TDK

March 2014

Mn-Zn

Large Size Ferrite Cores for High Power

UU series

⚠ REMINDERS FOR USING THESE PRODUCTS

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

The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.
The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.
When using the products for specific purposes, please first make confirmations in areas such as safety, reliability, and quality.
Please understand that we are not in a position to be held responsible for any damage or the like caused by any use exceeding the range or conditions of this specification sheet or by any use in the specific applications.

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

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

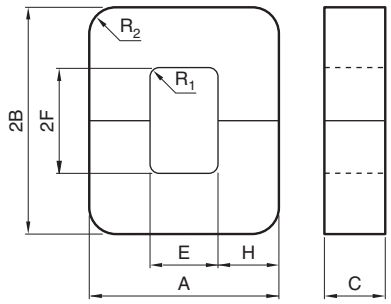
RANGE OF USE AND STORAGE TEMPERATURE

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

- RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. http://www.tdk.co.jp/rohs/
- Halogen-free: Indicates that Cl content is less than 900ppm, Br content is less than 900ppm, and that the total Cl and Br content is less than 1500ppm.

Mn-Zn UU Cores

SHAPES AND DIMENSIONS



PE22 UU 79 × 129 × 31

Material	Core shape	Wdth	Height when assembled	Thickness

Part No.	Dimensions (mm)								
	A	2B	C	E	2F	H	R_1	R_2	E×2F(mm^2)
PE22 UU79×129×31 PC40 UU79×129×31 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 PC40 UU100×151×30 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 PC40 UU101×115×25 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 PC40 UU120×160×20 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 PC40 UU80×150×30N 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

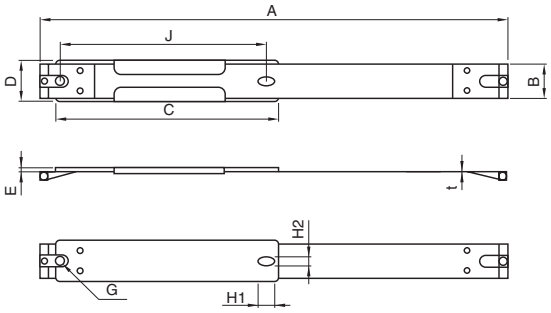
Part No.	Effective parameter						Electrical characteristics
	Core factor		Effective cross-sectional area	Effective magnetic path length	Effective core volume	Weigh	AL-value
	C_1 (mm^{-1})	$C_2×10^{-2}$ (mm^{-3})	A_e (mm^2)	ℓ_e (mm)	V_e (mm^3)	(g)	(nH/N^2) 1kHz 0.4A/m 23°C
PE22 UU79×129×31						1080	4790±25%
PC40 UU79×129×31	0.44605	0.06437	693	309	214220	1080	6030±25%
PE90 UU79×129×31						1103	5768±25%
PE22 UU100×151×30						1630	5540±25%
PC40 UU100×151×30	0.38801	0.04241	915	355	324860	1630	6990±25%
PE90 UU100×151×30						1664	6686±25%
PE22 UU101×115×25						1000	4480±25%
PC40 UU101×115×25	0.47757	0.07373	648	309	200350	1000	5640±25%
PE90 UU101×115×25						1021	5395±25%
PE22 UU120×160×20						1240	3140±25%
PC40 UU120×160×20	0.69041	0.11507	600	414	248550	1240	3960±25%
PE90 UU120×160×20						1266	3788±25%
PE22 UU80×150×30N						1095	3570±25%
PC40 UU80×150×30N	0.60472	0.00101	600	363	217700	1095	4500±25%
PE90 UU80×150×30N						1118	4304±25%

• All specifications are subject to change without notice.

Mn-Zn UU Core Bands

SHAPES AND DIMENSIONS

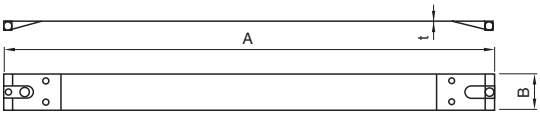
AH-type band



Band is optional parts.
AH-type is the band with a board.

Part No.	Dimensions (mm)									
	A	B	C	D	E	G	H1	H2	J	t
FHH 79×129AH	370	27	180	31.5	1.5	7	14	7	160	0.2
FHH 100×151AH	435	27	190	31.5	1.5	7	14	7	170	0.3
FHH 100×160AH	447	18	206	23.0	1.5	7	14	7	186	0.3
FHH 101×115AH	380	23.4	160	28.0	1.5	7	14	7	140	0.3
FHH 120×160AH	482	18	206	23.0	1.5	7	14	7	186	0.3

B-type band



Band is optional parts.
B-type is the band without a board.

Part No.	Dimensions (mm)		
	A	B	t
FHH 79×129B	370	27	0.3
FHH 100×151B	435	30	0.3
FHH 100×160B	447	18	0.3
FHH 101×115B	378	23.4	0.3
FHH 120×160B	482	18	0.3

HANDLING INSTRUCTIONS OF UU CORE BANDS

When using this product, read and follow the handling instructions below carefully to ensure the safety of the products that you design.

ASSEMBLING

- Certain parts of the ferrite core tightening band (hereinafter referred to as the "band") can be sharp. Be careful when handling these parts.
  Use protective equipment such as gloves if necessary.
- When putting a band and ferrite core together, make sure that the ferrite core matches the band's size, and set the ferrite core in the correct position.
- To tighten the band, use a cross point screwdriver of the correct size equipped with a torque reading mechanism.
- The torque for tightening the band must be determined and controlled according to the band's strength, the ferrite core's size, and the usage environment.
- Take special care not to overtighten the band as this could damage the ferrite core and/or the band.
- Conversely, if the tightening torque is too low, you will not be able to secure the ferrite core properly. Take special care to avoid this as this can cause the ferrite core to become displaced, fall off, drop, or affect the ferrite core's characteristics.

USAGE ENVIRONMENT

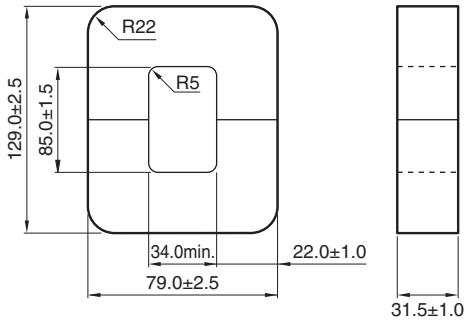
- Depending on the usage environment, the band may become damaged or its strength may be compromised, reducing the strength at which it can secure the ferrite core.
  When using the band, make sure that it is resistant to the intended usage environment.
- The band is constructed in such a way that it can become extended or damaged when subjected to shocks, excessive loads, vibrations, temperature variations, or high and low temperatures, causing the ferrite core to become displaced, fall off, or drop.
  Make sure that the strength of the band itself and the strength at which it secures the ferrite core can be maintained in the intended usage environment.
- The band is made of metal, which means it can be affected by water, chemicals and other elements, which may in turn lead to corrosion.
  When using the band, make sure that it is resistant to the intended usage environment.

OTHER PRECAUTIONS

- The band is essentially a thin metal plate. Take special care to avoid accidents because its ends can behave like the tip of a whip.
  Persons handling the band must take special care to protect themselves as well as others from getting injured.
- Never re-work the band or replace any parts becomes such actions can compromise the band's strength and lead to problems.
- Do not reuse a band that you have used once before as it may not have sufficient strength.
- Do not use the bands for purposes other than to secure ferrite cores.
  The bands are not edible. Keep them out of the reach of children.

Mn-Zn UU series Part No.: PE22 UU79X129X31

SHAPES AND DIMENSIONS

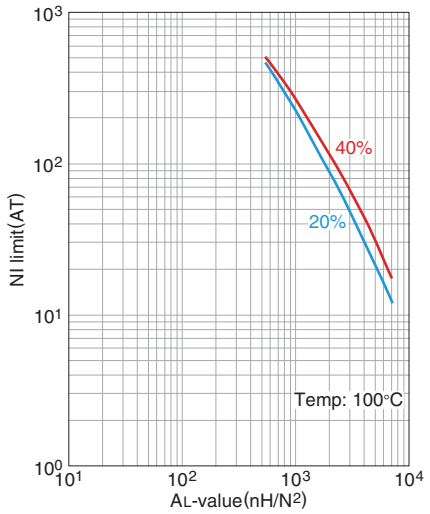


Dimensions in mm

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	Weigh (approx.)	AL-value
C1 (mm^{-1})	C2×10⁻² (mm^{-3})	ℓe (mm)	Ae (mm^2)	Ve (mm^3)	A min.* (mm^2)	Acw (mm^2)	(g)	(nH/N²) 1kHz 0.4A/m 23°C
0.44605	0.06437	309	693	214220	693LB*	2980	1080	4790±25%

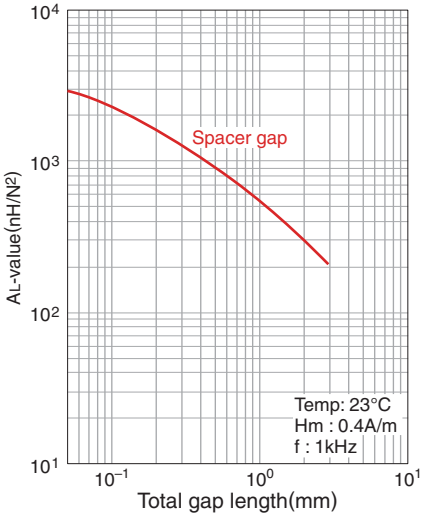
* The symbol followed A min. value shows minimum cross-sectional area part.
L is outer pole part, B is the back part.

NI limit vs. AL-value



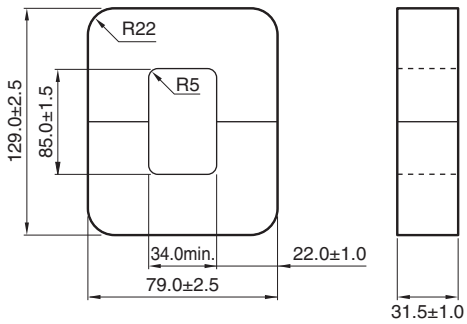
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

AL-value vs. Air gap length



Mn-Zn UU series Part No.: PC40 UU79X129X31

SHAPES AND DIMENSIONS

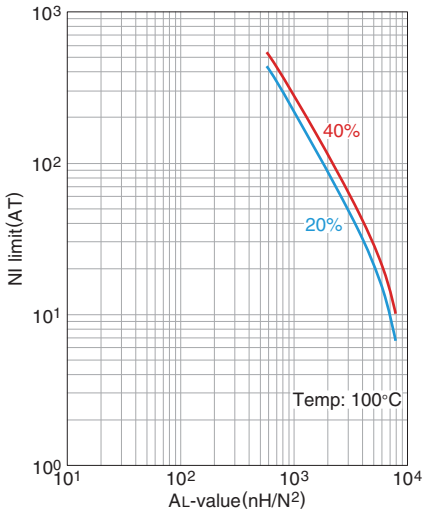


Dimensions in mm

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	Weigh (approx.)	AL-value
C1 (mm^{-1})	C2×10⁻² (mm^{-3})	ℓe (mm)	Ae (mm^2)	Ve (mm^3)	A min.* (mm^2)	Acw (mm^2)	(g)	(nH/N^2) 1kHz 0.4A/m 23°C
0.44605	0.06437	309	693	214220	693LB*	2980	1080	6030±25%

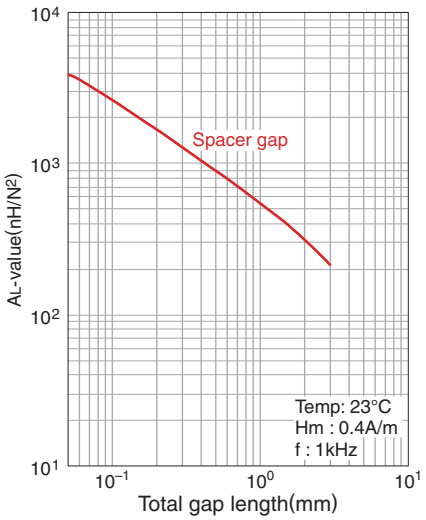
* The symbol followed A min. value shows minimum cross-sectional area part.
L is outer pole part, B is the back part.

NI limit vs. AL-value



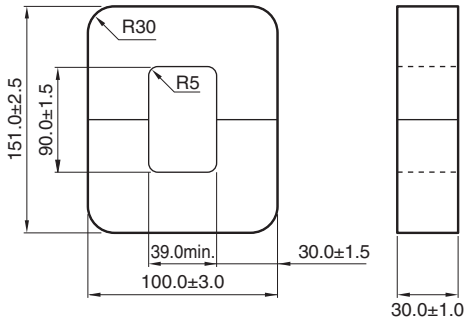
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

AL-value vs. Air gap length



Mn-Zn UU series Part No.: PE22 UU100X151X30

SHAPES AND DIMENSIONS

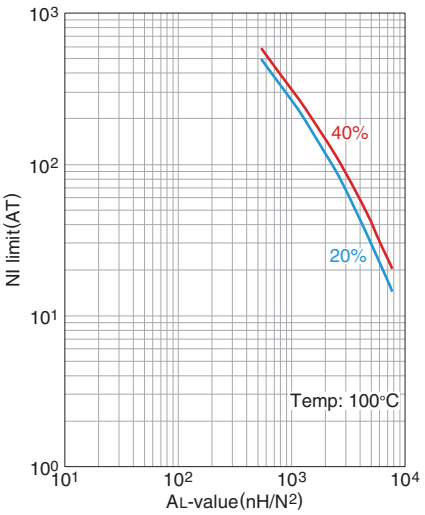


Dimensions in mm

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	Weigh (approx.)	AL-value
C1 (mm^{-1})	C2×10^{-2} (mm^{-3})	ℓe (mm)	Ae (mm^2)	Ve (mm^3)	A min.* (mm^2)	Acw (mm^2)	(g)	(nH/N^2) 1kHz 0.4A/m 23°C
0.38801	0.04241	355	915	324860	900L*	3600	1630	5540±25%

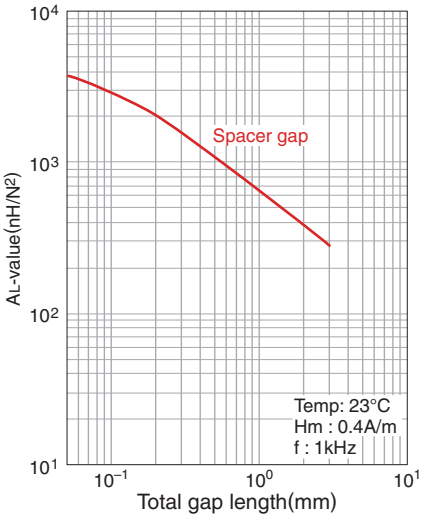
* The symbol followed A min. value shows minimum cross-sectional area part.
L is outer pole part, B is the back part.

NI limit vs. AL-value



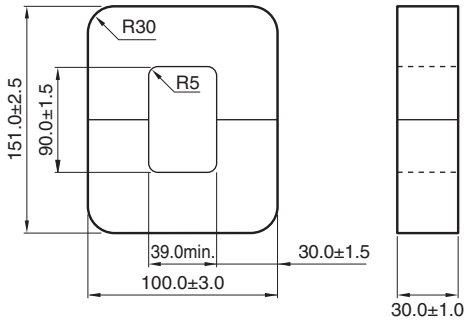
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

AL-value vs. Air gap length



Mn-Zn UU series Part No.: PC40 UU100X151X30

SHAPES AND DIMENSIONS

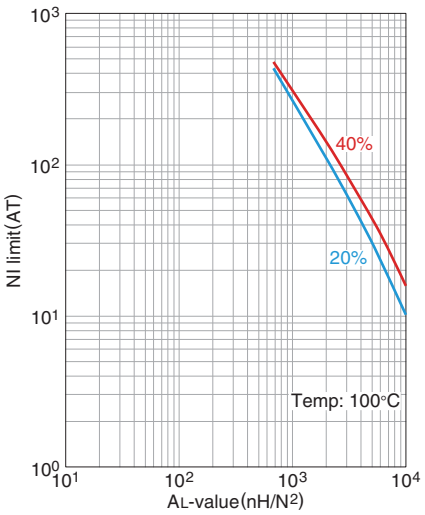


Dimensions in mm

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	Weigh (approx.)	AL-value
C1 (mm^{-1})	C2×10^{-2} (mm^{-3})	ℓe (mm)	Ae (mm^2)	Ve (mm^3)	A min.* (mm^2)	Acw (mm^2)	(g)	(nH/N^2) 1kHz 0.4A/m 23°C
0.38801	0.04241	355	915	324860	900L*	3600	1630	6990±25%

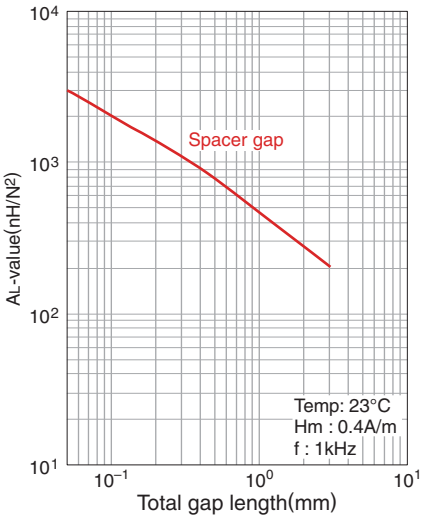
* The symbol followed A min. value shows minimum cross-sectional area part.
L is outer pole part, B is the back part.

NI limit vs. AL-value



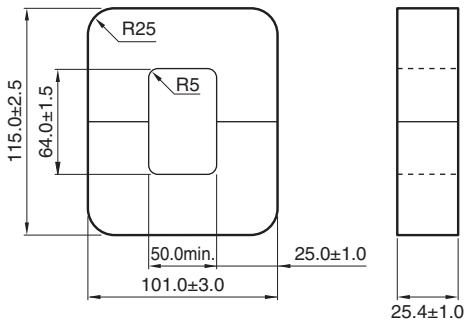
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

AL-value vs. Air gap length



Mn-Zn UU series Part No.: PE22 UU101X115X25

SHAPES AND DIMENSIONS

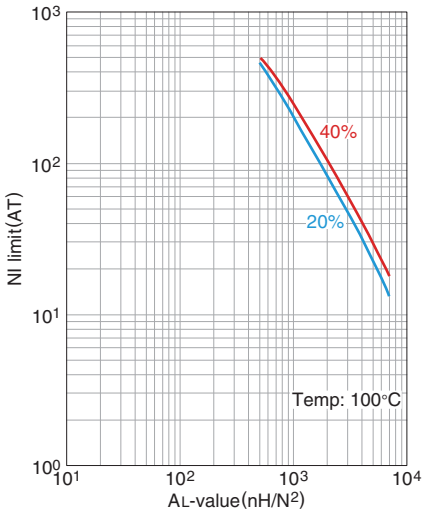


Dimensions in mm

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	Weigh (approx.)	AL-value
C_1 (mm^{-1})	$C_2 \times 10^{-2}$ (mm^{-3})	ℓe (mm)	Ae (mm^2)	Ve (mm^3)	A min.* (mm^2)	Acw (mm^2)	(g)	(nH/N^2) 1kHz 0.4A/m 23°C
0.47757	0.07373	309	648	200350	635L*	3260	1000	4480±25%

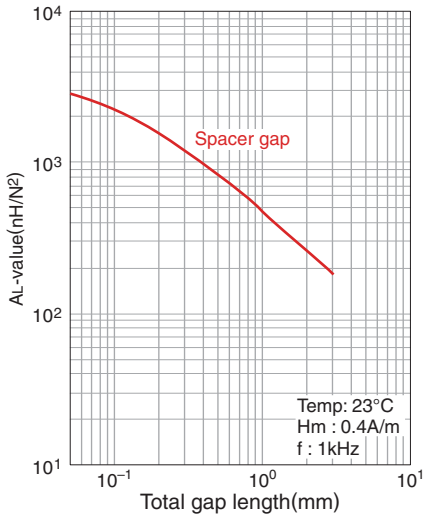
* The symbol followed A min. value shows minimum cross-sectional area part.
L is outer pole part, B is the back part.

NI limit vs. AL-value



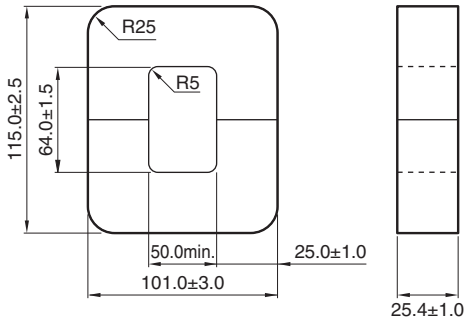
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

AL-value vs. Air gap length



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

SHAPES AND DIMENSIONS

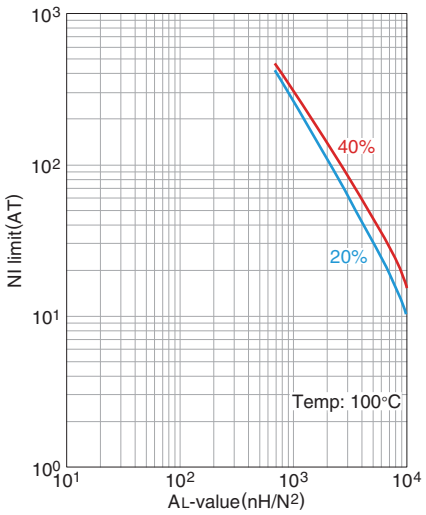


Dimensions in mm

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	Weigh (approx.)	AL-value
C_1 (mm^{-1})	$C_2 \times 10^{-2}$ (mm^{-3})	ℓe (mm)	Ae (mm^2)	Ve (mm^3)	A min.* (mm^2)	Acw (mm^2)	(g)	(nH/N^2) 1kHz 0.4A/m 23°C
0.47757	0.07373	309	648	200350	635L*	3260	1000	5640±25%

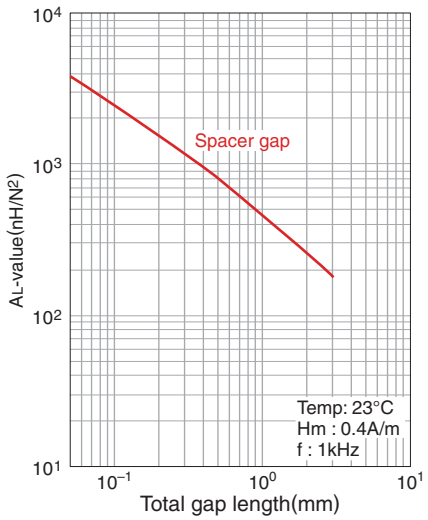
* The symbol followed A min. value shows minimum cross-sectional area part.
L is outer pole part, B is the back part.

NI limit vs. AL-value



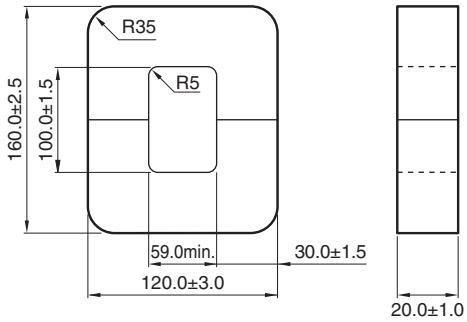
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

AL-value vs. Air gap length



Mn-Zn UU series Part No.: PE22 UU120X160X20

SHAPES AND DIMENSIONS

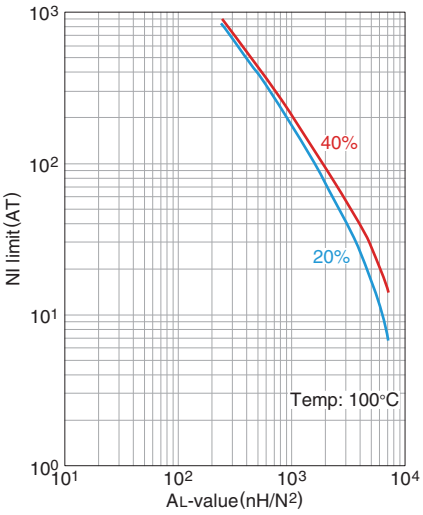


Dimensions in mm

Effective parameter								Electrical characteristics
Core factor		Effective magnetic path length	Effective cross-sectional area	Effective core volume	Minimum cross-sectional area	Winding cross-sectional area	Weigh (approx.)	AL-value
C_1 (mm^{-1})	$C_2 \times 10^{-2}$ (mm^{-3})	ℓe (mm)	Ae (mm^2)	Ve (mm^3)	A min.* (mm^2)	Acw (mm^2)	(g)	(nH/N^2) 1kHz 0.4A/m 23°C
0.69041	0.11507	414	600	248550	600LB*	6000	1240	3140±25%

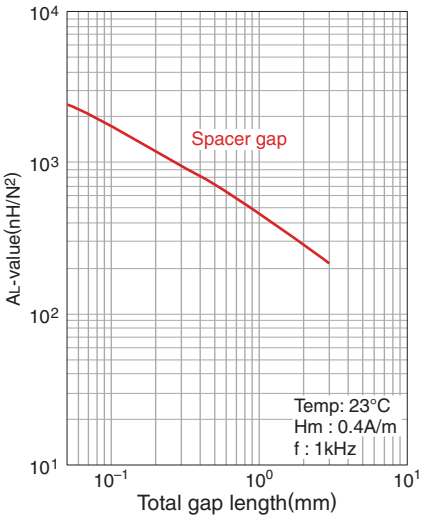
* The symbol followed A min. value shows minimum cross-sectional area part.
L is outer pole part, B is the back part.

NI limit vs. AL-value



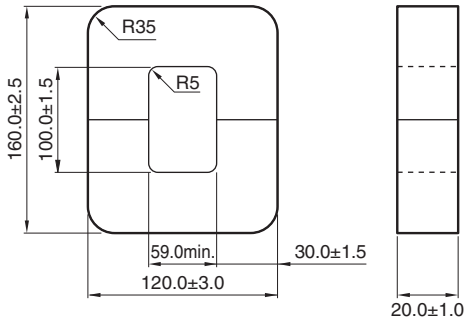
The 20% and 40% graph shows when a 20% and 40% drop from the initial AL-value has been made due to the DC superimposition.

AL-value vs. Air gap length



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

SHAPES AND DIMENSIONS

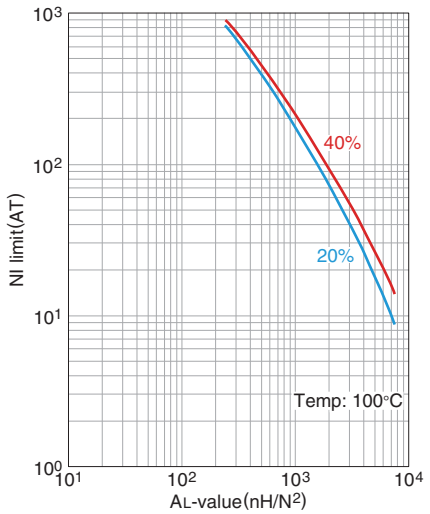


Dimensions in mm

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	Weigh (approx.)	AL-value
C_1 (mm^{-1})	$C_2 \times 10^{-2}$ (mm^{-3})	ℓe (mm)	Ae (mm^2)	Ve (mm^3)	A min.* (mm^2)	Acw (mm^2)	(g)	(nH/N^2) 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