

# Ferrite For Switching Power Supplies

## TECHNICAL DATA

EI Cores (EI12.5 to EI60)

EE Cores (EE10/11 to EE62.3/62/6)

EER Cores (EER25.5 to EER42/42/20)

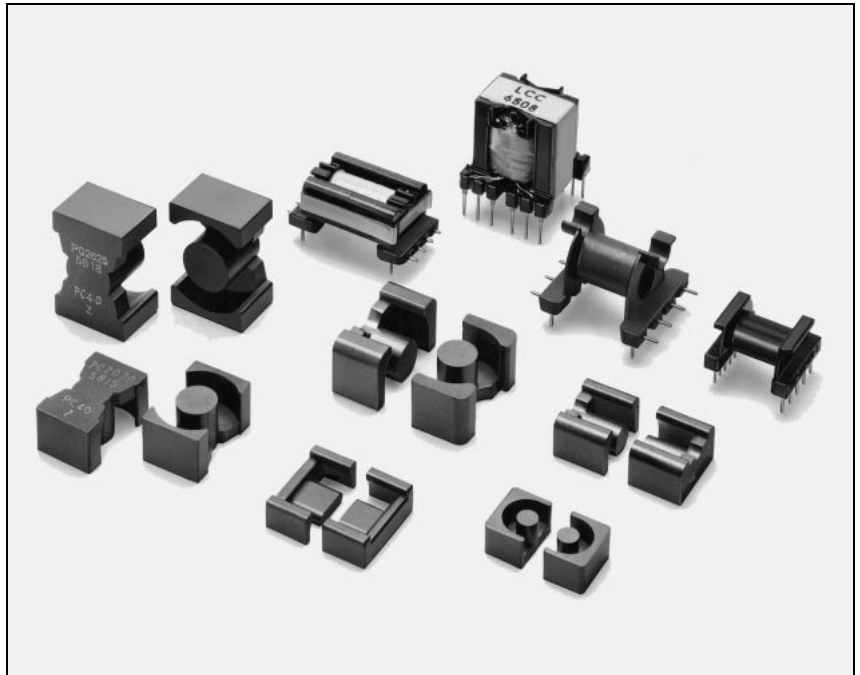
ETD Cores (ETD19 to ETD49)

PQ Cores (PQ20/16 to PQ50/50)

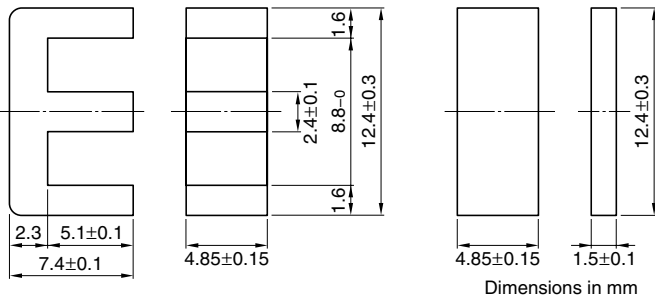
LP Cores (LP23/8 to LP32/13)

RM Cores (RM4 to RM14)

EPC Cores (EPC13 to EPC30)



## EI Series EI12.5 Cores(JIS FEI 12.5)



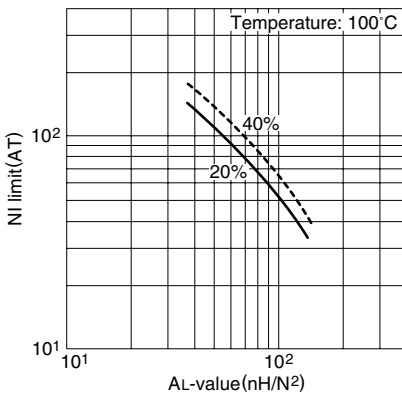
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.48
Effective magnetic path length	$\ell_e$	mm	21.3
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	14.4
Effective core volume	$V_e$	mm <sup>3</sup>	308
Cross-sectional center leg area	$A_{cp}$	mm <sup>2</sup>	11.6
Minimum cross-sectional area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	10.8
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	17.3
Weight (approx.)		g	1.9

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI12.5-Z</b>	1200±25% (1kHz, 0.5mA)* 2120 min. (100kHz, 200mT)	0.12 max.	8.8W (100kHz)

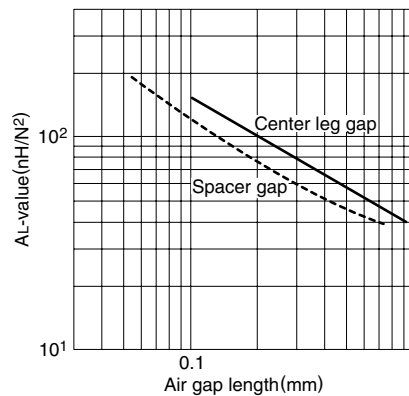
\* Coil:  $\phi 0.2$  2UEW 100Ts

### NI limit vs. AL-value for PC40EI12.5 gapped core (Typical)



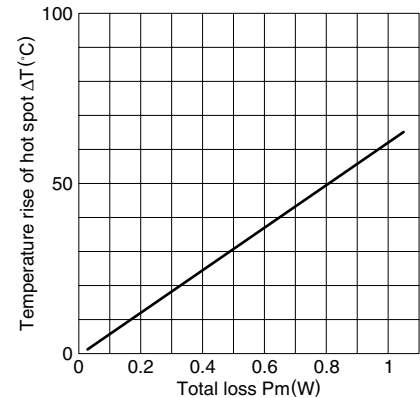
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI12.5 core (Typical)

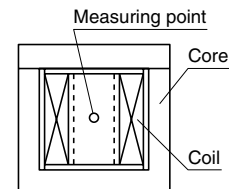


Measuring conditions • Coil:  $\phi 0.2$  2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

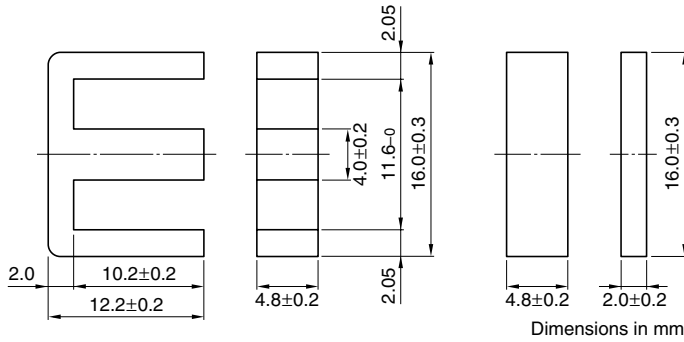
### Temperature rise vs. Total loss for EI12.5 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EI Series EI16 Cores(JIS FEI 16)



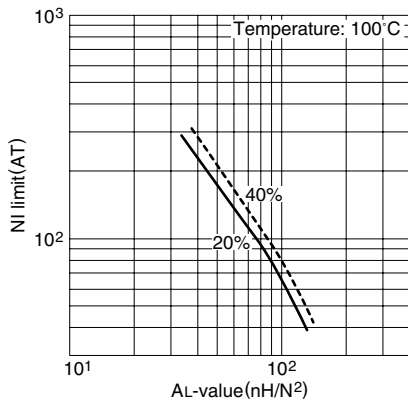
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.75
Effective magnetic path length	ℓ <sub>e</sub>	mm	34.6
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	19.8
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	685
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	19.2
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	17.5
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	40.3
Weight (approx.)		g	3.3

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI16-Z</b>	1100±25% (1kHz, 0.5mA)* 1750 min. (100kHz, 200mT)	0.31 max.	29W (100kHz)

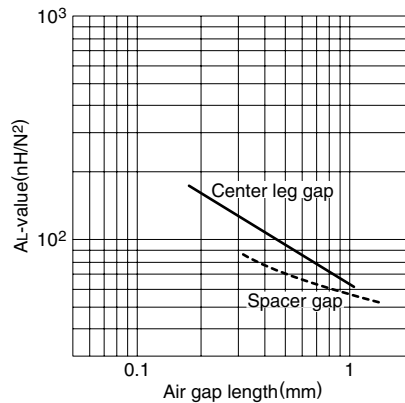
\* Coil: ø0.23 2UEW 100Ts

### NI limit vs. AL-value for PC40EI16 gapped core (Typical)



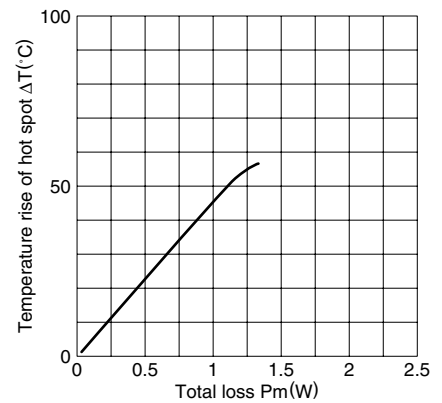
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI16 core (Typical)

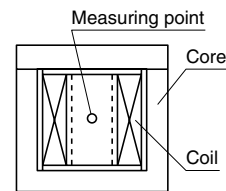


Measuring conditions • Coil: ø0.23 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

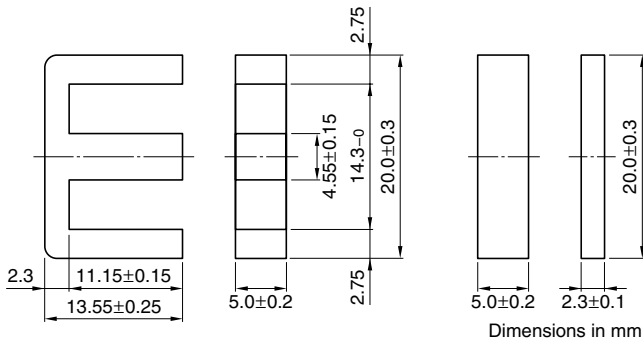
### Temperature rise vs. Total loss for EI16 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EI Series EI19 Cores



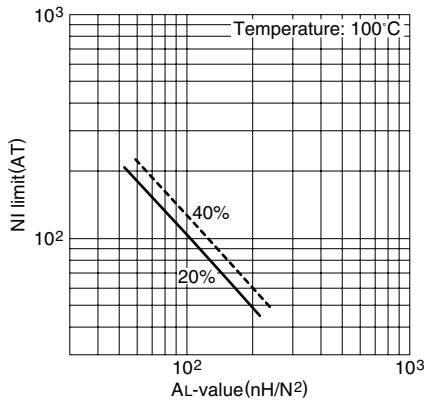
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.65
Effective magnetic path length	ℓ <sub>e</sub>	mm	39.6
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	24.0
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	950
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	22.8
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	21.1
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	55.5
Weight (approx.)		g	5.1

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI19-Z</b>	1400±25% (1kHz, 0.5mA)* 1830 min. (100kHz, 200mT)	0.42 max.	40W (100kHz)

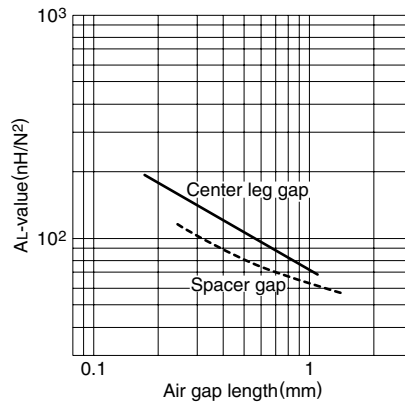
\* Coil: ø0.23 2UEW 100Ts

### NI limit vs. AL-value for PC40EI19 gapped core (Typical)



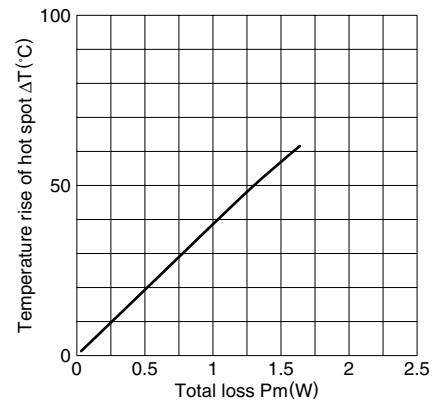
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI19 core (Typical)

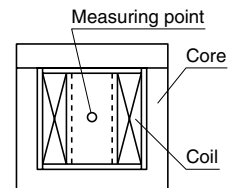


Measuring conditions • Coil: ø0.23 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

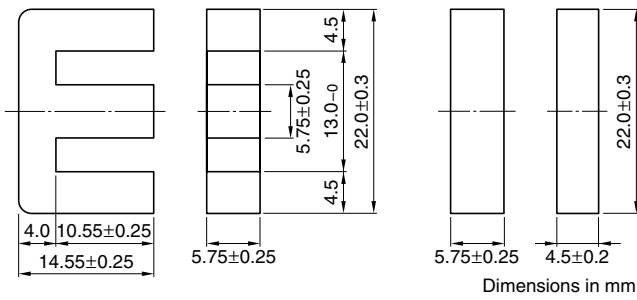
### Temperature rise vs. Total loss for EI19 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EI Series EI22 Cores



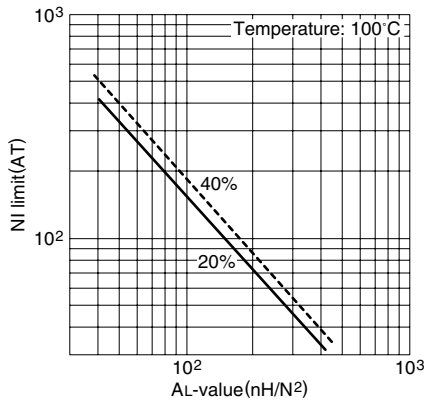
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.936
Effective magnetic path length	$l_e$	mm	39.3
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	42.0
Effective core volume	$V_e$	mm <sup>3</sup>	1650
Cross-sectional center leg area	$A_{cp}$	mm <sup>2</sup>	33.1
Minimum cross-sectional area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	30.3
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	38.2
Weight (approx.)	g		9.8

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI22-Z</b>	2400±25% (1kHz, 0.5mA)* 3360 min. (100kHz, 200mT)	0.60 max.	33W (100kHz)

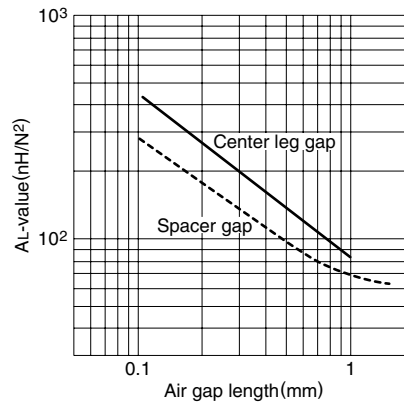
\* Coil:  $\phi 0.23$  2UEW 100Ts

### NI limit vs. AL-value for PC40EI22 gapped core (Typical)



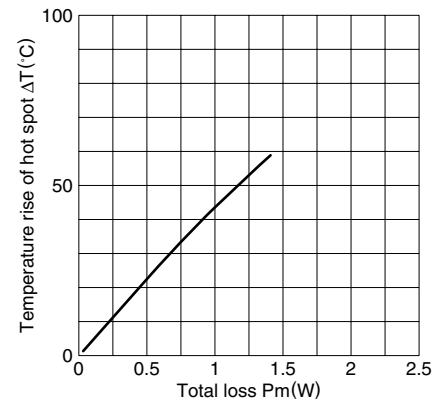
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI22 core (Typical)

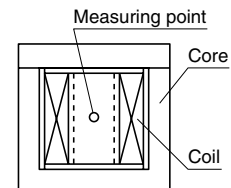


Measuring conditions • Coil:  $\phi 0.23$  2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

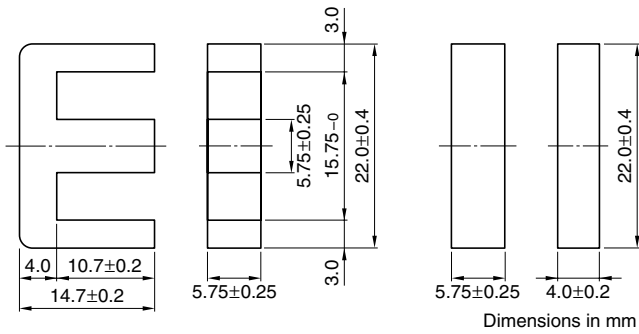
### Temperature rise vs. Total loss for EI22 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EI Series EI22/19/6 Cores(JIS FEI 22)



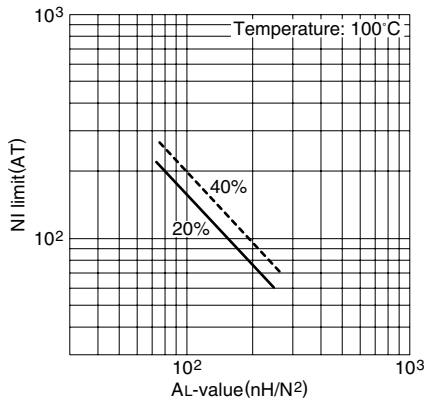
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.13
Effective magnetic path length	ℓ <sub>e</sub>	mm	41.8
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	37.0
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	1550
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	33.1
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	30.3
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	54.8
Weight (approx.)		g	8.5

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI22/19/6-Z</b>	2000±25% (1kHz, 0.5mA)* 2780 min. (100kHz, 200mT)	0.64 max.	48W (100kHz)

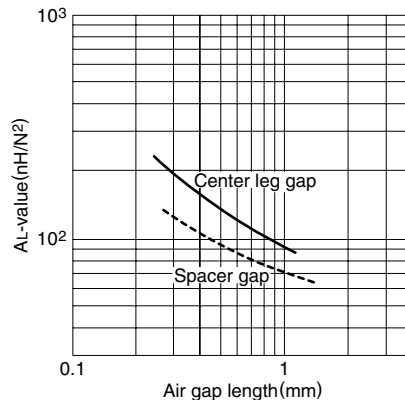
\* Coil: ø0.23 2UEW 100Ts

### NI limit vs. AL-value for PC40EI22/19/6 gapped core (Typical)



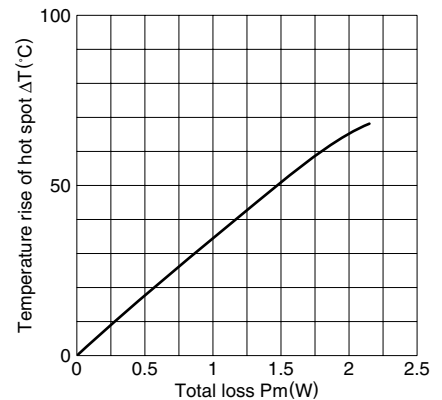
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI22/19/6 core (Typical)

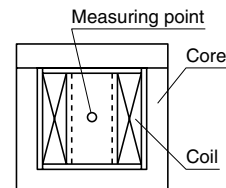


Measuring conditions • Coil: ø0.23 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

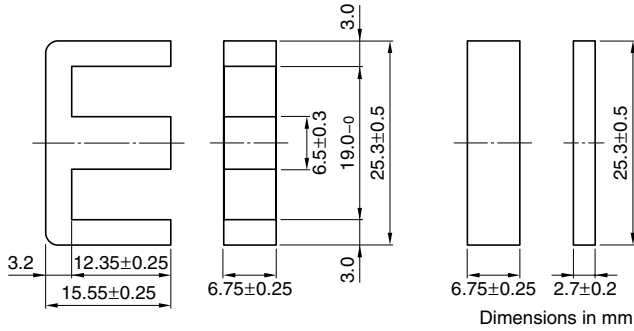
### Temperature rise vs. Total loss for EI22/19/6 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EI Series EI25 Cores



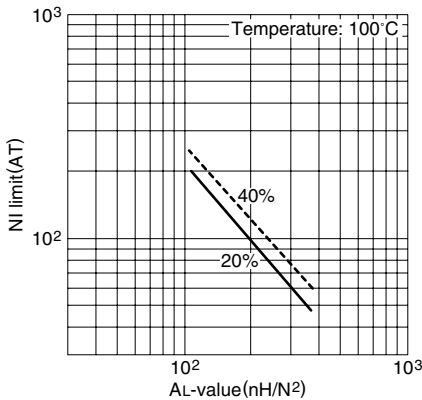
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.15
Effective magnetic path length	ℓ <sub>e</sub>	mm	47.0
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	41.0
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	1930
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	43.9
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	40.3
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	77.2
Weight (approx.)	g		9.8

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI25-Z</b>	2140±25% (1kHz, 0.5mA)* 2950 min. (100kHz, 200mT)	0.79 max.	68W (100kHz)

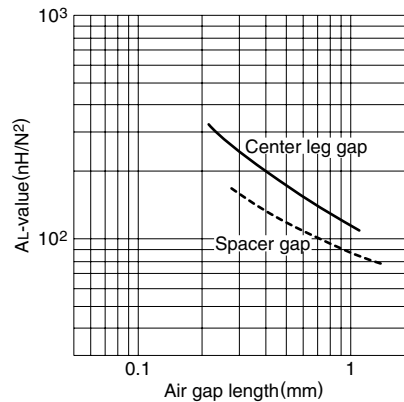
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EI25 gapped core (Typical)



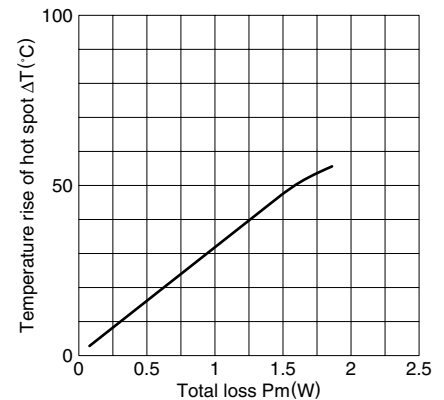
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI25 core (Typical)

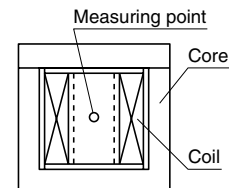


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

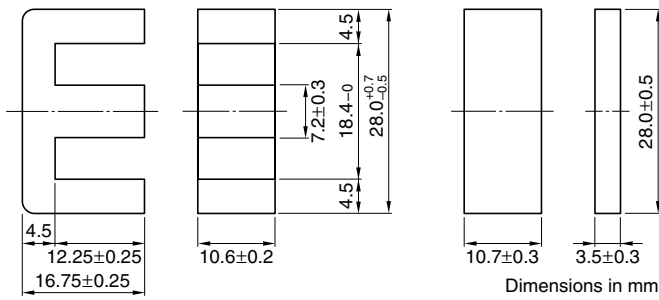
### Temperature rise vs. Total loss for EI25 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EI Series EI28 Cores(JIS FEI 28)



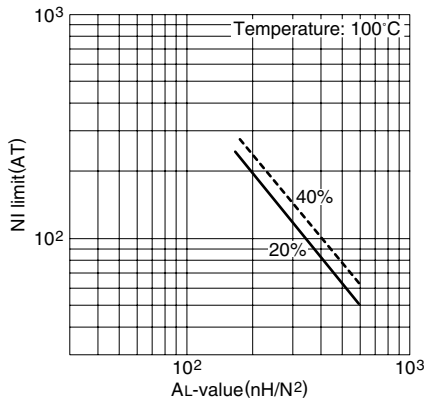
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.560
Effective magnetic path length	ℓ <sub>e</sub>	mm	48.2
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	86.0
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	4150
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	76.3
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	71.8
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	69.8
Weight (approx.)		g	22

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI28-Z</b>	4300±25% (1kHz, 0.5mA)* 6060 min. (100kHz, 200mT)	1.65 max.	107W (100kHz)

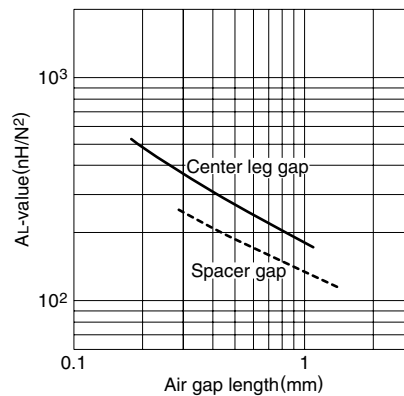
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EI28 gapped core (Typical)



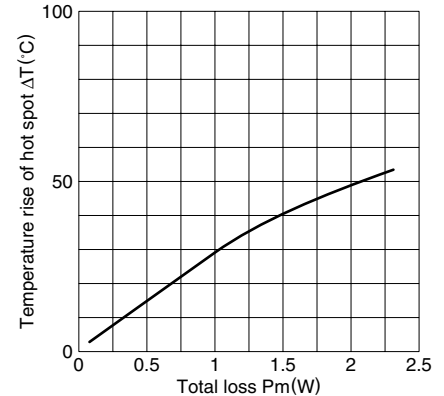
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI28 core (Typical)

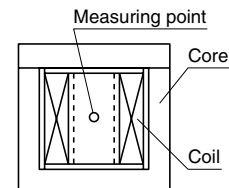


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

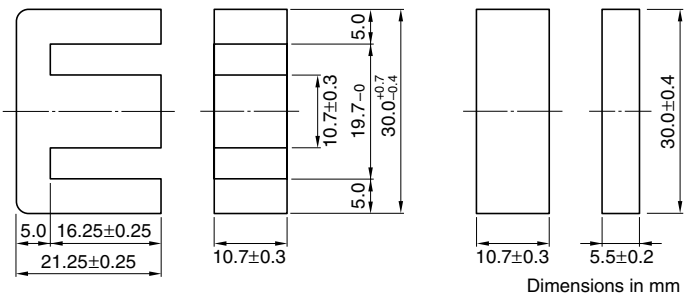
### Temperature rise vs. Total loss for EI28 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



### EI Series EI30 Cores(JIS FEI 30)



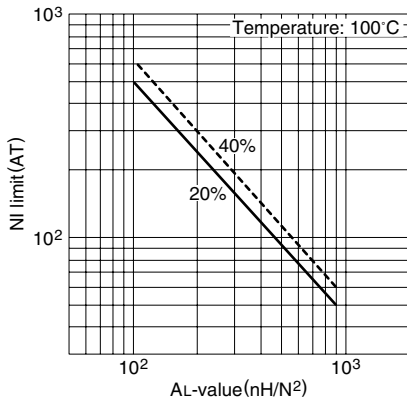
#### Parameter

Core factor	C1	mm <sup>-1</sup>	0.523
Effective magnetic path length	ℓ <sub>e</sub>	mm	58.0
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	111
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	6440
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	114
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	108
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	75.6
Weight (approx.)		g	34

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI30-Z</b>	4690±25% (1kHz, 0.5mA)* 6490 min. (100kHz, 200mT)	3.1 max.	155W (100kHz)

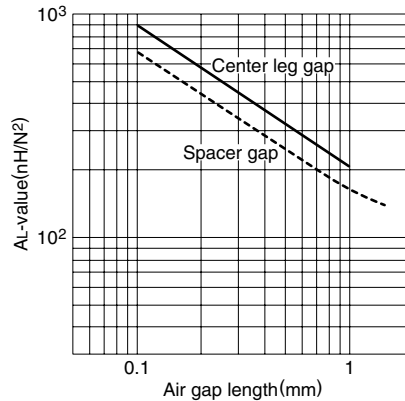
\* Coil: ø0.35 2UEW 100Ts

#### NI limit vs. AL-value for PC40EI30 gapped core (Typical)



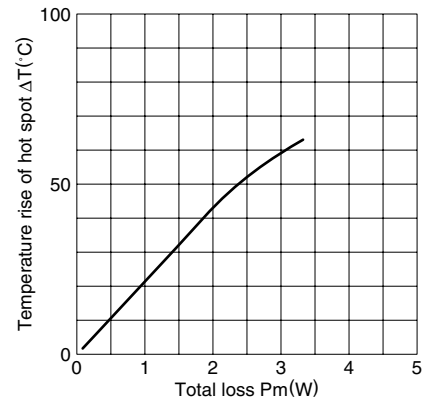
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

#### AL-value vs. Air gap length for PC40EI30 core (Typical)

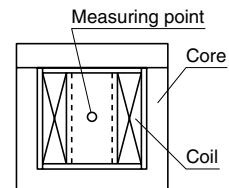


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

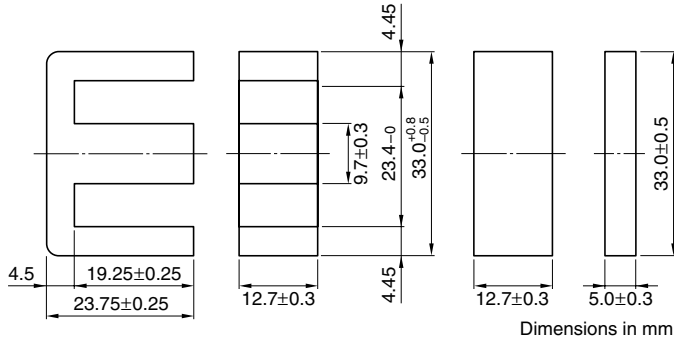
#### Temperature rise vs. Total loss for EI30 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EI Series EI33/29/13 Cores



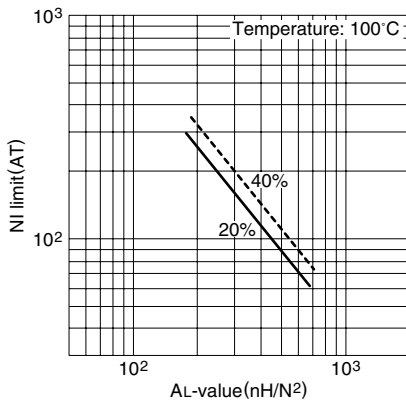
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.567
Effective magnetic path length	$l_e$	mm	67.5
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	119
Effective core volume	$V_e$	mm <sup>3</sup>	8030
Cross-sectional center leg area	$A_{cp}$	mm <sup>2</sup>	123
Minimum cross-sectional area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	117
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	138.6
Weight (approx.)		g	41

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI33/29/13-Z</b>	4400±25% (1kHz, 0.5mA)* 5980 min. (100kHz, 200mT)	3.5 max.	206W (100kHz)

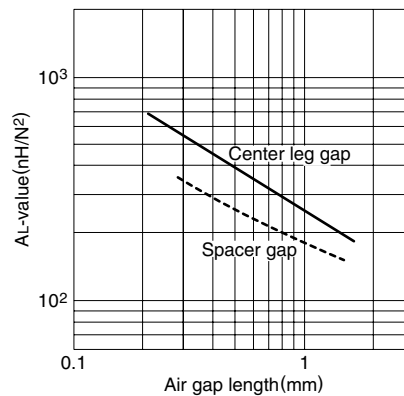
\* Coil:  $\phi 0.35$  2UEW 100Ts

### NI limit vs. AL-value for PC40EI33/29/13 gapped core (Typical)



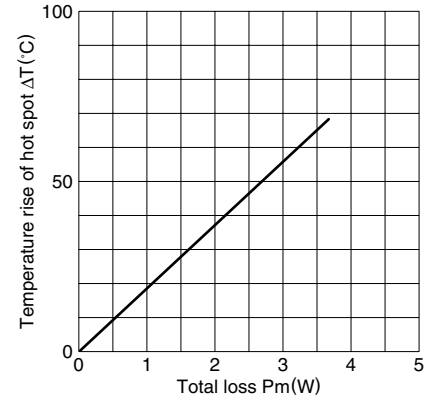
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI33/29/13 core (Typical)

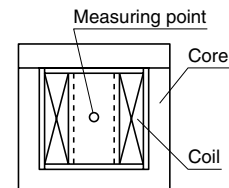


Measuring conditions • Coil:  $\phi 0.35$  2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

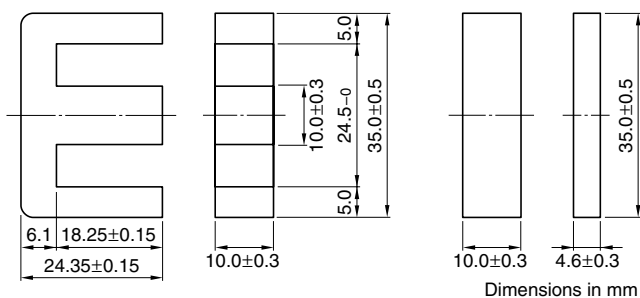
### Temperature rise vs. Total loss for EI33/29/13 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# EI Series EI35 Cores(JIS FEI 35)



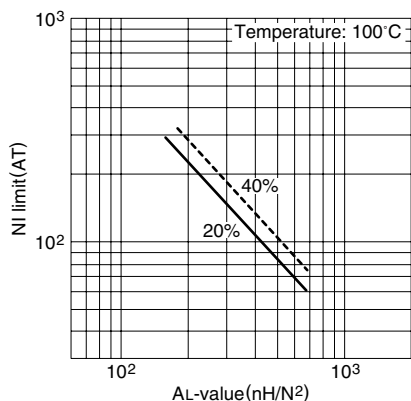
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.664
Effective magnetic path length	ℓ <sub>e</sub>	mm	67.1
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	101
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	6780
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	100
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	94.1
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	131.6
Weight (approx.)		g	36

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI35-Z</b>	3800±25% (1kHz, 0.5mA)* 5110 min. (100kHz, 200mT)	2.85 max.	218W (100kHz)

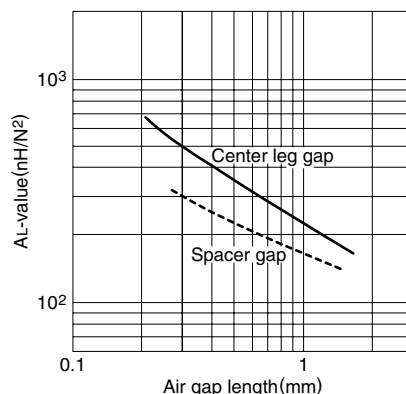
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EI35 gapped core (Typical)



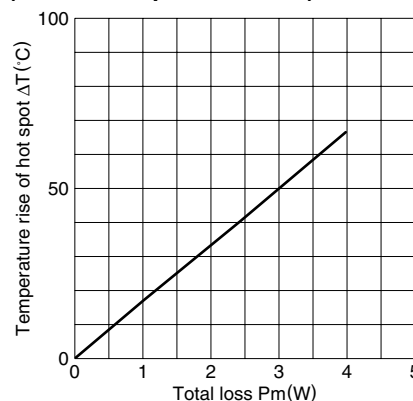
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI35 core (Typical)

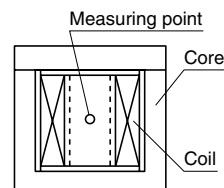


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

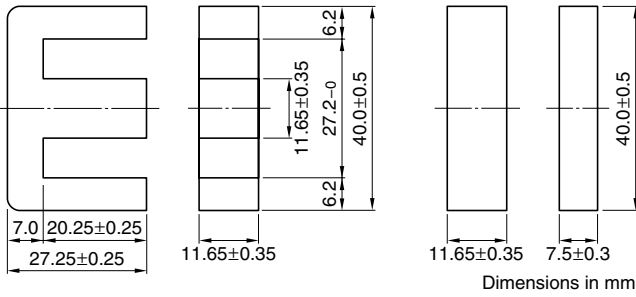
### Temperature rise vs. Total loss for EI35 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# EI Series EI40 Cores(JIS FEI 40)



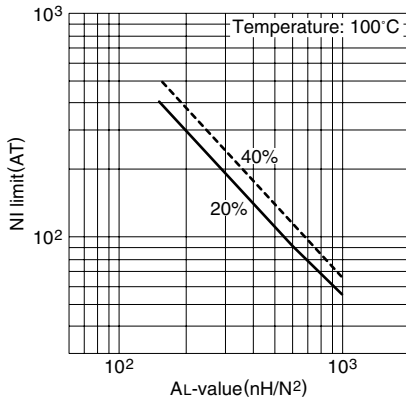
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.520
Effective magnetic path length	ℓ <sub>e</sub>	mm	77.0
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	148
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	11400
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	136
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	128
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	160.5
Weight (approx.)	g		60

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI40-Z</b>	4860±25% (1kHz, 0.5mA)* 6520 min. (100kHz, 200mT)	4.8 max.	348W (100kHz)

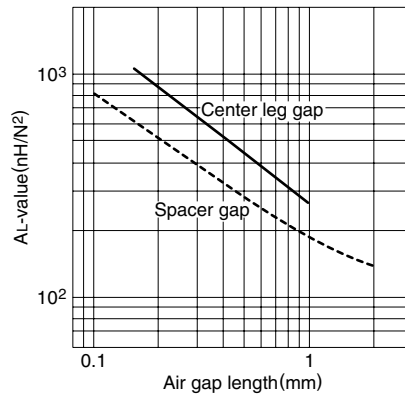
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EI40 gapped core (Typical)



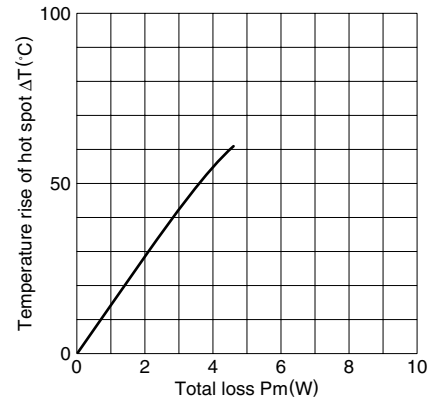
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI40 core (Typical)

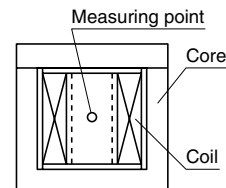


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

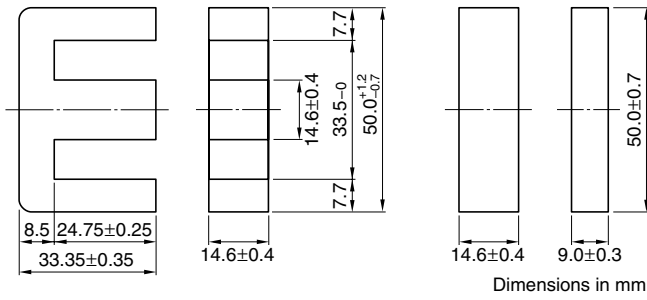
### Temperature rise vs. Total loss for EI40 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EI Series EI50 Cores(JIS FEI 50)



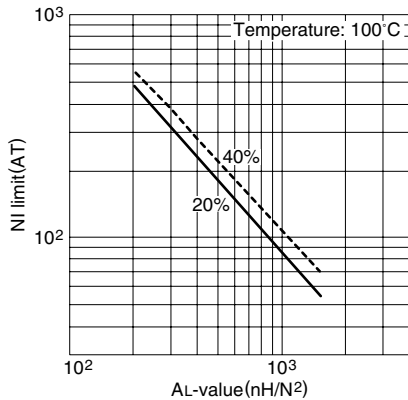
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.409
Effective magnetic path length	ℓ <sub>e</sub>	mm	94.0
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	230
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	21620
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	213
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	202
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	246.3
Weight (approx.)	g		115

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI50-Z</b>	6110±25% (1kHz, 0.5mA)* 8300 min. (100kHz, 200mT)	9.2 max.	508W (100kHz)

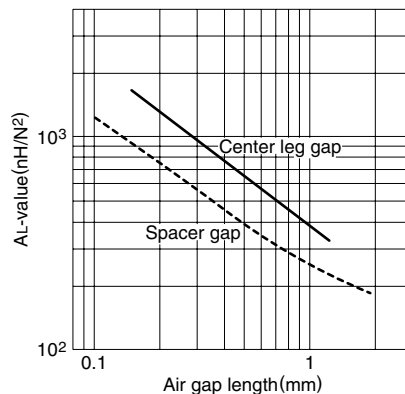
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EI50 gapped core (Typical)



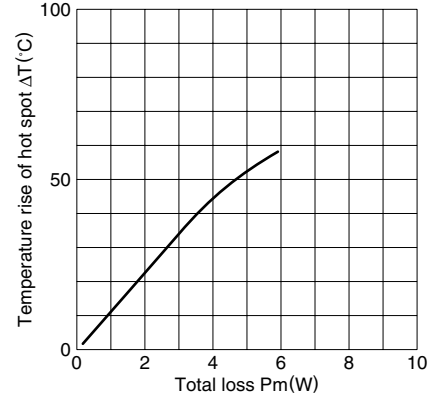
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI50 core (Typical)

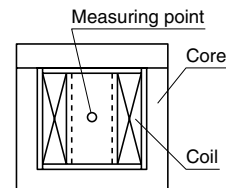


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

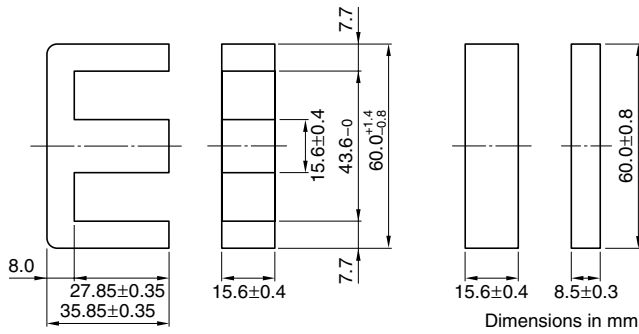
### Temperature rise vs. Total loss for EI50 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EI Series EI60 Cores(JIS FEI 60)



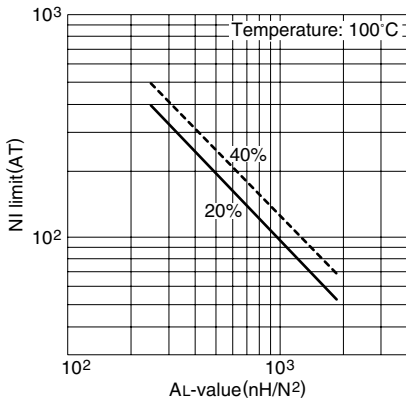
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.441
Effective magnetic path length	ℓ <sub>e</sub>	mm	109
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	247
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	26900
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	243
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	231
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	402.4
Weight (approx.)		g	139

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EI60-Z</b>	5670±25% (1kHz, 0.5mA)* 7690 min. (100kHz, 200mT)	12.5 max.	618W (100kHz)

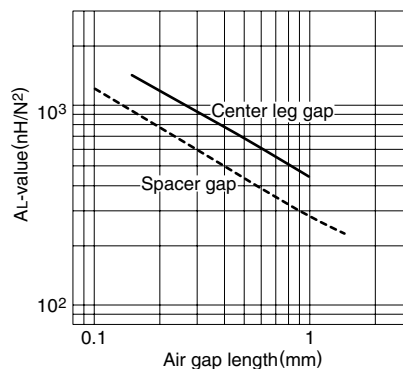
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EI60 gapped core (Typical)



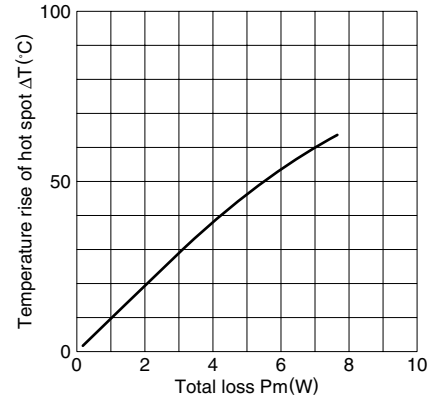
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EI60 core (Typical)

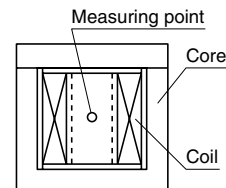


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

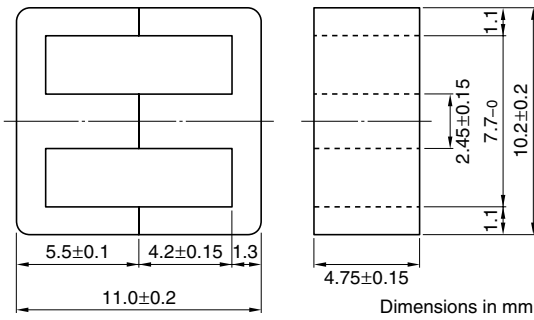
### Temperature rise vs. Total loss for EI60 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EE Series EE10/11 Cores(JIS FEE 10.2)



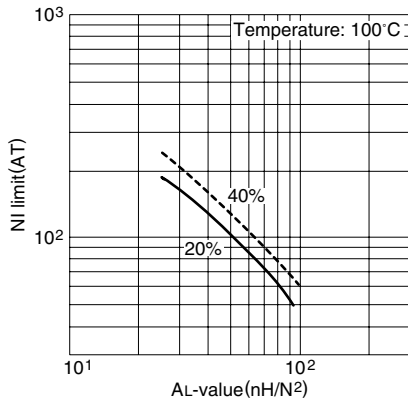
### Parameter

Core factor	C1	mm <sup>-1</sup>	2.16
Effective magnetic path length	ℓ <sub>e</sub>	mm	26.1
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	12.1
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	315
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	11.6
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	10.6
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	23.3
Weight (approx.)		g	1.5

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EE10/11-Z</b>	850±25% (1kHz, 0.5mA)* 1450 min. (100kHz, 200mT)	0.14 max.	9.4W (100kHz)

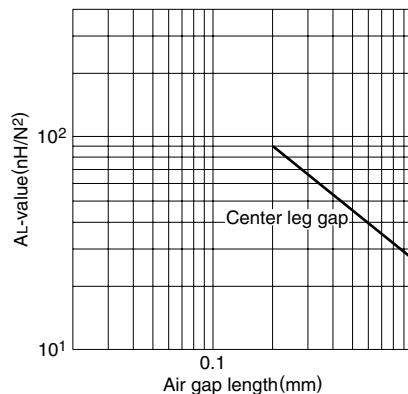
\* Coil: ø0.18 2UEW 100Ts

**NI limit vs. AL-value for PC40EE10/11 gapped core (Typical)**



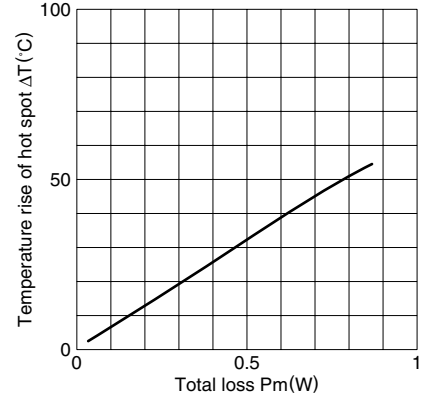
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

**AL-value vs. Air gap length for PC40EE10/11 core (Typical)**

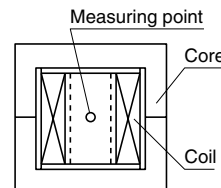


Measuring conditions • Coil: ø0.18 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

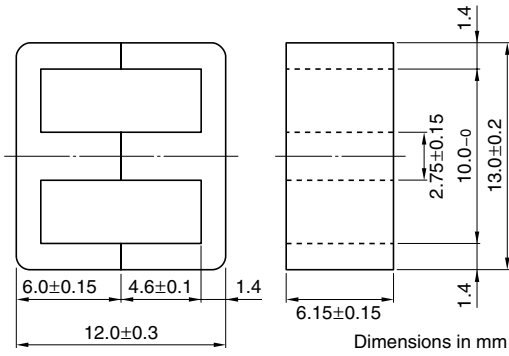
**Temperature rise vs. Total loss for EE10/11 core (Typical)**  
(Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EE Series EE13 Cores



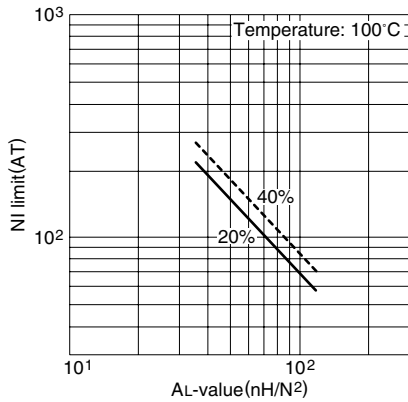
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.77
Effective magnetic path length	ℓ <sub>e</sub>	mm	30.2
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	17.1
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	517
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	16.9
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	15.6
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	34.3
Weight (approx.)		g	2.7

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EE13-Z</b>	1130±25% (1kHz, 0.5mA)* 1770 min. (100kHz, 200mT)	0.235 max.	17W (100kHz)

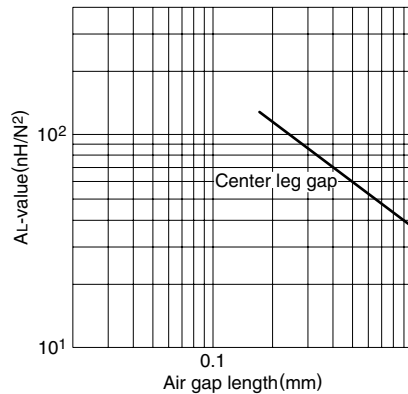
\* Coil: ø0.18 2UEW 100Ts

**NI limit vs. AL-value for PC40EE13 gapped core (Typical)**



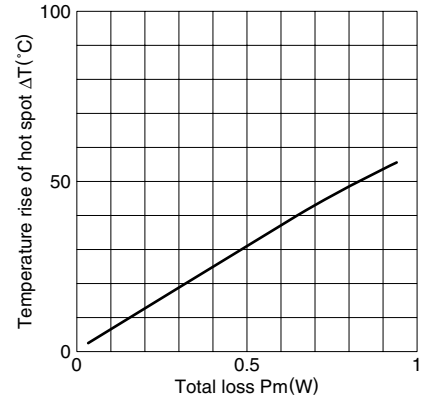
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

**AL-value vs. Air gap length for PC40EE13 core (Typical)**

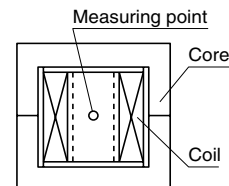


Measuring conditions • Coil: ø0.18 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

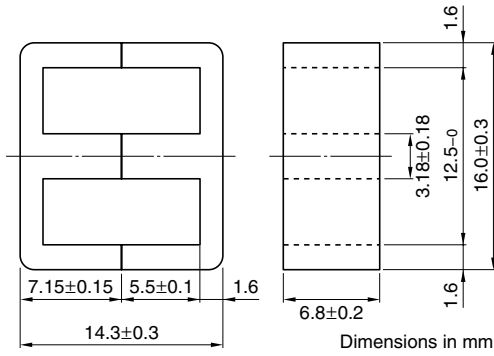
**Temperature rise vs. Total loss for EE13 core (Typical)**  
(Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EE Series SEE16 Cores



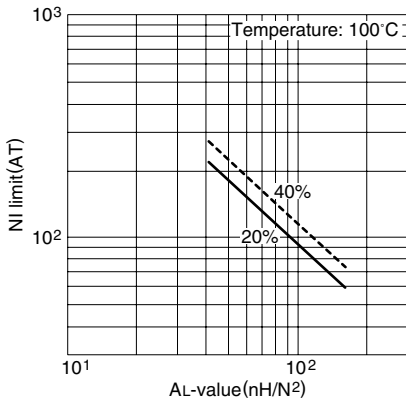
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.69
Effective magnetic path length	ℓ <sub>e</sub>	mm	36.6
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	21.7
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	795
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	21.6
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	19.8
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	52.9
Weight (approx.)		g	4.1

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40SEE16-Z</b>	1240±25% (1kHz, 0.5mA)* 1850 min. (100kHz, 200mT)	0.37 max.	32W (100kHz)

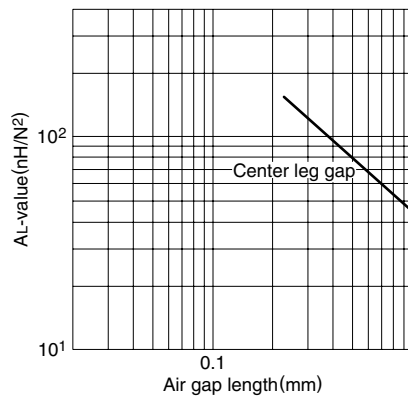
\* Coil: ø0.23 2UEW 100Ts

### NI limit vs. AL-value for PC40SEE16 gapped core (Typical)



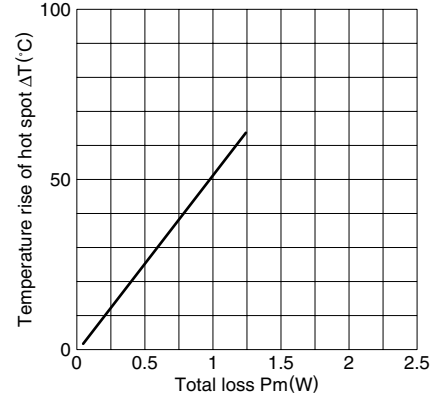
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40SEE16 core (Typical)

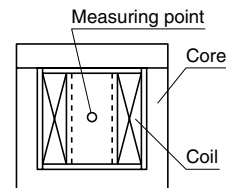


Measuring conditions • Coil: ø0.23 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

### Temperature rise vs. Total loss for SEE16 core (Typical) (Ambient temperature: 25°C)

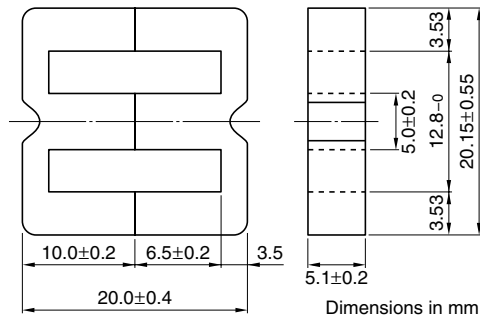


Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# EE Series EE20/20/5 Cores(DIN 41295)

Based on DIN 41295.



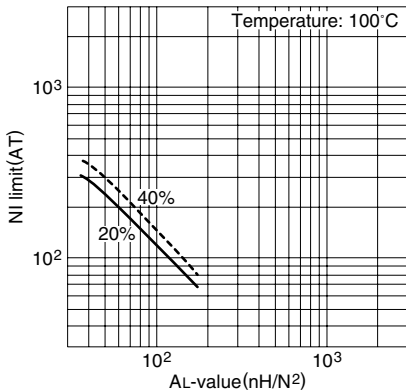
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.38
Effective magnetic path length	ℓ <sub>e</sub>	mm	43.0
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	31.0
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	1340
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	25.5
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	23.5
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	41.3
Weight (approx.)		g	7.5

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EE20/20/5-Z</b>	1400±25% (1kHz, 0.5mA)* 2270 min. (100kHz, 200mT)	0.51 max.	41W (100kHz)

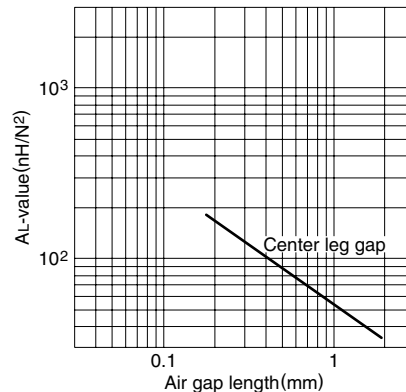
\* Coil: ø0.23 2UEW 100Ts

### NI limit vs. AL-value for PC40EE20/20/5 gapped core (Typical)



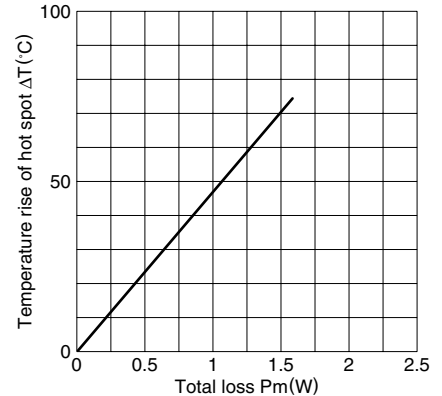
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EE20/20/5 core (Typical)

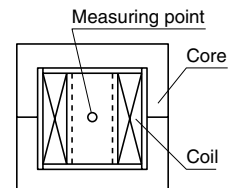


Measuring conditions • Coil: ø0.23 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

### Temperature rise vs. Total loss for EE20/20/5 core (Typical) (Ambient temperature: 25°C)

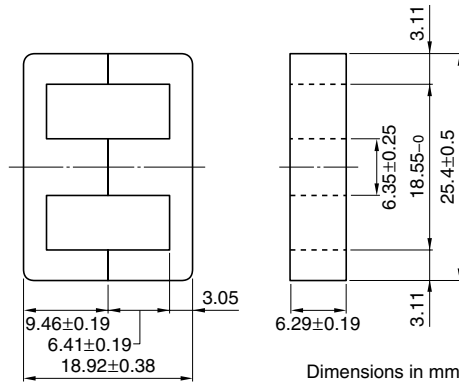


Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# EE Series EE25/19 Cores

Based on standard U. S. lamination size.



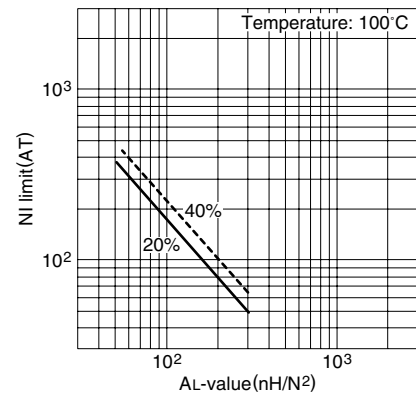
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.22
Effective magnetic path length	ℓ <sub>e</sub>	mm	48.7
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	40.0
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	1950
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	39.9
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	37.2
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	79.0
Weight (approx.)		g	9.1

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EE25/19-Z</b>	2000±25% (1kHz, 0.5mA)* 2570 min. (100kHz, 200mT)	0.86 max.	70W (100kHz)

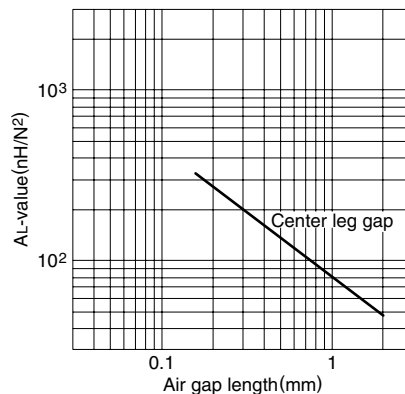
\* Coil: ø0.23 2UEW 100Ts

### NI limit vs. AL-value for PC40EE25/19 gapped core (Typical)



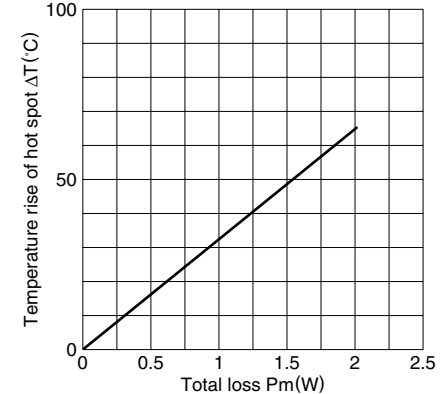
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EE25/19 core (Typical)

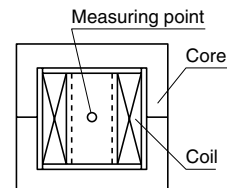


Measuring conditions • Coil: ø0.23 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

### Temperature rise vs. Total loss for EE25/19 core (Typical) (Ambient temperature: 25°C)

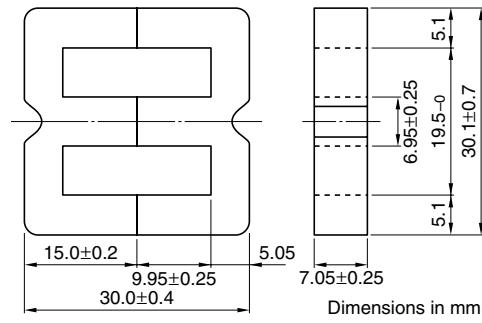


Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# EE Series EE30/30/7 Cores(DIN 41295)

Based on DIN 41295



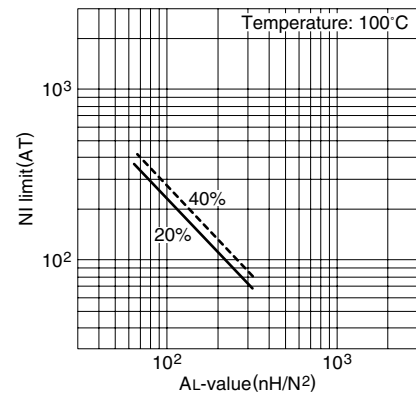
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.12
Effective magnetic path length	ℓ <sub>e</sub>	mm	66.9
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	59.7
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	4000
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	49.0
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	45.6
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	129
Weight (approx.)		g	22

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EE30/30/7-Z</b>	2100±25% (1kHz, 0.5mA)* 3030 min. (100kHz, 200mT)	1.51 max.	133W (100kHz)

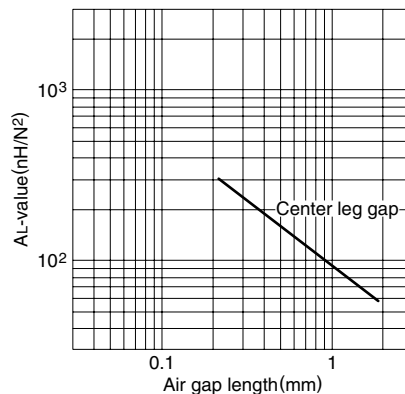
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EE30/30/7 gapped core (Typical)



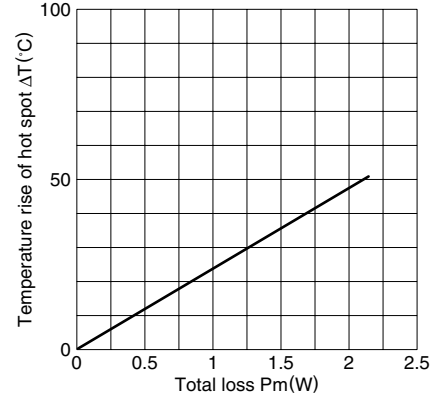
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EE30/30/7 core (Typical)

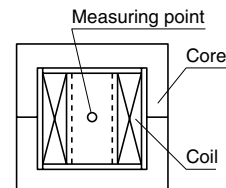


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

### Temperature rise vs. Total loss for EE30/30/7 core (Typical) (Ambient temperature: 25°C)

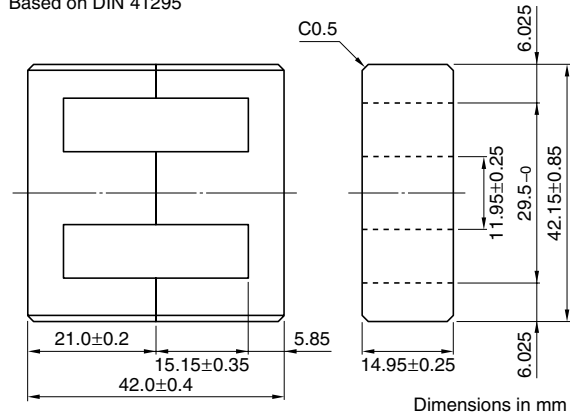


Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# EE Series EE42/42/15 Cores(DIN 41295)

Based on DIN 41295



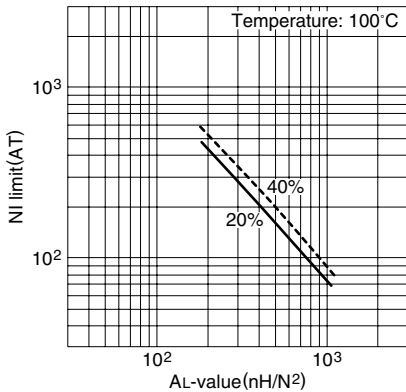
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.533
Effective magnetic path length	ℓ <sub>e</sub>	mm	97.0
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	182
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	17600
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	179
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	172
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	275
Weight (approx.)		g	80

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EE42/42/15-Z</b>	4700±25% (1kHz, 0.5mA)* 7050 min. (100kHz, 200mT)	8.0 max.	419W (100kHz)

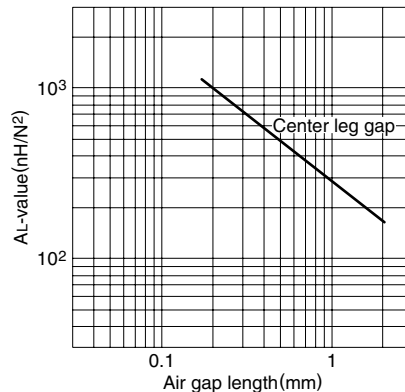
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EE42/42/15 gapped core (Typical)



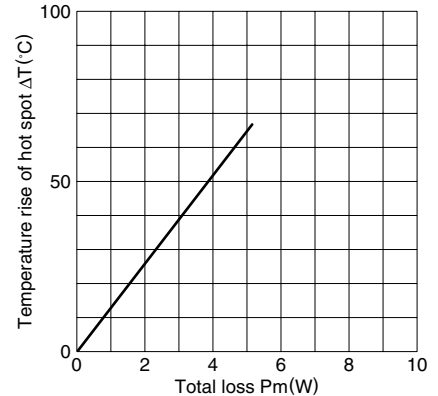
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EE42/42/15 core (Typical)

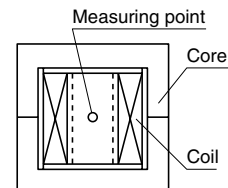


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

### Temperature rise vs. Total loss for EE42/42/15 core (Typical) (Ambient temperature: 25°C)

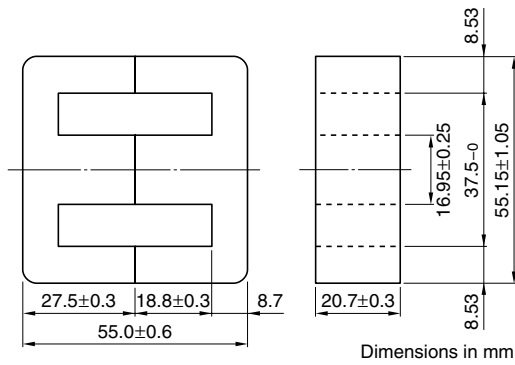


Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# EE Series EE55/55/21 Cores(DIN 41295)

Based on DIN 41295



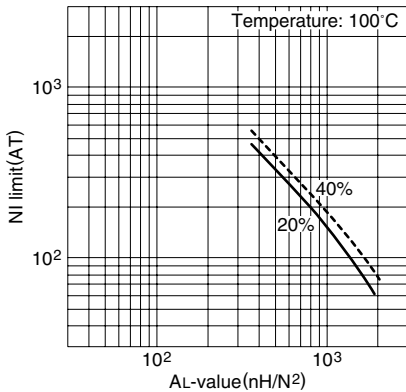
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.348
Effective magnetic path length	ℓ <sub>e</sub>	mm	123
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	354
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	43700
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	351
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	341
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	397
Weight (approx.)		g	234

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EE55/55/21-Z</b>	7100±25% (1kHz, 0.5mA)* 10830 min. (100kHz, 200mT)	11.0 max.	814W (100kHz)

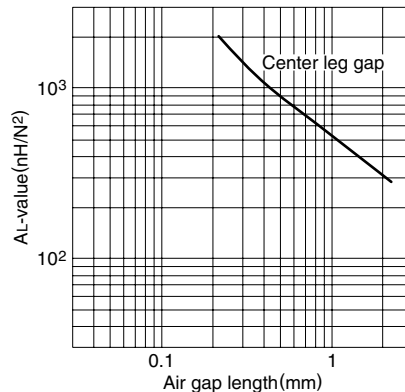
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EE55/55/21 gapped core (Typical)



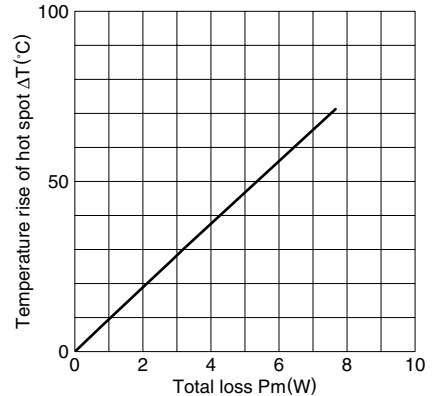
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EE55/55/21 core (Typical)

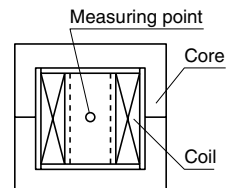


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

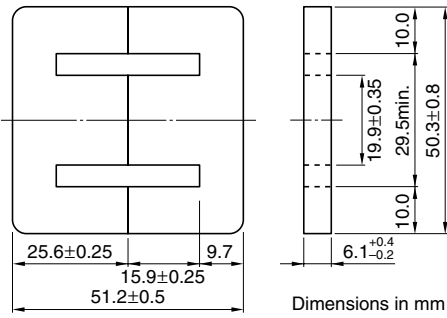
### Temperature rise vs. Total loss for EE55/55/21 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EE Series EE50.3/51/6 Cores



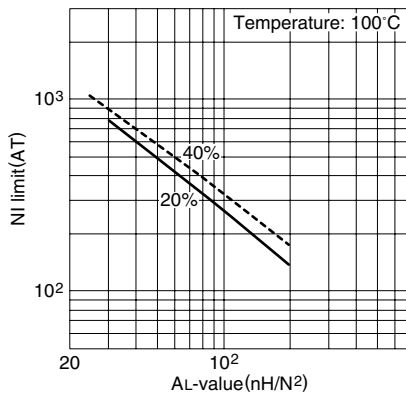
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.868
Effective magnetic path length	ℓ <sub>e</sub>	mm	105
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	121
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	12700
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	121
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	115
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	163.3
Weight (approx.)		g	68

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EE50.3/51/6-Z</b>	2900±25% (1kHz, 0.5mA)* 3950 min. (100kHz, 200mT)	5.83 max.	213W (100kHz)

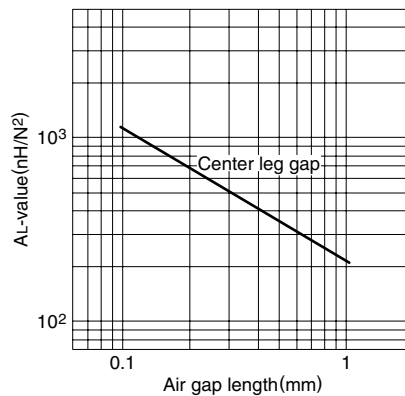
\* Coil: ø0.23 2UEW 100Ts

**NI limit vs. AL-value for PC40EE50.3/51/6 gapped core (Typical)**



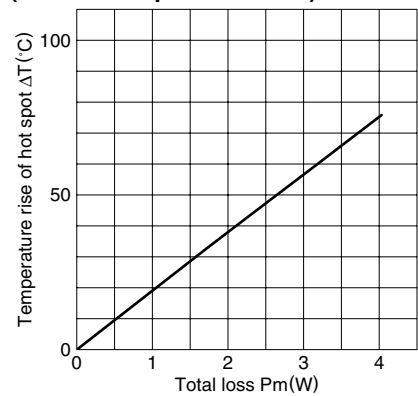
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

**AL-value vs. Air gap length for PC40EE50.3/51/6 core (Typical)**

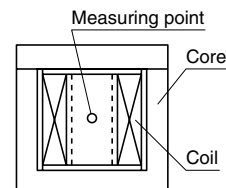


Measuring conditions • Coil: ø0.23 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

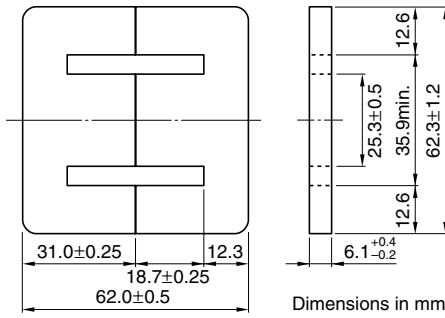
**Temperature rise vs. Total loss for EE50.3/51/6 core (Typical)  
(Ambient temperature: 25°C)**



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%)RH, respectively. (approx. 400×300×300cm)



## EE Series EE62.3/62/6 Cores



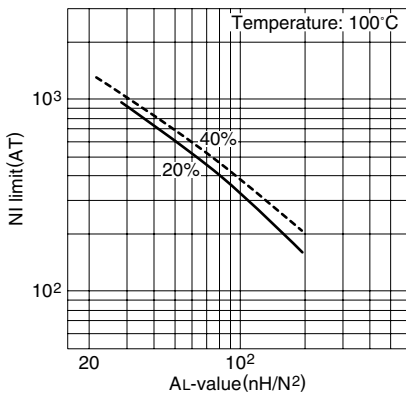
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.822
Effective magnetic path length	ℓ <sub>e</sub>	mm	126
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	153
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	19300
Cross-sectional center leg area	A <sub>cp</sub>	mm <sup>2</sup>	154
Minimum cross-sectional area	A <sub>cp min.</sub>	mm <sup>2</sup>	146.3
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	202
Weight (approx.)	g		102

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EE62.3/62/6-Z</b>	3100±25% (1kHz, 0.5mA)* 4150 min. (100kHz, 200mT)	8.85 max.	250W (100kHz)

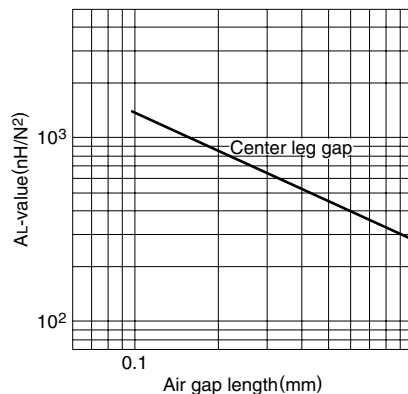
\* Coil: ø0.23 2UEW 100Ts

**NI limit vs. AL-value for PC40EE62.3/62/6 gapped core (Typical)**



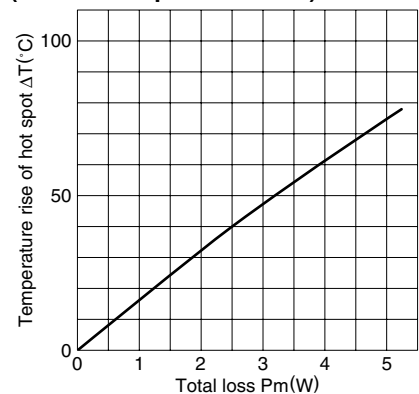
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

**AL-value vs. Air gap length for PC40EE62.3/62/6 core (Typical)**

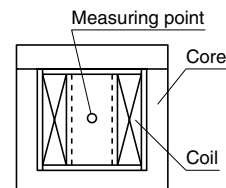


Measuring conditions • Coil: ø0.23 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

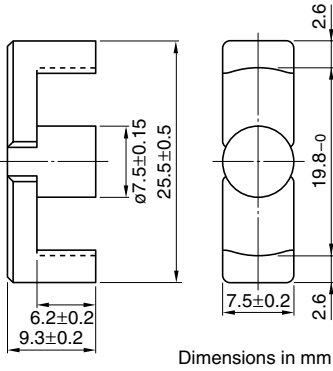
**Temperature rise vs. Total loss for EE62.3/62/6 core (Typical)  
(Ambient temperature: 25°C)**



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%)RH, respectively. (approx. 400×300×300cm)



## EER Series EER25.5 Cores(JIS FEER 25.5A)



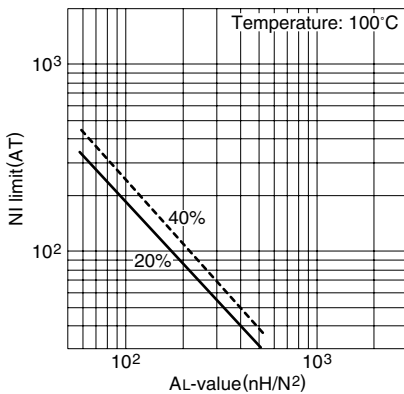
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.08
Effective magnetic path length	$\ell_e$	mm	48.2
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	44.8
Effective core volume	$V_e$	mm <sup>3</sup>	2160
Cross-sectional center pole area	$A_{cp}$	mm <sup>2</sup>	44.2
Minimum cross-sectional center pole area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	42.4
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	79.4
Weight (approx.)		g	11

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EER25.5-Z</b>	1920±25% (1kHz, 0.5mA)* 2910 min. (100kHz, 200mT)	0.98 max.	87W (100kHz)

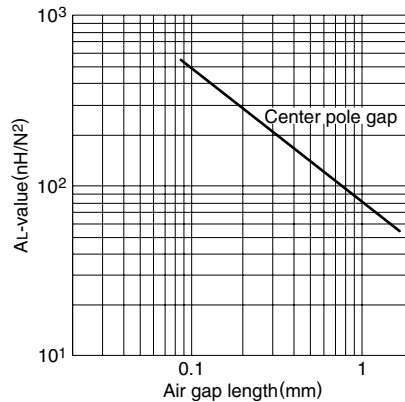
\* Coil:  $\phi 0.35$  2UEW 100Ts

### NI limit vs. AL-value for PC40EER25.5 gapped core (Typical)



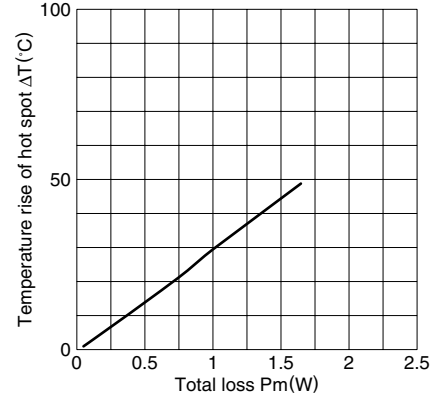
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EER25.5 core (Typical)

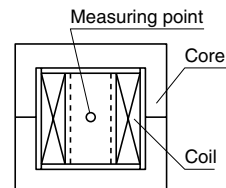


Measuring conditions • Coil:  $\phi 0.35$  2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

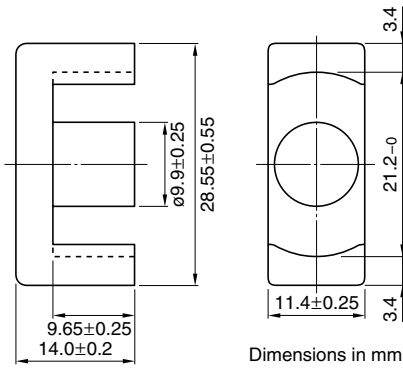
### Temperature rise vs. Total loss for EER25.5 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EER Series EER28 Cores(JIS FEER 28.5A)



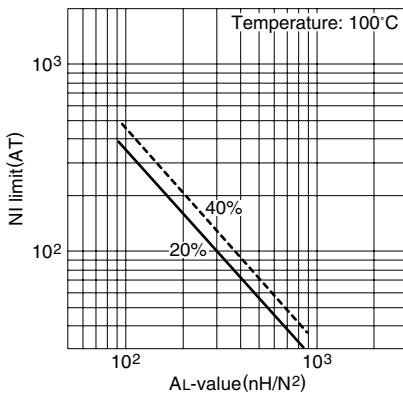
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.78
Effective magnetic path length	ℓ <sub>e</sub>	mm	64.0
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	82.1
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	5250
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	77.0
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	73.1
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	114
Weight (approx.)	g		28

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EER28-Z</b>	2870±25% (1kHz, 0.5mA)* 4350 min. (100kHz, 200mT)	2.3 max.	203W (100kHz)

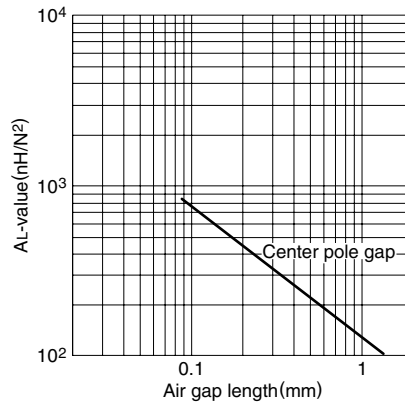
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EER28 gapped core (Typical)



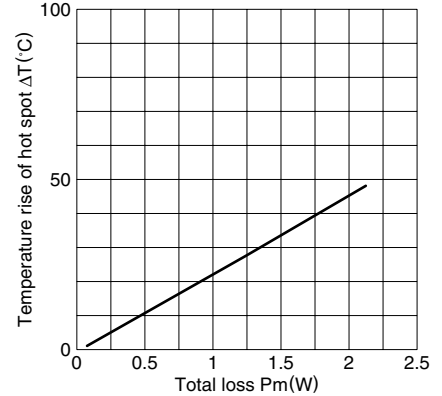
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EER28 core (Typical)

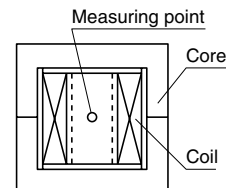


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

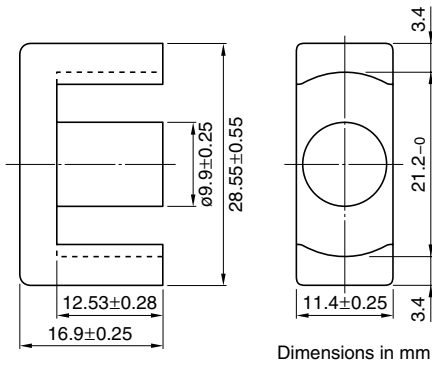
### Temperature rise vs. Total loss for EER28 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EER Series EER28L Cores(JIS FEER 28.5B)



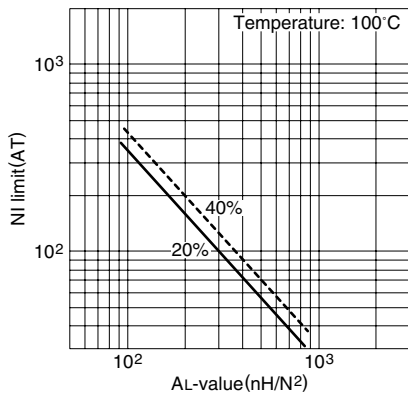
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.928
Effective magnetic path length	$\ell_e$	mm	75.5
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	81.4
Effective core volume	$V_e$	mm <sup>3</sup>	6150
Cross-sectional center pole area	$A_{cp}$	mm <sup>2</sup>	77.0
Minimum cross-sectional center pole area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	73.1
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	148
Weight (approx.)		g	33

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EER28L-Z</b>	2520±25% (1kHz, 0.5mA)* 3660 min. (100kHz, 200mT)	2.7 max.	228W (100kHz)

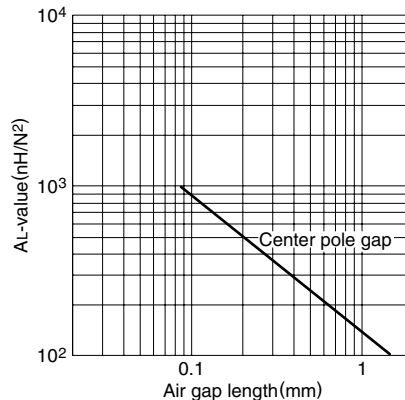
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EER28L gapped core (Typical)



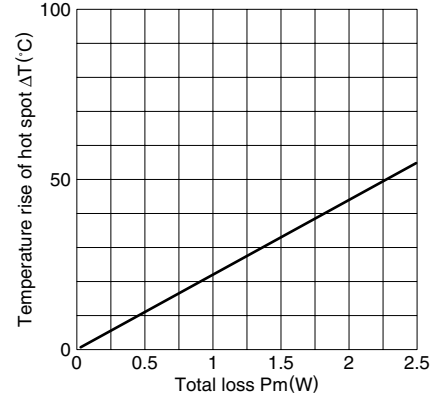
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EER28L core (Typical)

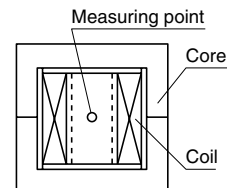


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

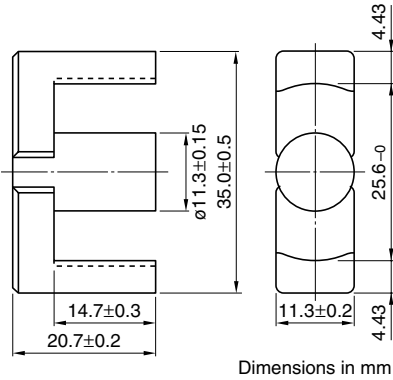
### Temperature rise vs. Total loss for EER28L core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EER Series EER35 Cores(JIS FEER 35A)



Dimensions in mm

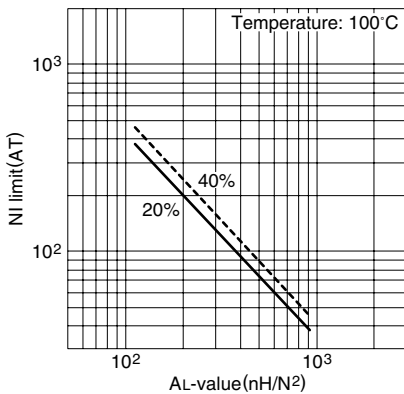
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.849
Effective magnetic path length	$\ell_e$	mm	90.8
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	107
Effective core volume	$V_e$	mm <sup>3</sup>	9720
Cross-sectional center pole area	$A_{cp}$	mm <sup>2</sup>	100
Minimum cross-sectional center pole area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	97.6
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	218
Weight (approx.)		g	52

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EER35-Z</b>	2770±25% (1kHz, 0.5mA)* 4000 min. (100kHz, 200mT)	4.2 max.	325W (100kHz)

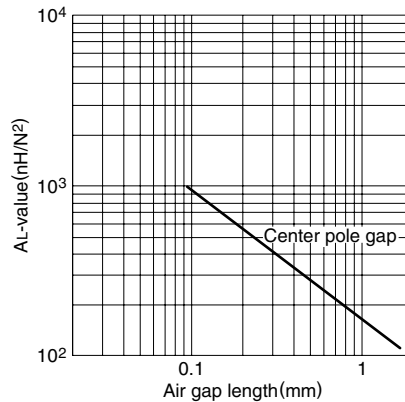
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EER35 gapped core (Typical)



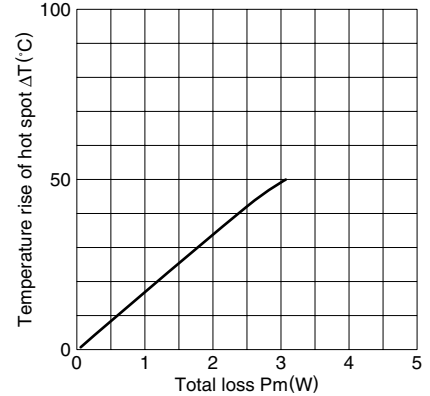
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EER35 core (Typical)

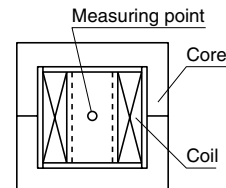


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

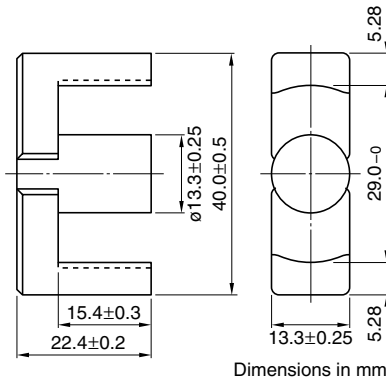
### Temperature rise vs. Total loss for EER35 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EER Series EER40 Cores



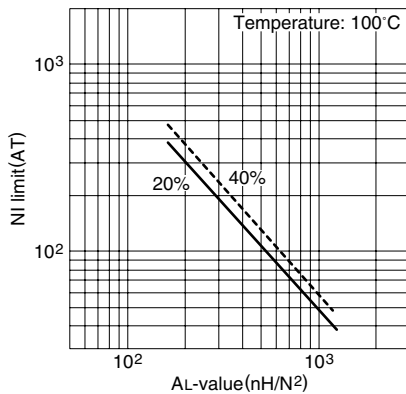
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.658
Effective magnetic path length	$\ell_e$	mm	98.0
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	149
Effective core volume	$V_e$	mm <sup>3</sup>	14600
Cross-sectional center pole area	$A_{cp}$	mm <sup>2</sup>	139
Minimum cross-sectional center pole area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	134
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	249
Weight (approx.)	g		78

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EER40-Z</b>	3620±25% (1kHz, 0.5mA)* 5160 min. (100kHz, 200mT)	6.3 max.	421W (100kHz)

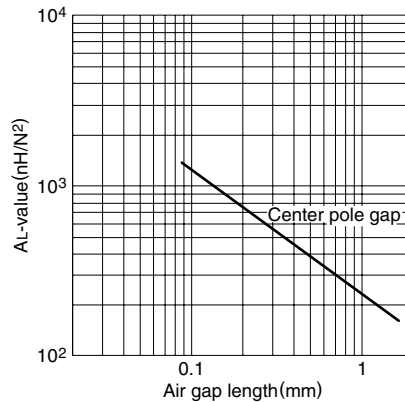
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EER40 gapped core (Typical)



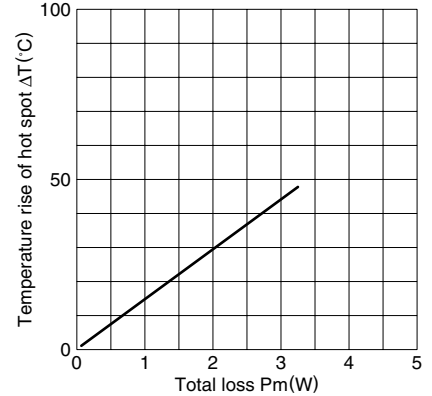
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EER40 core (Typical)



Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

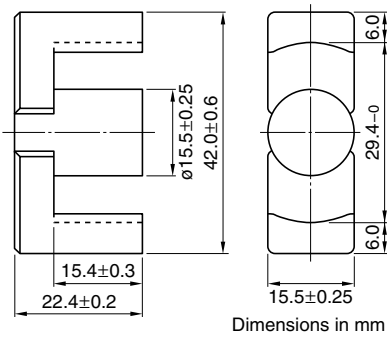
### Temperature rise vs. Total loss for EER40 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EER Series EER42 Cores(JIS FEER 42)



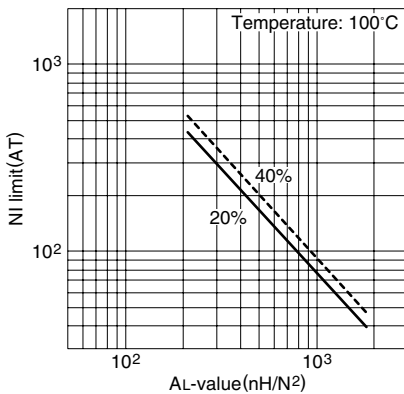
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.509
Effective magnetic path length	ℓ <sub>e</sub>	mm	98.8
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	194
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	19200
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	187
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	183
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	223
Weight (approx.)	g		102

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EER42-Z</b>	4690±25% (1kHz, 0.5mA)* 6670 min. (100kHz, 200mT)	8.6 max.	433W (100kHz)

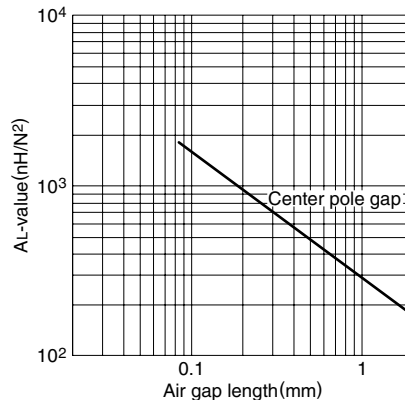
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40EER42 gapped core (Typical)



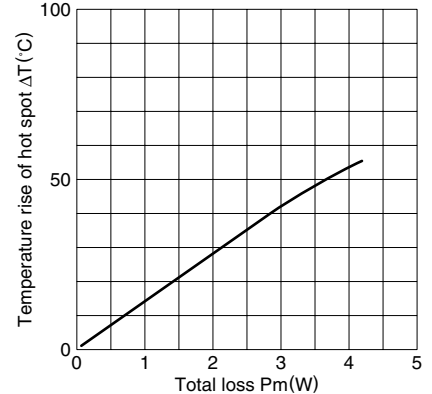
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40EER42 core (Typical)

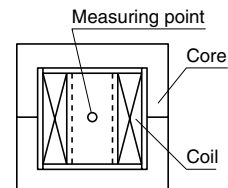


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

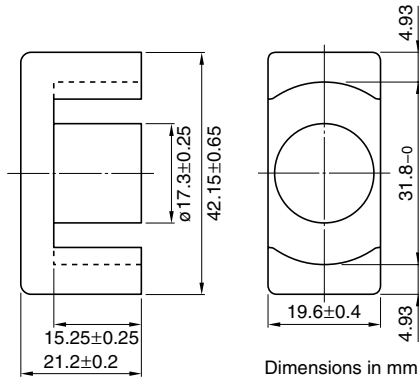
### Temperature rise vs. Total loss for EER42 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## EER Series EER42/42/20 Cores



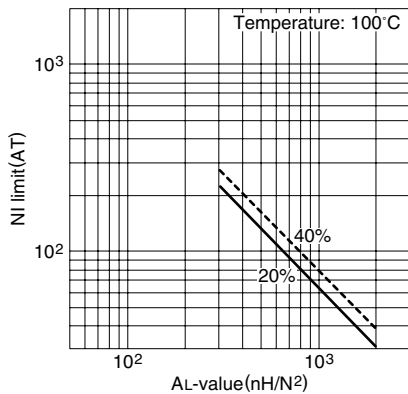
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.411
Effective magnetic path length	$\ell_e$	mm	98.6
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	240
Effective core volume	$V_e$	mm <sup>3</sup>	23700
Cross-sectional center pole area	$A_{cp}$	mm <sup>2</sup>	235
Minimum cross-sectional center pole area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	228
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	229
Weight (approx.)		g	116

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40EER42/42/20-Z</b>	5340±25% (1kHz, 0.5mA)* 8260 min. (100kHz, 200mT)	10.7 max.	509W (100kHz)

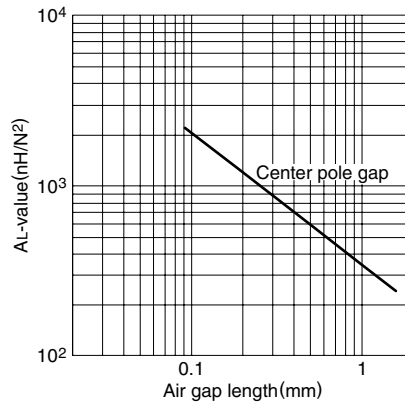
\* Coil:  $\phi 0.35$  2UEW 100Ts

**NI limit vs. AL-value for PC40EER42/42/20 gapped core (Typical)**



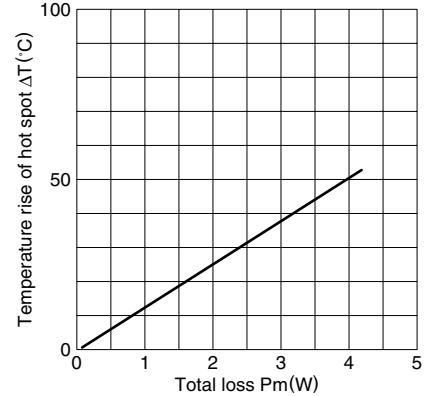
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

**AL-value vs. Air gap length for PC40EER42/42/20 core (Typical)**

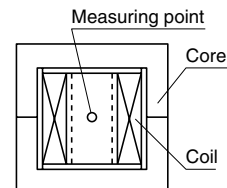


Measuring conditions • Coil:  $\phi 0.35$  2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

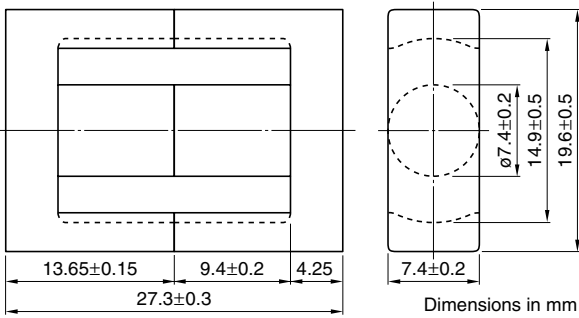
**Temperature rise vs. Total loss for EER42/42/20core (Typical)  
(Ambient temperature: 25°C)**



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# ETD Series ETD19 Cores



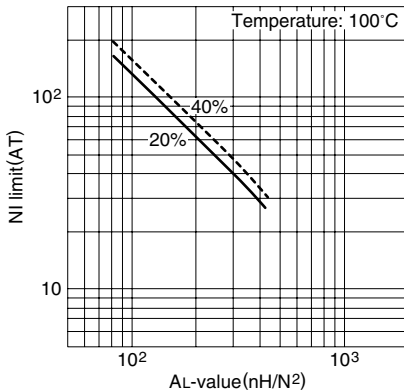
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.32
Effective magnetic path length	ℓ <sub>e</sub>	mm	54.6
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	41.3
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	2260
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	43
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	40.7
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	70.5
Weight (approx.)	g		13.3

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40ETD19-Z</b>	1720±25% (1kHz, 0.5mA)* 2380 min. (100kHz, 200mT)	1.1 max.	79W (100kHz)

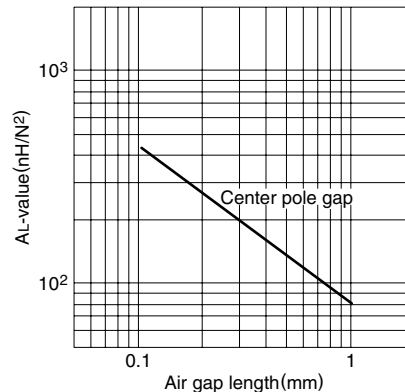
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40ETD19 gapped core (Typical)



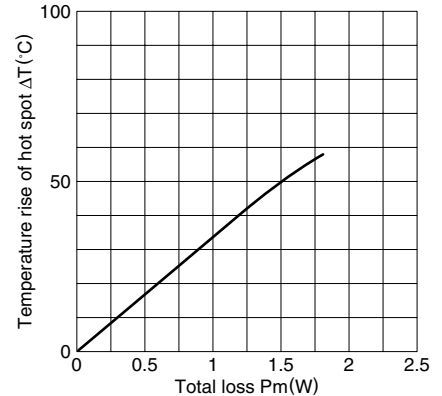
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40ETD19 core (Typical)

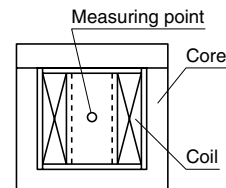


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

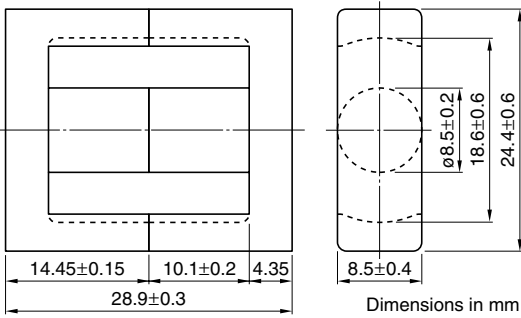
### Temperature rise vs. Total loss for ETD19 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# ETD Series ETD24 Cores



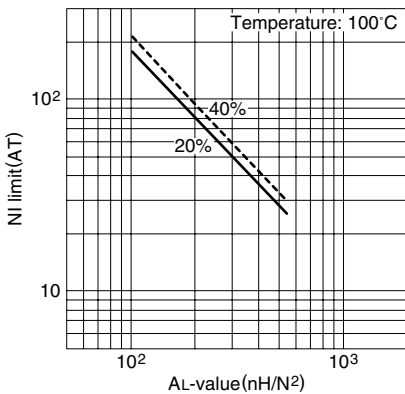
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.10
Effective magnetic path length	ℓ <sub>e</sub>	mm	61.9
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	56.3
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	3480
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	56.7
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	54.1
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	102
Weight (approx.)	g		19.5

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40ETD24-Z</b>	2125±25% (1kHz, 0.5mA)* 2860 min. (100kHz, 200mT)	1.6 max.	115W (100kHz)

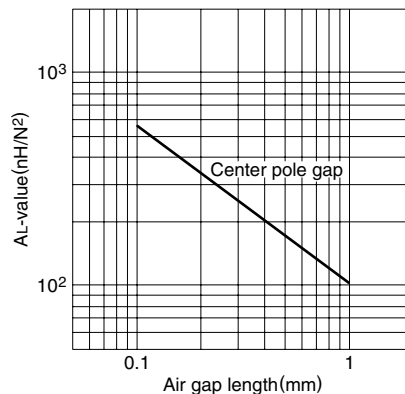
\* Coil: ø0.35 2UEW 100Ts

**NI limit vs. AL-value for PC40ETD24 gapped core (Typical)**



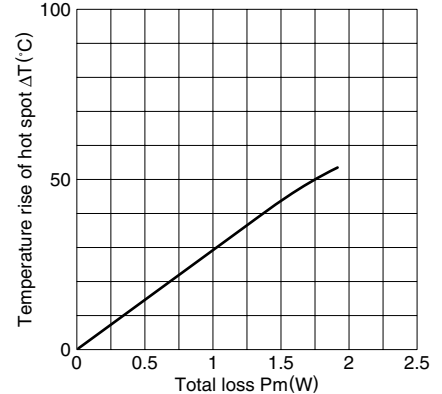
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

**AL-value vs. Air gap length for PC40ETD24 core (Typical)**

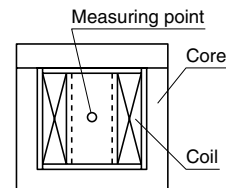


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

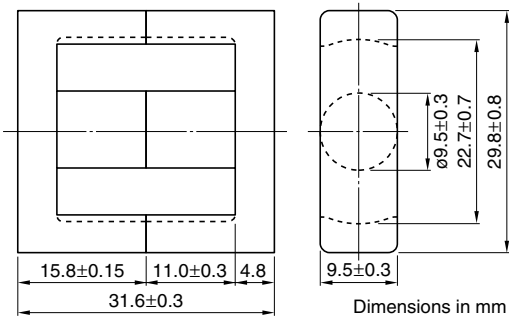
**Temperature rise vs. Total loss for ETD24 core (Typical)**  
(Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# ETD Series ETD29 Cores



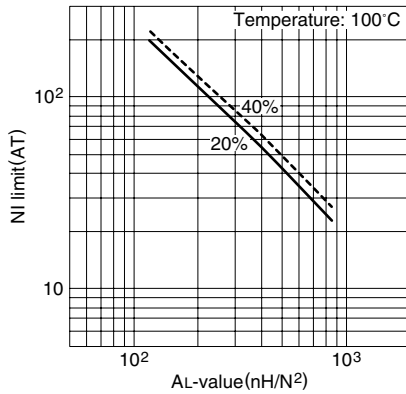
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.959
Effective magnetic path length	ℓ <sub>e</sub>	mm	70.6
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	73.6
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	5200
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	70.9
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	66.5
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	145.2
Weight (approx.)	g		28

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40ETD29-Z</b>	2500±25% (1kHz, 0.5mA)* 3540 min. (100kHz, 200mT)	2.4 max.	170W (100kHz)

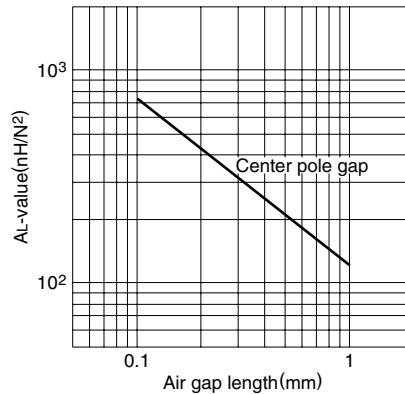
\* Coil: ø0.35 2UEW 100Ts

**NI limit vs. AL-value for PC40ETD29 gapped core (Typical)**



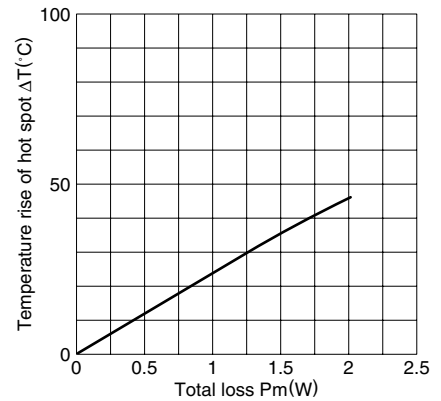
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

**AL-value vs. Air gap length for PC40ETD29 core (Typical)**

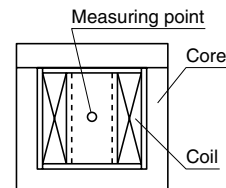


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

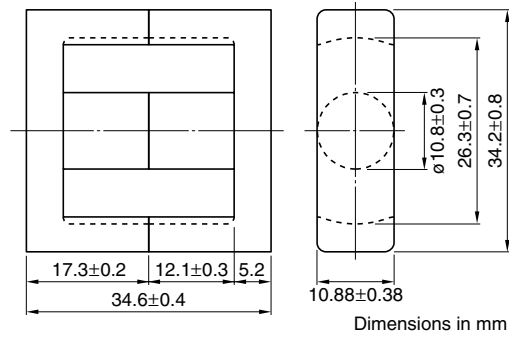
**Temperature rise vs. Total loss for ETD29 core (Typical)  
(Ambient temperature: 25°C)**



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## ETD Series ETD34 Cores



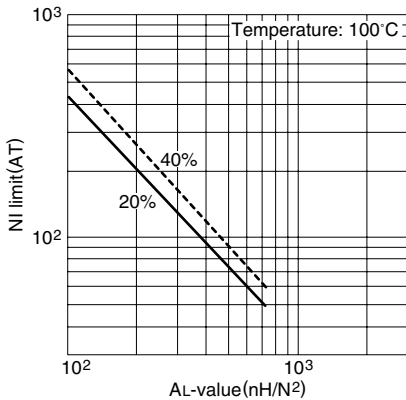
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.810
Effective magnetic path length	$\ell_e$	mm	78.6
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	97.1
Effective core volume	$V_e$	mm <sup>3</sup>	7630
Cross-sectional center pole area	$A_{cp}$	mm <sup>2</sup>	91.6
Minimum cross-sectional center pole area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	86.6
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	188
Weight (approx.)		g	40

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40ETD34-Z</b>	2780±25% (1kHz, 0.5mA)* 4190 min. (100kHz, 200mT)	3.31 max.	271W (100kHz)

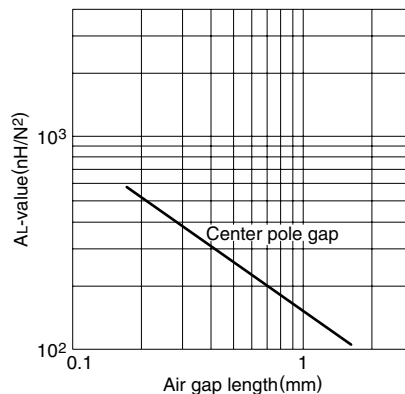
\* Coil:  $\phi 0.35$  2UEW 100Ts

### NI limit vs. AL-value for PC40ETD34 gapped core (Typical)



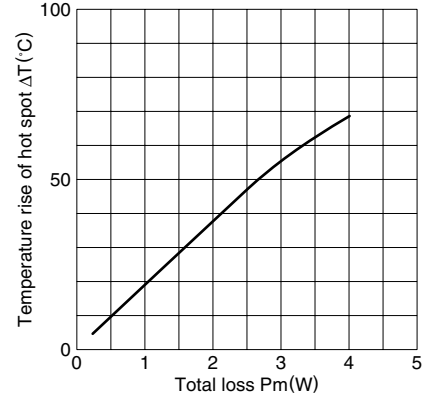
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40ETD34 core (Typical)

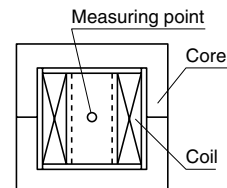


Measuring conditions • Coil:  $\phi 0.35$  2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

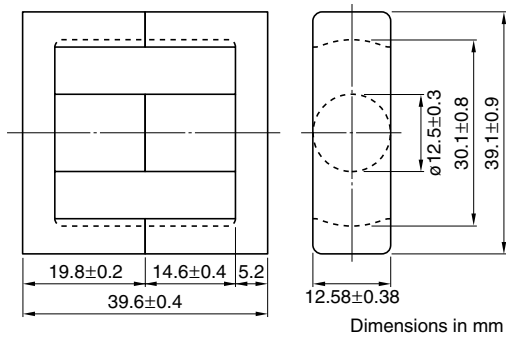
### Temperature rise vs. Total loss for ETD34 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# ETD Series ETD39 Cores



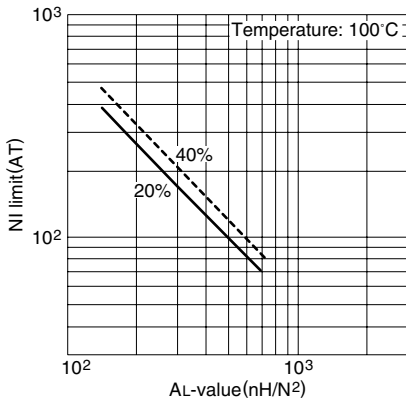
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.737
Effective magnetic path length	ℓ <sub>e</sub>	mm	92.1
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	125
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	11500
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	123
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	117
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	257
Weight (approx.)	g		60

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40ETD39-Z</b>	3150±25% (1kHz, 0.5mA)* 4600 min. (100kHz, 200mT)	5.3 max.	382W (100kHz)

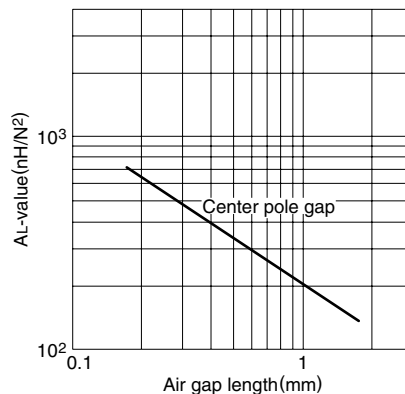
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40ETD39 gapped core (Typical)



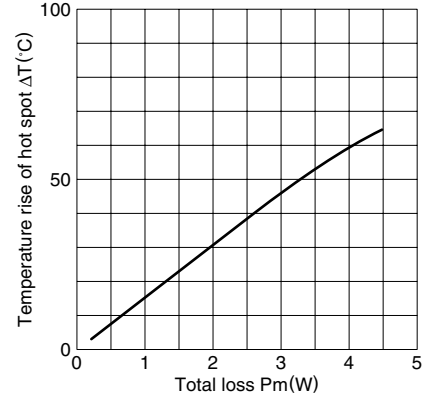
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40ETD39 core (Typical)

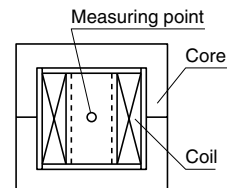


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

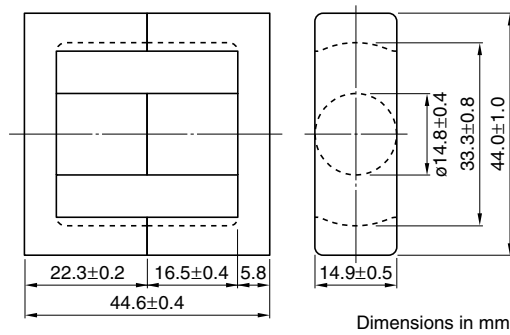
### Temperature rise vs. Total loss for ETD39 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## ETD Series ETD44 Cores



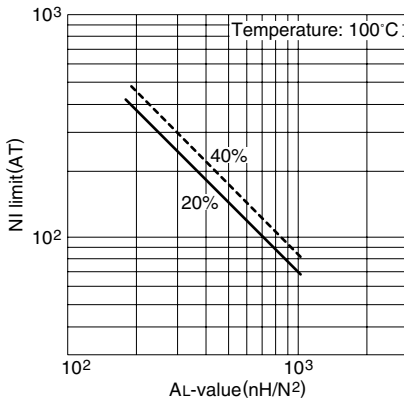
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.589
Effective magnetic path length	$\ell_e$	mm	103
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	175
Effective core volume	$V_e$	mm <sup>3</sup>	18000
Cross-sectional center pole area	$A_{cp}$	mm <sup>2</sup>	172
Minimum cross-sectional center pole area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	163
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	305
Weight (approx.)		g	94

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40ETD44-Z</b>	4000±25% (1kHz, 0.5mA)* 5760 min. (100kHz, 200mT)	8.3 max.	523W (100kHz)

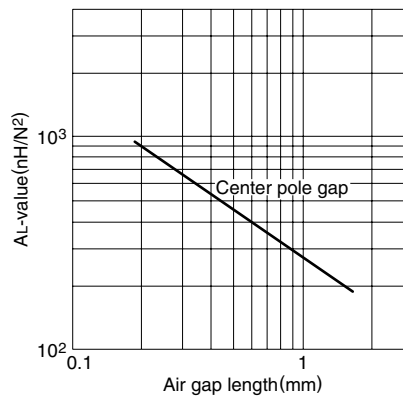
\* Coil:  $\phi 0.35$  2UEW 100Ts

### NI limit vs. AL-value for PC40ETD44 gapped core (Typical)



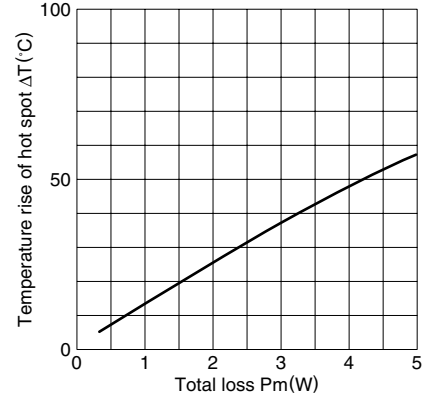
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40ETD44 core (Typical)

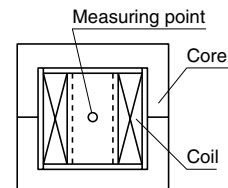


Measuring conditions • Coil:  $\phi 0.35$  2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

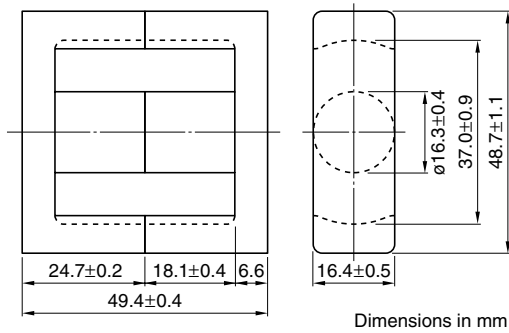
### Temperature rise vs. Total loss for ETD44 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## ETD Series ETD49 Cores



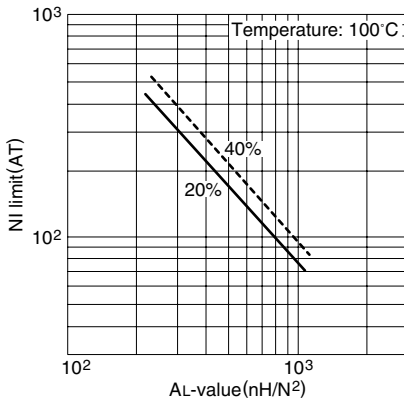
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.535
Effective magnetic path length	ℓ <sub>e</sub>	mm	114
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	213
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	24300
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	209
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	199
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	375
Weight (approx.)	g		124

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC40ETD49-Z</b>	4440±25% (1kHz, 0.5mA)* 6340 min. (100kHz, 200mT)	11.2 max.	682W (100kHz)

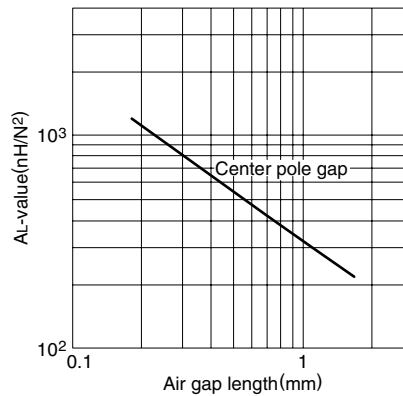
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC40ETD49 gapped core (Typical)



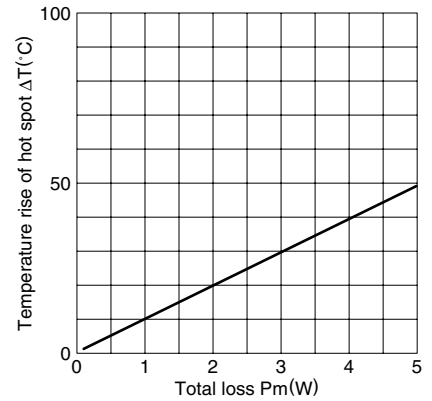
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC40ETD49 core (Typical)

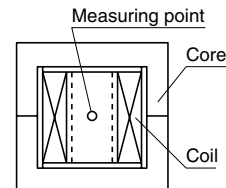


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

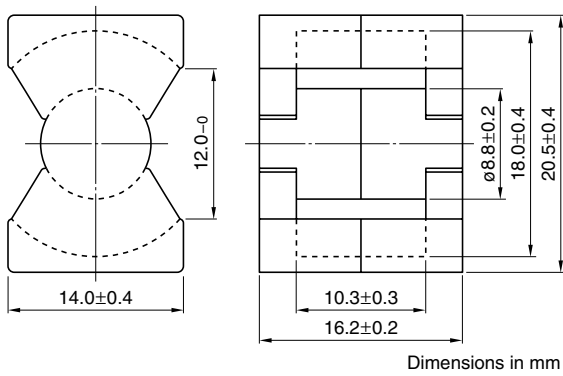
### Temperature rise vs. Total loss for ETD49 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## PQ Series PQ20/16 Cores



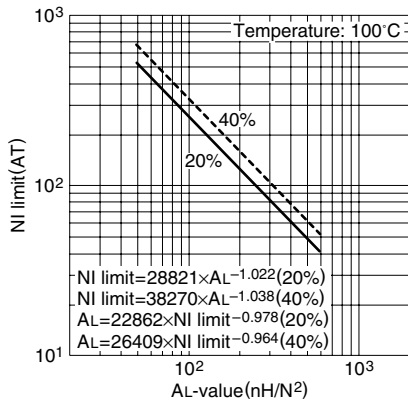
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.605
Effective magnetic path length	ℓ <sub>e</sub>	mm	37.4
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	62
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	2310
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	60.8
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	58.1
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	47.4
Weight (approx.)	g		13

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC44PQ20/16Z-12</b>	3880±25% (1kHz, 0.5mA)* 5210 min. (100kHz, 200mT)	0.84 max.	70W (100kHz)

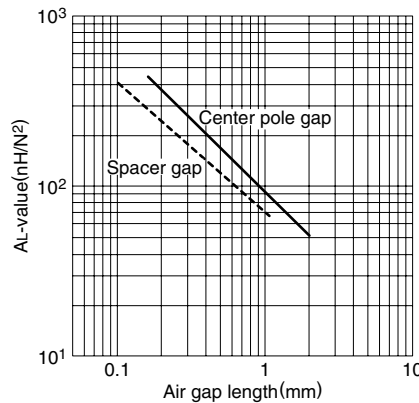
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC44PQ20/16 gapped core (Typical)



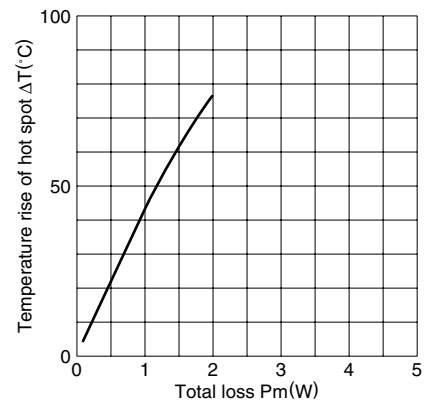
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC44PQ20/16 core (Typical)

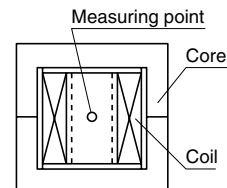


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

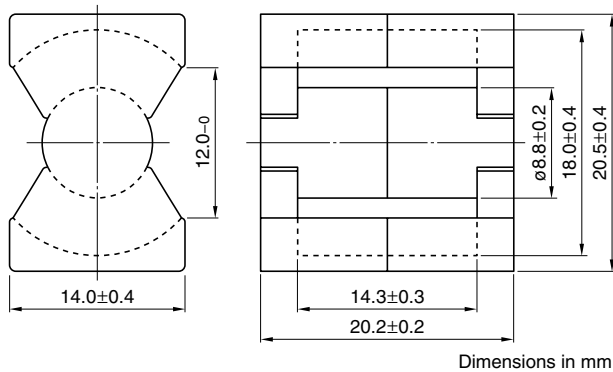
### Temperature rise vs. Total loss for PQ20/16 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## PQ Series PQ20/20 Cores



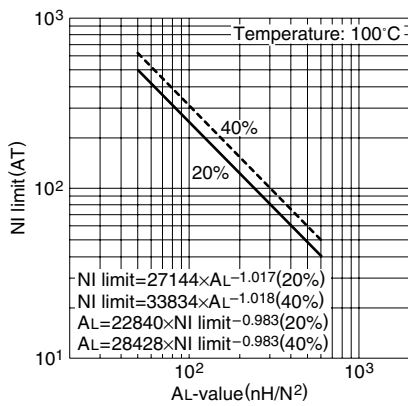
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.738
Effective magnetic path length	ℓ <sub>e</sub>	mm	45.4
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	62
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	2790
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	60.8
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	58.1
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	65.8
Weight (approx.)	g		15

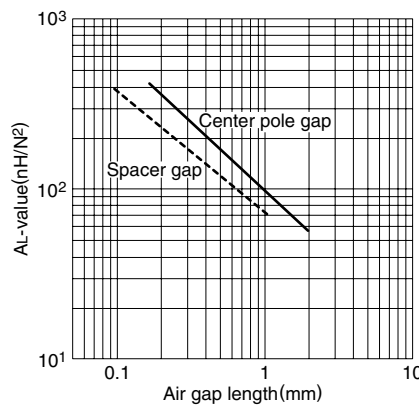
Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C		Calculated output power (forward converter mode)
		100kHz, 200mT	500kHz, 50mT	
<b>PC44PQ20/20Z-12</b>	3150±25% (1kHz, 0.5mA)* 4290 min. (100kHz, 200mT)	1.02 max.		92W (100kHz)
<b>PC50PQ20/20Z-12</b>	2000±25% (1kHz, 0.5mA)*	0.33 max.		187W (500kHz)

\* Coil: ø0.35 2UEW 100Ts

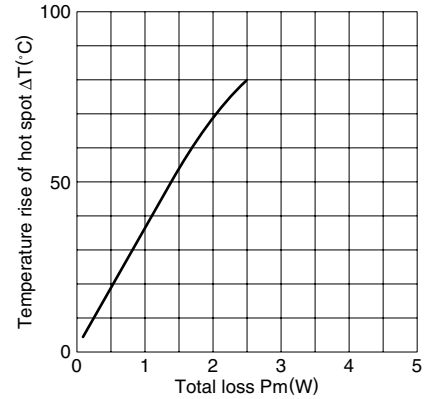
### NI limit vs. AL-value for PC44PQ20/20 gapped core (Typical)



### AL-value vs. Air gap length for PC44PQ20/20 core (Typical)

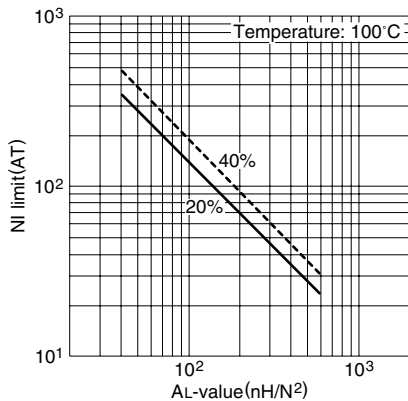


### Temperature rise vs. Total loss for PQ20/20 core (Typical) (Ambient temperature: 25°C)



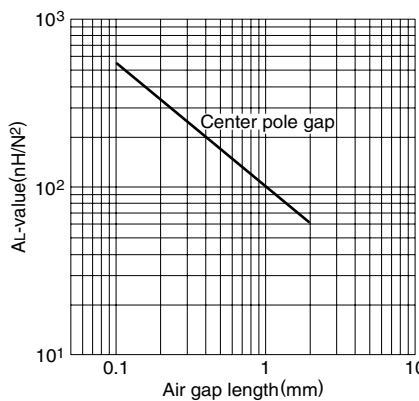
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)

### NI limit vs. AL-value for PC50PQ20/20 gapped core (Typical)

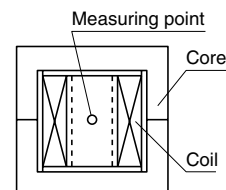


Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

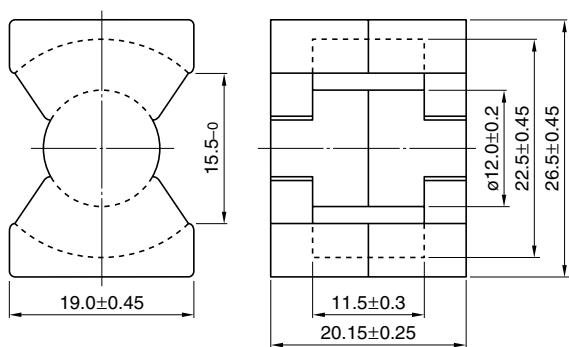
### AL-value vs. Air gap length for PC50PQ20/20 core (Typical)



Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA



### PQ Series PQ26/20 Cores



Dimensions in mm

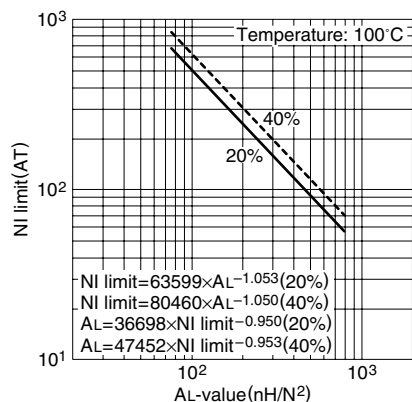
#### Parameter

Core factor	C1	mm <sup>-1</sup>	0.391
Effective magnetic path length	ℓ <sub>e</sub>	mm	46.3
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	119
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	5490
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	113
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	109
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	60.4
Weight (approx.)	g		31

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC44PQ26/20Z-12</b>	6170±25% (1kHz, 0.5mA)* 8060 min. (100kHz, 200mT)	1.94 max.	170W (100kHz)

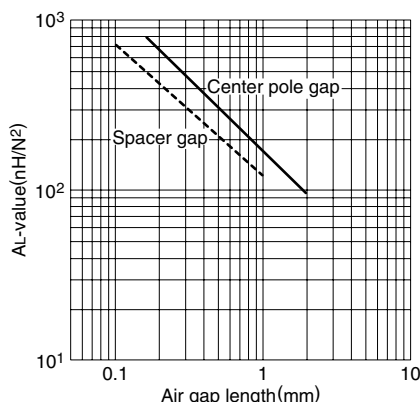
\* Coil: ø0.35 2UEW 100Ts

#### NI limit vs. AL-value for PC44PQ26/20 gapped core (Typical)



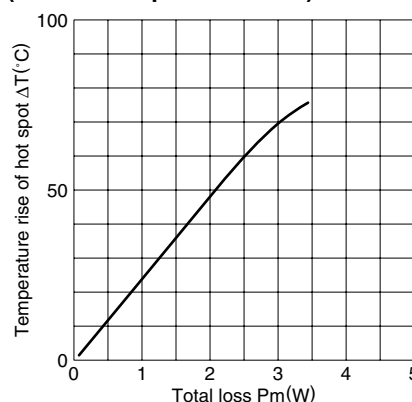
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

#### AL-value vs. Air gap length for PC44PQ26/20 core (Typical)

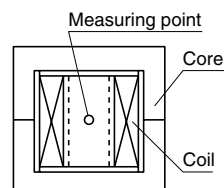


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

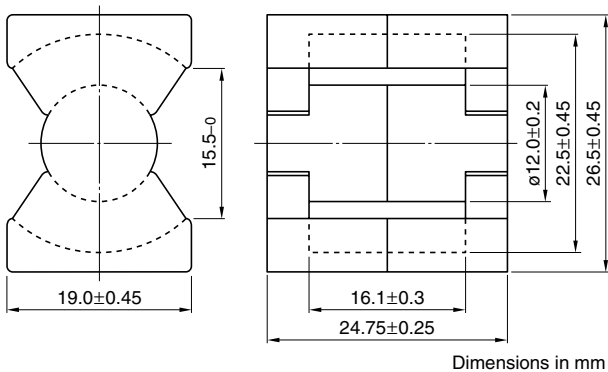
#### Temperature rise vs. Total loss for PQ26/20 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



# PQ Series PQ26/25 Cores



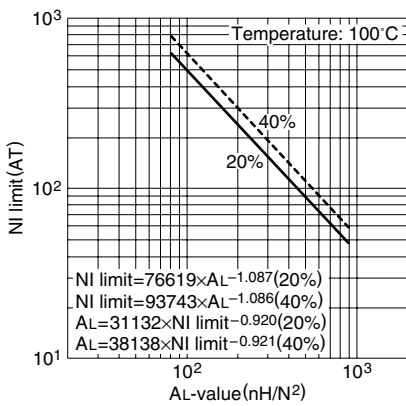
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.472
Effective magnetic path length	ℓ <sub>e</sub>	mm	55.5
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	118
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	6530
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	113
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	109
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	84.5
Weight (approx.)		g	36

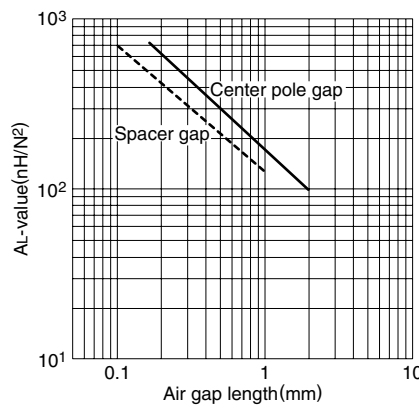
Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C		Calculated output power (forward converter mode)
		100kHz, 200mT	500kHz, 50mT	
<b>PC44PQ26/25Z-12</b>	5250±25% (1kHz, 0.5mA)* 6680 min. (100kHz, 200mT)	2.32 max.		195W (100kHz)
<b>PC50PQ26/25Z-12</b>	3200±25% (1kHz, 0.5mA)*	0.76 max.		366W (500kHz)

\* Coil: ø0.35 2UEW 100Ts

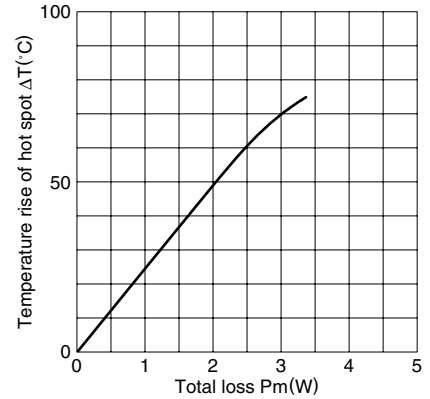
**NI limit vs. AL-value for PC44PQ26/25 gapped core (Typical)**



**AL-value vs. Air gap length for PC44PQ26/25 core (Typical)**

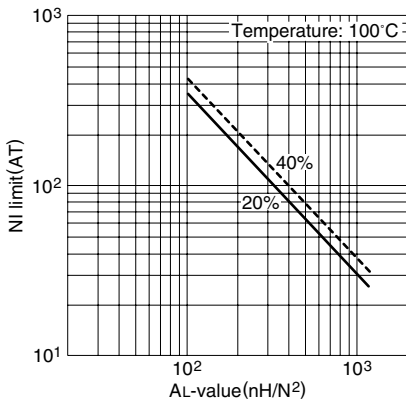


**Temperature rise vs. Total loss for PQ26/25 core (Typical) (Ambient temperature: 25°C)**



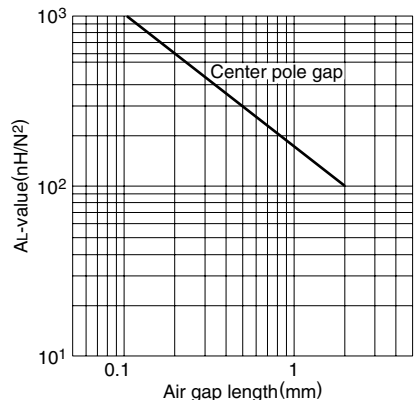
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)

**NI limit vs. AL-value for PC50PQ26/25 gapped core (Typical)**

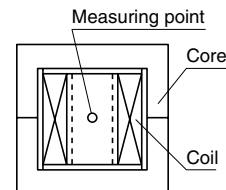


Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

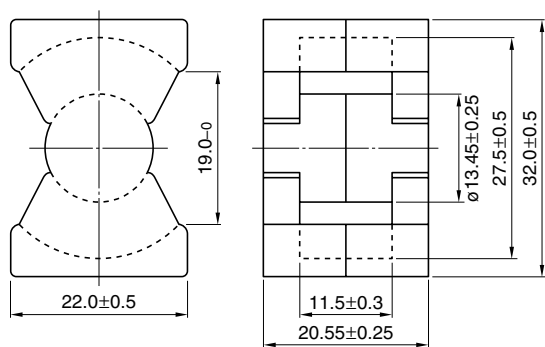
**AL-value vs. Air gap length for PC50PQ26/25 core (Typical)**



Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA



# PQ Series PQ32/20 Cores



Dimensions in mm

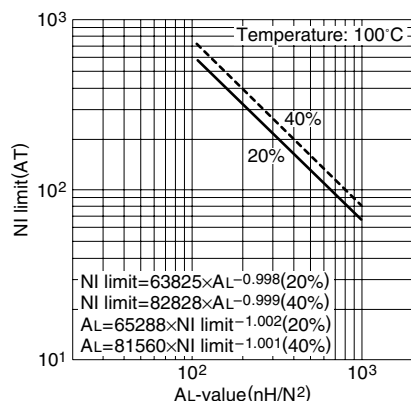
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.326
Effective magnetic path length	ℓ <sub>e</sub>	mm	55.5
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	170
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	9420
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	142
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	137
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	80.8
Weight (approx.)	g		42

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC44PQ32/20Z-12</b>	7310±25% (1kHz, 0.5mA)* 9640 min. (100kHz, 200mT)	2.92 max.	232W (100kHz)

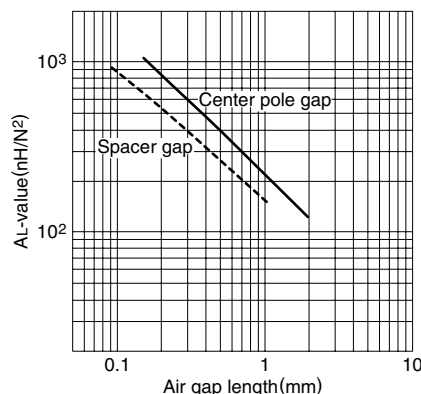
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC44PQ32/20 gapped core (Typical)



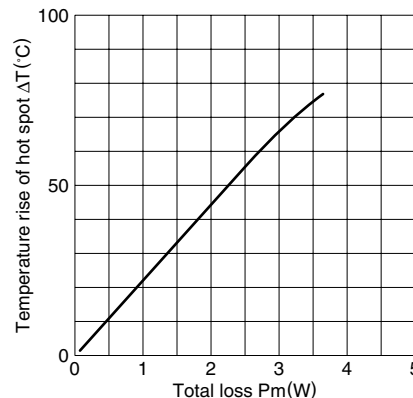
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC44PQ32/20 core (Typical)

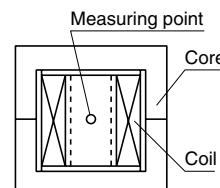


Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

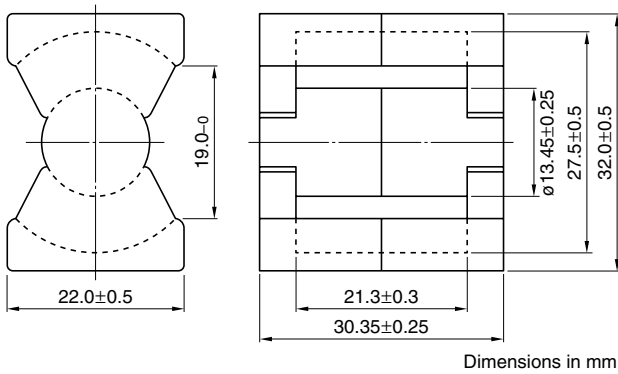
### Temperature rise vs. Total loss for PQ32/20 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## PQ Series PQ32/30 Cores



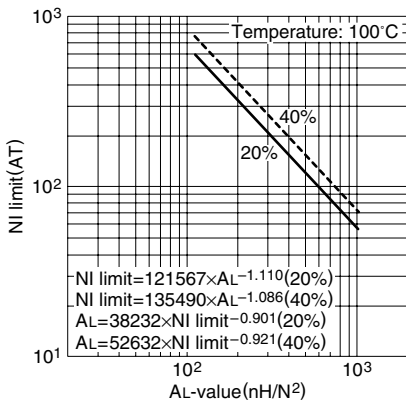
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.464
Effective magnetic path length	$\ell_e$	mm	74.6
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	161
Effective core volume	$V_e$	mm <sup>3</sup>	12000
Cross-sectional center pole area	$A_{cp}$	mm <sup>2</sup>	142
Minimum cross-sectional center pole area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	137
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	149.6
Weight (approx.)		g	55

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC44PQ32/30Z-12</b>	5140±25% (1kHz, 0.5mA)* 6790 min. (100kHz, 200mT)	3.92 max.	331W (100kHz)

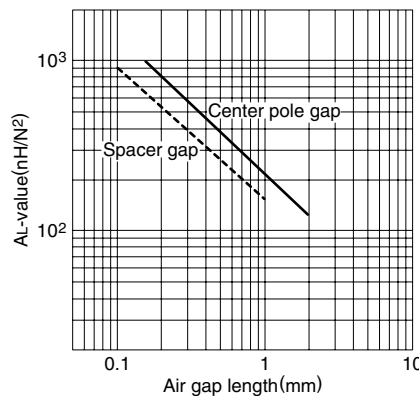
\* Coil: ø0.4 2UEW 100Ts

### NI limit vs. AL-value for PC44PQ32/30 gapped core (Typical)



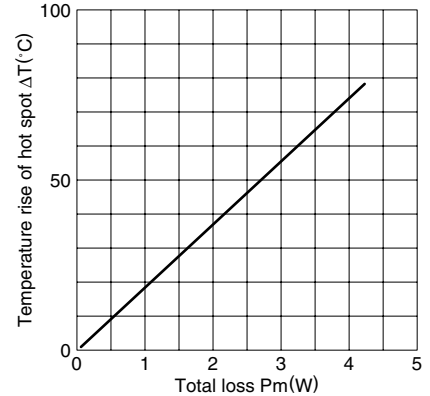
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC44PQ32/30 core (Typical)

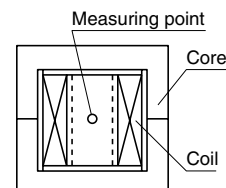


Measuring conditions • Coil: ø0.4 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

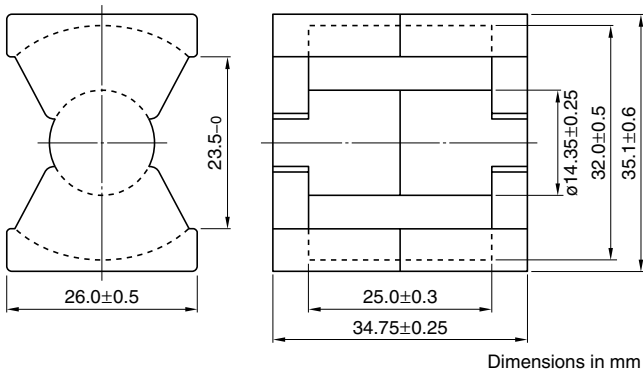
### Temperature rise vs. Total loss for PQ32/30 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%)RH, respectively. (approx. 400×300×300cm)



## PQ Series PQ35/35 Cores



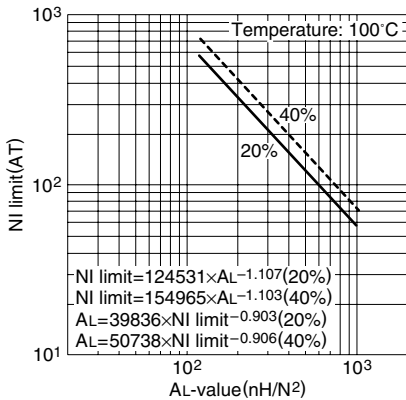
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.448
Effective magnetic path length	$\ell_e$	mm	87.9
Effective cross-sectional area	$A_e$	mm <sup>2</sup>	196
Effective core volume	$V_e$	mm <sup>3</sup>	17300
Cross-sectional center pole area	$A_{cp}$	mm <sup>2</sup>	162
Minimum cross-sectional center pole area	$A_{cp \text{ min.}}$	mm <sup>2</sup>	156
Cross-sectional winding area of core	$A_{cw}$	mm <sup>2</sup>	220.6
Weight (approx.)		g	73

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC44PQ35/35Z-12</b>	4860±25% (1kHz, 0.5mA)* 7010 min. (100kHz, 200mT)	5.27 max.	452W (100kHz)

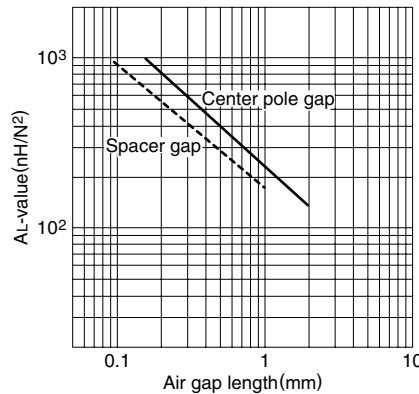
\* Coil:  $\phi 0.4$  2UEW 100Ts

### NI limit vs. AL-value for PC44PQ35/35 gapped core (Typical)



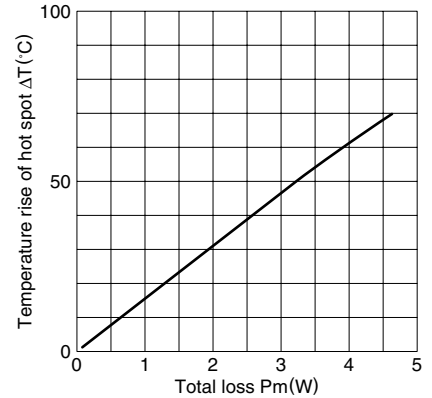
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC44PQ35/35 core (Typical)

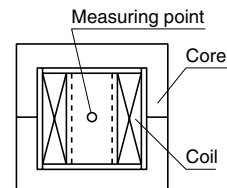


Measuring conditions • Coil:  $\phi 0.4$  2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

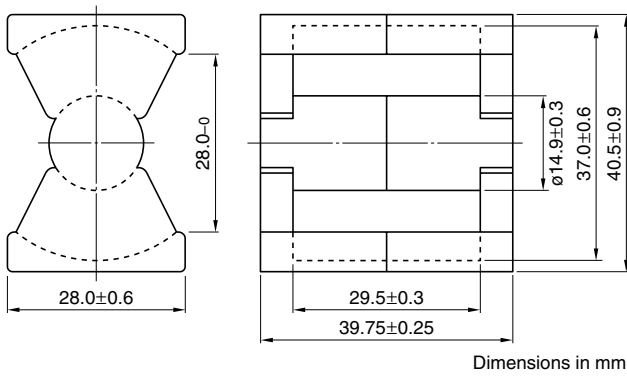
### Temperature rise vs. Total loss for PQ35/35 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



### PQ Series PQ40/40 Cores



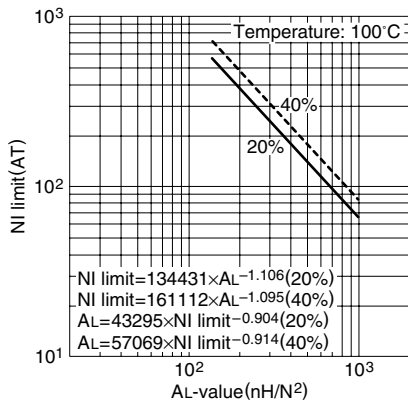
#### Parameter

Core factor	C1	mm <sup>-1</sup>	0.508
Effective magnetic path length	ℓ <sub>e</sub>	mm	102
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	201
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	20500
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	174
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	167
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	326
Weight (approx.)		g	95

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC44PQ40/40Z-12</b>	4300±25% (1kHz, 0.5mA)* 6200 min. (100kHz, 200mT)	6.56 max.	596W (100kHz)

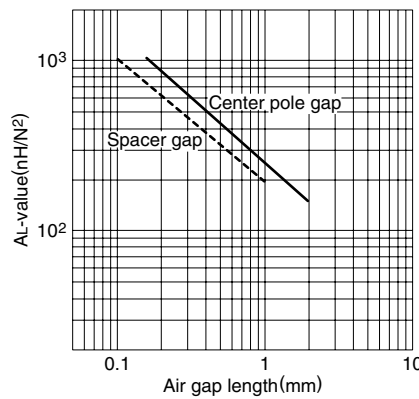
\* Coil: ø0.4 2UEW 100Ts

#### NI limit vs. AL-value for PC44PQ40/40 gapped core (Typical)



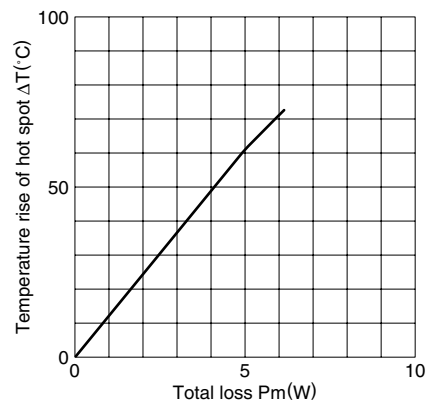
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

#### AL-value vs. Air gap length for PC44PQ40/40 core (Typical)

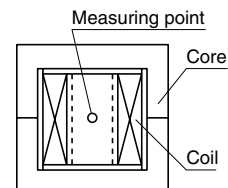


Measuring conditions • Coil: ø0.4 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

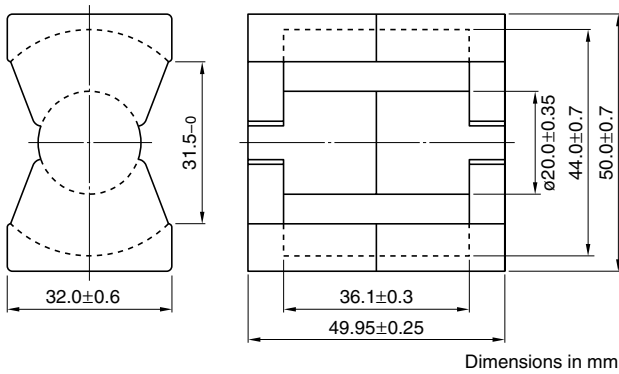
#### Temperature rise vs. Total loss for PQ40/40 core (Typical)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## PQ Series PQ50/50 Cores



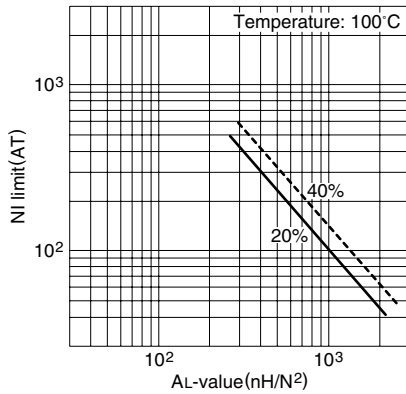
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.346
Effective magnetic path length	ℓ <sub>e</sub>	mm	113
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	328
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	37200
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	314
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	303
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	433
Weight (approx.)	g		195

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 150mT	Calculated output power (forward converter mode)
<b>PC44PQ50/50Z-12</b>	6720±25% (1kHz, 0.5mA)* 9810 min. (100kHz, 150mT)	6.1 max.	1045W (100kHz)

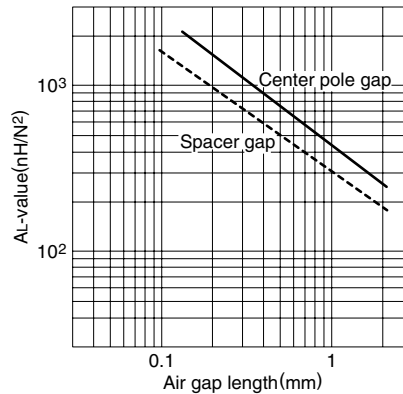
\* Coil: ø0.4 2UEW 100Ts

### NI limit vs. AL-value for PC44PQ50/50 gapped core (Typical)



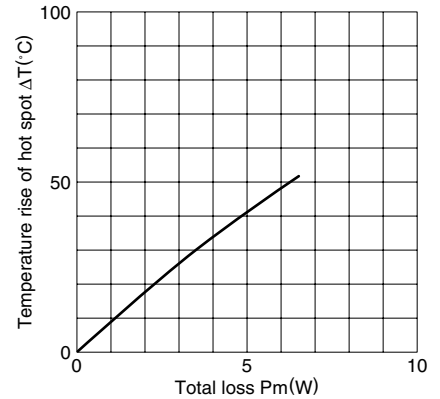
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC44PQ50/50 core (Typical)

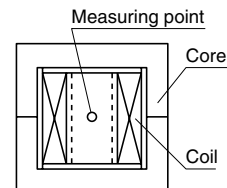


Measuring conditions • Coil: ø0.4 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

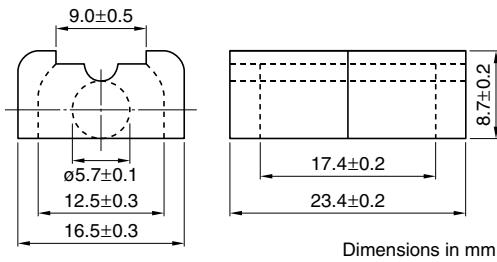
### Temperature rise vs. Total loss for PQ50/50 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)



## LP Series LP23/8 Cores



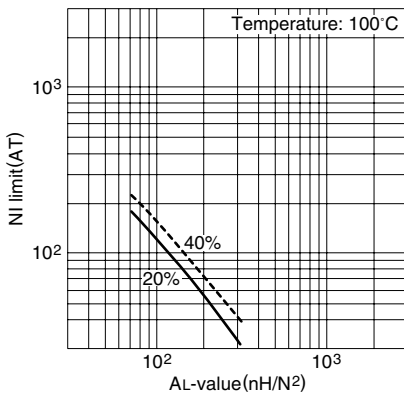
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.41
Effective magnetic path length	ℓ <sub>e</sub>	mm	44.1
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	31.3
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	1380
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	25.5
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	24.6
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	59.2
Weight (approx.)	g		9.6

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC44LP23/8Z-12</b>	1600±25% (1kHz, 0.5mA)* 2230 min. (100kHz, 200mT)	0.42 max.	50W (100kHz)

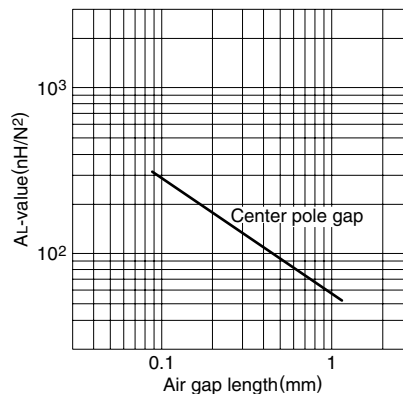
\* Coil: ø0.3 2UEW 100Ts

### NI limit vs. AL-value for PC44LP23/8 gapped core (Typical)



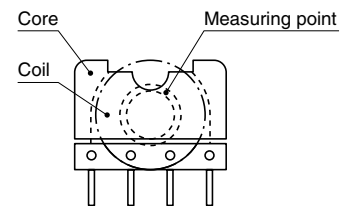
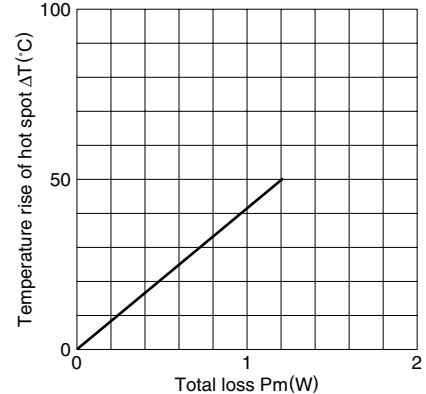
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC44LP23/8 core (Typical)



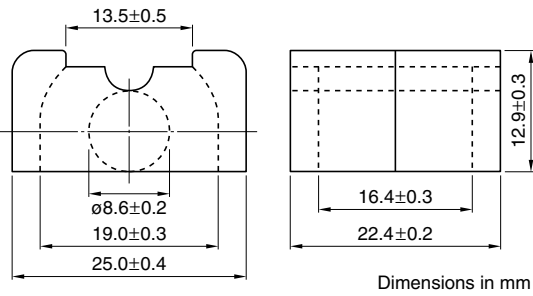
Measuring conditions • Coil: ø0.3 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

### Temperature rise vs. Total loss for LP23/8 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)

## LP Series LP22/13 Cores



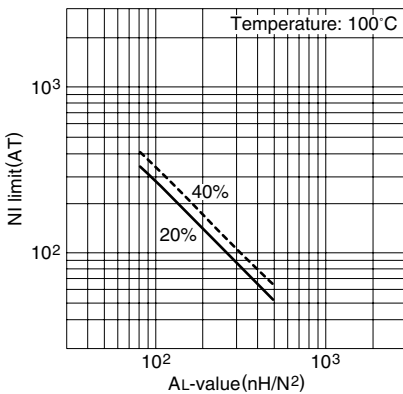
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.721
Effective magnetic path length	ℓ <sub>e</sub>	mm	49.0
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	67.9
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	3330
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	58.1
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	55.4
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	84.2
Weight (approx.)	g		21

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC44LP22/13Z-12</b>	3310±25% (1kHz, 0.5mA)* 4700 min. (100kHz, 200mT)	1.05 max.	121W (100kHz)

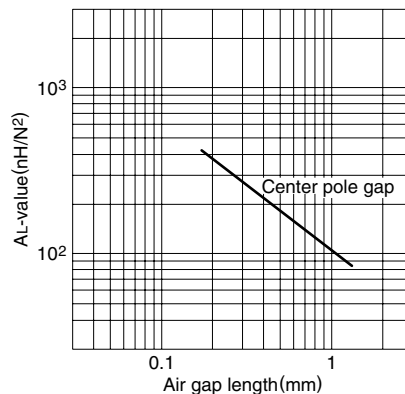
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC44LP22/13 gapped core (Typical)



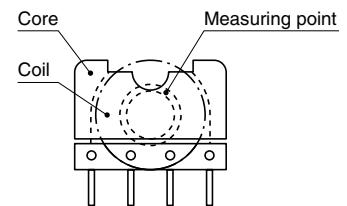
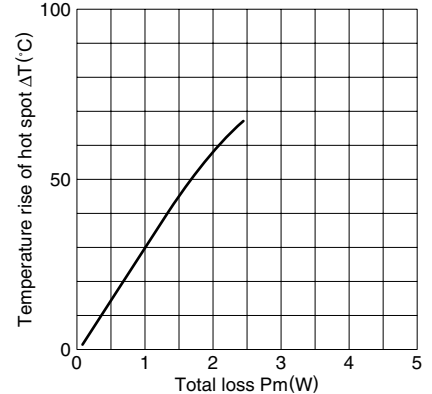
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC44LP22/13 core (Typical)



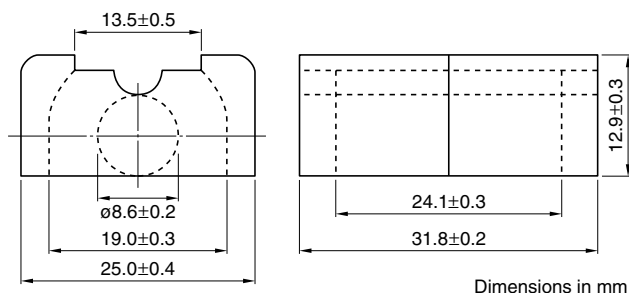
Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

### Temperature rise vs. Total loss for LP22/13 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)

# LP Series LP32/13 Cores



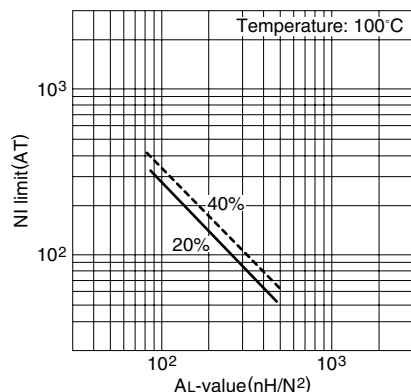
## Parameter

Core factor	C1	mm <sup>-1</sup>	0.909
Effective magnetic path length	ℓ <sub>e</sub>	mm	64.0
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	70.3
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	4500
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	58.1
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	55.4
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	125.3
Weight (approx.)		g	30

Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
<b>PC44LP32/13Z-12</b>	2630±25% (1kHz, 0.5mA)* 3730 min. (100kHz, 200mT)	1.38 max.	164W (100kHz)

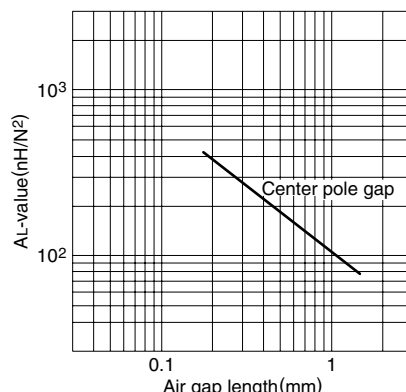
\* Coil: ø0.35 2UEW 100Ts

### NI limit vs. AL-value for PC44LP32/13 gapped core (Typical)



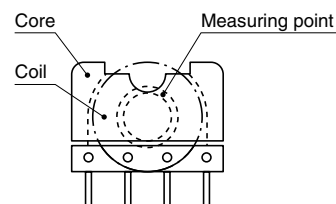
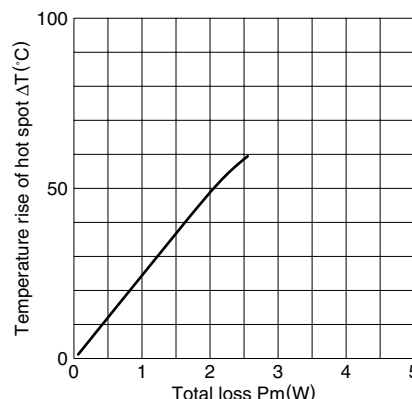
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

### AL-value vs. Air gap length for PC44LP32/13core (Typical)



Measuring conditions • Coil: ø0.35 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

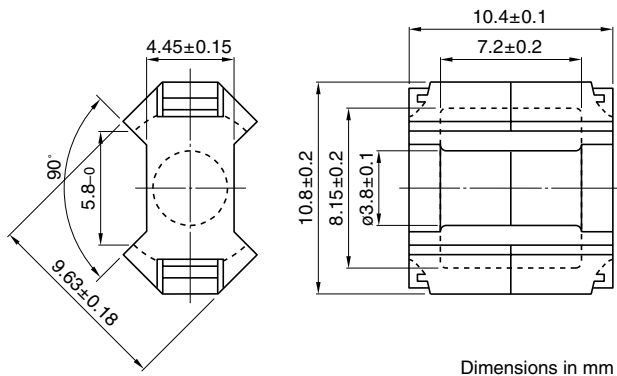
### Temperature rise vs. Total loss for LP32/13 core (Typical) (Ambient temperature: 25°C)



Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%RH), respectively. (approx. 400×300×300cm)

# RM Series RM4 Cores

Based on JIS C 2516, IEC Publication 60431 and DIN 41980.



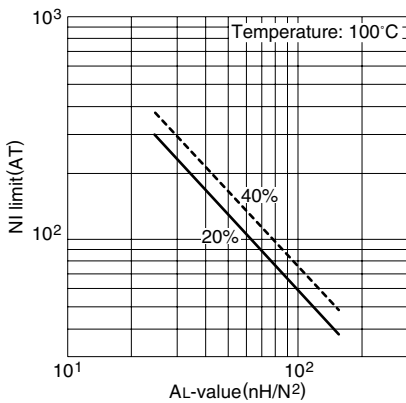
### Parameter

Core factor	C1	mm <sup>-1</sup>	1.62
Effective magnetic path length	ℓ <sub>e</sub>	mm	22.7
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	14.0
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	318
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	11.3
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	10.7
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	15.6
Weight (approx.)		g	1.7

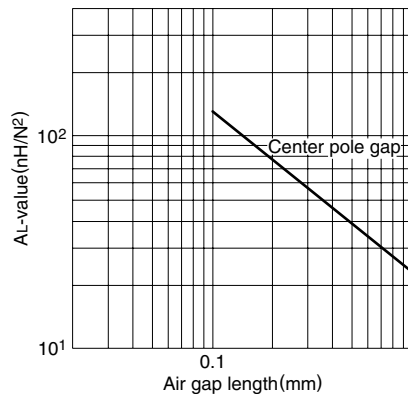
Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C		Calculated output power (forward converter mode)
		100kHz, 200mT	500kHz, 50mT	
<b>PC40RM4Z-12</b>	680 min. (1kHz, 0.5mA)* 1650 min. (100kHz, 200mT)	0.12 max.		6.9W (100kHz)
<b>PC50RM4Z-12</b>	960±25% (1kHz, 0.5mA)*	0.036 max.		21W (500kHz)

\* Coil: ø0.18 2UEW 100Ts

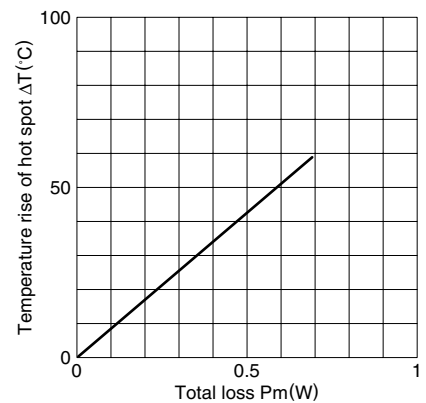
**NI limit vs. AL-value for PC40RM4 gapped core (Typical)**



**AL-value vs. Air gap length for PC40RM4 core (Typical)**

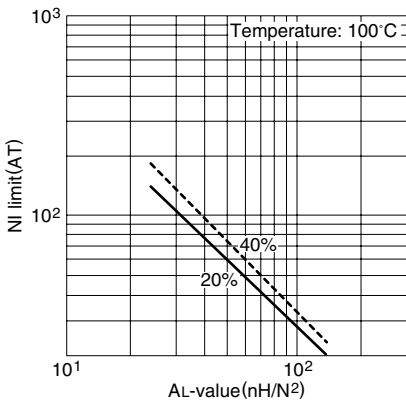


**Temperature rise vs. Total loss for RM4 core (Typical)**  
(Ambient temperature: 25°C)



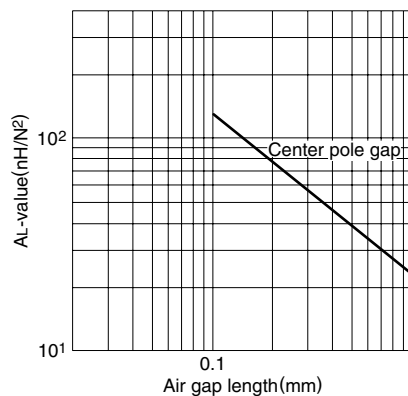
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45%RH, respectively. (approx. 400×300×300cm)

**NI limit vs. AL-value for PC50RM4 gapped core (Typical)**

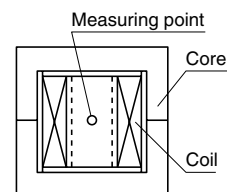


Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

**AL-value vs. Air gap length for PC50RM4 core (Typical)**

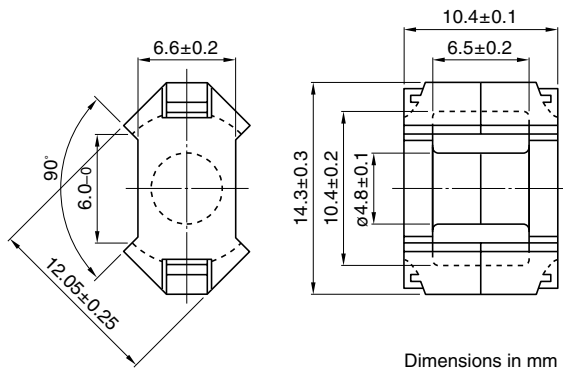


Measuring conditions • Coil: ø0.18 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA



# RM Series RM5 Cores

Based on JIS C 2516, IEC Publication 60431 and DIN 41980.



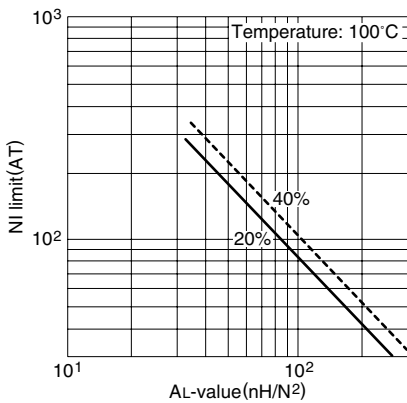
### Parameter

Core factor	C1	mm <sup>-1</sup>	0.940
Effective magnetic path length	ℓ <sub>e</sub>	mm	22.4
Effective cross-sectional area	A <sub>e</sub>	mm <sup>2</sup>	23.7
Effective core volume	V <sub>e</sub>	mm <sup>3</sup>	530
Cross-sectional center pole area	A <sub>cp</sub>	mm <sup>2</sup>	18.1
Minimum cross-sectional center pole area	A <sub>cp min.</sub>	mm <sup>2</sup>	17.3
Cross-sectional winding area of core	A <sub>cw</sub>	mm <sup>2</sup>	18.2
Weight (approx.)		g	3.0

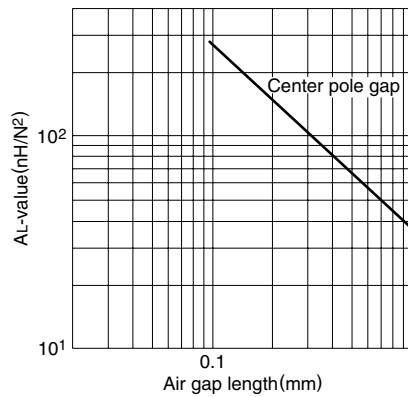
Part No.	AL-value (nH/N <sup>2</sup> )	Core loss (W) at 100°C		Calculated output power (forward converter mode)
		100kHz, 200mT	500kHz, 50mT	
<b>PC40RM5Z-12</b>	1250 min. (1kHz, 0.5mA)* 3340 min. (100kHz, 200mT)	0.18 max.		16W (100kHz)
<b>PC50RM5Z-12</b>	1340±25% (1kHz, 0.5mA)*	0.053 max.		34W (500kHz)

\* Coil: ø0.2 2UEW 100Ts

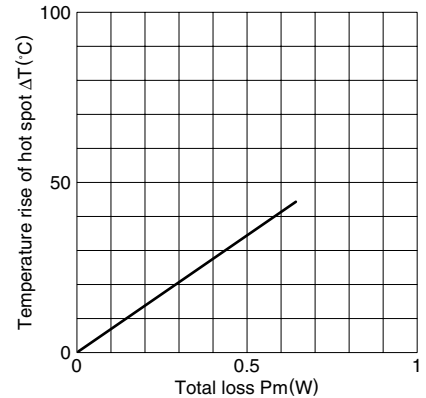
**NI limit vs. AL-value for PC40RM5 gapped core (Typical)**



**AL-value vs. Air gap length for PC40RM5 core (Typical)**

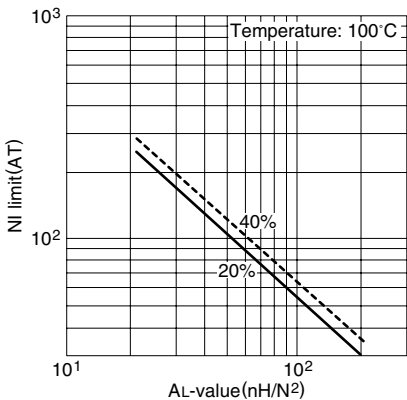


**Temperature rise vs. Total loss for RM5 core (Typical)**  
(Ambient temperature: 25°C)



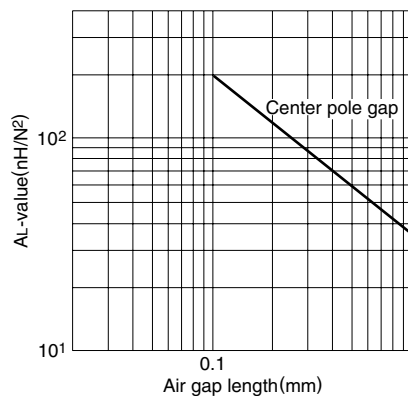
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%RH), respectively. (approx. 400×300×300cm)

**NI limit vs. AL-value for PC50RM5 gapped core (Typical)**



Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

**AL-value vs. Air gap length for PC50RM5 core (Typical)**



Measuring conditions • Coil: ø0.2 2UEW 100Ts  
• Frequency: 1kHz  
• Level: 0.5mA

