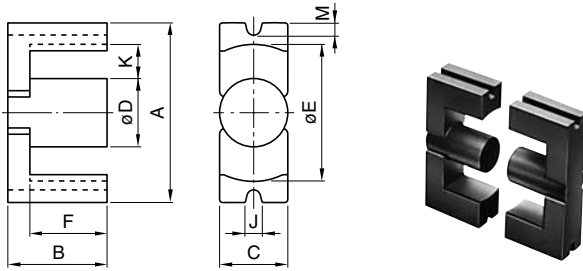


EC Series

EC CORE

CORE SHAPES AND DIMENSIONS/CHARACTERISTICS



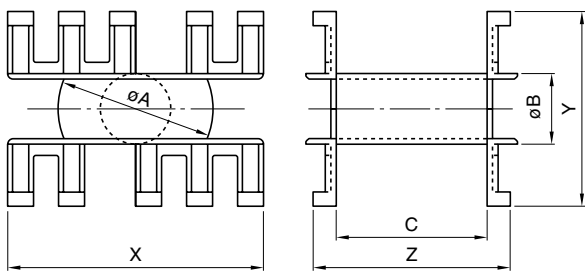
PRODUCT IDENTIFICATION

PE22 EC 90 × 90 × 30
(1) (2) (3) (4) (5)

- (1) Material name
- (2) Shape
- (3) Dimension A
- (4) Dimension B×2
- (5) Dimension C

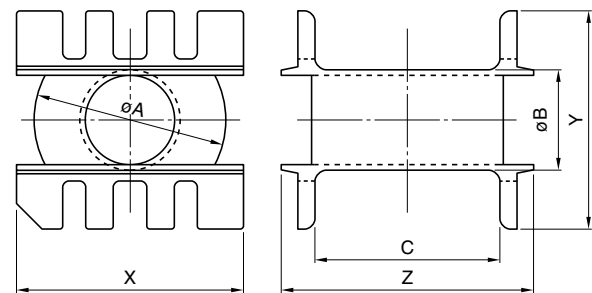
EC CORE BOBBIN

FOR EC70



Bobbin is optional parts.

FOR EC90, 120



Bobbin is optional parts.

Part No.	AL*(nH/N ²) ±25%	Dimensions (mm)										
		A	B×2	C	øD	øE	F×2	M	J	R	K	K×2F(mm ²)
PE22 EC70×69×16	3910	70.0±1.7	69.0±1.0	16.4±0.5	16.4±0.5	43.3min.	45.5±1.0	5.2	4.75	1max.	14.1	639
PC40 EC70×69×16	4845											
PE90 EC70×69×16	4634											
PE22 EC90×90×30	5925	90.0±1.8	90.0±1.3	30.0±1.0	30.0±1.0	68.5min.	71.0±1.0	5.5	6.0	1max.	20.0	1420
PC40 EC90×90×30	7415											
PE90 EC90×90×30	7093											
PE22 EC120×101×30	6395	120.0±2.0	101.0±1.3	30.0±1.0	30.0±1.0	93.3min.	71.0±1.0	5.5	6.0	1.5max.	32.5	2307
PC40 EC120×101×30	8025											
PE90 EC120×101×30	7676											

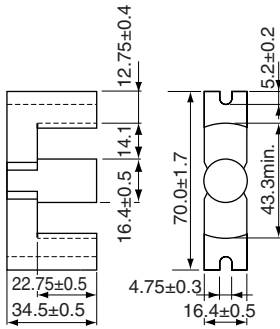
* Measuring condition: T=23°C, f=1kHz, H_m=0.4A/m

Part No.	Core factor						Weight (g)
	C ₁ (mm ⁻¹)	C ₂ ×10 ⁻² (mm ⁻³)	A _e (mm ²)	ℓ _e (mm)	V _e (mm ³)		
PE22 EC70×69×16						250	
PC40 EC70×69×16	0.5138891	0.18322	280	144	40420	250	
PE90 EC70×69×16						255	
PE22 EC90×90×30						635	
PC40 EC90×90×30	0.3533380	0.05648	626	221	138270	635	
PE90 EC90×90×30						648	
PE22 EC120×101×30						986	
PC40 EC120×101×30	0.3300745	0.04278	772	255	196490	986	
PE90 EC120×101×30						1007	

EC CORE BOBBIN

Part No.	Dimensions (mm)							Cross-sectional winding area A _w (mm ²)	Average winding length ℓ _w (mm)	Weight (g)	Material
	øA	øB	C	X	Y	Z	t*				
BEC70	42.5±0.5	19.3±0.3	41.5±2.5	70.0±1.5	56.0±1.5	57.0±2.0	1.13	471.4	98	19.0	PBT
BEC90	67.0±0.7	35.0±0.5	65.0±3.0	79.5±0.5	76.0±1.0	89.5±2.5	1.7	1047	162	82.0	PBT

* Bobbin minimum thickness

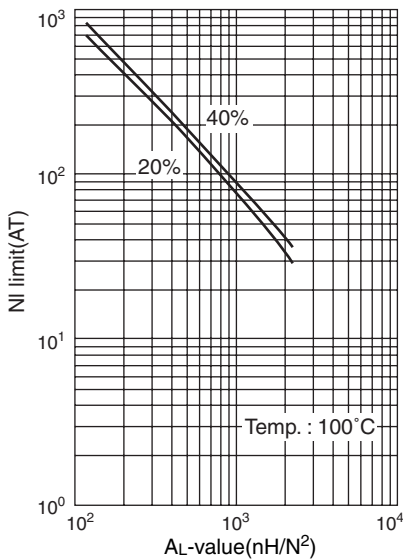
EC70X69X16

Parameter

Core constant	C ₁	mm ⁻¹	0.5138891
	C ₂ ×10 ⁻²	mm ⁻³	0.18322
Effective magnetic path length	ℓ _e	mm	144
Effective cross-sectional area	A _e	mm ²	280
Effective core volume	V _e	mm ³	40420
Cross-sectional center leg area	A _c	mm ²	211
Minimum cross-sectional area	A _{min.*}	mm ²	211C*
Winding cross-sectional area	A _{cw}	mm ²	642
Weight(approx.)		g	250

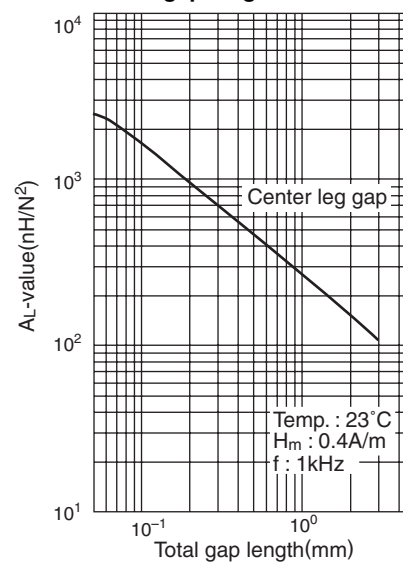
* The symbol followed A min. value shows minimum cross-sectional area part.
C is center pole part, L is outer pole part, B is the back part.

Part No.	AL-value*(nH/N ²)	Calculated output power(kW) (forward converter mode)
PE22 EC70X69X16	3910±25%	1.1(100kHz)
PC40 EC70X69X16	4845±25%	1.2(100kHz)

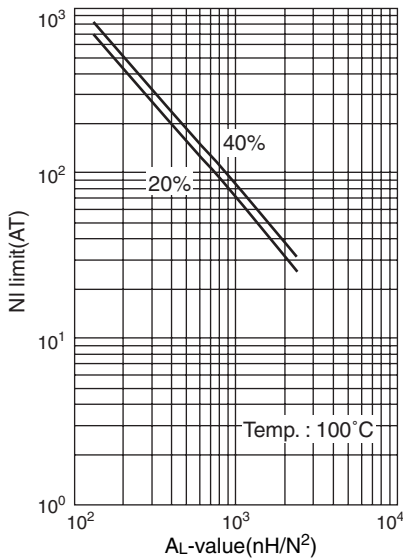
* AL-value: T=23°C, f=1kHz, H_m=0.4A/m

NI limit vs. AL-value for PE22 EC70X69X16


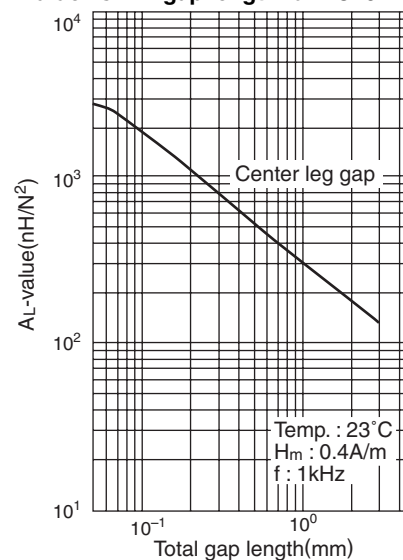
When applied magnetic field providing NI to a setting core for arbitrary AL-value, show each NI value when decreased 20% and 40% from initial AL-value.

AL-value vs. Air gap length for PE22 EC70X69X16


Temp. : 23°C
H_m : 0.4A/m
f : 1kHz

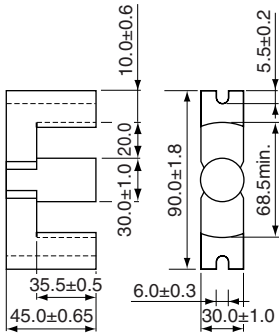
NI limit vs. AL-value for PC40 EC70X69X16


When applied magnetic field providing NI to a setting core for arbitrary AL-value, show each NI value when decreased 20% and 40% from initial AL-value.

AL-value vs. Air gap length for PC40 EC70X69X16


Temp. : 23°C
H_m : 0.4A/m
f : 1kHz

EC90X90X30



Parameter

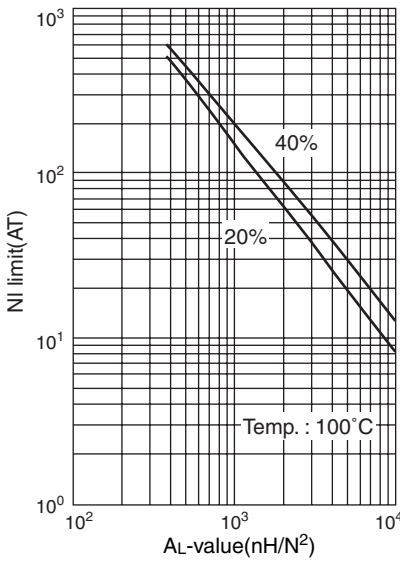
Core constant	C1	mm ⁻¹	0.3533380
	C2×10 ⁻²	mm ⁻³	0.05648
Effective magnetic path length	ℓ _e	mm	221
Effective cross-sectional area	A _e	mm ²	626
Effective core volume	V _e	mm ³	138270
Cross-sectional center leg area	A _c	mm ²	707
Minimum cross-sectional area	A _{min.*}	mm ²	570B*
Winding cross-sectional area	A _{cw}	mm ²	1420
Weight(approx.)		g	635

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

Part No.	AL-value*(nH/N ²)	Calculated output power(kW) (forward converter mode)
PE22 EC90X90X30	5925±25%	3.2(100kHz)
PC40 EC90X90X30	7415±25%	3.4(100kHz)

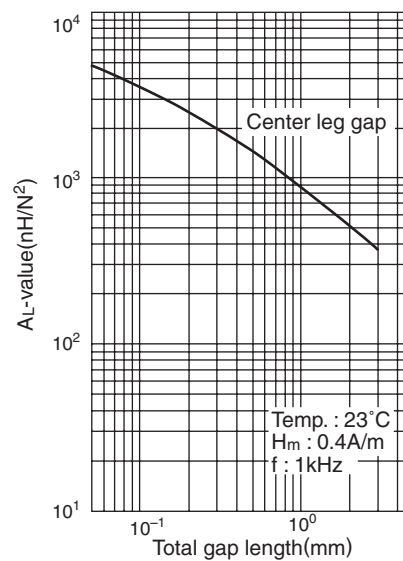
* AL-value: T=23°C, f=1kHz, H_m=0.4A/m

NI limit vs. AL-value for PE22 EC90X90X30

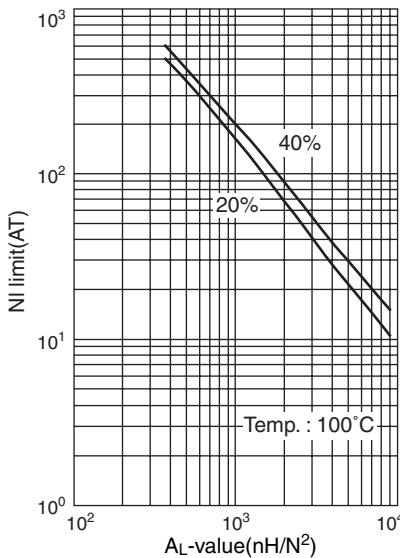


When applied magnetic field providing NI to a setting core for arbitrary AL-value, show each NI value when decreased 20% and 40% from initial AL-value.

AL-value vs. Air gap length for PE22 EC90X90X30

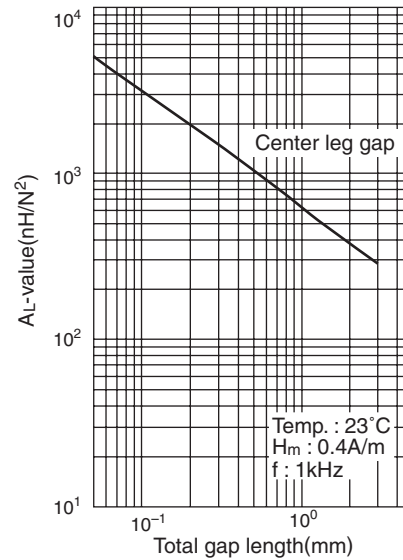


NI limit vs. AL-value for PC40 EC90X90X30

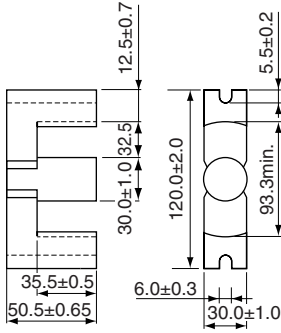


When applied magnetic field providing NI to a setting core for arbitrary AL-value, show each NI value when decreased 20% and 40% from initial AL-value.

AL-value vs. Air gap length for PC40 EC90X90X30



EC120X101X30



Parameter

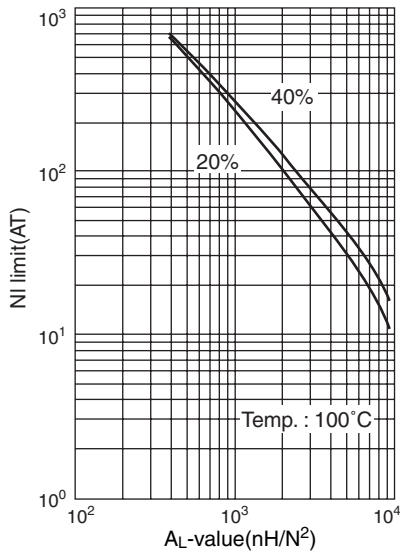
Core constant	C ₁	mm ⁻¹	0.3300745
	C ₂ ×10 ⁻²	mm ⁻³	0.04278
Effective magnetic path length	ℓ _e	mm	255
Effective cross-sectional area	A _e	mm ²	773
Effective core volume	V _e	mm ³	196490
Cross-sectional center leg area	A _c	mm ²	707
Minimum cross-sectional area	A _{min.*}	mm ²	707C*
Winding cross-sectional area	A _{cw}	mm ²	2307
Weight(approx.)		g	986

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

Part No.	AL-value*(nH/N ²)	Calculated output power(kW) (forward converter mode)
PE22 EC120X101X30	6395±25%	4.3(100kHz)
PC40 EC120X101X30	8025±25%	4.5(100kHz)

* AL-value: T=23°C, f=1kHz, H_m=0.4A/m

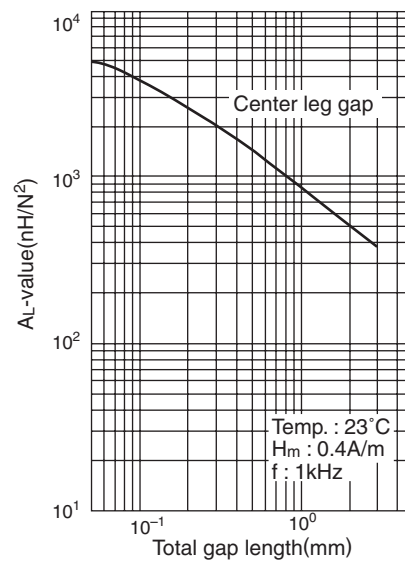
NI limit vs. AL-value for PE22 EC120X101X30



When applied magnetic field providing NI to a setting core for arbitrary AL-value, show each NI value when decreased 20% and 40% from initial AL-value.

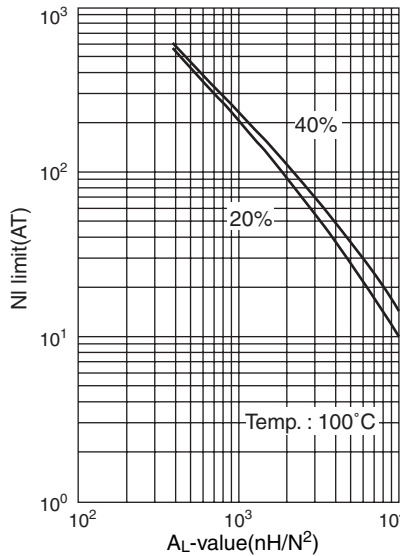
Temp. : 100°C

AL-value vs. Air gap length for PE22 EC120X101X30



Temp. : 23°C
H_m : 0.4A/m
f : 1kHz

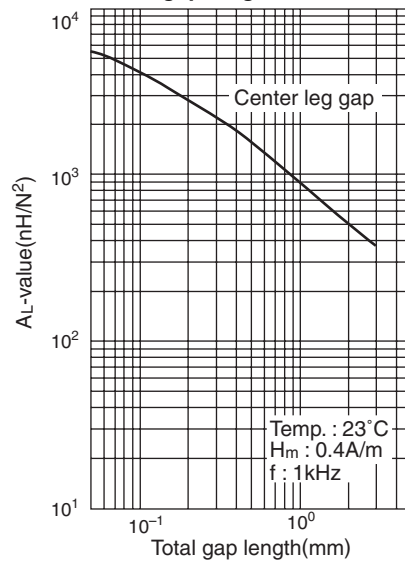
NI limit vs. AL-value for PC40 EC120X101X30



When applied magnetic field providing NI to a setting core for arbitrary AL-value, show each NI value when decreased 20% and 40% from initial AL-value.

Temp. : 100°C

AL-value vs. Air gap length for PC40 EC120X101X30



Temp. : 23°C
H_m : 0.4A/m
f : 1kHz