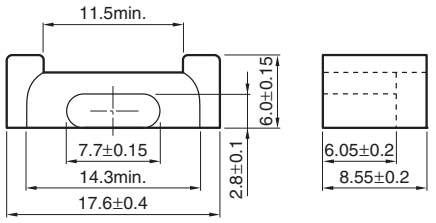


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



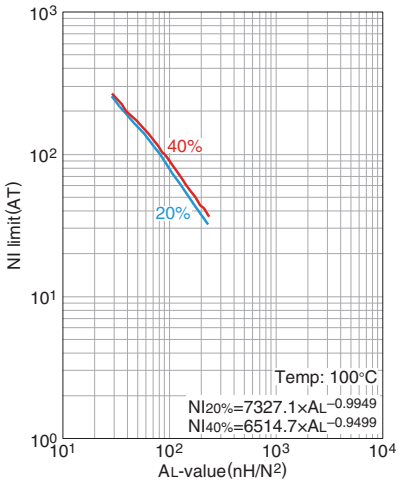
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

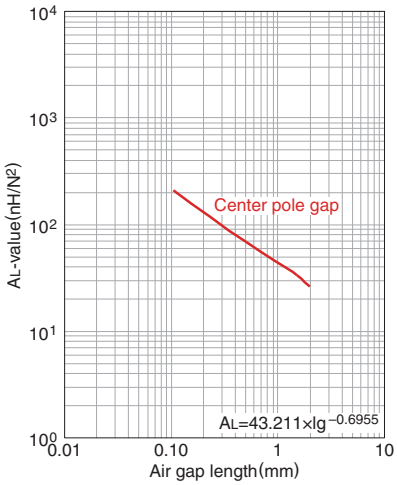
○ Calculated output power (forward converter mode): 20.5W

NI limit vs. AL-value (Typ.)



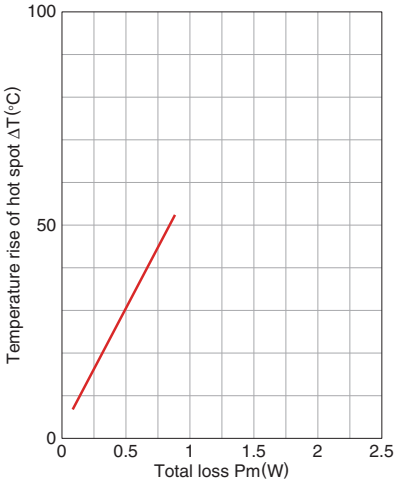
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

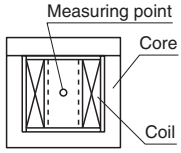


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

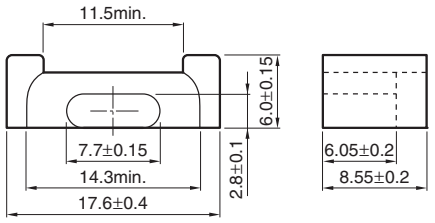


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



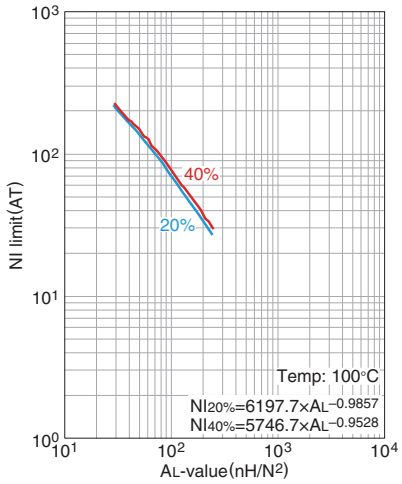
Dimensions in mm

Effective parameter								Electrical characteristics			
Core factor C_1 (mm^{-1})	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm^2)	Effective core volume Ve (mm^3)	Cross-sectional center pole area Acp (mm^2)	Minimum cross-sectional center pole are Acp min. (mm^2)	Cross-sectional winding area of core Acw (mm^2)	Weigh (g/set)	A_L-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

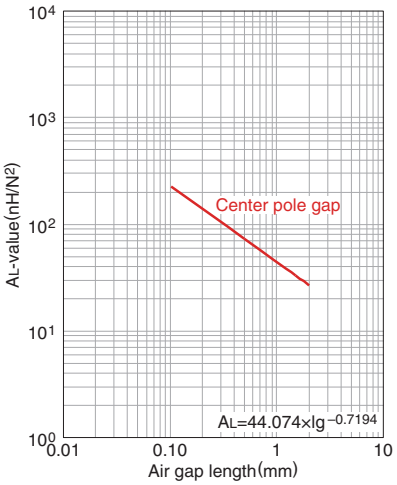
○ Calculated output power (forward converter mode): 21.1W

NI limit vs. A_L-value (Typ.)



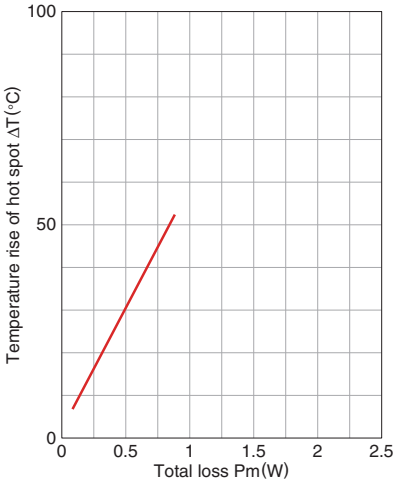
The 20% and 40% graph shows when a 20% and 40% drop from the initial A_L-value has been made due to the DC superimposition.

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

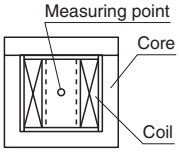


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

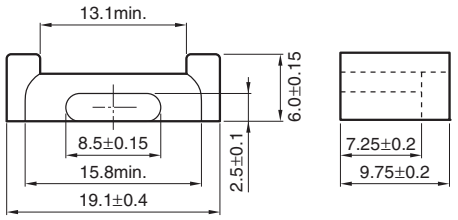


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



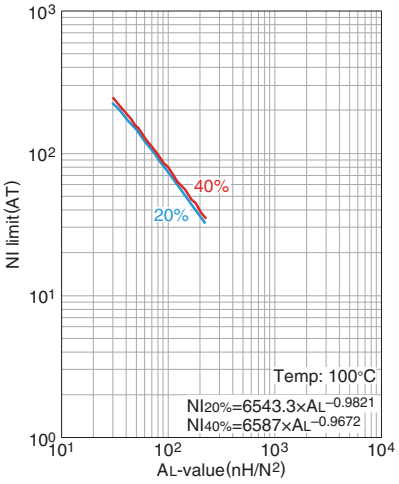
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

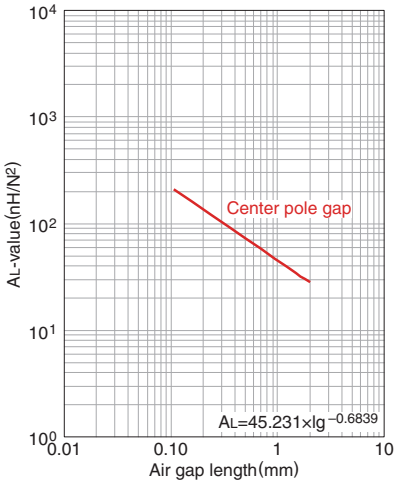
○ Calculated output power (forward converter mode): 29.9W (100kHz)

NI limit vs. AL-value (Typ.)



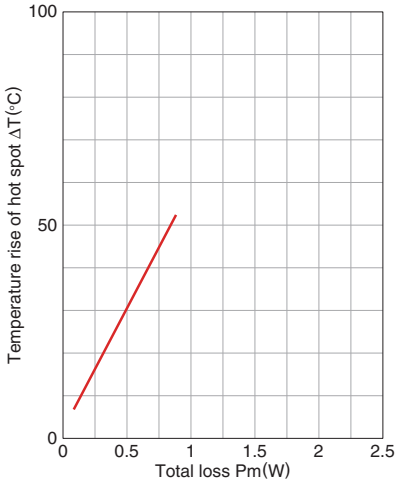
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

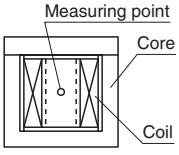


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

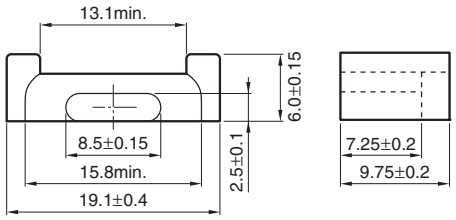


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



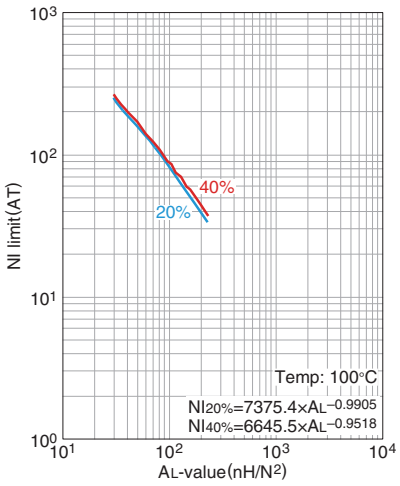
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

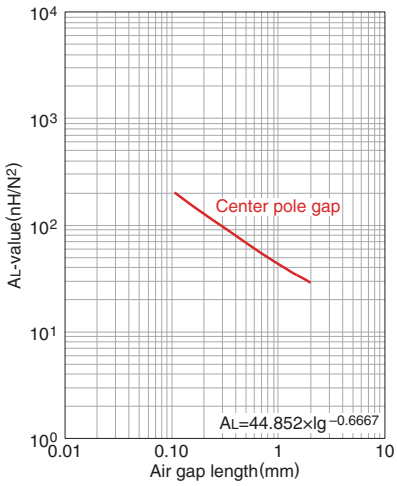
○ Calculated output power (forward converter mode): 28W

NI limit vs. AL-value (Typ.)



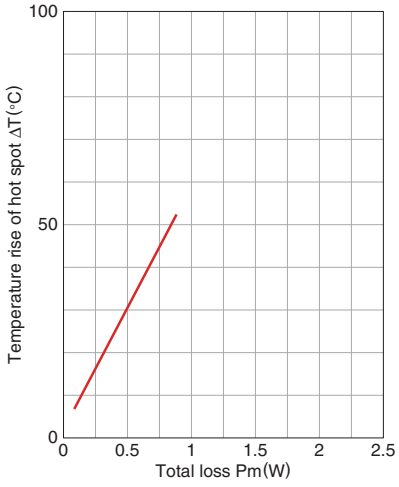
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

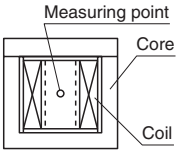


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

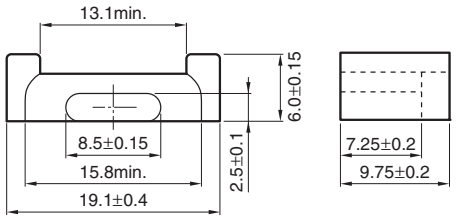


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



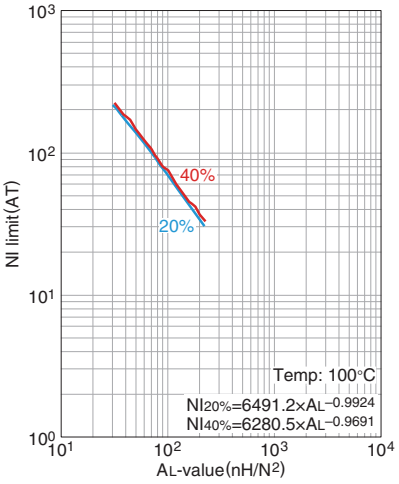
Dimensions in mm

Effective parameter								Electrical characteristics			
Core factor C_1 (mm^{-1})	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm^2)	Effective core volume Ve (mm^3)	Cross-sectional center pole area Acp (mm^2)	Minimum cross-sectional center pole are Acp min. (mm^2)	Cross-sectional winding area of core Acw (mm^2)	Weigh (g/set)	A_L-value * (nH/N^2) 1kHz 0.5mA	Core loss (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

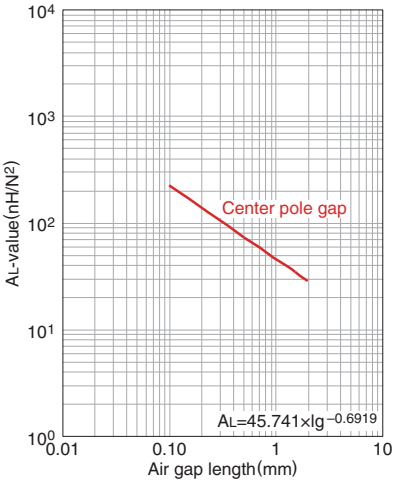
○ Calculated output power (forward converter mode): 28.7W

NI limit vs. A_L-value (Typ.)



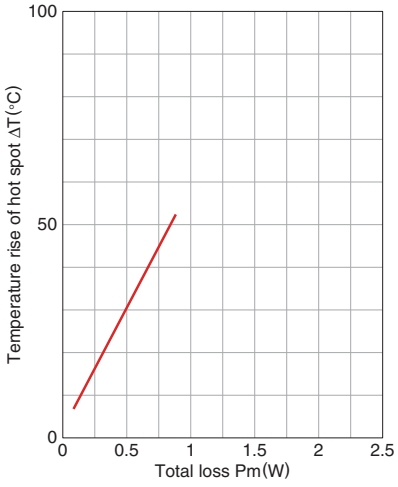
The 20% and 40% graph shows when a 20% and 40% drop from the initial A_L-value has been made due to the DC superimposition.

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

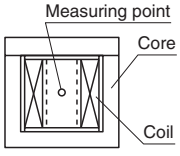


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

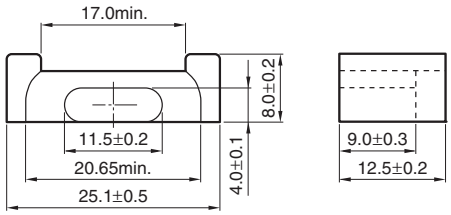


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



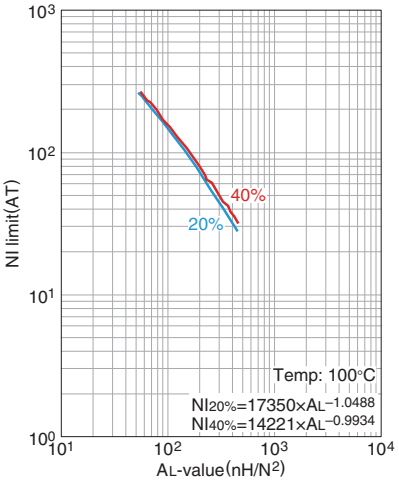
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

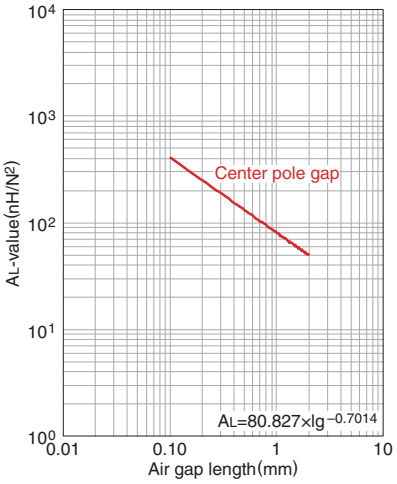
○ Calculated output power (forward converter mode): 71.6W (100kHz)

NI limit vs. AL-value (Typ.)



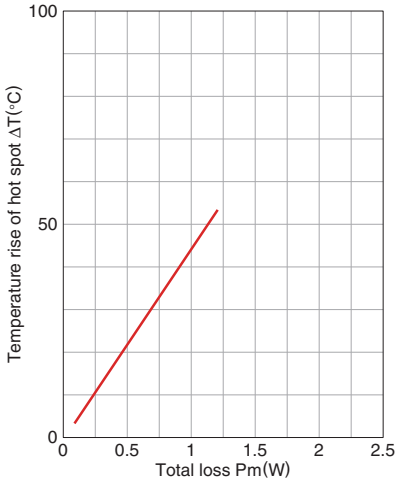
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

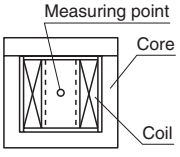


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

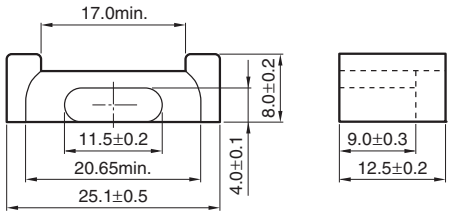


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



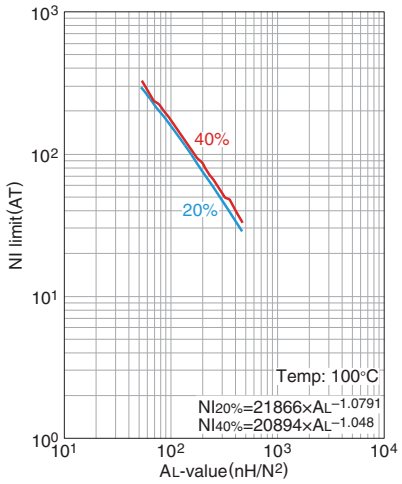
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

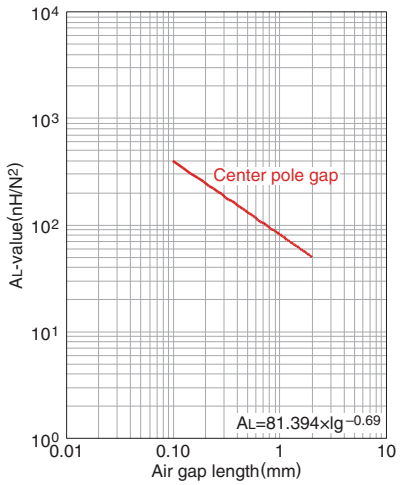
○ Calculated output power (forward converter mode): 64W

NI limit vs. AL-value (Typ.)



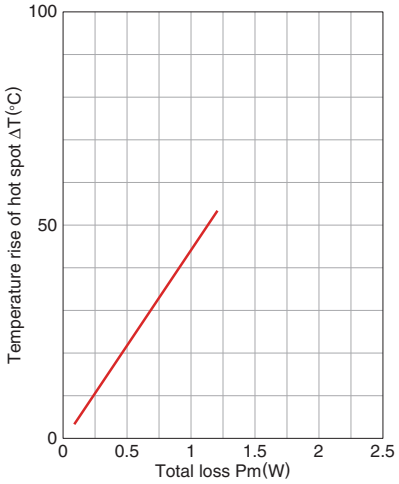
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

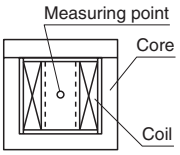


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

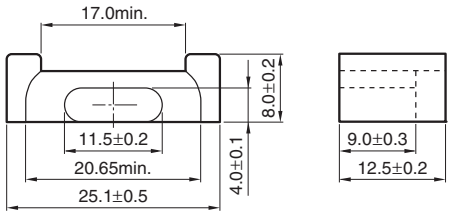


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



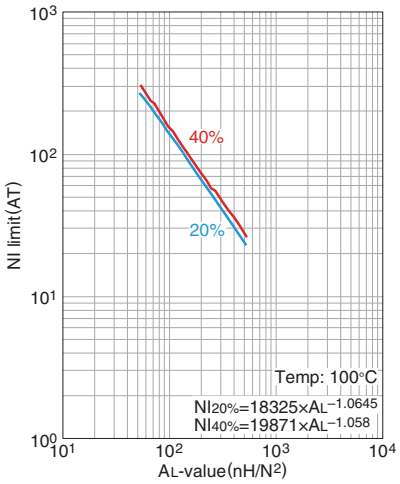
Dimensions in mm

Effective parameter								Electrical characteristics			
Core factor C_1 (mm^{-1})	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm^2)	Effective core volume Ve (mm^3)	Cross-sectional center pole area Acp (mm^2)	Minimum cross-sectional center pole are Acp min. (mm^2)	Cross-sectional winding area of core Acw (mm^2)	Weigh (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

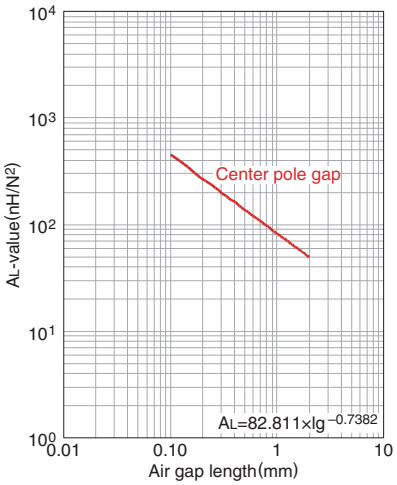
○ Calculated output power (forward converter mode): 66.9W

NI limit vs. AL-value (Typ.)



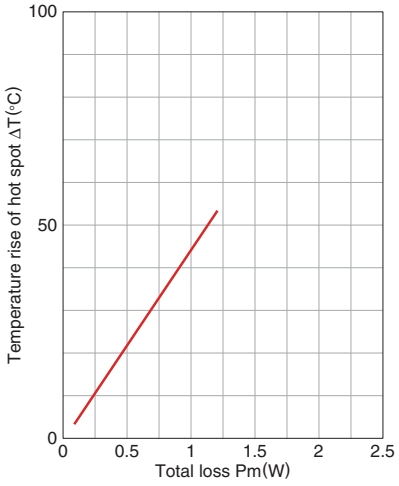
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

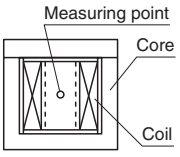


Measuring conditions
- Coil：ø0.2 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

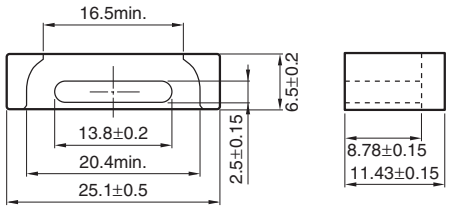


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



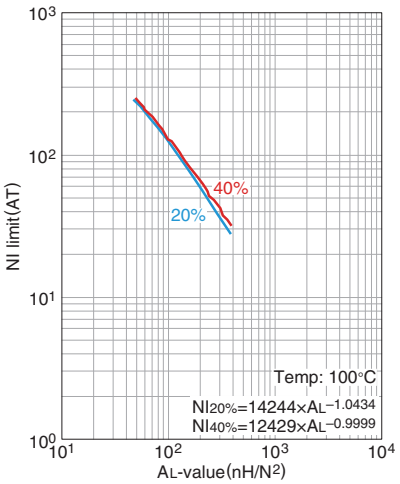
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

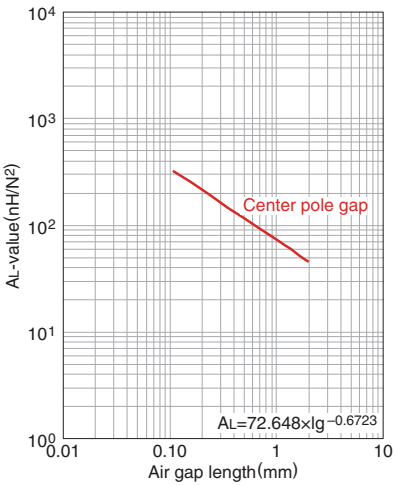
○ Calculated output power (forward converter mode): 50.3W (100kHz)

NI limit vs. AL-value (Typ.)



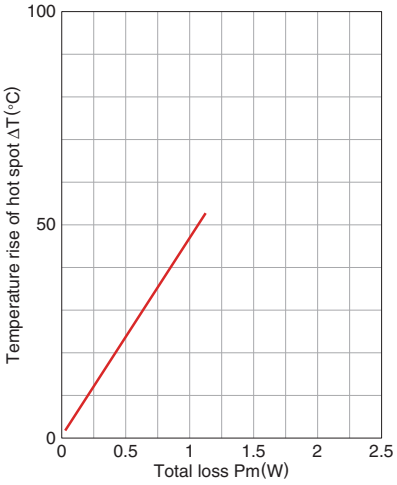
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

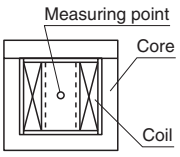


Measuring conditions
- Coil：ø0.23 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

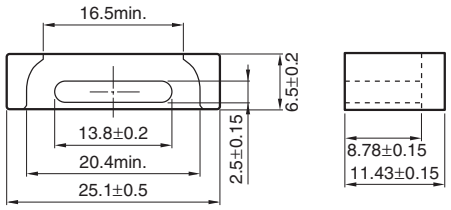


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



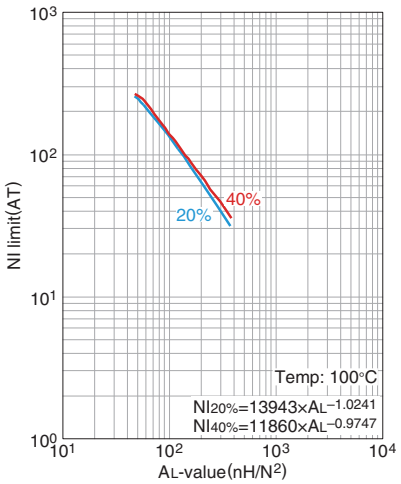
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

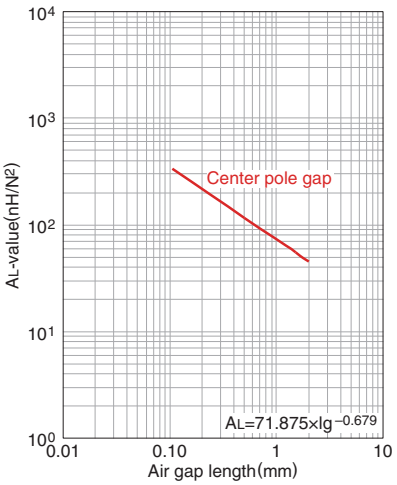
○ Calculated output power (forward converter mode): 46W

NI limit vs. AL-value (Typ.)



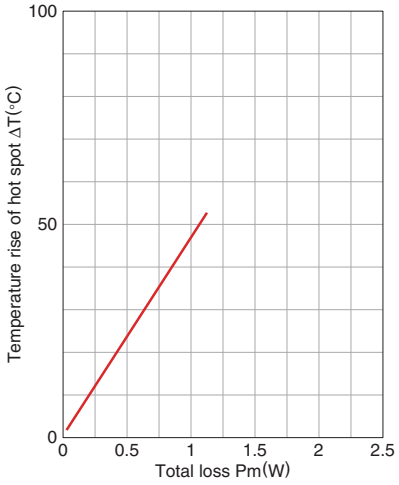
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

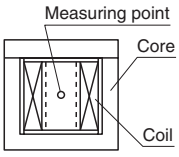


Measuring conditions
- Coil：ø0.23 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

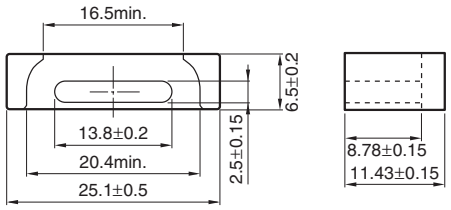


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



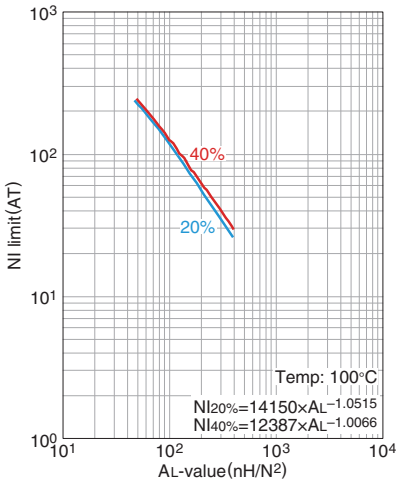
Dimensions in mm

Effective parameter								Electrical characteristics			
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 1kHz 0.5mA	Core loss (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

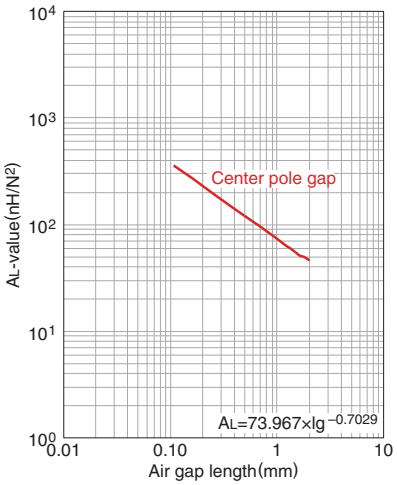
○ Calculated output power (forward converter mode): 47.6W

NI limit vs. AL-value (Typ.)



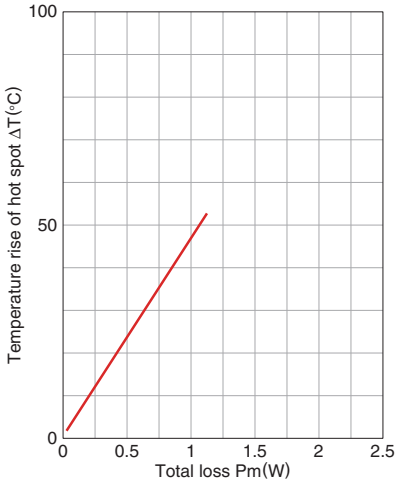
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

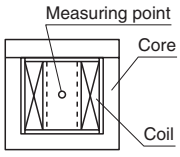


Measuring conditions
- Coil：ø0.23 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

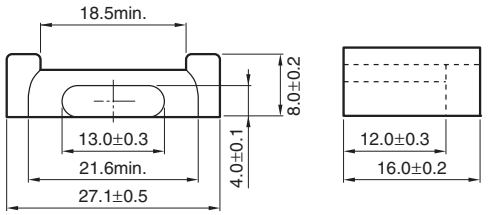


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



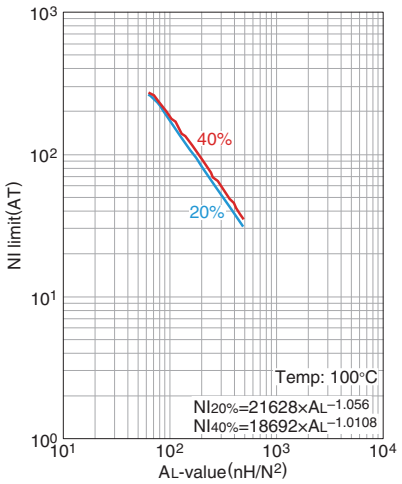
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

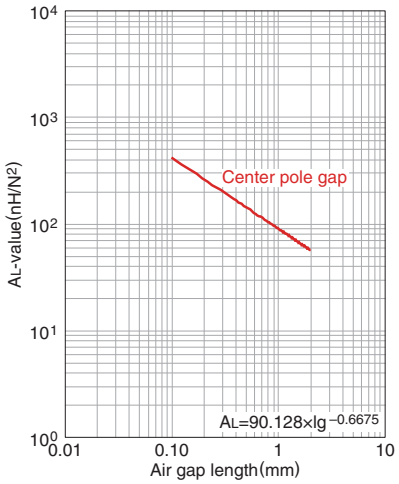
○ Calculated output power (forward converter mode): 88.7W (100kHz)

NI limit vs. AL-value (Typ.)



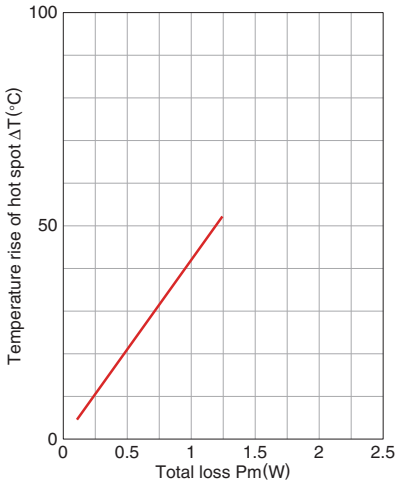
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

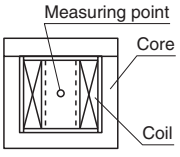


Measuring conditions
- Coil：ø0.3 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

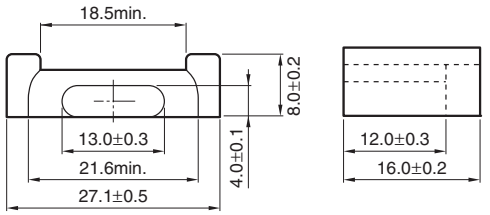


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



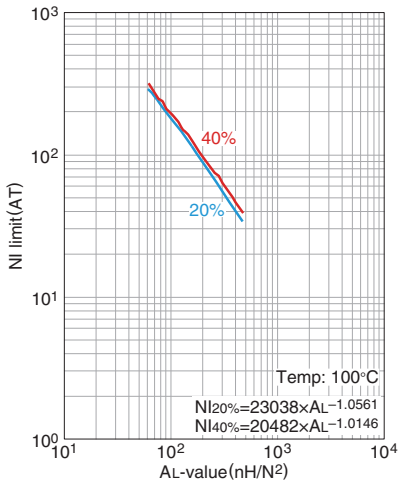
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

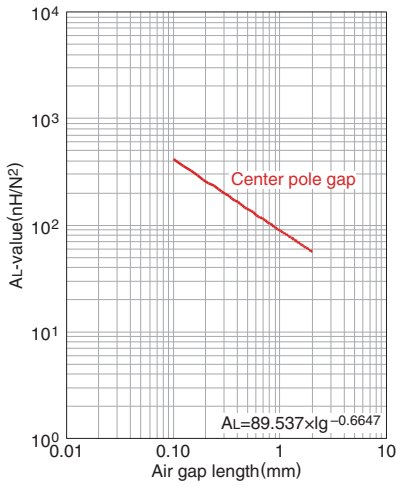
○ Calculated output power (forward converter mode): 80.5W

NI limit vs. AL-value (Typ.)



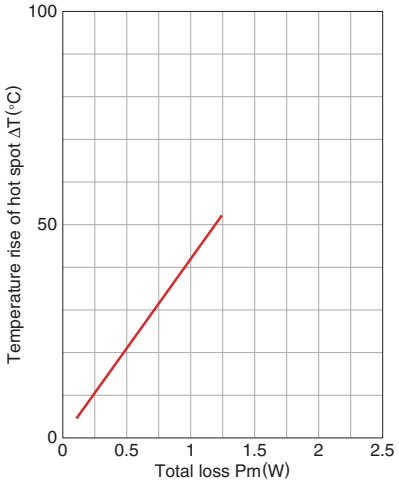
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

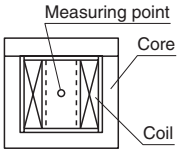


Measuring conditions
- Coil：ø0.3 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

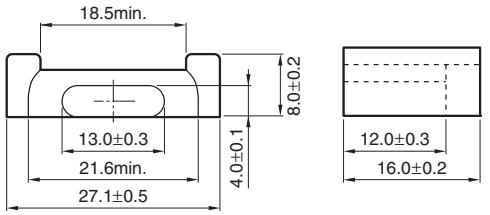


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



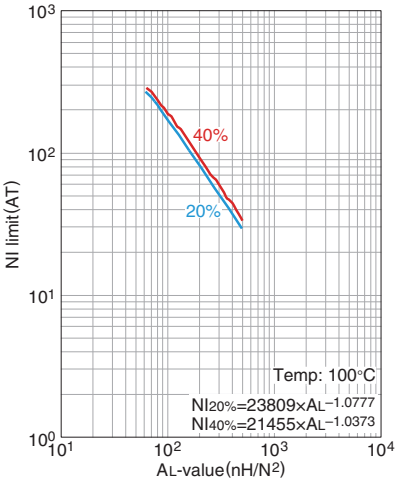
Dimensions in mm

Effective parameter								Electrical characteristics			
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 1kHz 0.5mA	Core loss (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

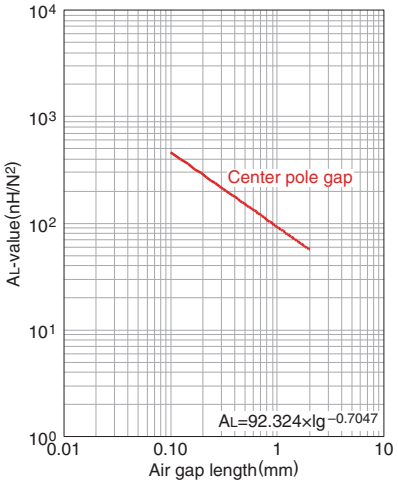
○ Calculated output power (forward converter mode): 84.8W

NI limit vs. AL-value (Typ.)

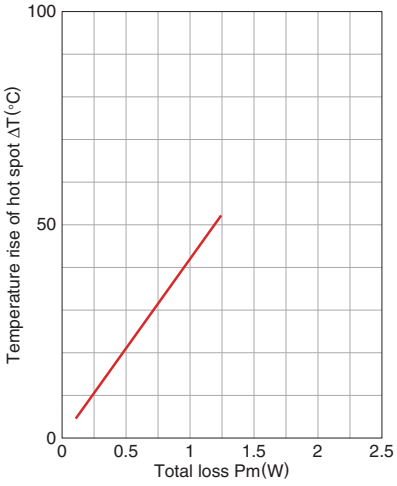


The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

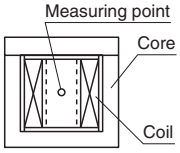
AL-value vs. Air gap length (Typ.)



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

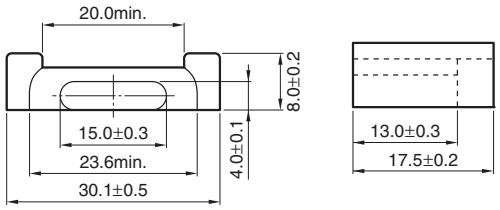


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



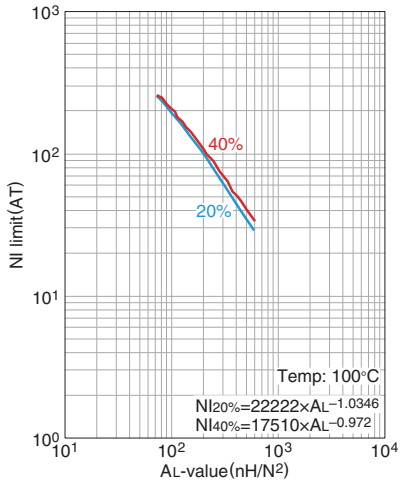
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 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

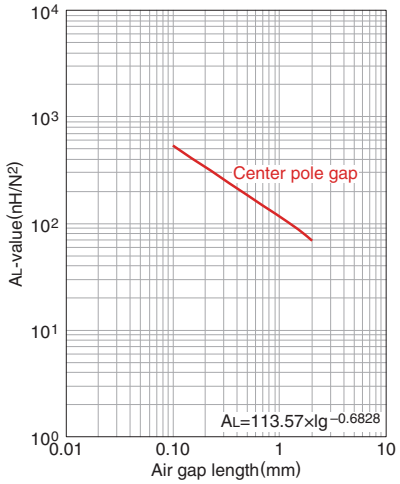
○ Calculated output power (forward converter mode): 95.7W (100kHz)

NI limit vs. AL-value (Typ.)



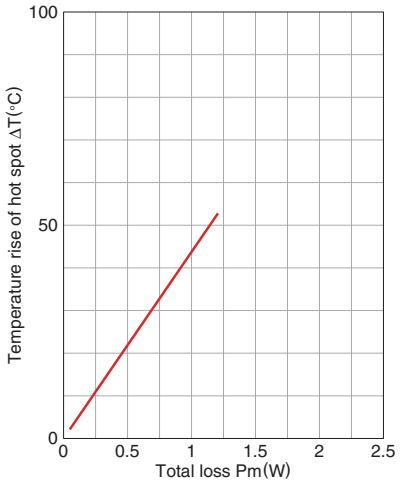
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

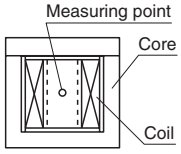


Measuring conditions
- Coil：ø0.3 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

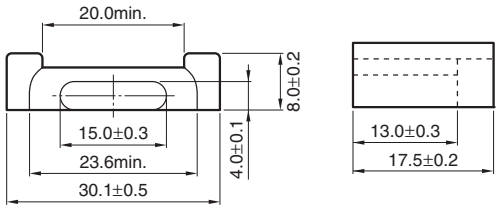


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



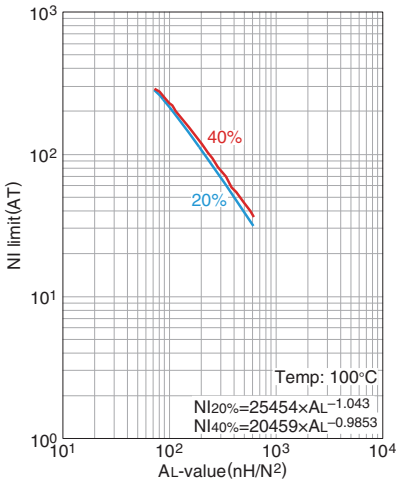
Dimensions in mm

Effective parameter								Electrical characteristics	
Core factor C_1 (mm^{-1})	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm^2)	Effective core volume Ve (mm^3)	Cross-sectional center pole area Acp (mm^2)	Minimum cross-sectional center pole are Acp min. (mm^2)	Cross-sectional winding area of core Acw (mm^2)	Weigh (g/set)	A_L-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

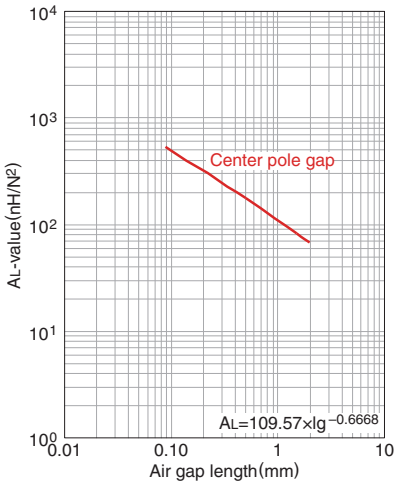
○ Calculated output power (forward converter mode): 85.5W

NI limit vs. A_L-value (Typ.)



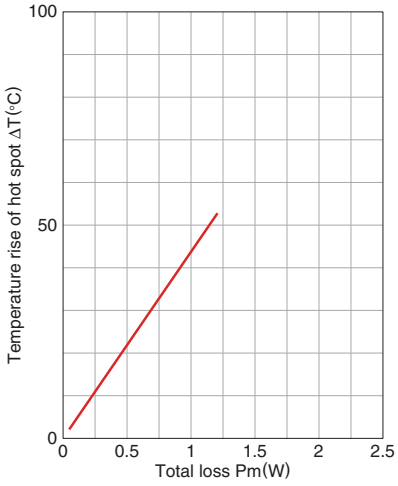
The 20% and 40% graph shows when a 20% and 40% drop from the initial A_L-value has been made due to the DC superimposition.

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

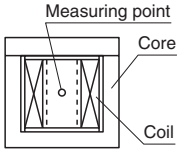


Measuring conditions
- Coil：ø0.3 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

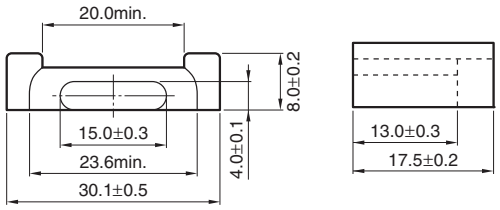


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



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

SHAPES AND DIMENSIONS



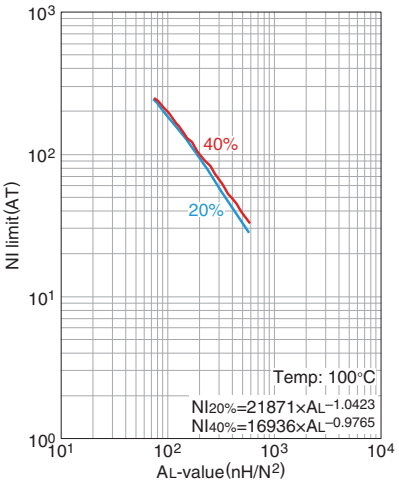
Dimensions in mm

Effective parameter								Electrical characteristics			
Core factor C1 (mm⁻¹)	Effective magnetic path length ℓe (mm)	Effective cross-sectional area Ae (mm²)	Effective core volume Ve (mm³)	Cross-sectional center pole area Acp (mm²)	Minimum cross-sectional center pole are Acp min. (mm²)	Cross-sectional winding area of core Acw (mm²)	Weigh (g/set)	AL-value * (nH/N²) 1kHz 0.5mA	Core loss (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

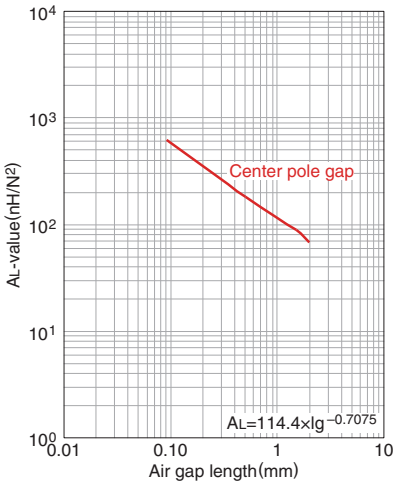
○ Calculated output power (forward converter mode): 90.1W

NI limit vs. AL-value (Typ.)



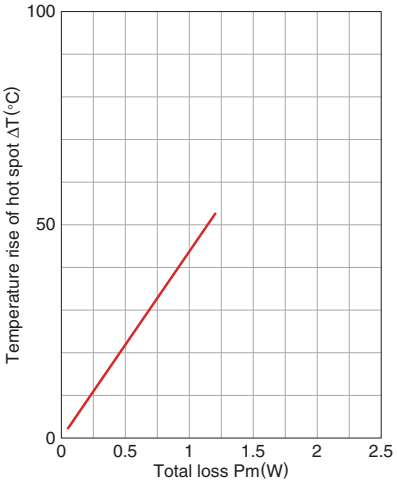
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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.