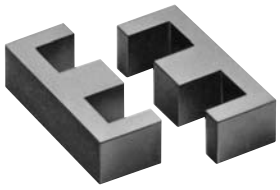
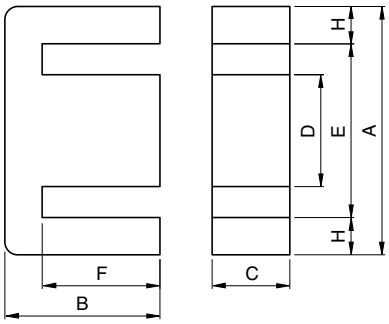
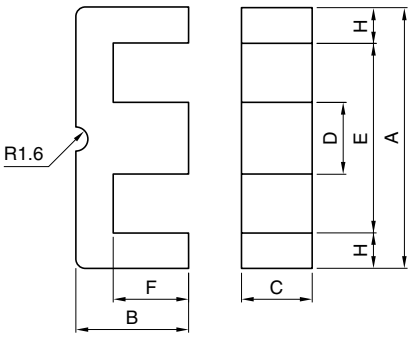
EE AND EF CORES





Type 1



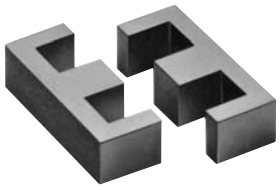
Type 2

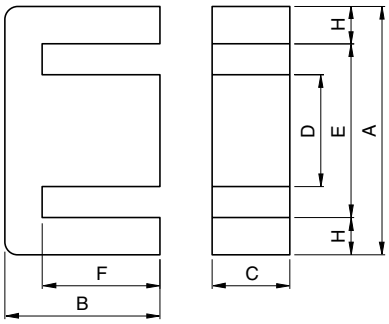
Part No.	U.S. lam. cores, DIN standard JIS	Type	Dimensions in mm						
			A	B	C	D	E min.	F	H
PC47EE8-Z	JIS FEE 8.3	1	8.3±0.2	4.0±0.1	3.6±0.2	1.85±0.15	6.0	3.0±0.1	1.0
PC47EE10/11-Z	JIS FEE 10.2	1	10.2±0.2	5.5±0.1	4.75±0.15	2.45±0.15	7.7	4.20±0.15	1.1
PC47EF12.6-Z	DIN 41985	1	12.7±0.4	6.4±0.1	3.6±0.2	3.65±0.15	8.8	4.65±0.15	1.83
PC47EE13-Z		1	13.0±0.2	6.00±0.15	6.15±0.15	2.75±0.15	10.0	4.6±0.1	1.4
PC47EE16-Z	JIS FEE 16A	1	16.0±0.3	7.15±0.15	4.8±0.2	4.0±0.2	11.7	5.1±0.2	2.0
PC47SEE16-Z		1	16.0±0.3	7.15±0.15	6.8±0.2	3.18±0.18	12.5	5.5±0.1	1.6
PC47EF16-Z	DIN 41985	1	16.1±0.6	8.05±0.15	4.5±0.2	4.55±0.15	11.3	5.9±0.2	2.2
PC47EE19-Z	JIS FEE 19A	1	19.1±0.3	7.95±0.15	5.0±0.2	4.55±0.15	14.2	5.6±0.1	2.3
PC47EE19/16-Z	U.S. EE-187	1	19.29±0.32	8.1±0.18	4.75±0.13	4.75±0.08	14.05	5.715±0.125	2.46
PC47EE20/20/5-Z	DIN 41295	2	20.15±0.55	10.0±0.2	5.1±0.2	5.0±0.2	12.8	6.5±0.2	3.53

Part No.	Effective parameter				Electrical characteristics			Weight (g)
					A_L-value (nH/N²)*		Core loss (W) max.	
	C_1 (mm⁻¹)	Ae (mm²)	ℓe (mm)	Ve (mm³)	Without air gap	With air gap	100kHz, 200mT, 100°C	
PC47EE8-Z	2.75	7.0	19.2	134	610±25%	40±7% 63±10%	0.05	0.7
PC47EE10/11-Z	2.16	12.1	26.1	315	850±25%	40±7% 63±10%	0.12	1.5
PC47EF12.6-Z	2.28	13.0	29.6	385	810±25%	63±7% 100±10%	0.16	2.0
PC47EE13-Z	1.77	17.1	30.2	517	1130±25%	63±7% 100±10%	0.22	2.7
PC47EE16-Z	1.82	19.0	34.5	656	1140±25%	80±7% 160±10%	0.28	3.3
PC47SEE16-Z	1.69	21.7	36.6	795	1240±25%	80±7% 160±10%	0.34	4.1
PC47EF16-Z	1.87	20.1	37.6	754	1100±25%	63±7% 100±10%	0.31	3.9
PC47EE19-Z	1.71	23.0	39.4	906	1250±25%	80±7% 160±10%	0.39	4.8
PC47EE19/16-Z	1.75	22.4	39.1	876	1350±25%	80±7% 160±10%	0.38	4.8
PC47EE20/20/5-Z	1.38	31.0	43.0	1340	1400±25%	100±7% 160±10%	0.47	7.5

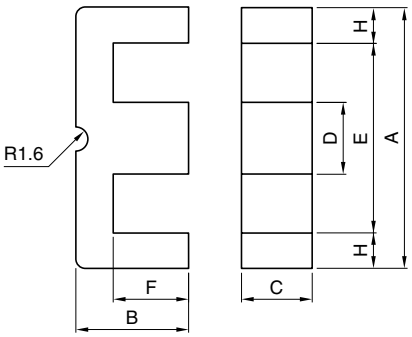
* A_L-value: 1kHz, 0.5mA, 100Ts

EE AND EF CORES





Type 1



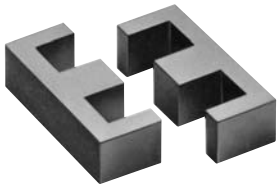
Type 2

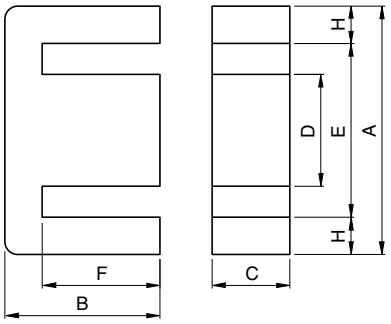
Part No.	U.S. lam. cores, DIN standard JIS	Type	Dimensions in mm						
			A	B	C	D	E min.	F	H
PC47EF20-Z	DIN 41985	1	20.0±0.4	9.9±0.2	5.65±0.25	5.7±0.2	14.1	7.2±0.2	2.8
PC47EE22-Z		1	22.0±0.3	9.35±0.15	5.75±0.25	5.75±0.25	13.0	5.35±0.15	4.3
PC47EE25/19-Z	U.S. EE-24/25	1	25.4±0.5	9.46±0.19	6.29±0.19	6.35±0.25	18.55	6.41±0.19	3.11
PC47EF25-Z	DIN 41985	1	25.05±0.75	12.55±0.25	7.2±0.3	7.25±0.25	17.5	8.95±0.25	3.55
PC47EE25.4-Z	JIS FEE 25.4A	1	25.4±0.76	9.66±0.15	6.35±0.25	6.35±0.25	18.5	6.48±0.15	3.18
PC47EE30-Z	JIS FEE 30A	1	30.0±0.5	13.15±0.15	10.7±0.3	10.7±0.3	19.7	8.15±0.15	5.0
PC47EE30/30/7-Z	DIN 41295	2	30.1±0.7	15.0±0.2	7.05±0.25	6.95±0.25	19.5	9.95±0.25	5.1
PC47EF32-Z	DIN 41985	1	32.1±0.8	16.1±0.3	9.15±0.35	9.2±0.3	22.7	11.6±0.3	4.4
PC47EE35/28B-Z	U.S. EE-375	1	34.6±0.5	14.27±0.37	9.31±0.30	9.4±0.3	25.0	9.78±0.25	4.5
PC47EE35-Z	JIS FEE35B	1	34.54±1.0	14.35±0.35	9.53±0.38	9.39±0.27	24.89	9.71±0.28	4.75

Part No.	Effective parameter				Electrical characteristics			
	C_1 (mm^{-1})	Ae (mm^2)	ℓe (mm)	Ve (mm^3)	A_L-value (nH/N^2)*		Core loss (W) max.	Weight (g)
					Without air gap	With air gap	100kHz, 200mT, 100°C	
PC47EF20-Z	1.34	33.5	44.9	1500	1570±25%	100±7% 160±10%	0.59	7.4
PC47EE22-Z	0.970	41.0	39.6	1620	2180±25%	125±7% 250±10%	0.56	8.8
PC47EE25/19-Z	1.22	40.0	48.7	1950	2000±25%	100±7% 200±10%	0.80	9.1
PC47EF25-Z	1.11	51.8	57.8	2990	2000±25%	100±7% 160±10%	1.27	15
PC47EE25.4-Z	1.21	40.3	48.7	1963	2000±25%	125±7% 250±10%	0.84	10
PC47EE30-Z	0.529	109.0	57.7	6290	4690±25%	200±5% 400±7%	2.03	32
PC47EE30/30/7-Z	1.12	59.7	66.9	4000	2100±25%	160±5% 250±7%	1.41	22
PC47EF32-Z	0.893	83.2	74.3	6180	2590±25%	160±5% 250±7%	2.09	32
PC47EE35/28B-Z	0.819	84.9	69.6	5907	2950±25%	200±5% 400±7%	2.02	28
PC47EE35-Z	0.774	89.3	69.2	6179	3170±25%	200±5% 400±7%	2.14	57

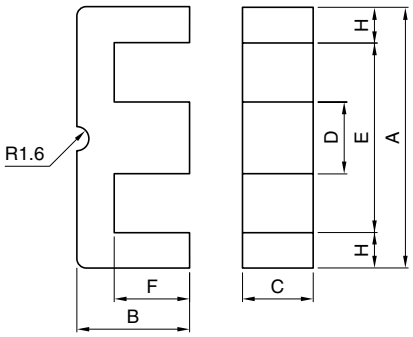
* A_L-value: 1kHz, 0.5mA, 100Ts

EE AND EF CORES





Type 1



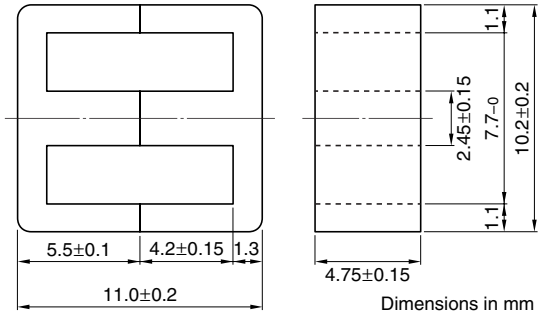
Type 2

Part No.	U.S. lam. cores, DIN standard JIS		Type	Dimensions in mm						
				A	B	C	D	E min.	F	H
PC47EE40-Z	JIS FEE40A		1	40.0±0.5	17.0±0.3	10.7±0.3	10.7±0.3	27.4	10.25±0.25	6.0
PC47EE41/33C-Z	U.S. EE-21		1	41.07±0.8	16.78±0.4	12.57±0.38	12.64±0.45	28.55	10.38±0.3	6.0
PC47EE42/42/15-Z	DIN 41295	JIS FEE42A	1	42.15±0.85	21.0±0.2	14.95±0.25	11.95±0.25	29.5	15.15±0.35	6.025
PC47EE42/42/20-Z	DIN 41295	JIS FEE42B	1	42.15±0.85	21.0±0.2	19.7±0.3	11.95±0.25	29.5	15.15±0.35	6.025
PC47EE47/39-Z	U.S. EE-625		1	47.12±0.48	19.63±0.2	15.62±0.25	15.62±0.25	31.72	12.2±0.13	7.49
PC47EE50-Z	JIS FEE50A		1	$50.0^{+1.0}_{-0.7}$	21.3±0.3	14.6±0.4	14.6±0.4	34.2	12.75±0.25	7.5
PC47EE55/55/21-Z	DIN 41295	JIS FEE55	1	55.15±1.05	27.5±0.3	20.7±0.3	16.95±0.25	37.5	18.8±0.3	8.53
PC47EE57/47-Z	U.S. EE-75		1	56.57±1.0	23.60±0.23	18.8±0.25	18.80±0.25	38.1	14.63±0.15	9.02
PC47EE60-Z	JIS FEE60A		1	$60.0^{+1.1}_{-0.8}$	22.3±0.3	15.6±0.4	15.6±0.4	43.8	14.05±0.25	7.7

Part No.	Effective parameter				Electrical characteristics			Weight (g)
	C_1 (mm^{-1})	Ae (mm^2)	ℓe (mm)	Ve (mm^3)	A_L-value (nH/N^2)*		Core loss (W) max.	
					Without air gap	With air gap	100kHz, 200mT, 100°C	
PC47EE40-Z	0.606	128	77.3	9890	4150±25%	200±5% 400±7%	3.10	50
PC47EE41/33C-Z	0.495	157	77.6	12200	5060±25%	200±5% 400±7%	4.10	64
PC47EE42/42/15-Z	0.534	182	97.0	17600	4700±25%	250±5% 400±7%	5.94	80
PC47EE42/42/20-Z	0.415	235	97.4	22900	6100±25%	250±5% 400±7%	9.65	116
PC47EE47/39-Z	0.374	242	90.6	21930	6660±25%	250±5% 400±7%	9.04	108
PC47EE50-Z	0.425	226	95.8	21600	6110±25%	250±5% 500±7%	8.78	116
PC47EE55/55/21-Z	0.348	354	123	43700	7100±25%	250±5% 400±7%	18.51	234
PC47EE57/47-Z	0.297	344	102	35100	8530±25%	250±5% 400±7%	14.79	190
PC47EE60-Z	0.446	247	110	27100	5670±25%	250±5% 500±7%	11.35	135

* A_L-value: 1kHz, 0.5mA, 100Ts

EE Series EE10/11 Cores(JIS FEE 10.2)



Dimensions in mm

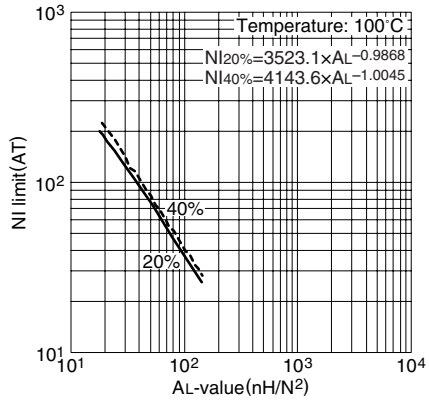
PARAMETER

Core factor	C1	mm^{-1}	2.16
Effective magnetic path length	ℓe	mm	26.1
Effective cross-sectional area	Ae	mm^2	12.1
Effective core volume	Ve	mm^3	315
Cross-sectional center pole area	Acp	mm^2	11.6
Minimum cross-sectional area	Acp min.	mm^2	10.6
Cross-sectional winding area of core	Acw	mm^2	23.3
Weight (approx.)		g	1.5

Part No.	AL-value (nH/N2)	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EE10/11-Z	850±25% (1kHz, 0.5mA)* 1450 min. (100kHz, 200mT)	0.12 max.	12.1W (100kHz)

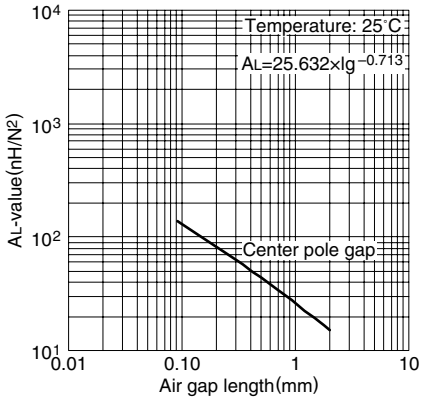
* Coil: ø0.18 2UEW 100Ts

NI limit vs. AL-value for PC47EE10/11 gapped core (Typical)



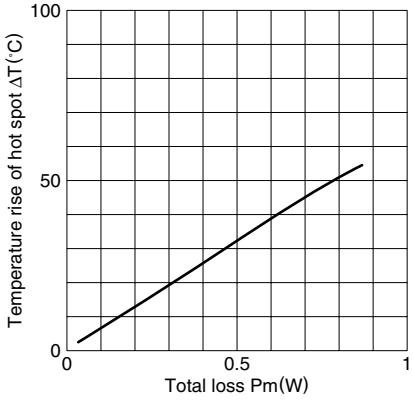
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EE10/11 core (Typical)

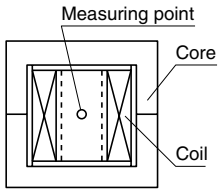


Measuring conditions
- Coil: ø0.18 2UEW 100Ts
- Frequency: 1kHz
- Level: 0.5mA

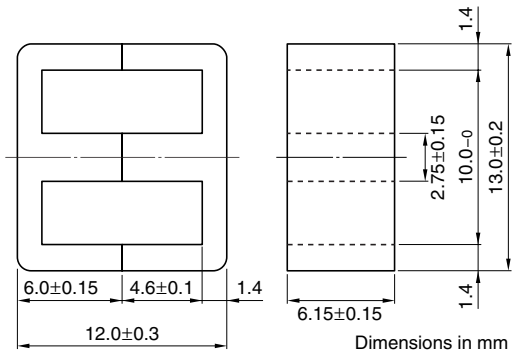
Temperature rise vs. Total loss for EE10/11 core (Typical) (Ambient temperature: 25°C)



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



Dimensions in mm

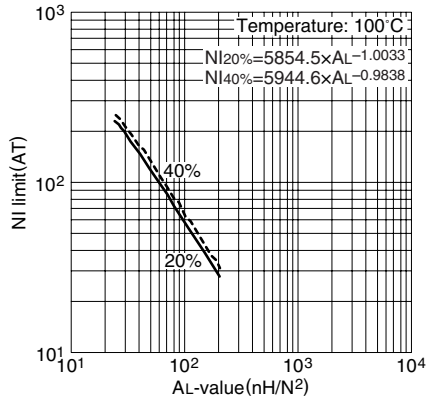
PARAMETER

Core factor	C_1	mm^{-1}	1.77
Effective magnetic path length	ℓe	mm	30.2
Effective cross-sectional area	Ae	mm^2	17.1
Effective core volume	Ve	mm^3	517
Cross-sectional center pole area	Acp	mm^2	16.9
Minimum cross-sectional area	Acp min.	mm^2	15.6
Cross-sectional winding area of core	Acw	mm^2	34.3
Weight (approx.)		g	2.7

Part No.	A_L-value (nH/N^2)	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EE13-Z	1130±25% (1kHz, 0.5mA)* 1770 min. (100kHz, 200mT)	0.22 max.	25W (100kHz)

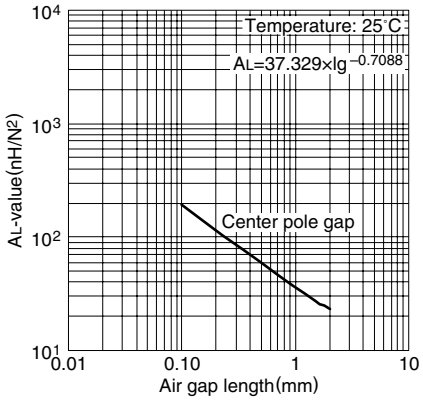
* Coil: ø0.18 2UEW 100Ts

NI limit vs. A_L-value for PC47EE13 gapped core (Typical)



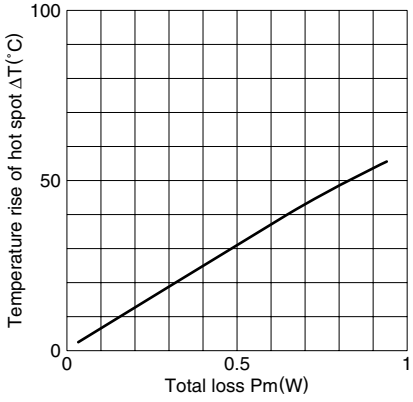
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

A_L-value vs. Air gap length for PC47EE13 core (Typical)

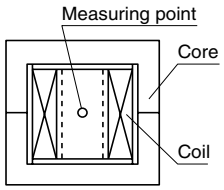


Measuring conditions
- Coil: ø0.18 2UEW 100Ts
- Frequency: 1kHz
- Level: 0.5mA

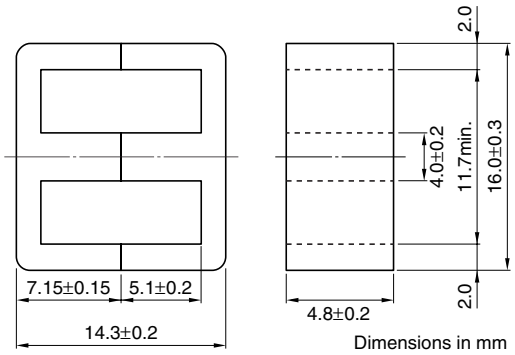
Temperature rise vs. Total loss for EE13 core (Typical) (Ambient temperature: 25°C)



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 EE16 Cores



Dimensions in mm

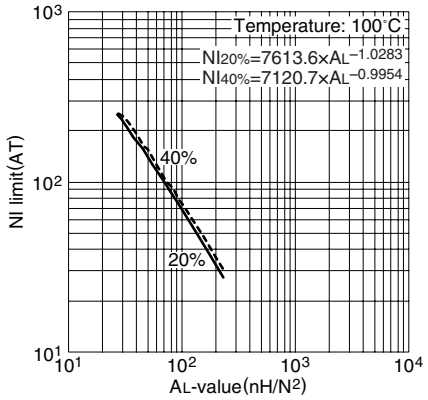
PARAMETER

Core factor	C1	mm^{-1}	1.82
Effective magnetic path length	ℓe	mm	34.5
Effective cross-sectional area	Ae	mm^2	19.0
Effective core volume	Ve	mm^3	656
Cross-sectional center pole area	Acp	mm^2	19.2
Minimum cross-sectional area	Acp min.	mm^2	17.5
Cross-sectional winding area of core	Acw	mm^2	41.4
Weight (approx.)		g	3.3

Part No.	AL-value (nH/N^2)	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EE16-Z	1140±25% (1kHz, 0.5mA)*	0.28 max.	32W (100kHz)

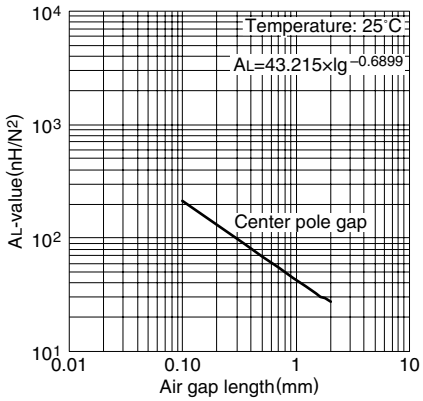
* Coil: ø0.18 2UEW 100Ts

NI limit vs. AL-value for PC47EE16 gapped core (Typical)



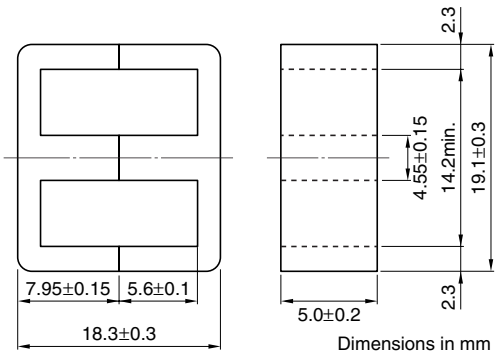
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EE16 core (Typical)



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

EE Series EE19 Cores



Dimensions in mm

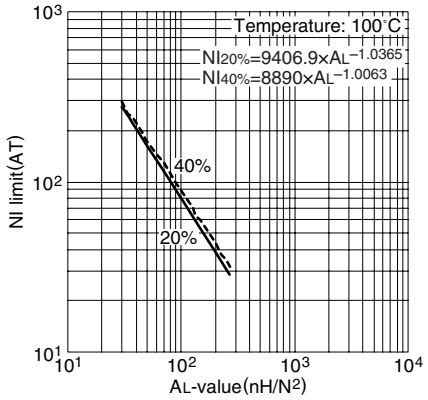
PARAMETER

Core factor	C1	mm^{-1}	1.71
Effective magnetic path length	ℓe	mm	39.4
Effective cross-sectional area	Ae	mm^2	23.0
Effective core volume	Ve	mm^3	906
Cross-sectional center pole area	Acp	mm^2	22.8
Minimum cross-sectional area	Acp min.	mm^2	21.1
Cross-sectional winding area of core	Acw	mm^2	55.8
Weight (approx.)		g	4.8

Part No.	AL-value (nH/N^2)	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EE19-Z	1250±25% (1kHz, 0.5mA)*	0.39	45W (100kHz)

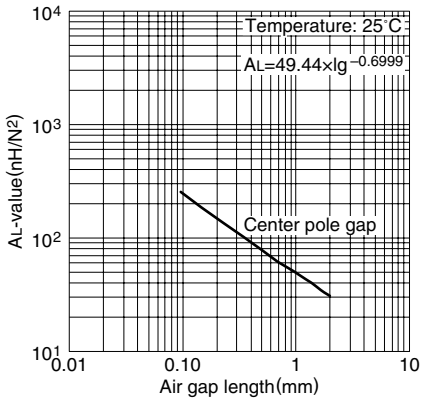
* Coil: ø0.18 2UEW 100Ts

NI limit vs. AL-value for PC47EE19 gapped core (Typical)



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

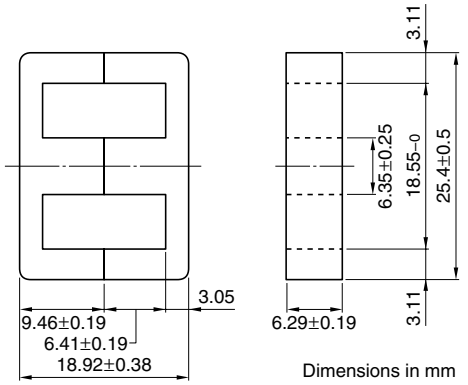
AL-value vs. Air gap length for PC47EE19 core (Typical)



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

EE Series EE25/19 Cores

Based on standard U. S. lamination size.



Dimensions in mm

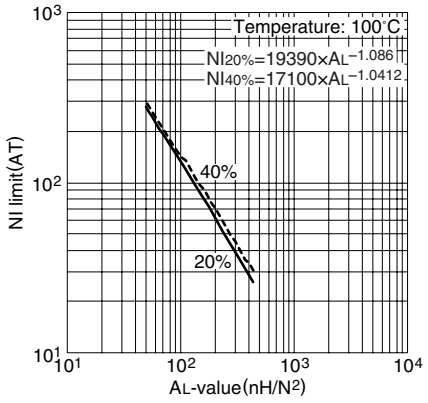
PARAMETER

Core factor	C_1	mm^{-1}	1.22
Effective magnetic path length	ℓe	mm	48.7
Effective cross-sectional area	Ae	mm^2	40.0
Effective core volume	Ve	mm^3	1950
Cross-sectional center pole area	Acp	mm^2	39.9
Minimum cross-sectional area	Acp min.	mm^2	37.2
Cross-sectional winding area of core	Acw	mm^2	79.0
Weight (approx.)		g	9.1

Part No.	A_L-value (nH/N^2)	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EE25/19-Z	2000±25% (1kHz, 0.5mA)* 2570 min. (100kHz, 200mT)	0.80 max.	93W (100kHz)

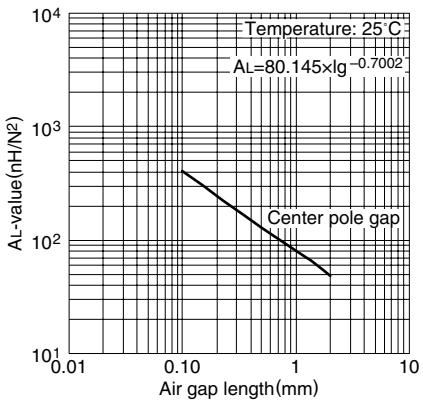
* Coil: ø0.23 2UEW 100Ts

NI limit vs. A_L-value for PC47EE25/19 gapped core (Typical)



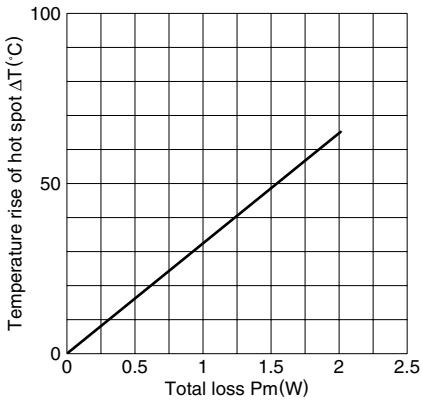
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

A_L-value vs. Air gap length for PC47EE25/19 core (Typical)

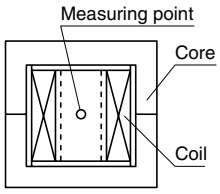


Measuring conditions
- Coil: ø0.23 2UEW 100Ts
- Frequency: 1kHz
- Level: 0.5mA

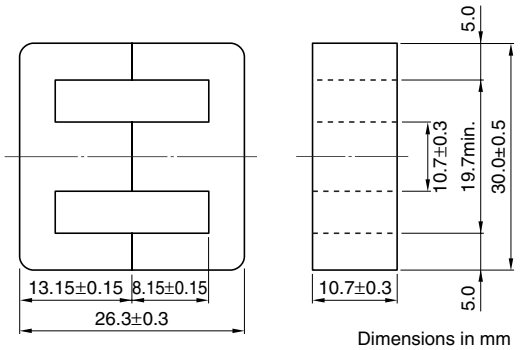
Temperature rise vs. Total loss for EE25/19 core (Typical) (Ambient temperature: 25°C)



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 Cores(DIN 41295)



Dimensions in mm

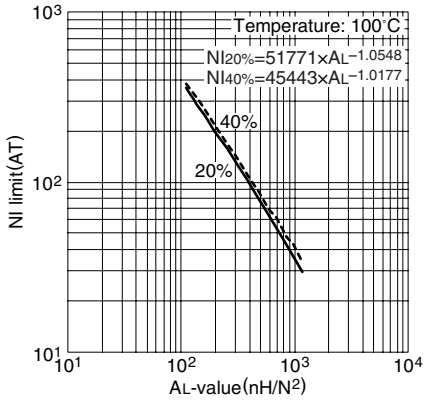
PARAMETER

Core factor	C1	mm^{-1}	0.529
Effective magnetic path length	ℓe	mm	57.7
Effective cross-sectional area	Ae	mm^2	109.0
Effective core volume	Ve	mm^3	6290
Cross-sectional center pole area	Acp	mm^2	114
Minimum cross-sectional area	Acp min.	mm^2	108
Cross-sectional winding area of core	Acw	mm^2	75.8
Weight (approx.)		g	32

Part No.	AL-value (nH/N^2)	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EE30-Z	4690±25% (1kHz, 0.5mA)*	2.03 max.	203W (100kHz)

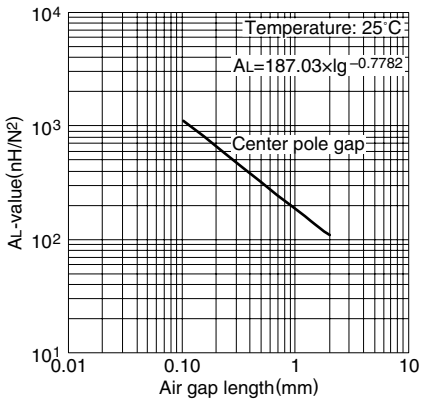
* Coil: ø0.35 2UEW 100Ts

NI limit vs. AL-value for PC47EE30 gapped core (Typical)



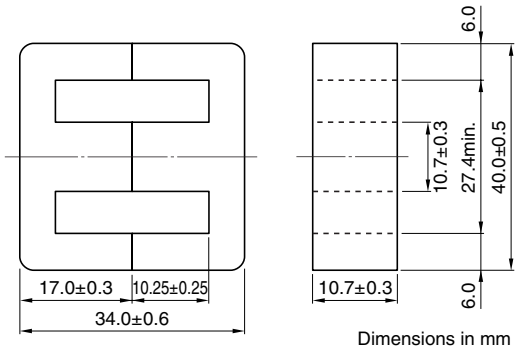
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EE30 core (Typical)



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

EE Series EE40 Cores



Dimensions in mm

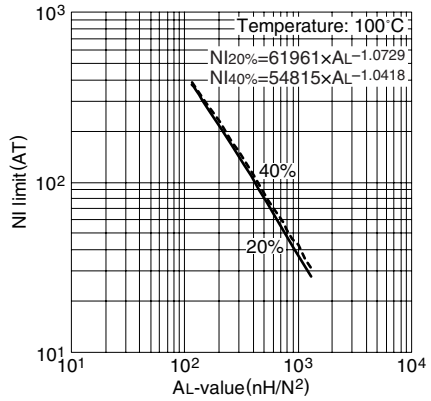
PARAMETER

Core factor	C1	mm^{-1}	0.606
Effective magnetic path length	ℓe	mm	77.3
Effective cross-sectional area	Ae	mm^2	128
Effective core volume	Ve	mm^3	9890
Cross-sectional center pole area	Acp	mm^2	114
Minimum cross-sectional area	Acp min.	mm^2	108
Cross-sectional winding area of core	Acw	mm^2	164
Weight (approx.)		g	50

Part No.	AL-value (nH/N2)	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EE40-Z	4150±25% (1kHz, 0.5mA)*	3.1 max.	311W (100kHz)

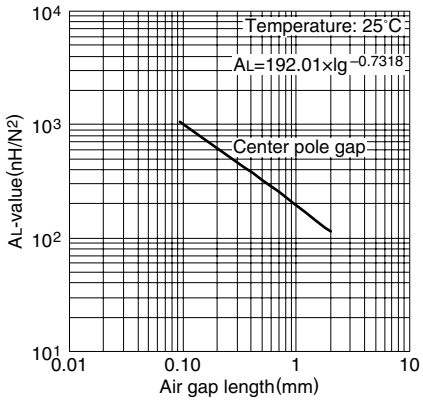
* Coil: ø0.18 2UEW 100Ts

NI limit vs. AL-value for PC47EE40 gapped core (Typical)



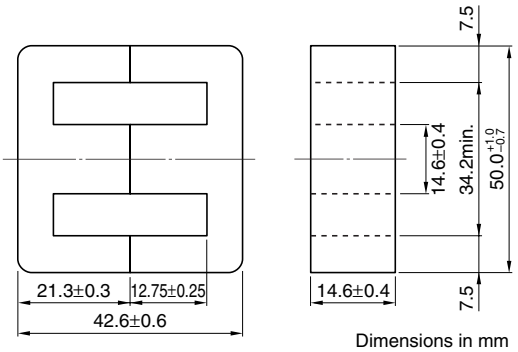
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EE40 core (Typical)



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

EE Series EE50 Cores



Dimensions in mm

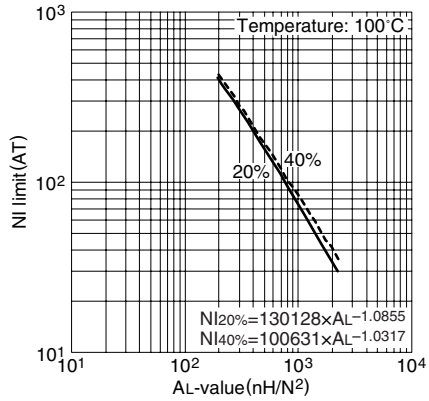
PARAMETER

Core factor	C1	mm^{-1}	0.425
Effective magnetic path length	ℓe	mm	95.8
Effective cross-sectional area	Ae	mm^2	226
Effective core volume	Ve	mm^3	21600
Cross-sectional center pole area	Acp	mm^2	213
Minimum cross-sectional area	Acp min.	mm^2	202
Cross-sectional winding area of core	Acw	mm^2	262
Weight (approx.)		g	116

Part No.	AL-value (nH/N^2)	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EE50-Z	6110±25% (1kHz, 0.5mA)*	8.78 max.	556W (100kHz)

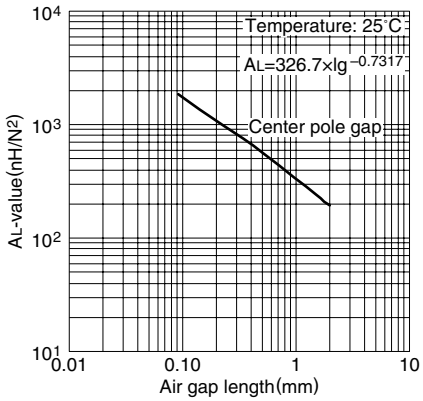
* Coil: ø0.18 2UEW 100Ts

NI limit vs. AL-value for PC47EE50 gapped core (Typical)



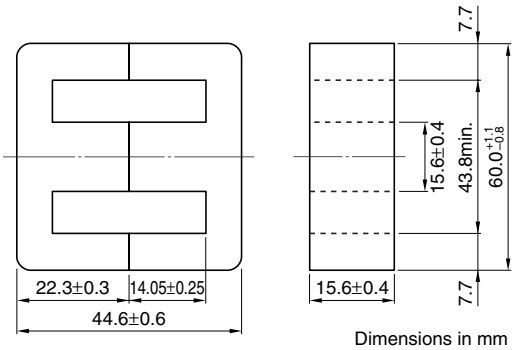
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EE50 core (Typical)



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

EE Series EE60 Cores



Dimensions in mm

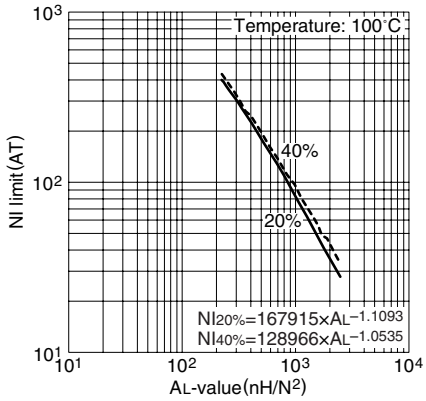
PARAMETER

Core factor	C_1	mm^{-1}	0.446
Effective magnetic path length	ℓe	mm	110
Effective cross-sectional area	Ae	mm^2	247
Effective core volume	Ve	mm^3	27100
Cross-sectional center pole area	Acp	mm^2	243
Minimum cross-sectional area	Acp min.	mm^2	231
Cross-sectional winding area of core	Acw	mm^2	407
Weight (approx.)		g	135

Part No.	A_L-value (nH/N^2)	Core loss (W) at 100°C 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EE60-Z	5670±25% (1kHz, 0.5mA)*	11.35 max.	713W (100kHz)

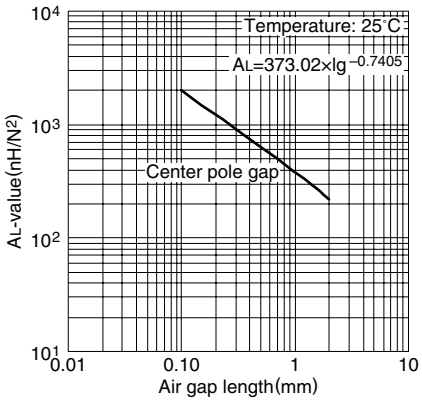
* Coil: ø0.18 2UEW 100Ts

NI limit vs. A_L-value for PC47EE60 gapped core (Typical)



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

A_L-value vs. Air gap length for PC47EE60 core (Typical)



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