



June 2016

**Mn-Zn**

**Large Size Ferrite Cores for High Power**

**UU** series

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## 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.

# Large Size Ferrite Cores for High Power

Product compatible with RoHS directive  
Halogen-free

## Overview of the UU Series

### ■ FEATURES

- Large size cores for transformers with large power outputs.
- Can also be used in reactors.

### ■ APPLICATION

- Large size industrial equipment, transformers for consumer equipment
- Reactors

### ■ PART NUMBER CONSTRUCTION

PE22	UU	79	×	129	×	31
Material	Core shape	Width		Height when assembled		Thickness
PE22	UU	79		115		31
PC40		100		129		30
PE90		100		150		20
		101		151		25
		120		160		20
		80				30N
						30N
						25N

### ■ RANGE OF USE AND STORAGE TEMPERATURE

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

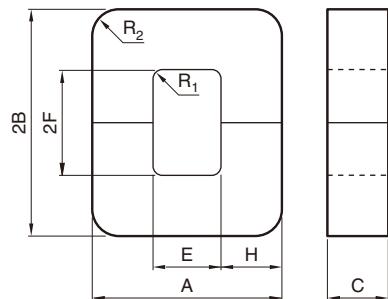
- RoHS Directive Compliant Product: See the following for more details.<https://product.tdk.com/info/en/environment/rohs/index.html>
- Halogen-free: Indicates that Cl content is less than 900ppm, Br content is less than 900ppm, and that the total Cl and Br content is less than 1500ppm.

**⚠** Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.  
Please note that the contents may change without any prior notice due to reasons such as upgrading.

# Mn-Zn UU Cores



## ■ SHAPES AND DIMENSIONS



PE22	UU	79	x	129	x	31
Material	Core shape	Wdth	Height when assembled	Thickness		

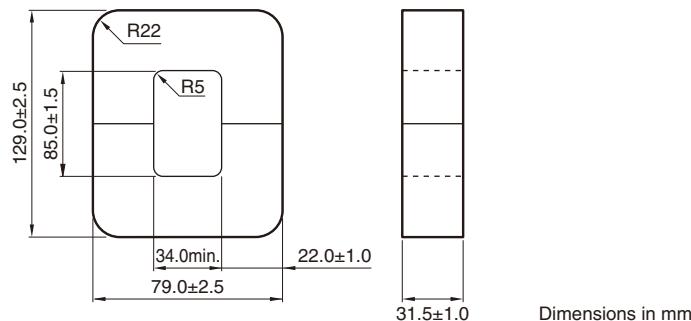
Part No.	Dimensions (mm)									
	A	2B	C	E	2F	H	R <sub>1</sub>	R <sub>2</sub>	E×2F(mm <sup>2</sup> )	
PE22 UU79×129×31										
PC40 UU79×129×31	79.0±2.5	129.0±2.5	31.5±1.0	34.0min.	85.0±1.5	22.0±1.0	5	22	2980	
PE90 UU79×129×31										
PE22 UU100×151×30										
PC40 UU100×151×30	100.0±3.0	151.0±2.5	30.0±1.0	39.0min.	90.0±1.5	30.0±1.5	5	30	3600	
PE90 UU100×151×30										
PE22 UU101×115×25										
PC40 UU101×115×25	101.0±3.0	115.0±2.5	25.4±1.0	50.0min.	64.0±1.5	25.0±1.0	5	25	3260	
PE90 UU101×115×25										
PE22 UU120×160×20										
PC40 UU120×160×20	120.0±3.0	160.0±2.5	20.0±1.0	59.0min.	100.0±1.5	30.0±1.5	5	35	6000	
PE90 UU120×160×20										
PE22 UU80×150×30N										
PC40 UU80×150×30N	80.0±2.5	150.0±2.5	30.0±1.0	39.0min.	110.0±1.5	20.0±1.0	1	0	4400	
PE90 UU80×150×30N										

Part No.	Effective parameter						Electrical characteristics Al-value (nH/N <sup>2</sup> ) 1kHz 0.4A/m 23°C
	Core factor C <sub>1</sub> (mm <sup>-1</sup> )	C <sub>2</sub> ×10 <sup>-2</sup> (mm <sup>-3</sup> )	Effective cross-sectional area A <sub>e</sub> (mm <sup>2</sup> )	Effective magnetic path length l <sub>e</sub> (mm)	Effective core volume V <sub>e</sub> (mm <sup>3</sup> )	Weight (g)	
PE22 UU79×129×31							
PC40 UU79×129×31	0.44605	0.06437	693	309	214220	1080	4790±25%
PE90 UU79×129×31						1080	6030±25%
						1103	5768±25%
PE22 UU100×151×30							
PC40 UU100×151×30	0.38801	0.04241	915	355	324860	1630	5540±25%
PE90 UU100×151×30						1630	6990±25%
						1664	6686±25%
PE22 UU101×115×25							
PC40 UU101×115×25	0.47757	0.07373	648	309	200350	1000	4480±25%
PE90 UU101×115×25						1000	5640±25%
						1021	5395±25%
PE22 UU120×160×20							
PC40 UU120×160×20	0.69041	0.11507	600	414	248550	1240	3140±25%
PE90 UU120×160×20						1240	3960±25%
						1266	3788±25%
PE22 UU80×150×30N							
PC40 UU80×150×30N	0.60472	0.00101	600	363	217700	1095	3570±25%
PE90 UU80×150×30N						1095	4500±25%
						1118	4304±25%

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## Mn-Zn UU series Part No.: PE22 UU79X129X31

## ■ SHAPES AND DIMENSIONS

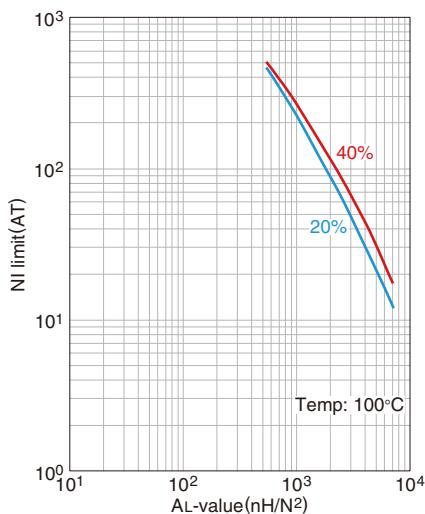


Effective parameter								Electrical characteristics
Core factor		Effective magnetic path length	Effective cross-sectional area	Effective core volume	Minimum cross-sectional area	Winding cross-sectional area	Weight (approx.)	AL-value
C <sub>1</sub> (mm <sup>-1</sup> )	C <sub>2</sub> ×10 <sup>-2</sup> (mm <sup>-3</sup> )	ℓ <sub>e</sub> (mm)	A <sub>e</sub> (mm <sup>2</sup> )	V <sub>e</sub> (mm <sup>3</sup> )	A min.* (mm <sup>2</sup> )	A <sub>cw</sub> (mm <sup>2</sup> )	(g)	(nH/N <sup>2</sup> ) 1kHz 0.4A/m 23°C
0.44605	0.06437	309	693	214220	693LB*	2980	1080	4790±25%

\* The symbol followed A min. value shows minimum cross-sectional area part.

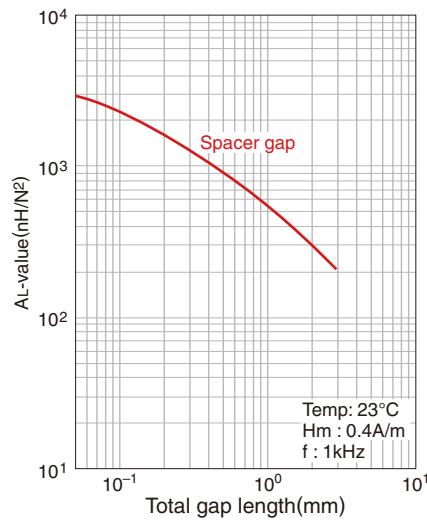
L is outer pole part, B is the back part.

## NI limit vs. AL-value



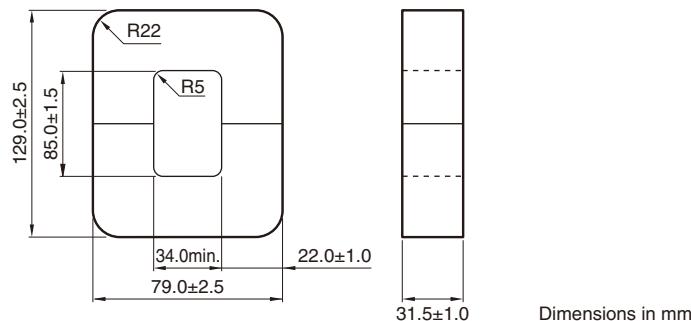
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

## AL-value vs. Air gap length



## Mn-Zn UU series Part No.: PC40 UU79X129X31

## ■ SHAPES AND DIMENSIONS

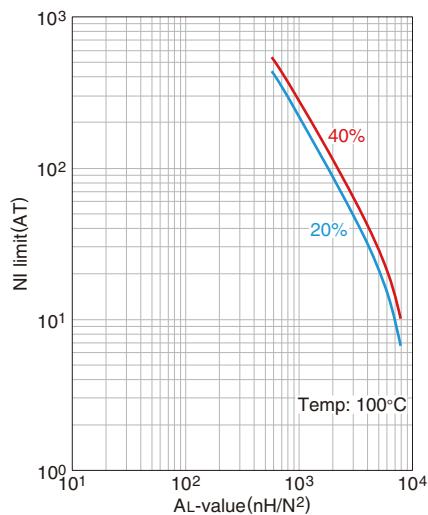


Effective parameter								Electrical characteristics
Core factor		Effective magnetic path length	Effective cross-sectional area	Effective core volume	Minimum cross-sectional area	Winding cross-sectional area	Weight (approx.)	AL-value
C <sub>1</sub> (mm <sup>-1</sup> )	C <sub>2</sub> ×10 <sup>-2</sup> (mm <sup>-3</sup> )	ℓ <sub>e</sub> (mm)	A <sub>e</sub> (mm <sup>2</sup> )	V <sub>e</sub> (mm <sup>3</sup> )	A min.* (mm <sup>2</sup> )	A <sub>cw</sub> (mm <sup>2</sup> )	(g)	(nH/N <sup>2</sup> ) 1kHz 0.4A/m 23°C
0.44605	0.06437	309	693	214220	693LB*	2980	1080	6030±25%

\* The symbol followed A min. value shows minimum cross-sectional area part.

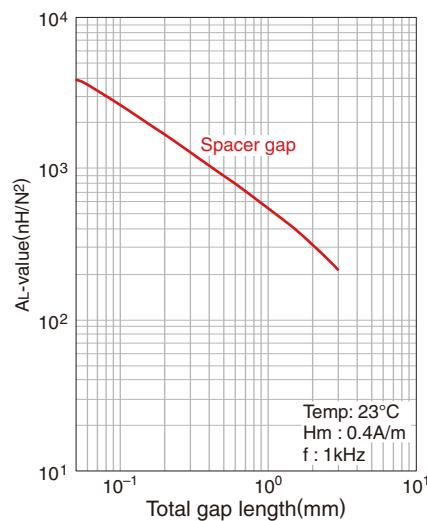
L is outer pole part, B is the back part.

## NI limit vs. AL-value



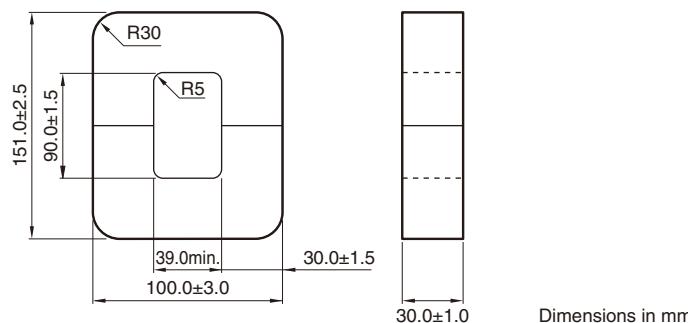
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

## AL-value vs. Air gap length



## Mn-Zn UU series Part No.: PE22 UU100X151X30

## ■ SHAPES AND DIMENSIONS

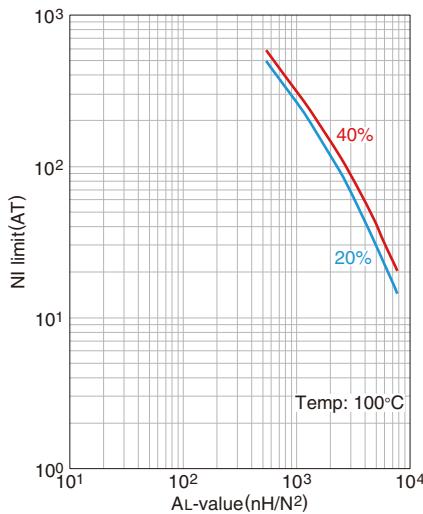


Effective parameter								Electrical characteristics
Core factor		Effective magnetic path length	Effective cross-sectional area	Effective core volume	Minimum cross-sectional area	Winding cross-sectional area	Weight (approx.)	AL-value
C <sub>1</sub> (mm <sup>-1</sup> )	C <sub>2</sub> ×10 <sup>-2</sup> (mm <sup>-3</sup> )	ℓ <sub>e</sub> (mm)	A <sub>e</sub> (mm <sup>2</sup> )	V <sub>e</sub> (mm <sup>3</sup> )	A min.* (mm <sup>2</sup> )	A <sub>cw</sub> (mm <sup>2</sup> )	(g)	(nH/N <sup>2</sup> ) 1kHz 0.4A/m 23°C
0.38801	0.04241	355	915	324860	900L*	3600	1630	5540±25%

\* The symbol followed A min. value shows minimum cross-sectional area part.

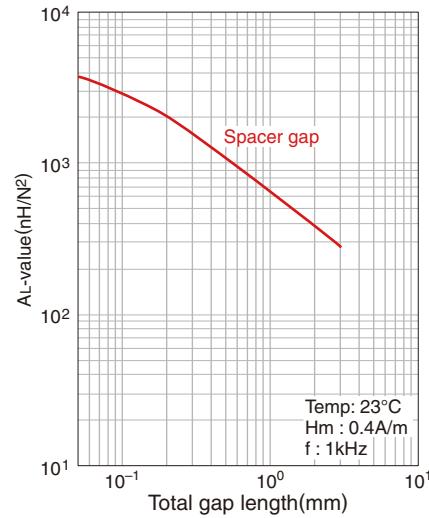
L is outer pole part, B is the back part.

## NI limit vs. AL-value



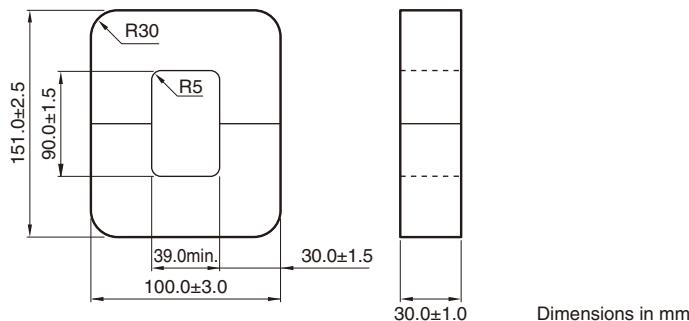
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

## AL-value vs. Air gap length



## Mn-Zn UU series Part No.: PC40 UU100X151X30

## ■ SHAPES AND DIMENSIONS

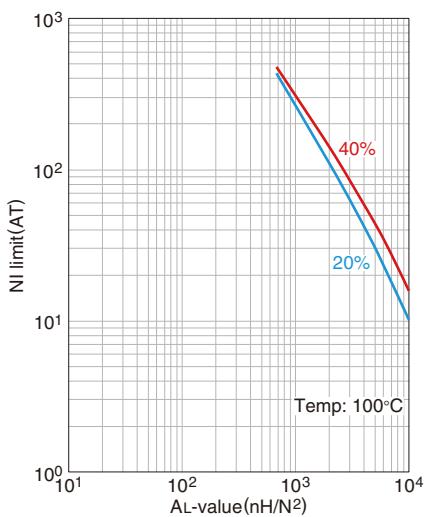


Effective parameter								Electrical characteristics
Core factor		Effective magnetic path length	Effective cross-sectional area	Effective core volume	Minimum cross-sectional area	Winding cross-sectional area	Weight (approx.)	AL-value
C <sub>1</sub> (mm <sup>-1</sup> )	C <sub>2</sub> ×10 <sup>-2</sup> (mm <sup>-3</sup> )	ℓ <sub>e</sub> (mm)	A <sub>e</sub> (mm <sup>2</sup> )	V <sub>e</sub> (mm <sup>3</sup> )	A min.* (mm <sup>2</sup> )	A <sub>cw</sub> (mm <sup>2</sup> )	(g)	(nH/N <sup>2</sup> ) 1kHz 0.4A/m 23°C
0.38801	0.04241	355	915	324860	900L*	3600	1630	6990±25%

\* The symbol followed A min. value shows minimum cross-sectional area part.

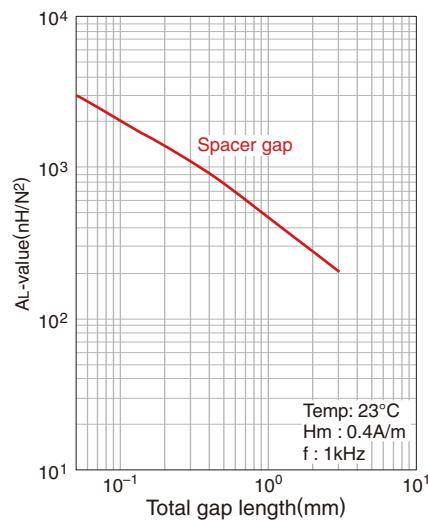
L is outer pole part, B is the back part.

## NI limit vs. AL-value



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.

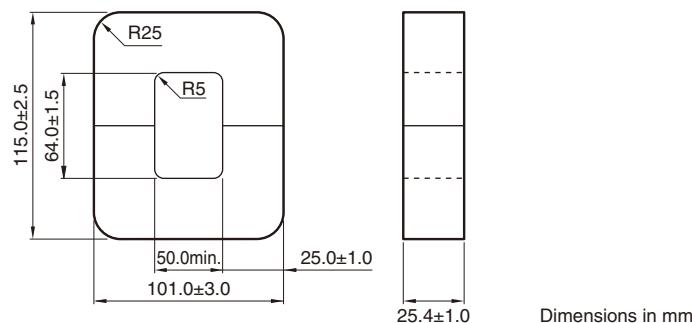
## AL-value vs. Air gap length



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## Mn-Zn UU series Part No.: PE22 UU101X115X25

## ■ SHAPES AND DIMENSIONS

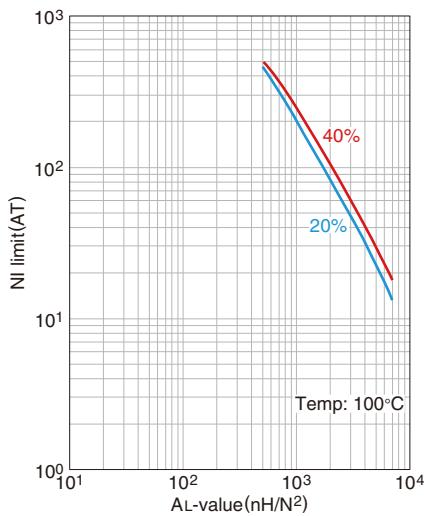


Effective parameter								Electrical characteristics
Core factor		Effective magnetic path length	Effective cross-sectional area	Effective core volume	Minimum cross-sectional area	Winding cross-sectional area	Weight (approx.)	Al-value
C <sub>1</sub> (mm <sup>-1</sup> )	C <sub>2</sub> ×10 <sup>-2</sup> (mm <sup>-3</sup> )	ℓ <sub>e</sub> (mm)	A <sub>e</sub> (mm <sup>2</sup> )	V <sub>e</sub> (mm <sup>3</sup> )	A min.* (mm <sup>2</sup> )	A <sub>cw</sub> (mm <sup>2</sup> )	(g)	(nH/N <sup>2</sup> ) 1kHz 0.4A/m 23°C
0.47757	0.07373	309	648	200350	635L*	3260	1000	4480±25%

\* The symbol followed A min. value shows minimum cross-sectional area part.

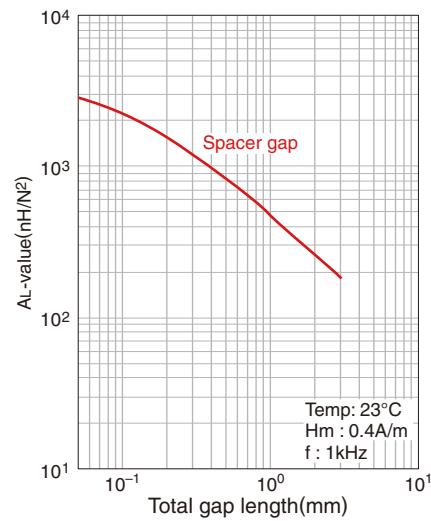
L is outer pole part, B is the back part.

## NI limit vs. Al-value



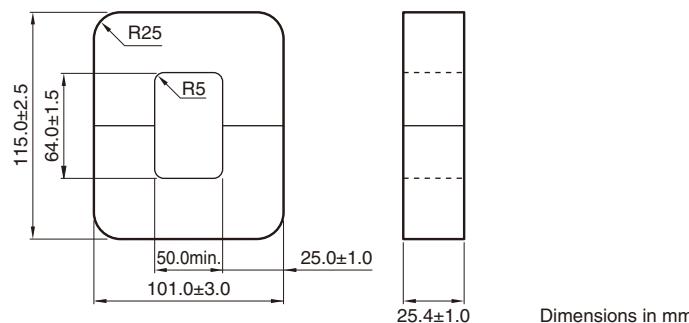
The 20% and 40% graph shows when a 20% and 40% drop from the initial Al-value has been made due to the DC superimposition.

## Al-value vs. Air gap length



## Mn-Zn UU series Part No.: PC40 UU101X115X25

## ■ SHAPES AND DIMENSIONS

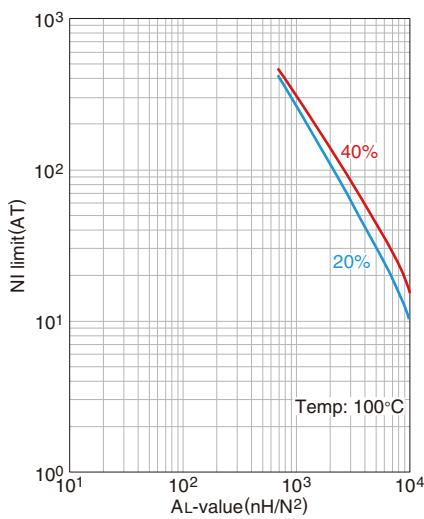


Effective parameter								Electrical characteristics
Core factor		Effective magnetic path length	Effective cross-sectional area	Effective core volume	Minimum cross-sectional area	Winding cross-sectional area	Weight (approx.)	Al-value
C <sub>1</sub> (mm <sup>-1</sup> )	C <sub>2</sub> ×10 <sup>-2</sup> (mm <sup>-3</sup> )	ℓ <sub>e</sub> (mm)	A <sub>e</sub> (mm <sup>2</sup> )	V <sub>e</sub> (mm <sup>3</sup> )	A min.* (mm <sup>2</sup> )	A <sub>cw</sub> (mm <sup>2</sup> )	(g)	(nH/N <sup>2</sup> ) 1kHz 0.4A/m 23°C
0.47757	0.07373	309	648	200350	635L*	3260	1000	5640±25%

\* The symbol followed A min. value shows minimum cross-sectional area part.

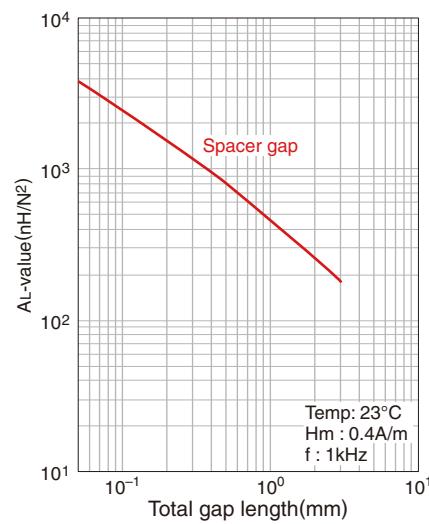
L is outer pole part, B is the back part.

## NI limit vs. Al-value



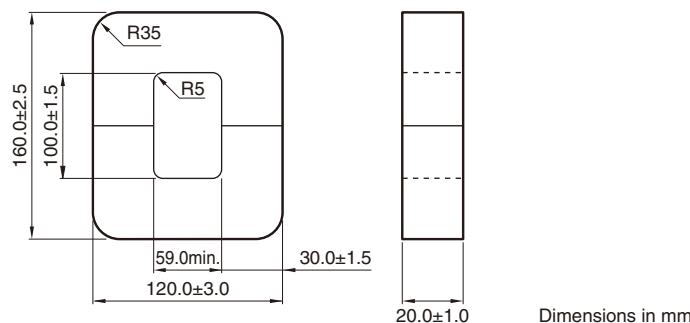
The 20% and 40% graph shows when a 20% and 40% drop from the initial Al-value has been made due to the DC superimposition.

## Al-value vs. Air gap length



## Mn-Zn UU series Part No.: PE22 UU120X160X20

## ■ SHAPES AND DIMENSIONS



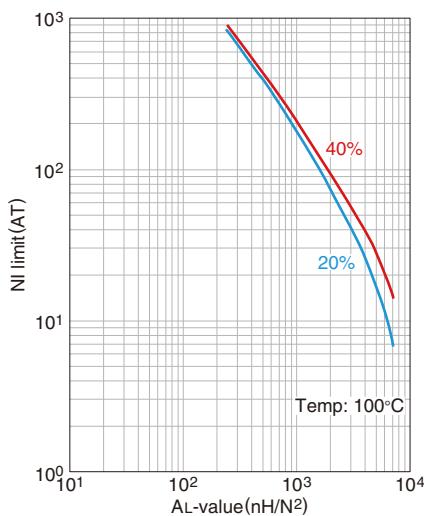
Dimensions in mm

Effective parameter								Electrical characteristics AL-value (nH/N <sup>2</sup> ) 1kHz 0.4A/m 23°C
Core factor C <sub>1</sub> (mm <sup>-1</sup> )	Effective magnetic path length C <sub>2</sub> ×10 <sup>-2</sup> (mm <sup>-3</sup> )	Effective cross-sectional area ℓ <sub>e</sub> (mm)	Effective core volume A <sub>e</sub> (mm <sup>2</sup> )	Effective core volume V <sub>e</sub> (mm <sup>3</sup> )	Minimum cross-sectional area A min.* (mm <sup>2</sup> )	Winding cross-sectional area A <sub>cw</sub> (mm <sup>2</sup> )	Weight (approx.) (g)	
0.69041	0.11507	414	600	248550	600LB*	6000	1240	3140±25%

\* The symbol followed A min. value shows minimum cross-sectional area part.

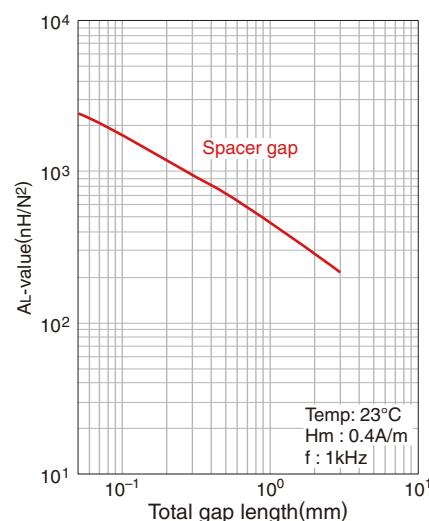
L is outer pole part, B is the back part.

## NI limit vs. AL-value



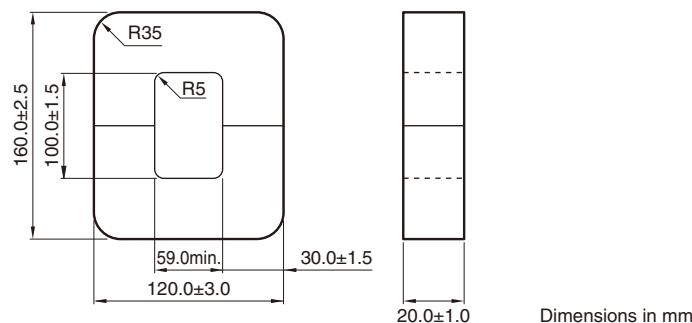
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

## AL-value vs. Air gap length



## Mn-Zn UU series Part No.: PC40 UU120X160X20

## ■ SHAPES AND DIMENSIONS

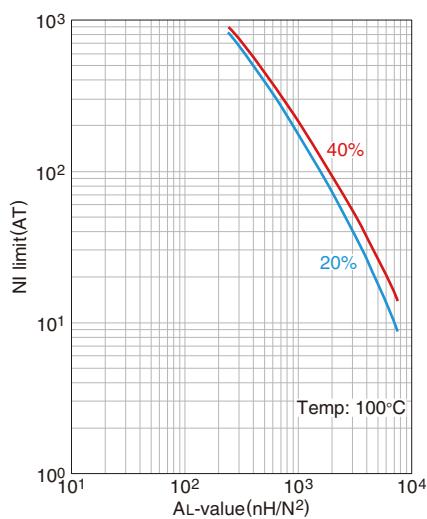


Effective parameter								Electrical characteristics
Core factor		Effective magnetic path length	Effective cross-sectional area	Effective core volume	Minimum cross-sectional area	Winding cross-sectional area	Weight (approx.)	Al-value
C <sub>1</sub> (mm <sup>-1</sup> )	C <sub>2</sub> ×10 <sup>-2</sup> (mm <sup>-3</sup> )	ℓ <sub>e</sub> (mm)	A <sub>e</sub> (mm <sup>2</sup> )	V <sub>e</sub> (mm <sup>3</sup> )	A min.* (mm <sup>2</sup> )	A <sub>cw</sub> (mm <sup>2</sup> )	(g)	(nH/N <sup>2</sup> ) 1kHz 0.4A/m 23°C
0.69041	0.11507	414	600	248550	600LB*	6000	1240	3960±25%

\* The symbol followed A min. value shows minimum cross-sectional area part.

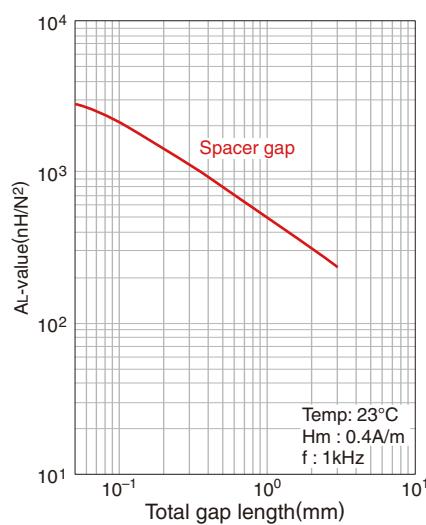
L is outer pole part, B is the back part.

## NI limit vs. Al-value



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



# Mouser Electronics

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[PC40\\_UU101X115X25](#) [PC40\\_UU120X160X20](#) [PC40\\_UU120X310X20](#) [PC40\\_UU79X129X31](#) [PC40\\_UU80X150X30N](#)  
[PE22\\_UU100X151X30](#) [PE22\\_UU100X151X30N](#) [PE22\\_UU100X160X20](#) [PE22\\_UU101X114X25N](#)  
[PE22\\_UU101X115X25](#) [PE22\\_UU120X160X20](#) [PE22\\_UU120X310X20](#) [PE22\\_UU79X129X31](#) [PE22\\_UU80X150X30N](#)  
[PE90\\_UU100X151X30](#) [PE90\\_UU100X151X30N](#) [PE90\\_UU100X160X20](#) [PE90\\_UU101X114X25N](#)  
[PE90\\_UU101X115X25](#) [PE90\\_UU120X160X20](#) [PE90\\_UU120X310X20](#) [PE90\\_UU79X129X31](#) [PE90\\_UU80X150X30N](#)