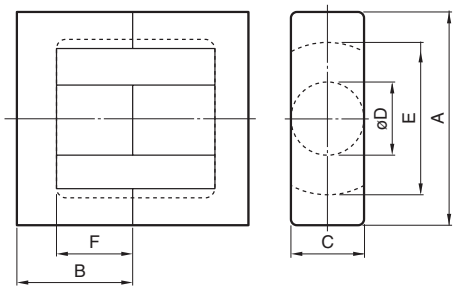
Mn-Zn ETD Cores

SHAPES AND DIMENSIONS



PC47 | ETD19 - Z

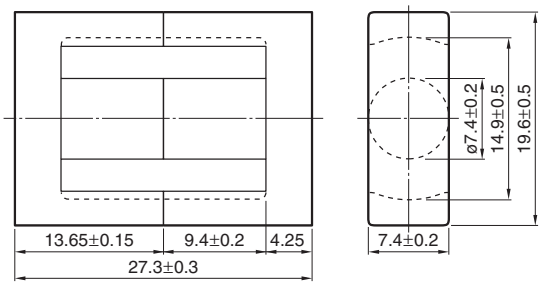
Material	Size of E core	AL-value (Z: without air gap)

Part No.	JIS	Dimensions (mm)					
		A	B	C	øD	E	F
PC47ETD19-Z		19.6±0.5	13.65±0.15	7.4±0.2	7.4±0.2	14.9±0.5	9.4±0.2
PC47ETD24-Z		24.4±0.6	14.45±0.15	8.5±0.4	8.5±0.2	18.6±0.6	10.1±0.2
PC47ETD29-Z		29.8±0.8	15.80±0.15	9.5±0.3	9.5±0.3	22.7±0.7	11.0±0.3
PC47ETD34-Z	JIS FEER 34.2	34.2±0.8	17.3±0.2	10.88±0.38	10.8±0.3	26.3±0.7	12.1±0.3
PC47ETD39-Z	JIS FEER 39.1	39.1±0.9	19.8±0.2	12.58±0.38	12.5±0.3	30.1±0.8	14.6±0.4
PC47ETD44-Z	JIS FEER 44	44.0±1.0	22.3±0.2	14.9±0.5	14.8±0.4	33.3±0.8	16.5±0.4
PC47ETD49-Z	JIS FEER 48.7	48.7±1.1	24.7±0.2	16.4±0.5	16.3±0.4	37.0±0.9	18.1±0.4

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 100°C
						Without air gap	With air gap	
PC47ETD19-Z	1.32	41.3	54.6	2260	14	1720±25%	80±5% 160±7%	1.01
PC47ETD24-Z	1.100	56.3	61.9	3480	20	2125±25%	100±5% 200±7%	1.51
PC47ETD29-Z	0.959	73.6	70.6	5200	28	2500±25%	200±5% 400±10%	1.75
PC47ETD34-Z	0.810	97.1	78.6	7630	40	2780±25%	200±5% 400±7%	2.52
PC47ETD39-Z	0.737	125	92.1	11500	60	3150±25%	200±5% 400±7%	3.96
PC47ETD44-Z	0.589	175	103	18000	94	4000±25%	250±5% 400±7%	6.20
PC47ETD49-Z	0.535	213	114	24300	124	4440±25%	250±5% 400±7%	10.25

Mn-Zn E series **Part No.: PC47ETD19-Z**

SHAPES AND DIMENSIONS



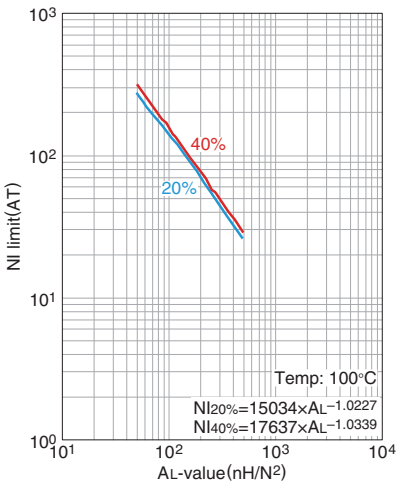
Dimensions in mm

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
C1	ℓe	Ae	Ve	Acp	Acp min.	Acw				
(mm−1)	(mm)	(mm2)	(mm3)	(mm2)	(mm2)	(mm2)	(g/set)	(nH/N2)		(W)max.
								1kHz 0.5mA	100kHz 200mT	100kHz 200mT 100°C
1.32	54.6	41.3	2260	43	40.7	70.5	13.3	1720±25%	2380 min.	1.01

* Coil：ø0.35 2UEW 100Ts

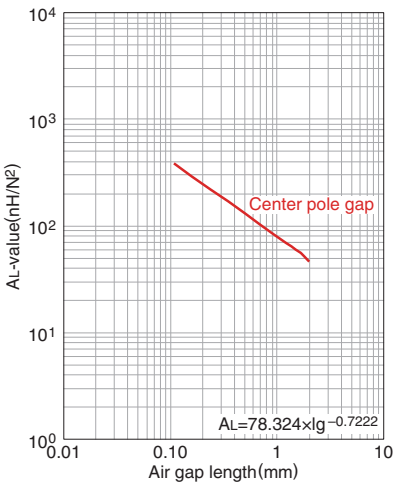
○ Calculated output power (forward converter mode): 114W (100kHz)

NI limit vs. AL-value (Typ.)



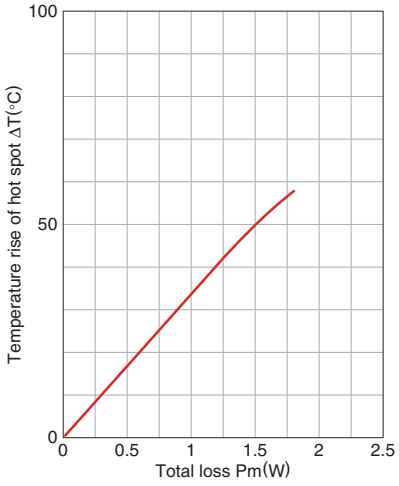
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

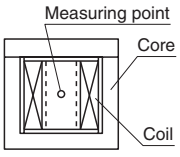


Measuring conditions
- Coil：ø0.35 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

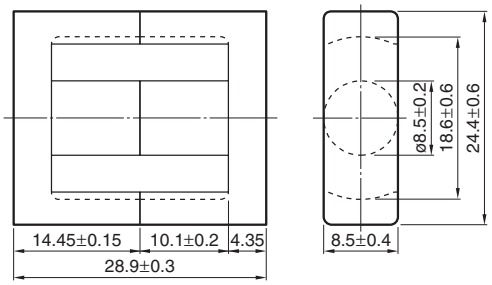


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



Mn-Zn E series **Part No.: PC47ETD24-Z**

SHAPES AND DIMENSIONS



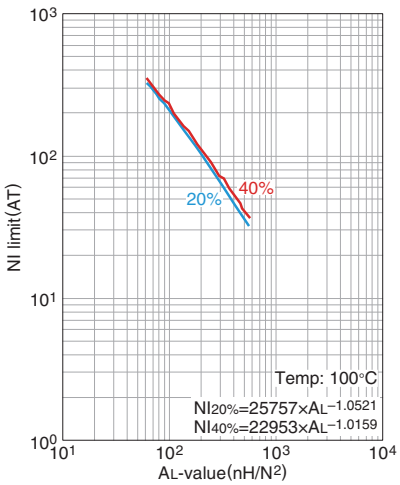
Dimensions in mm

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
C1	ℓe	Ae	Ve	Acp	Acp min.	Acw				
(mm−1)	(mm)	(mm2)	(mm3)	(mm2)	(mm2)	(mm2)	(g/set)	(nH/N2)		(W)max.
								1kHz 0.5mA	100kHz 200mT	100kHz 200mT 100°C
1.10	61.9	56.3	3480	56.7	54.1	102	19.5	2125±25%	2860 min.	1.51

* Coil：ø0.35 2UEW 100Ts

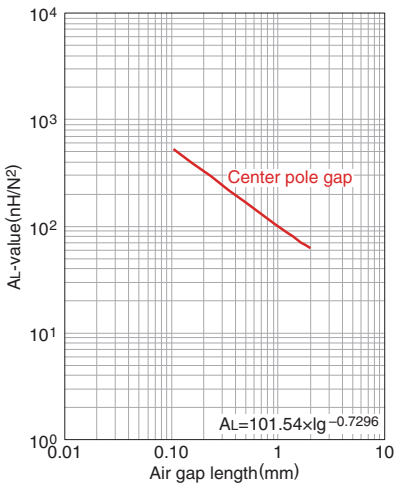
○ Calculated output power (forward converter mode): 131W (100kHz)

NI limit vs. AL-value (Typ.)



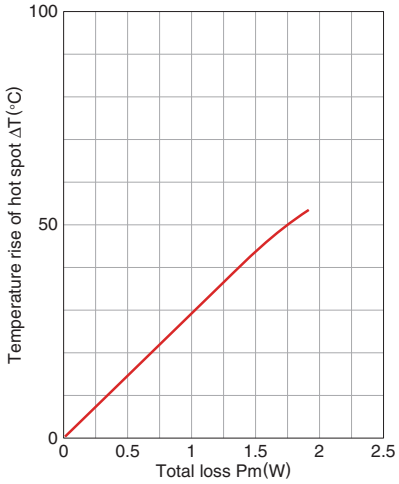
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

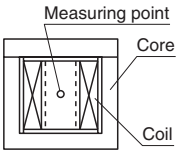


Measuring conditions
- Coil：ø0.35 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

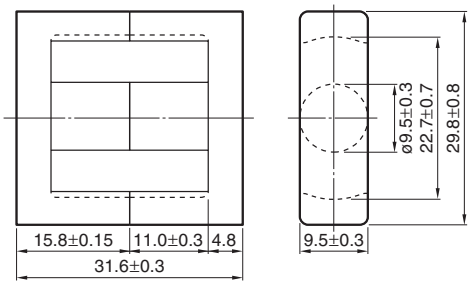


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



Mn-Zn E series **Part No.: PC47ETD29-Z**

SHAPES AND DIMENSIONS



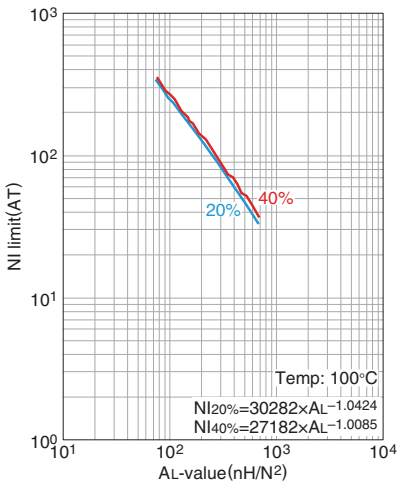
Dimensions in mm

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
C1	ℓe	Ae	Ve	Acp	Acp min.	Acw				
(mm−1)	(mm)	(mm2)	(mm3)	(mm2)	(mm2)	(mm2)	(g/set)	(nH/N2)		(W)max.
								1kHz 0.5mA	100kHz 200mT	100kHz 200mT 100°C
0.959	70.6	73.6	5200	70.9	66.5	145.2	28	2500±25%	3540 min.	1.75

* Coil：ø0.35 2UEW 100Ts

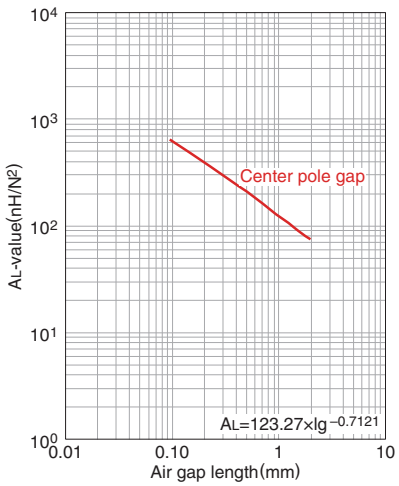
○ Calculated output power (forward converter mode): 242W (100kHz)

NI limit vs. AL-value (Typ.)



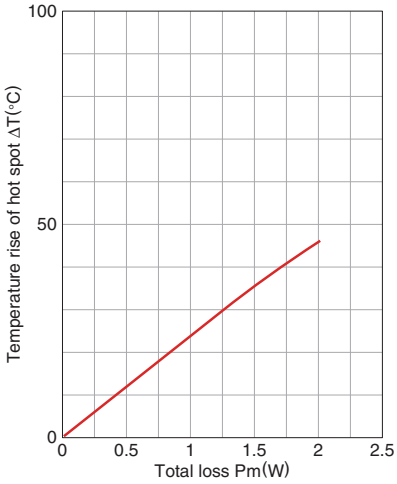
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

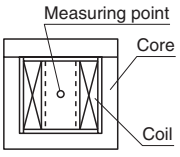


Measuring conditions
- Coil：ø0.35 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

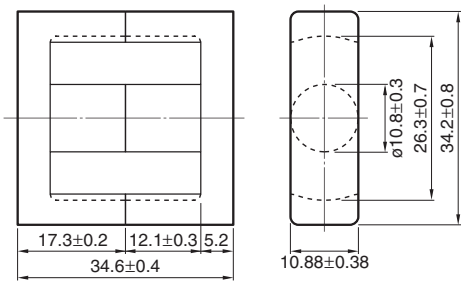


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



Mn-Zn E series **Part No.: PC47ETD34-Z**

SHAPES AND DIMENSIONS



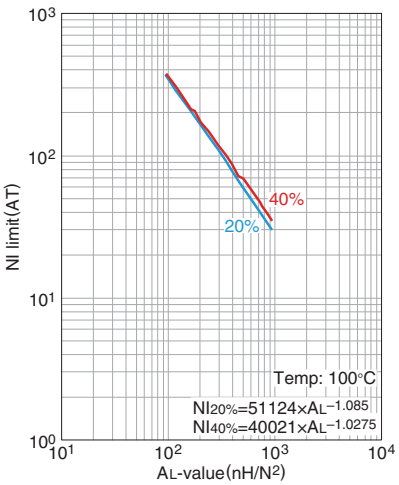
Dimensions in mm

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
C1	ℓe	Ae	Ve	Acp	Acp min.	Acw				
(mm−1)	(mm)	(mm2)	(mm3)	(mm2)	(mm2)	(mm2)	(g/set)	(nH/N2)		(W)max.
								1kHz 0.5mA	100kHz 200mT	100kHz 200mT 100°C
0.810	78.6	97.1	7630	91.6	86.6	188	40	2780±25%	4190 min.	2.52

* Coil：ø0.35 2UEW 100Ts

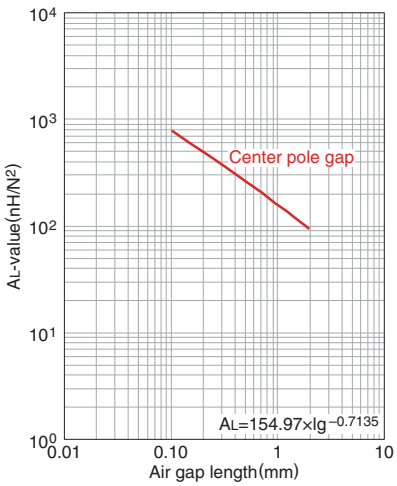
○ Calculated output power (forward converter mode): 321W (100kHz)

NI limit vs. AL-value (Typ.)



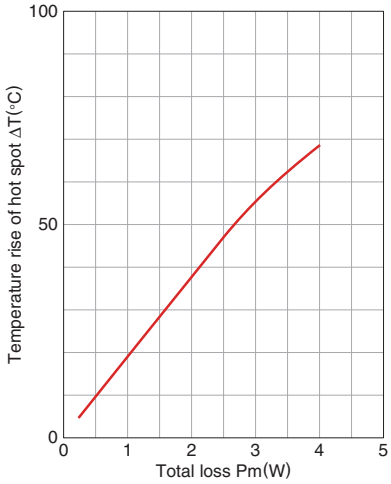
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

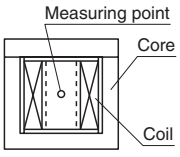


Measuring conditions
- Coil：ø0.35 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

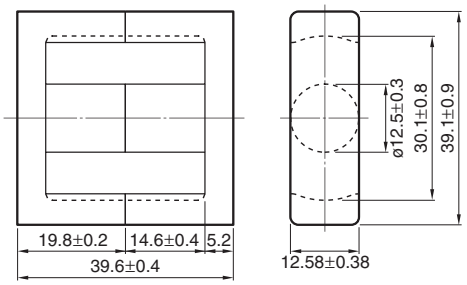


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



Mn-Zn E series **Part No.: PC47ETD39-Z**

SHAPES AND DIMENSIONS



Dimensions in mm

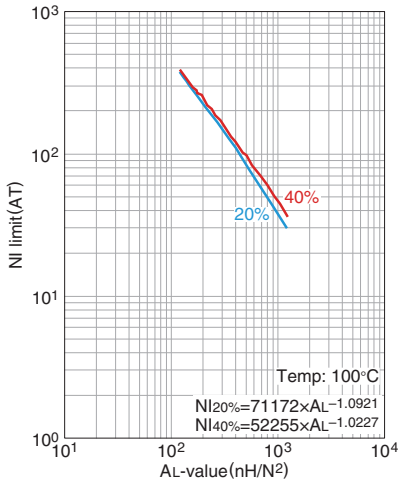
Based on JIS FEI 12.5.

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	(nH/N^2) 100kHz 200mT	Core loss (W)max. 100kHz 200mT 100°C
0.737	92.1	125	11500	123	117	257	60	3150±25%	4600 min.	3.96

* Coil：ø0.35 2UEW 100Ts

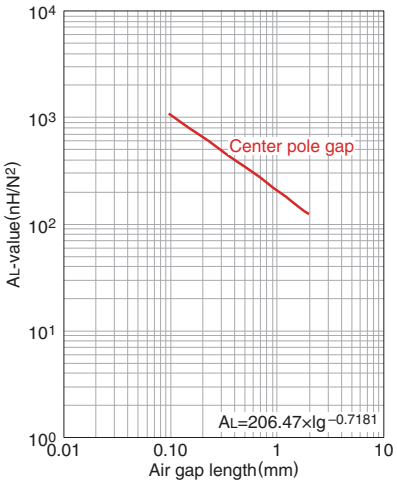
○ Calculated output power (forward converter mode): 450W (100kHz)

NI limit vs. A_L-value (Typ.)



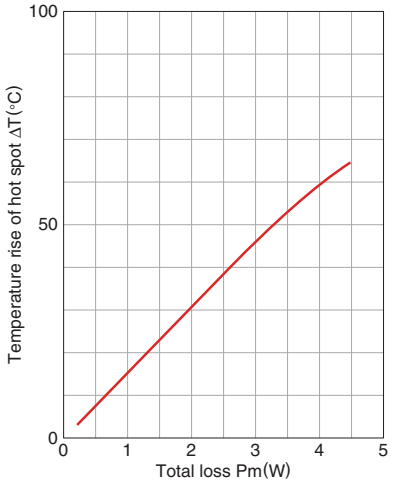
The 20% and 40% graph shows when a 20% and 40% drop from the initial A_L-value has been made due to the DC superimposition.

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

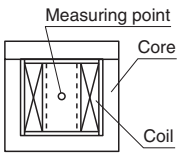


Measuring conditions
- Coil：ø0.35 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

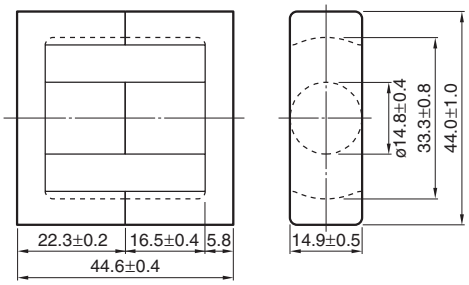


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



Mn-Zn E series **Part No.: PC47ETD44-Z**

SHAPES AND DIMENSIONS



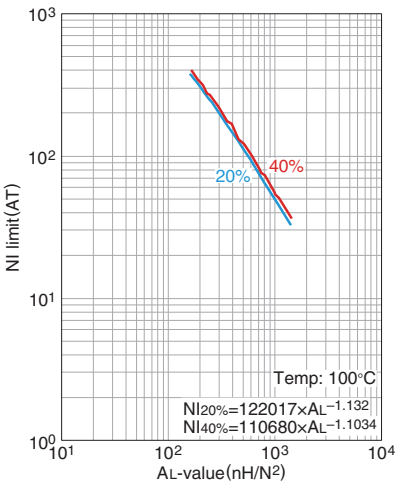
Dimensions in mm

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
C1	ℓe	Ae	Ve	Acp	Acp min.	Acw				
(mm⁻¹)	(mm)	(mm²)	(mm³)	(mm²)	(mm²)	(mm²)	(g/set)	(nH/N²)		(W)max.
								1kHz 0.5mA	100kHz 200mT	100kHz 200mT 100°C
0.589	103	175	18000	172	163	305	94	4000±25%	5760 min.	6.2

* Coil：ø0.35 2UEW 100Ts

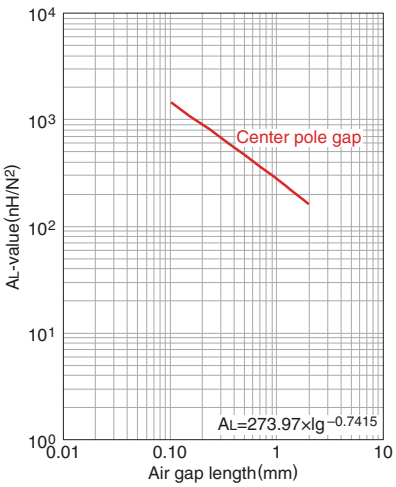
○ Calculated output power (forward converter mode): 581W (100kHz)

NI limit vs. AL-value (Typ.)



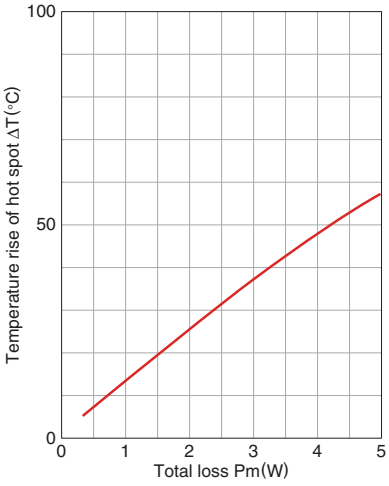
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

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

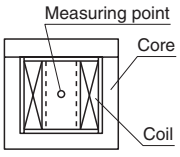


Measuring conditions
- Coil：ø0.35 2UEW 100Ts
- Frequency：1kHz
- Current level：0.5mA
- Ambient temperature：25°C

Temperature rise vs. Total loss (Typ.)

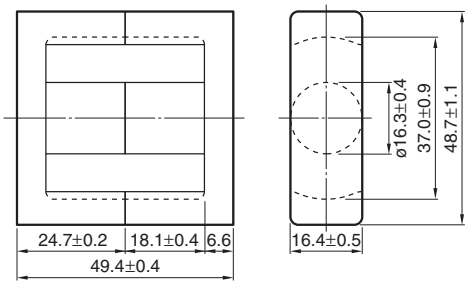


Measuring conditions
- Room space: approx. 400x300x 300cm
- Ambient temperature：25°C
- Humidity：45(%)RH.



Mn-Zn E series **Part No.: PC47ETD49-Z**

SHAPES AND DIMENSIONS



Dimensions in mm

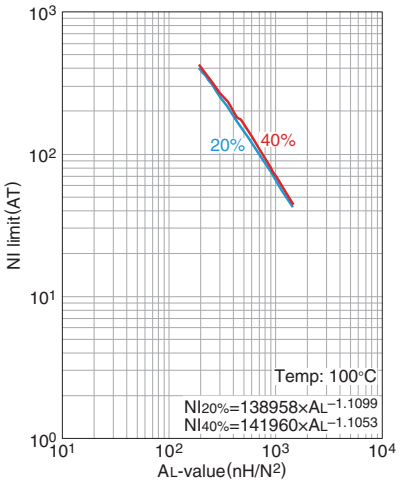
Based on JIS FEI 12.5.

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	(nH/N^2) 100kHz 200mT	Core loss (W)max. 100kHz 200mT 100°C
0.535	114	213	24300	209	199	375	124	4440±25%	6340 min.	10.25

* Coil：ø0.35 2UEW 100Ts

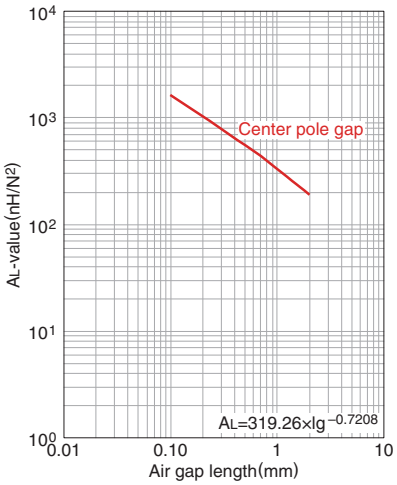
○ Calculated output power (forward converter mode): 692W (100kHz)

NI limit vs. A_L-value (Typ.)



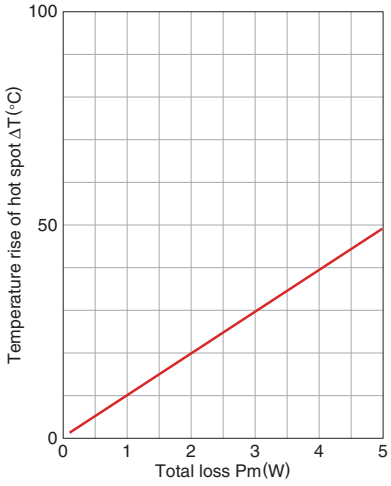
The 20% and 40% graph shows when a 20% and 40% drop from the initial A_L-value has been made due to the DC superimposition.

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



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

Temperature rise vs. Total loss (Typ.)



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