



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>

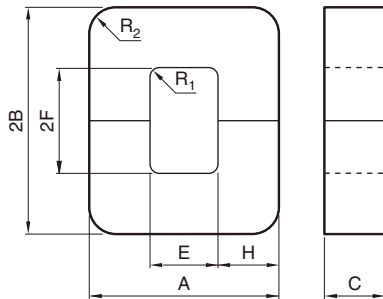
○ Halogen-free: Indicates that Cl content is less than 900ppm, Br content is less than 900ppm, and that the total Cl and Br content is less than 1500ppm.

⚠ 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    | × | 129                   | × | 31        |
| Material | Core shape | Width |   | Height when assembled |   | Thickness |

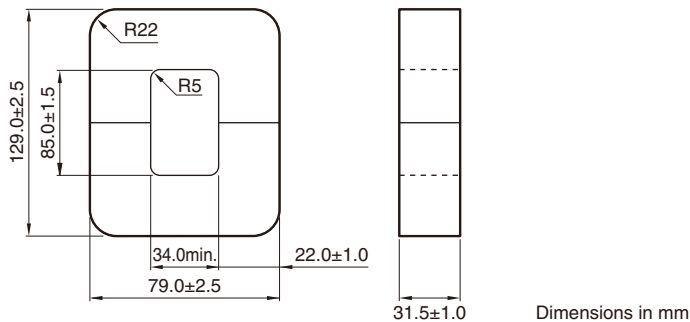
| Part No.  | Dimensions (mm) |           |          |          |           |          |    |    |                        |
|---|-----------------|-----------|----------|----------|-----------|----------|----|----|------------------------|
|   | A               | 2B        | C        | E        | 2F        | H        | R1 | R2 | E×2F(mm <sup>2</sup> ) |
| PE22 UU79×129×31<br>PC40 UU79×129×31<br>PE90 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                   |
| PE22 UU100×151×30<br>PC40 UU100×151×30<br>PE90 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                   |
| PE22 UU101×115×25<br>PC40 UU101×115×25<br>PE90 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                   |
| PE22 UU120×160×20<br>PC40 UU120×160×20<br>PE90 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                   |
| PE22 UU80×150×30N<br>PC40 UU80×150×30N<br>PE90 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                   |

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

⚠ 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 series Part No.: PE22 UU79X129X31

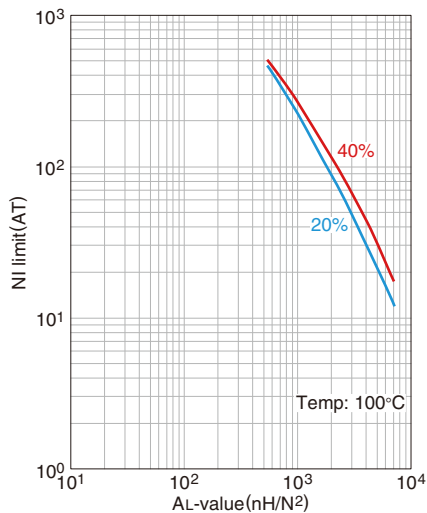
## SHAPES AND DIMENSIONS



| 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                                       |
| $C_1$<br>(mm <sup>-1</sup> ) | $C_2 \times 10^{-2}$<br>(mm <sup>-3</sup> ) | $\ell_e$<br>(mm)               | $A_e$<br>(mm <sup>2</sup> )    | $V_e$<br>(mm <sup>3</sup> ) | $A_{min.*}$<br>(mm <sup>2</sup> ) | $A_{cw}$<br>(mm <sup>2</sup> ) | (g)              | (nH/N <sup>2</sup> )<br>1kHz<br>0.4A/m<br>23°C |
| 0.44605                      | 0.06437                                     | 309                            | 693                            | 214220                      | 693LB*                            | 2980                           | 1080             | 4790±25%                                       |

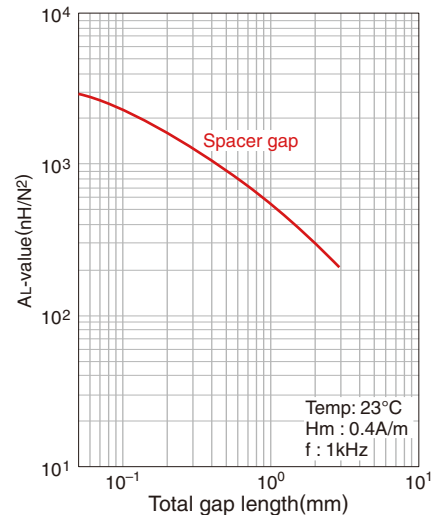
\* The symbol followed A min. value shows minimum cross-sectional area part.  
L is outer pole part, B is the back part.

### NI limit vs. AL-value



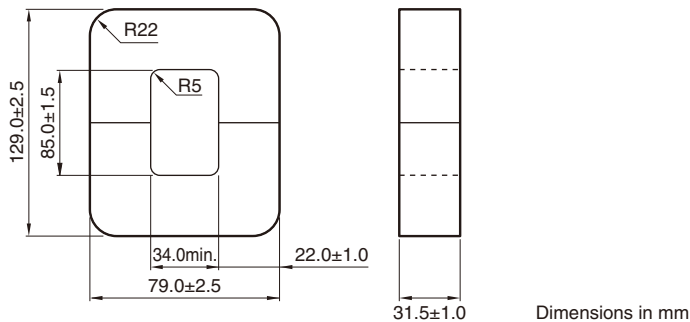
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

### AL-value vs. Air gap length



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

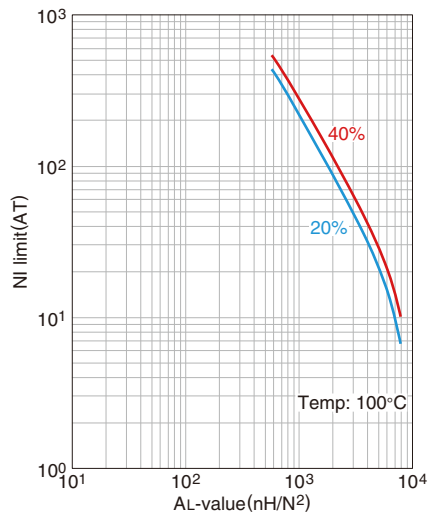
## SHAPES AND DIMENSIONS



| 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                                       |
| $C_1$<br>(mm <sup>-1</sup> ) | $C_2 \times 10^{-2}$<br>(mm <sup>-3</sup> ) | $\ell_e$<br>(mm)               | $A_e$<br>(mm <sup>2</sup> )    | $V_e$<br>(mm <sup>3</sup> ) | $A_{min.*}$<br>(mm <sup>2</sup> ) | $A_{cw}$<br>(mm <sup>2</sup> ) | (g)              | (nH/N <sup>2</sup> )<br>1kHz<br>0.4A/m<br>23°C |
| 0.44605                      | 0.06437                                     | 309                            | 693                            | 214220                      | 693LB*                            | 2980                           | 1080             | 6030±25%                                       |

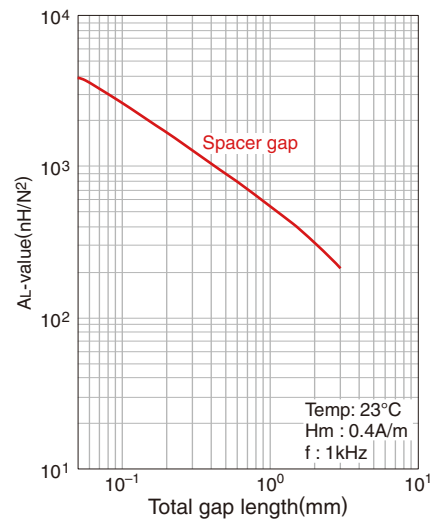
\* The symbol followed A min. value shows minimum cross-sectional area part.  
L is outer pole part, B is the back part.

### NI limit vs. AL-value



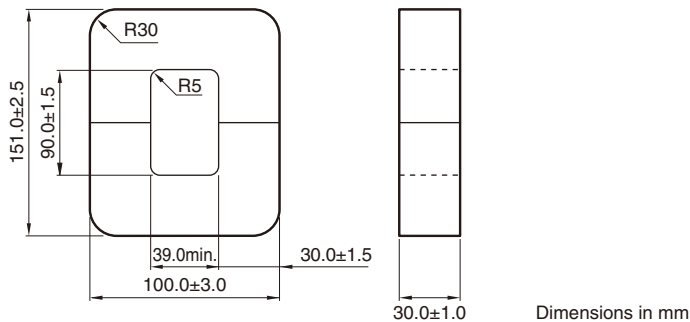
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

### AL-value vs. Air gap length



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

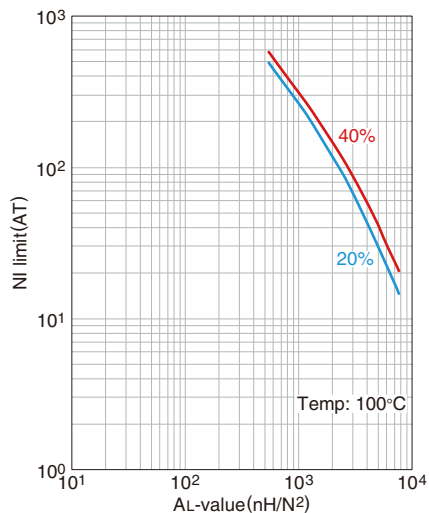
## ■ SHAPES AND DIMENSIONS



| 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                                       |
| $C_1$<br>(mm <sup>-1</sup> ) | $C_2 \times 10^{-2}$<br>(mm <sup>-3</sup> ) | $\ell_e$<br>(mm)               | $A_e$<br>(mm <sup>2</sup> )    | $V_e$<br>(mm <sup>3</sup> ) | $A_{min.*}$<br>(mm <sup>2</sup> ) | $A_{cw}$<br>(mm <sup>2</sup> ) | (g)              | (nH/N <sup>2</sup> )<br>1kHz<br>0.4A/m<br>23°C |
| 0.38801                      | 0.04241                                     | 355                            | 915                            | 324860                      | 900L*                             | 3600                           | 1630             | 5540±25%                                       |

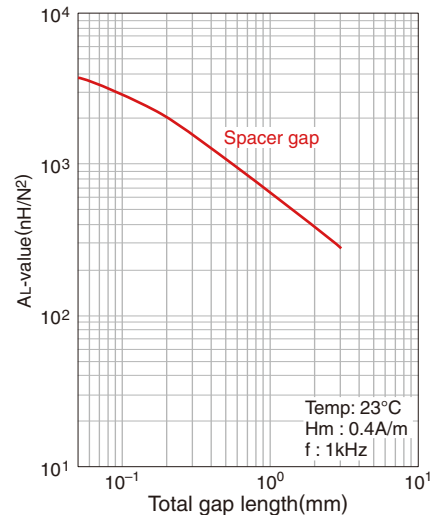
\* The symbol followed A min. value shows minimum cross-sectional area part.  
L is outer pole part, B is the back part.

## NI limit vs. AL-value



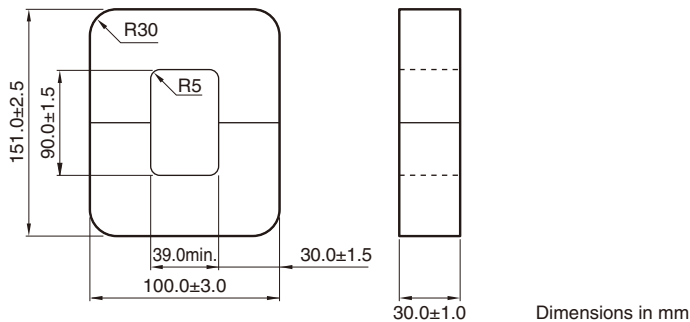
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

## AL-value vs. Air gap length



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

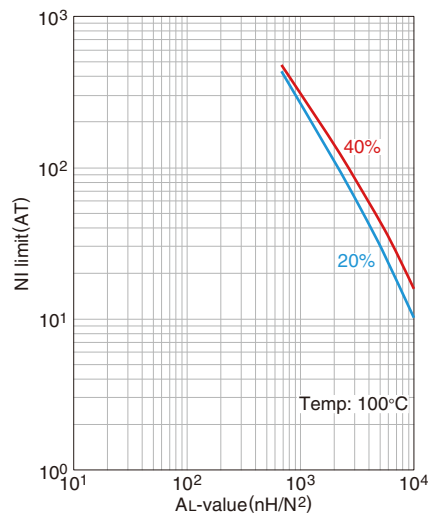
## ■ SHAPES AND DIMENSIONS



| 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                                       |
| $C_1$<br>(mm <sup>-1</sup> ) | $C_2 \times 10^{-2}$<br>(mm <sup>-3</sup> ) | $\ell_e$<br>(mm)               | $A_e$<br>(mm <sup>2</sup> )    | $V_e$<br>(mm <sup>3</sup> ) | $A_{min.*}$<br>(mm <sup>2</sup> ) | $A_{cw}$<br>(mm <sup>2</sup> ) | (g)              | (nH/N <sup>2</sup> )<br>1kHz<br>0.4A/m<br>23°C |
| 0.38801                      | 0.04241                                     | 355                            | 915                            | 324860                      | 900L*                             | 3600                           | 1630             | 6990±25%                                       |

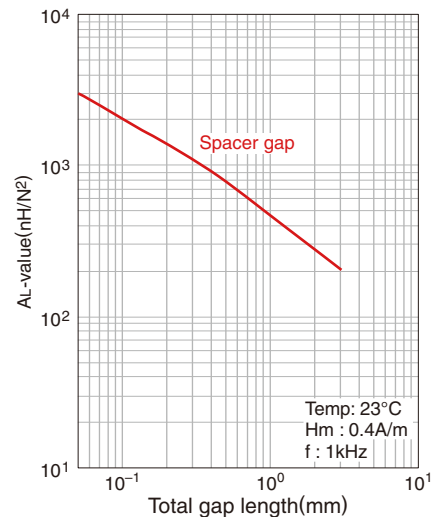
\* The symbol followed A min. value shows minimum cross-sectional area part.  
L is outer pole part, B is the back part.

## 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.

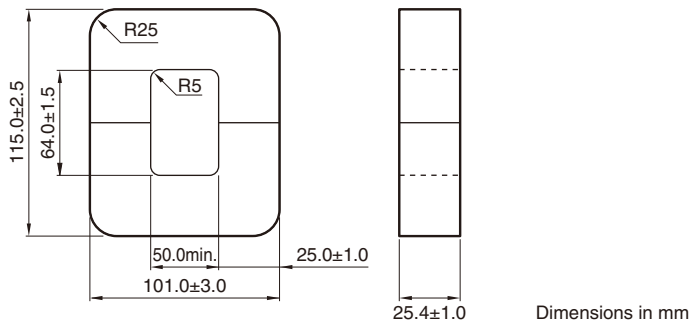
## AL-value vs. Air gap length





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

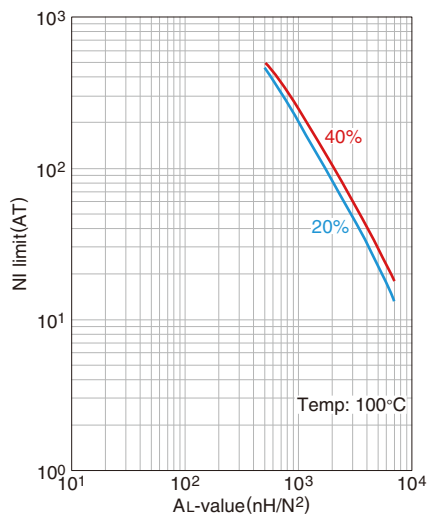
## ■ SHAPES AND DIMENSIONS



| 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                                       |
| $C_1$<br>(mm <sup>-1</sup> ) | $C_2 \times 10^{-2}$<br>(mm <sup>-3</sup> ) | $\ell_e$<br>(mm)               | $A_e$<br>(mm <sup>2</sup> )    | $V_e$<br>(mm <sup>3</sup> ) | $A_{min.*}$<br>(mm <sup>2</sup> ) | $A_{cw}$<br>(mm <sup>2</sup> ) | (g)              | (nH/N <sup>2</sup> )<br>1kHz<br>0.4A/m<br>23°C |
| 0.47757                      | 0.07373                                     | 309                            | 648                            | 200350                      | 635L*                             | 3260                           | 1000             | 4480±25%                                       |

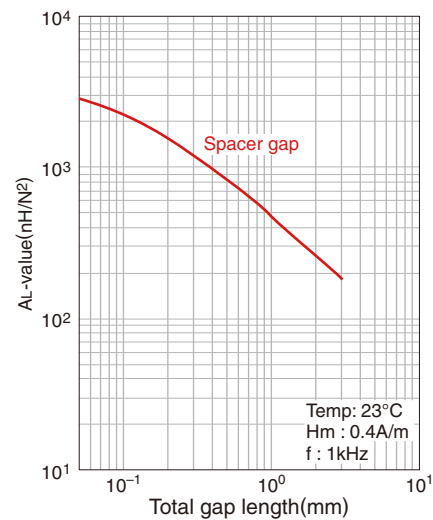
\* The symbol followed A min. value shows minimum cross-sectional area part.  
L is outer pole part, B is the back part.

## NI limit vs. AL-value



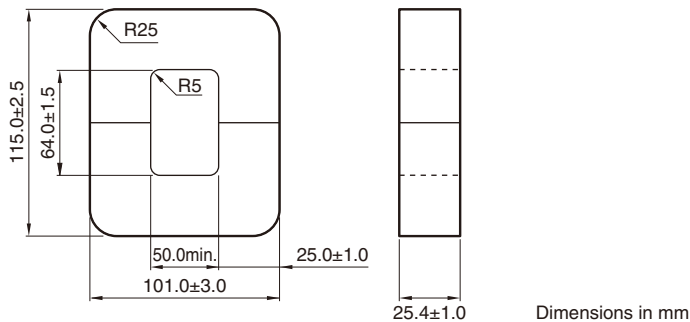
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

## AL-value vs. Air gap length



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

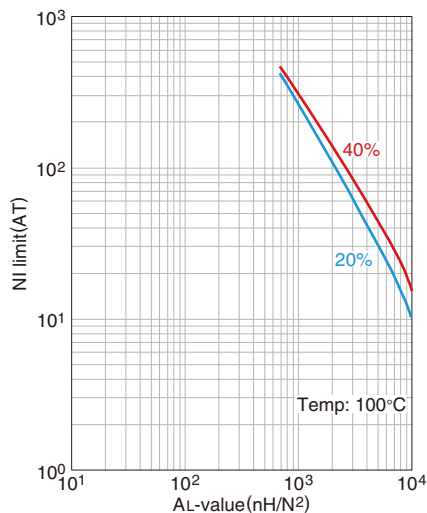
## ■ SHAPES AND DIMENSIONS



| 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                                       |
| $C_1$<br>(mm <sup>-1</sup> ) | $C_2 \times 10^{-2}$<br>(mm <sup>-3</sup> ) | $\ell_e$<br>(mm)               | $A_e$<br>(mm <sup>2</sup> )    | $V_e$<br>(mm <sup>3</sup> ) | $A_{min.*}$<br>(mm <sup>2</sup> ) | $A_{cw}$<br>(mm <sup>2</sup> ) | (g)              | (nH/N <sup>2</sup> )<br>1kHz<br>0.4A/m<br>23°C |
| 0.47757                      | 0.07373                                     | 309                            | 648                            | 200350                      | 635L*                             | 3260                           | 1000             | 5640±25%                                       |

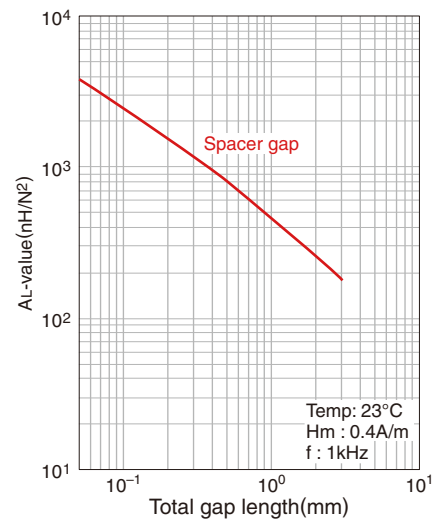
\* The symbol followed A min. value shows minimum cross-sectional area part.  
L is outer pole part, B is the back part.

## NI limit vs. AL-value



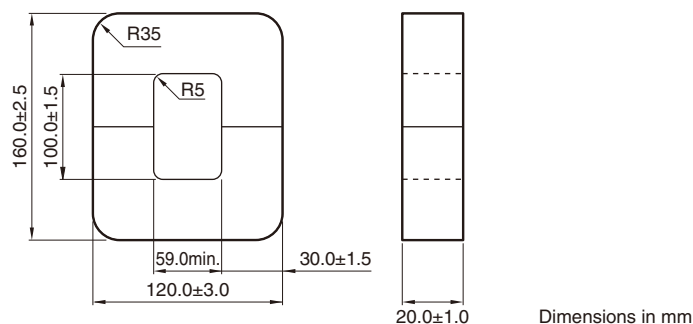
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

## AL-value vs. Air gap length



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

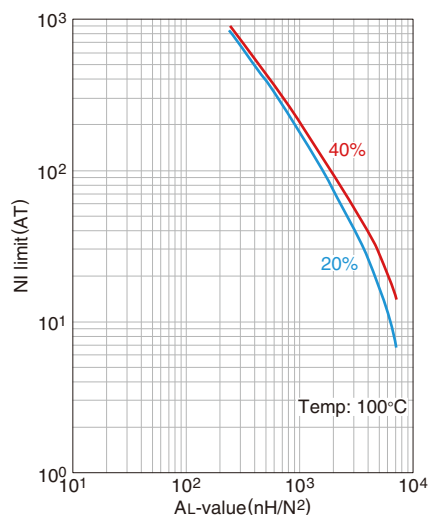
## ■ SHAPES AND DIMENSIONS



| 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                                       |
| $C_1$<br>(mm <sup>-1</sup> ) | $C_2 \times 10^{-2}$<br>(mm <sup>-3</sup> ) | $\ell_e$<br>(mm)               | $A_e$<br>(mm <sup>2</sup> )    | $V_e$<br>(mm <sup>3</sup> ) | $A_{min.*}$<br>(mm <sup>2</sup> ) | $A_{cw}$<br>(mm <sup>2</sup> ) | (g)              | (nH/N <sup>2</sup> )<br>1kHz<br>0.4A/m<br>23°C |
| 0.69041                      | 0.11507                                     | 414                            | 600                            | 248550                      | 600LB*                            | 6000                           | 1240             | 3140±25%                                       |

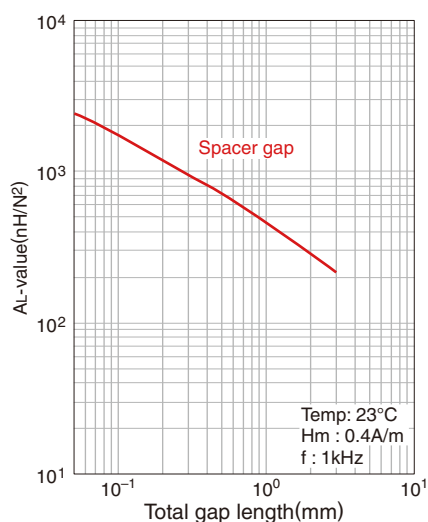
\* The symbol followed A min. value shows minimum cross-sectional area part.  
L is outer pole part, B is the back part.

## NI limit vs. AL-value



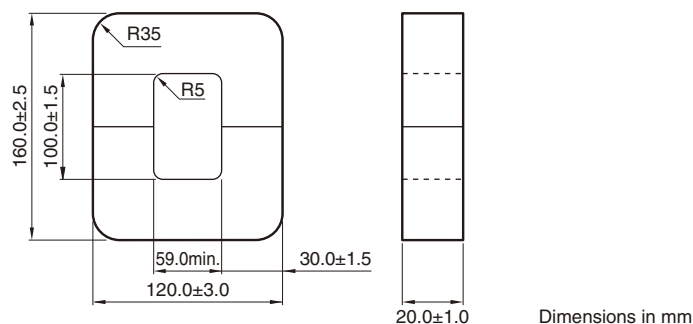
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

## AL-value vs. Air gap length



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

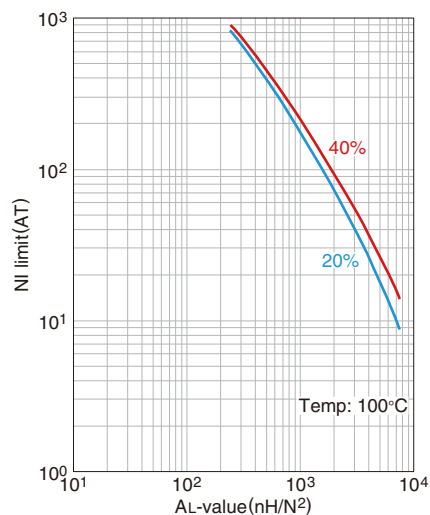
## ■ SHAPES AND DIMENSIONS



| 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                                       |
| $C_1$<br>(mm <sup>-1</sup> ) | $C_2 \times 10^{-2}$<br>(mm <sup>-3</sup> ) | $\ell_e$<br>(mm)               | $A_e$<br>(mm <sup>2</sup> )    | $V_e$<br>(mm <sup>3</sup> ) | $A_{min.*}$<br>(mm <sup>2</sup> ) | $A_{cw}$<br>(mm <sup>2</sup> ) | (g)              | (nH/N <sup>2</sup> )<br>1kHz<br>0.4A/m<br>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

