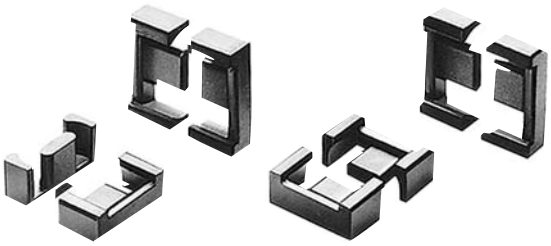
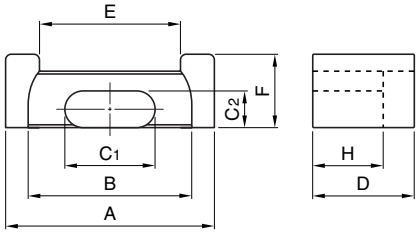
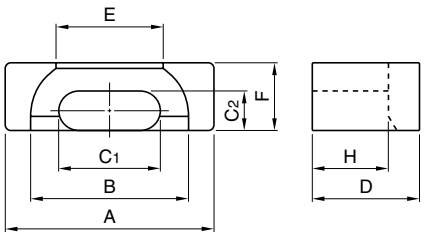
EPC CORES



US. PAT. 4,760,366
EP. PAT. 245,083(DE, FR, GB, NL)
KS. UM 50,836
TW. UM 39,406
JP. PENDING



Type 1



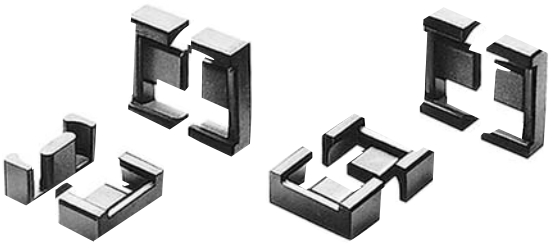
Type 2

Part No.	Type	Dimensions in mm							
		A	B min.	C_1	C_2	D	E min.	F	H
PC47EPC10-Z PC90EPC10-Z PC95EPC10-Z	2	10.2±0.2	7.6	5.0±0.1	1.9±0.1	4.05±0.10	5.3	3.4±0.1	2.65±0.10
PC47EPC13-Z PC90EPC13-Z PC95EPC13-Z	1	13.25±0.3	10.5	5.60±0.15	2.05±0.10	6.6±0.2	8.3	4.60±0.15	4.5±0.2
PC47EPC17-Z PC90EPC17-Z PC95EPC17-Z	1	17.6±0.4	14.3	7.70±0.15	2.8±0.1	8.55±0.20	11.5	6.00±0.15	6.05±0.20
PC47EPC19-Z PC90EPC19-Z PC95EPC19-Z	1	19.1±0.4	15.8	8.50±0.15	2.5±0.1	9.75±0.20	13.1	6.00±0.15	7.25±0.20

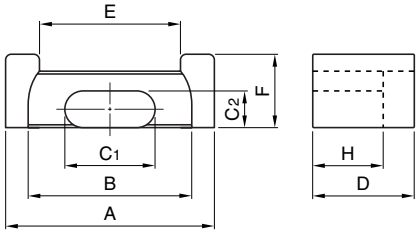
Part No.	Effective parameter				Electrical characteristics			Weight (g)
	C_1 (mm^{-1})	Ae (mm^2)	ℓe (mm)	Ve (mm^3)	A_L-value (nH/N^2)*		Core loss (W) max.	
					Without air gap	With air gap	100kHz, 200mT, 100°C	
PC47EPC10-Z PC90EPC10-Z PC95EPC10-Z	1.89	9.39	17.8	167	1000±25% 900±25% 1040±25%	40±7% 63±10%	0.067 0.090 0.100/0.080/0.100**	1.1
PC47EPC13-Z PC90EPC13-Z PC95EPC13-Z	2.45	12.5	30.6	382	870±25% 800±25% 1060±25%	40±4% 63±5%	0.14 0.17 0.17/0.15/0.17**	2.1
PC47EPC17-Z PC90EPC17-Z PC95EPC17-Z	1.76	22.8	40.2	917	1150±25% 1100±25% 1500±25%	80±4% 125±5%	0.34 0.45 0.45/0.35/0.45**	4.5
PC47EPC19-Z PC90EPC19-Z PC95EPC19-Z	2.03	22.7	46.1	1050	940±25% 940±25% 1400±25%	80±4% 125±5%	0.39 0.5 0.5/0.4/0.5**	5.3

* A_L-value: 1kHz, 0.5mA, 100Ts
** Core loss: 100kHz, 200mT, 25°C/80°C/120°C

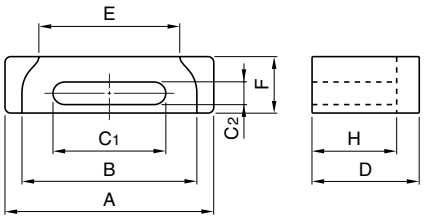
EPC CORES



US. PAT. 4,760,366
EP. PAT. 245,083(DE, FR, GB, NL)
KS. UM 50,836
TW. UM 39,406
JP. PENDING



Type 1



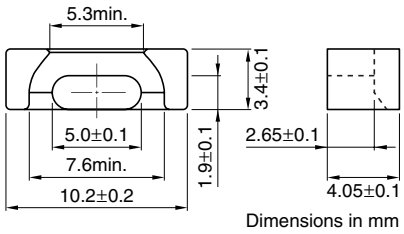
Type 2

Part No.	Type	Dimensions in mm							
		A	B min.	C_1	C_2	D	E min.	F	H
PC47EPC25-Z **PC90EPC25-Z** **PC95EPC25-Z**	1	25.1±0.5	20.65	11.5±0.2	4.0±0.1	12.5±0.2	17.1	8.0±0.2	9.0±0.3
PC47EPC25B-Z **PC90EPC25B-Z** **PC95EPC25B-Z**	2	25.1±0.5	20.4	13.8±0.2	2.50±0.15	11.43±0.15	16.5	6.5±0.2	8.78±0.15
PC47EPC27-Z **PC90EPC27-Z** **PC95EPC27-Z**	1	27.1±0.5	21.6	13.0±0.3	4.0±0.1	16.0±0.2	18.5	8.0±0.2	12.0±0.3
PC47EPC30-Z **PC90EPC30-Z** **PC95EPC30-Z**	1	30.1±0.5	23.6	15.0±0.3	4.0±0.1	17.5±0.2	20.0	8.0±0.2	13.0±0.3

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	
PC47EPC25-Z **PC90EPC25-Z** **PC95EPC25-Z**	1.40	40.4	56.3	2280	1560±25% 1400±25% 2200±25%	125±5% 200±7%	1.08 1.4 1.4/1.2/1.4**	13
PC47EPC25B-Z **PC90EPC25B-Z** **PC95EPC25B-Z**	1.39	33.3	46.2	1540	1560±25% 1400±25% 2200±25%	80±5% 125±7%	0.64 0.8 0.8/0.65/0.8**	11
PC47EPC27-Z **PC90EPC27-Z** **PC95EPC27-Z**	1.43	48.6	69.4	3370	1540±25% 1400±25% 2200±25%	125±5% 200±7%	1.53 2.0 2.0/1.7/2.0**	18
PC47EPC30-Z **PC90EPC30-Z** **PC95EPC30-Z**	1.35	55.6	75.3	4190	1570±25% 1700±25% 2300±25%	125±5% 200±7%	1.99 2.5 2.3/2.0/2.3**	23

* A_L-value: 1kHz, 0.5mA, 100Ts
** Core loss: 100kHz, 200mT, 25°C/80°C/120°C

EPC Series EPC10 Cores



Dimensions in mm

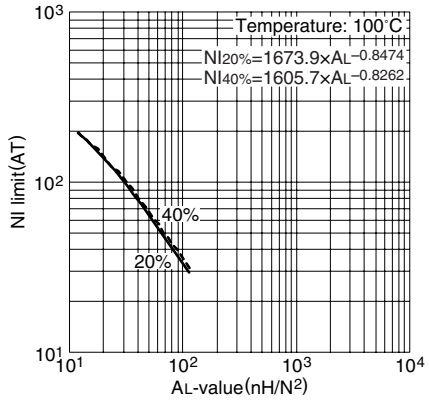
PARAMETER

Core factor	C1	mm^{-1}	1.89
Effective magnetic path length	ℓe	mm	17.8
Effective cross-sectional area	Ae	mm^2	9.39
Effective core volume	Ve	mm^3	167
Cross-sectional center pole area	Acp	mm^2	8.73
Minimum cross-sectional area	Acp min.	mm^2	8.13
Cross-sectional winding area of core	Acw	mm^2	7.69
Weight (approx.)		g	1.1

Part No.	AL-value (nH/N^2)*	Core loss (W) max. 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EPC10-Z	1000±25% (1kHz, 0.5mA)	0.067(100°C)	5.8W (100kHz)
PC90EPC10-Z	900±25% (1kHz, 0.5mA)	0.090(100°C)	5.4W
PC95EPC10-Z	1040±25% (1kHz, 0.5mA)	0.100/0.080/0.100(25°C/80°C/120°C)	5.6W

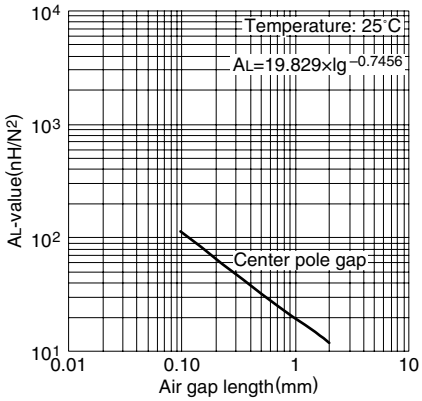
* Coil: ø0.1 2UEW 100Ts

NI limit vs. AL-value for PC47EPC10 gapped core (Typical)



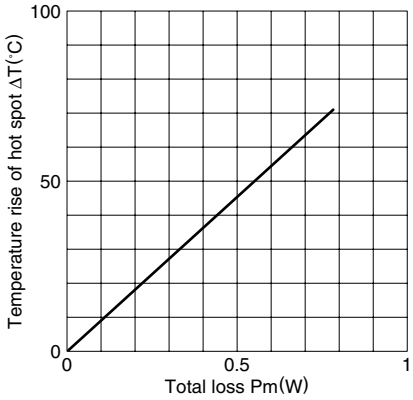
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EPC10 core (Typical)

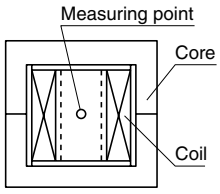


Measuring conditions
- Coil: ø0.1 2UEW 100Ts
- Frequency: 1kHz
- Level: 0.5mA

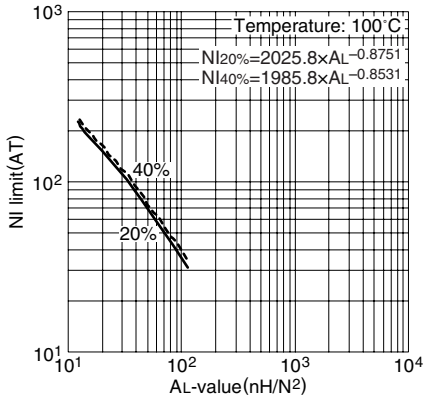
Temperature rise vs. Total loss for EPC10 core (Typical) (Ambient temperature: 25°C)



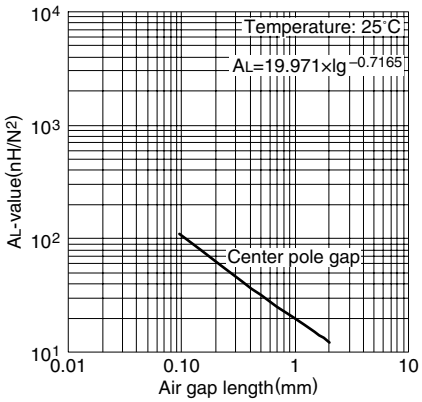
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%)RH. respectively. (approx. 400×300×300cm)



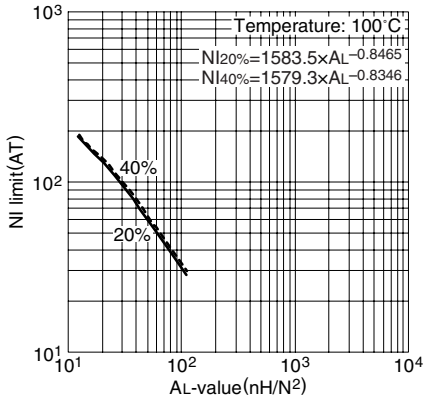
NI limit vs. AL-value for PC90EPC10 gapped core (Typical)



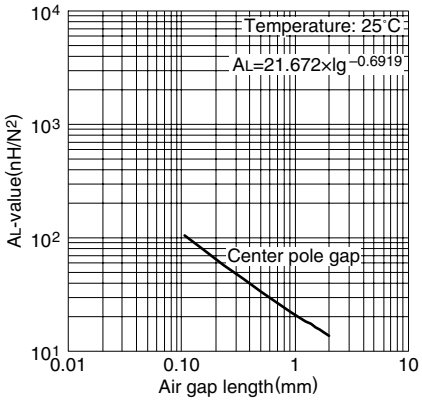
AL-value vs. Air gap length for PC90EPC10 core (Typical)



NI limit vs. AL-value for PC95EPC10 gapped core (Typical)



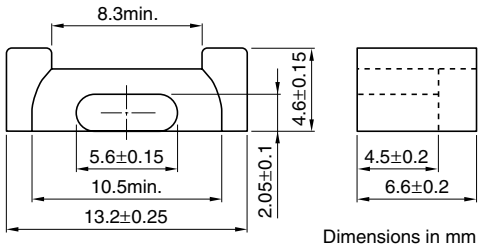
AL-value vs. Air gap length for PC95EPC10 core (Typical)



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

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

EPC Series EPC13 Cores



Dimensions in mm

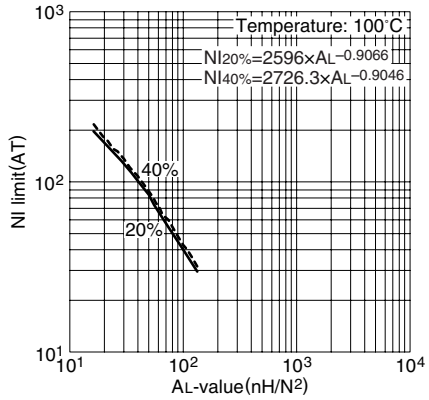
PARAMETER

Core factor	C1	mm^{-1}	2.45
Effective magnetic path length	ℓe	mm	30.6
Effective cross-sectional area	Ae	mm^2	12.5
Effective core volume	Ve	mm^3	382
Cross-sectional center pole area	Acp	mm^2	10.6
Minimum cross-sectional area	Acp min.	mm^2	9.71
Cross-sectional winding area of core	Acw	mm^2	23.0
Weight (approx.)		g	2.1

Part No.	AL-value (nH/N^2)*	Core loss (W) max. 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EPC13-Z	870±25% (1kHz, 0.5mA)	0.14(100°C)	9.1W (100kHz)
PC90EPC13-Z	800±25% (1kHz, 0.5mA)	0.17(100°C)	8.6W
PC95EPC13-Z	1060±25% (1kHz, 0.5mA)	0.17/0.15/0.17(25°C/80°C/120°C)	8.8W

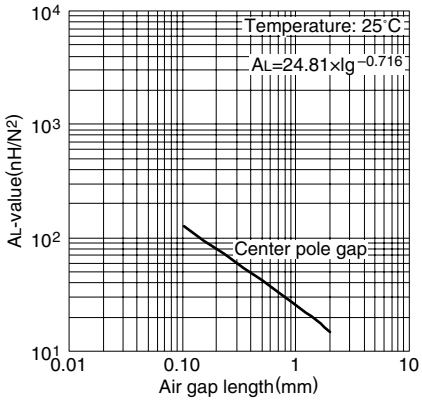
* Coil: ø0.2 2UEW 100Ts

NI limit vs. AL-value for PC47EPC13 gapped core (Typical)



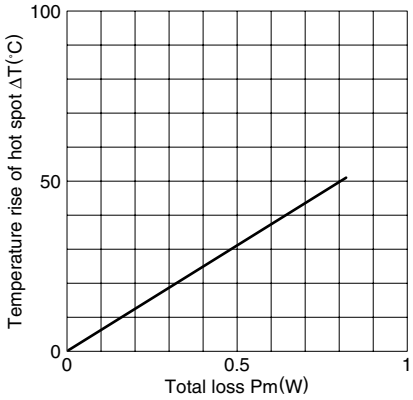
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EPC13 core (Typical)

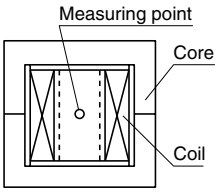


Measuring conditions
- Coil: ø0.2 2UEW 100Ts
- Frequency: 1kHz
- Level: 0.5mA

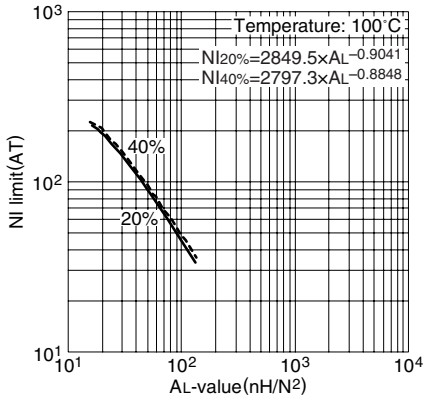
Temperature rise vs. Total loss for EPC13 core (Typical) (Ambient temperature: 25°C)



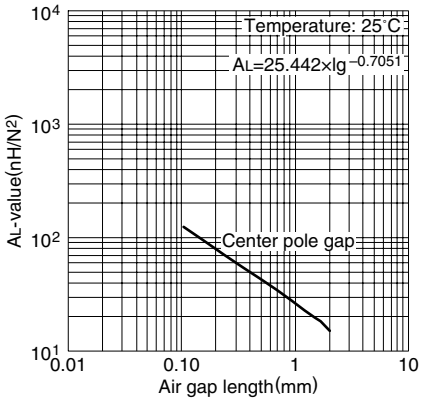
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%)RH. respectively. (approx. 400×300×300cm)



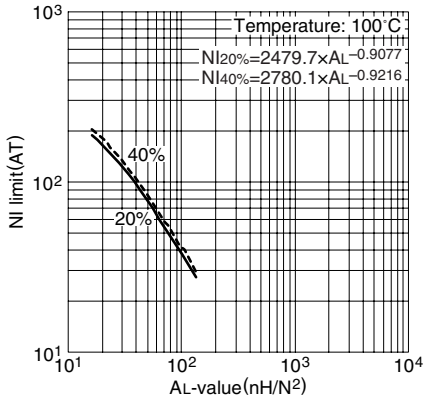
NI limit vs. AL-value for PC90EPC13 gapped core (Typical)



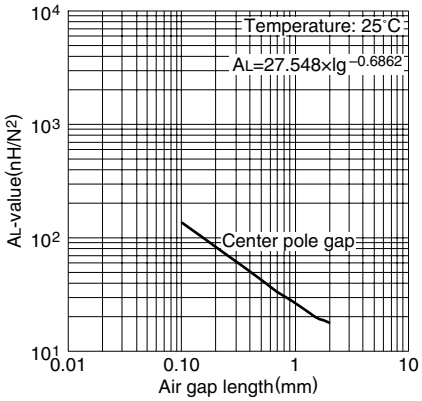
AL-value vs. Air gap length for PC90EPC13 core (Typical)



NI limit vs. AL-value for PC95EPC13 gapped core (Typical)



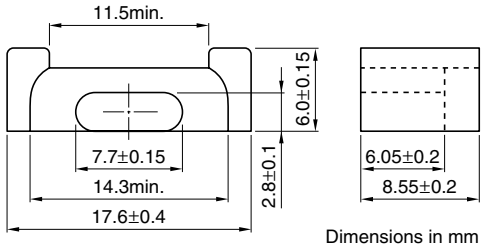
AL-value vs. Air gap length for PC95EPC13 core (Typical)



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

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

EPC Series EPC17 Cores



Dimensions in mm

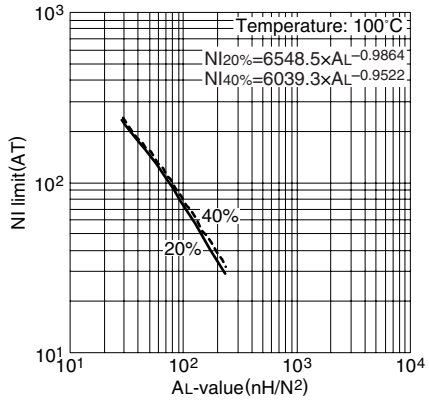
PARAMETER

Core factor	C1	mm^{-1}	1.76
Effective magnetic path length	ℓe	mm	40.2
Effective cross-sectional area	Ae	mm^2	22.8
Effective core volume	Ve	mm^3	917
Cross-sectional center pole area	Acp	mm^2	19.9
Minimum cross-sectional area	Acp min.	mm^2	18.7
Cross-sectional winding area of core	Acw	mm^2	41.1
Weight (approx.)		g	4.5

Part No.	AL-value (nH/N^2)*	Core loss (W) max. 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EPC17-Z	1150±25% (1kHz, 0.5mA)	0.34(100°C)	21.9W (100kHz)
PC90EPC17-Z	1100±25% (1kHz, 0.5mA)	0.45(100°C)	20.5W
PC95EPC17-Z	1500±25% (1kHz, 0.5mA)	0.45/0.35/0.45(25°C/80°C/120°C)	21.1W

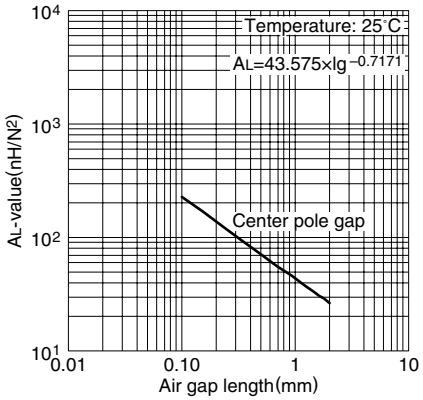
* Coil: ø0.2 2UEW 100Ts

NI limit vs. AL-value for PC47EPC17 gapped core (Typical)



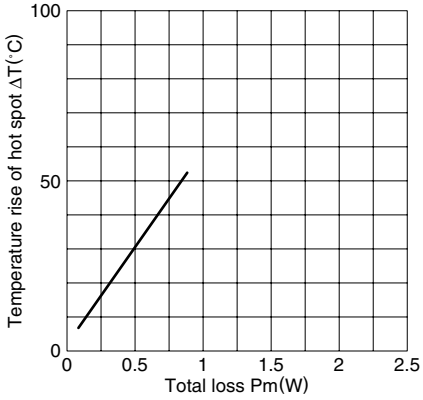
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EPC17 core (Typical)

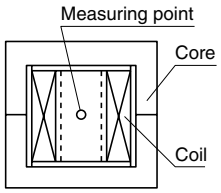


Measuring conditions
- Coil: ø0.2 2UEW 100Ts
- Frequency: 1kHz
- Level: 0.5mA

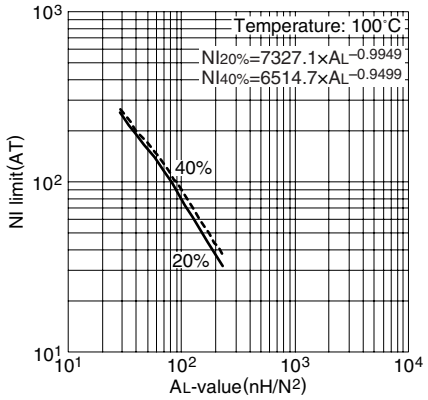
Temperature rise vs. Total loss for EPC17 core (Typical) (Ambient temperature: 25°C)



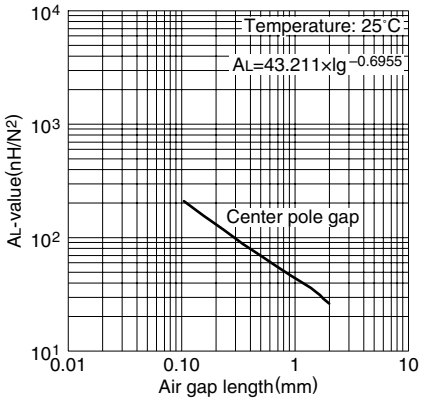
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%)RH. respectively. (approx. 400×300×300cm)



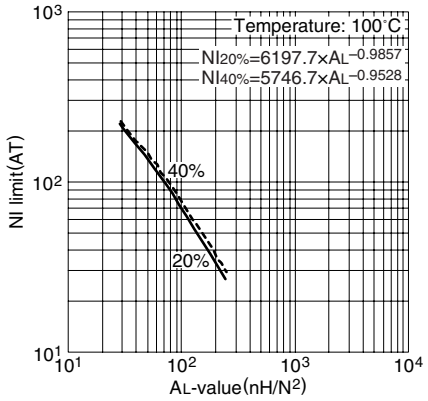
NI limit vs. AL-value for PC90EPC17 gapped core (Typical)



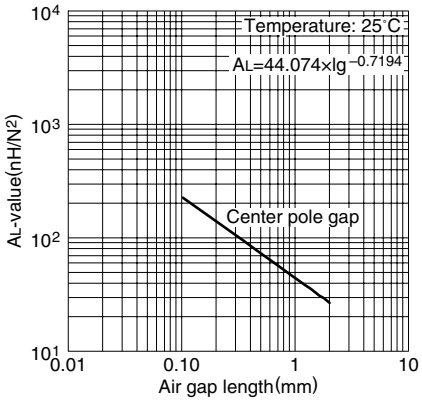
AL-value vs. Air gap length for PC90EPC17 core (Typical)



NI limit vs. AL-value for PC95EPC17 gapped core (Typical)



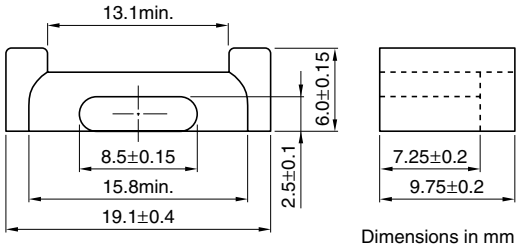
AL-value vs. Air gap length for PC95EPC17 core (Typical)



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

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

EPC Series EPC19 Cores



Dimensions in mm

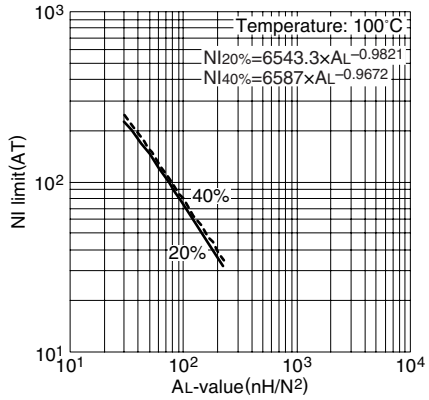
PARAMETER

Core factor	C1	mm^{-1}	2.03
Effective magnetic path length	ℓe	mm	46.1
Effective cross-sectional area	Ae	mm^2	22.7
Effective core volume	Ve	mm^3	1050
Cross-sectional center pole area	Acp	mm^2	19.9
Minimum cross-sectional area	Acp min.	mm^2	18.7
Cross-sectional winding area of core	Acw	mm^2	54.4
Weight (approx.)		g	5.3

Part No.	AL-value (nH/N²)*	Core loss (W) max. 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EPC19-Z	940±25% (1kHz, 0.5mA)	0.39(100°C)	29.9W (100kHz)
PC90EPC19-Z	940±25% (1kHz, 0.5mA)	0.5(100°C)	28W
PC95EPC19-Z	1400±25% (1kHz, 0.5mA)	0.5/0.4/0.5(25°C/80°C/120°C)	28.7W

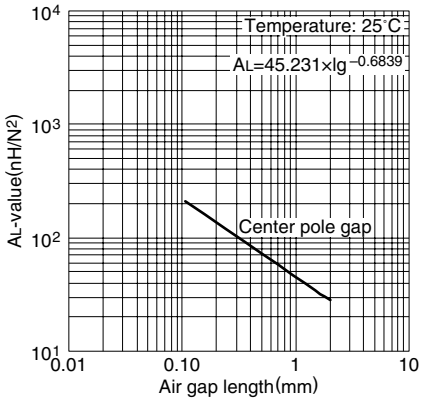
* Coil: ø0.2 2UEW 100Ts

NI limit vs. AL-value for PC47EPC19 gapped core (Typical)



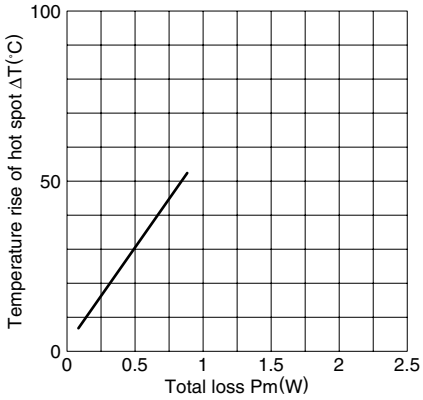
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EPC19 core (Typical)

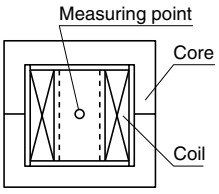


Measuring conditions
- Coil: ø0.2 2UEW 100Ts
- Frequency: 1kHz
- Level: 0.5mA

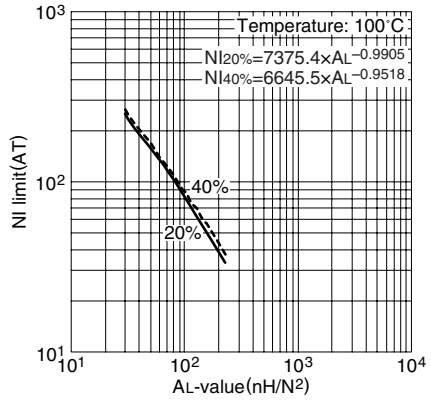
Temperature rise vs. Total loss for EPC19 core (Typical) (Ambient temperature: 25°C)



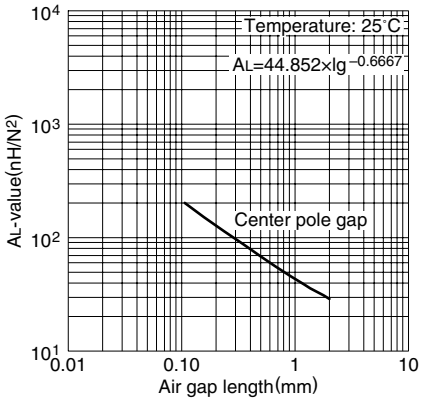
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%)RH. respectively. (approx. 400×300×300cm)



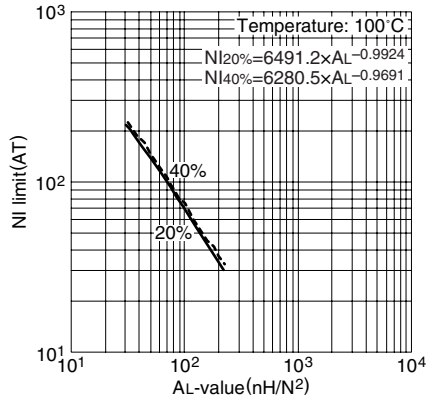
NI limit vs. AL-value for PC90EPC19 gapped core (Typical)



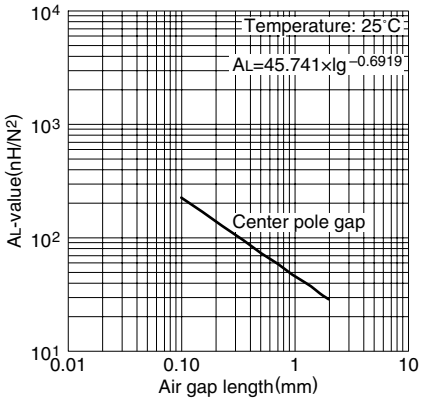
AL-value vs. Air gap length for PC90EPC19 core (Typical)



NI limit vs. AL-value for PC95EPC19 gapped core (Typical)



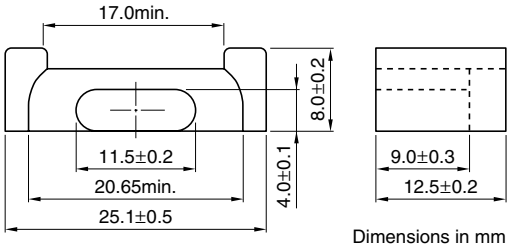
AL-value vs. Air gap length for PC95EPC19 core (Typical)



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

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

EPC Series EPC25 Cores



Dimensions in mm

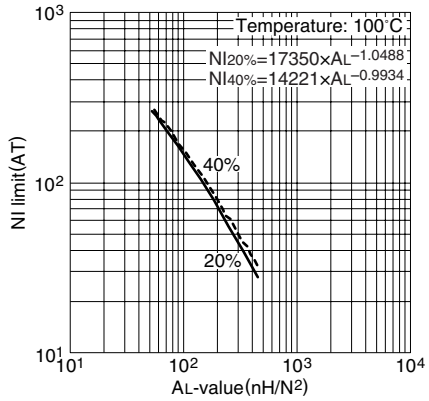
PARAMETER

Core factor	C1	mm^{-1}	1.40
Effective magnetic path length	ℓe	mm	56.3
Effective cross-sectional area	Ae	mm^2	40.4
Effective core volume	Ve	mm^3	2280
Cross-sectional center pole area	Acp	mm^2	42.6
Minimum cross-sectional area	Acp min.	mm^2	40.6
Cross-sectional winding area of core	Acw	mm^2	85.5
Weight (approx.)		g	13

Part No.	AL-value (nH/N2)*	Core loss (W) max. 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EPC25-Z	1560±25% (1kHz, 0.5mA)	1.08(100°C)	71.6W (100kHz)
PC90EPC25-Z	1400±25% (1kHz, 0.5mA)	1.4(100°C)	64W
PC95EPC25-Z	2200±25% (1kHz, 0.5mA)	1.4/1.2/1.4(25°C/80°C/120°C)	66.9W

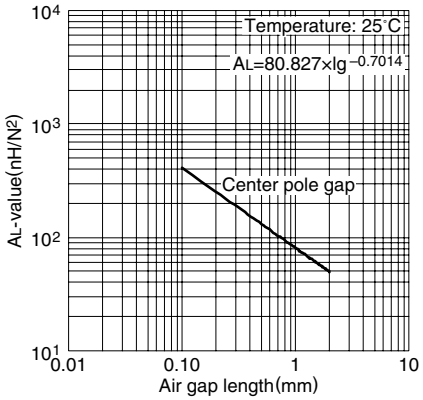
* Coil: ø0.2 2UEW 100Ts

NI limit vs. AL-value for PC47EPC25 gapped core (Typical)



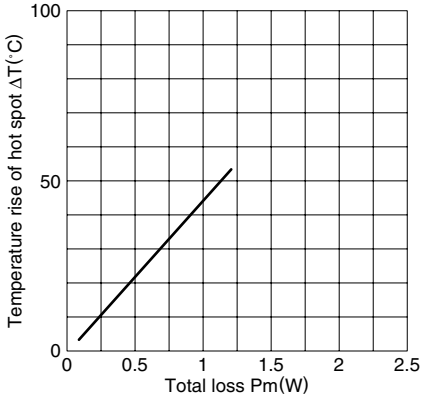
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EPC25 core (Typical)

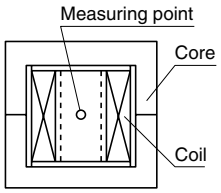


Measuring conditions
- Coil: ø0.2 2UEW 100Ts
- Frequency: 1kHz
- Level: 0.5mA

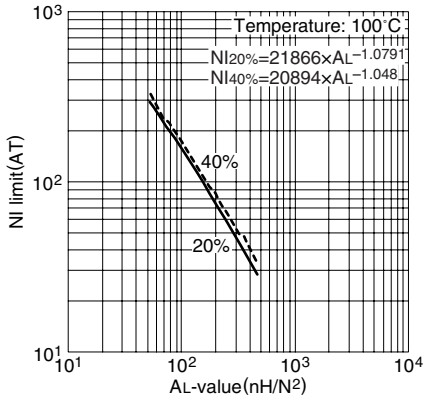
Temperature rise vs. Total loss for EPC25 core (Typical) (Ambient temperature: 25°C)



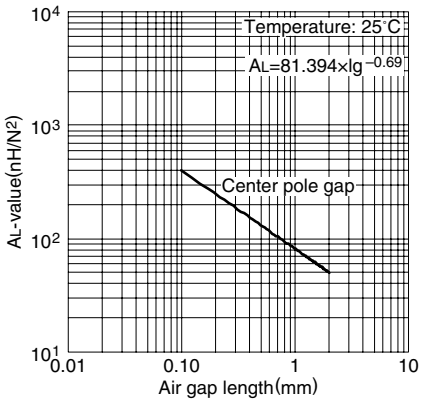
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%)RH. respectively. (approx. 400×300×300cm)



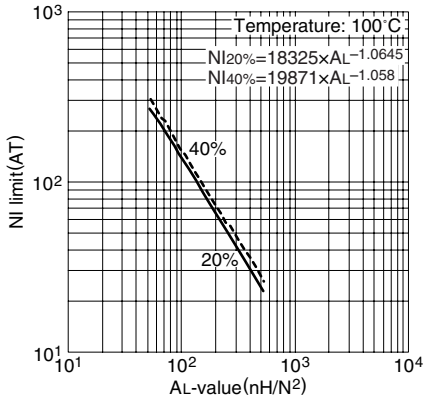
NI limit vs. AL-value for PC90EPC25 gapped core (Typical)



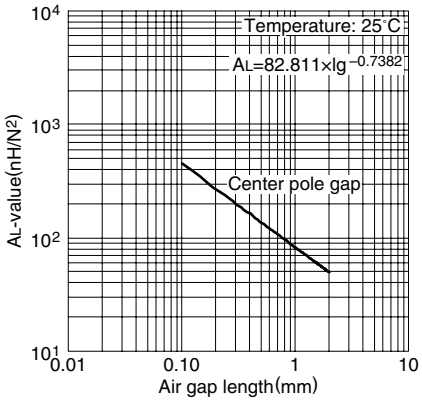
AL-value vs. Air gap length for PC90EPC25 core (Typical)



NI limit vs. AL-value for PC95EPC25 gapped core (Typical)



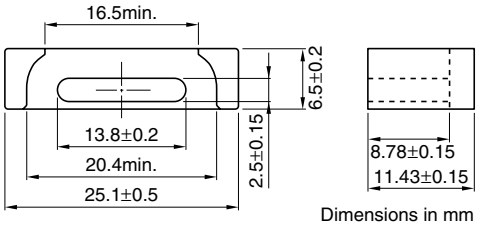
AL-value vs. Air gap length for PC95EPC25 core (Typical)



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

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

EPC Series EPC25B Cores



Dimensions in mm

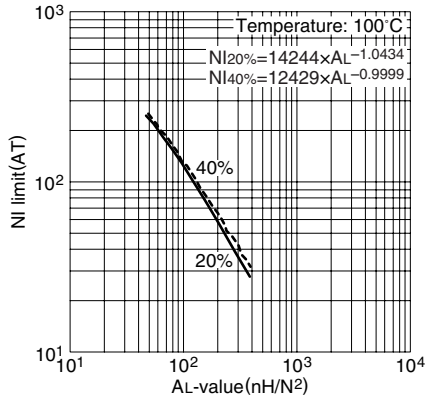
PARAMETER

Core factor	C1	mm^{-1}	1.39
Effective magnetic path length	ℓe	mm	46.2
Effective cross-sectional area	Ae	mm^2	33.3
Effective core volume	Ve	mm^3	1540
Cross-sectional center pole area	Acp	mm^2	32.4
Minimum cross-sectional area	Acp min.	mm^2	30.3
Cross-sectional winding area of core	Acw	mm^2	62.1
Weight (approx.)		g	11

Part No.	AL-value (nH/N^2)*	Core loss (W) max. 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EPC25B-Z	1560±25% (1kHz, 0.5mA)	0.64(100°C)	50.3W (100kHz)
PC90EPC25B-Z	1400±25% (1kHz, 0.5mA)	0.8(100°C)	46W
PC95EPC25B-Z	2200±25% (1kHz, 0.5mA)	0.8/0.65/0.8(25°C/80°C/120°C)	47.6W

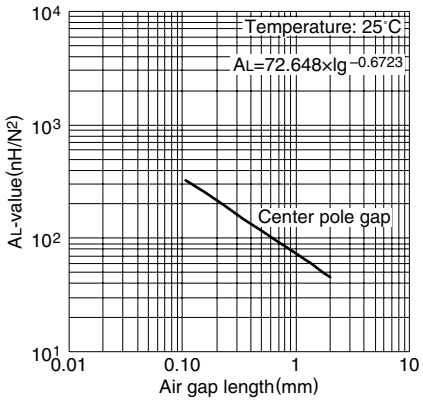
* Coil: ø0.23 2UEW 100Ts

NI limit vs. AL-value for PC47EPC25B gapped core (Typical)



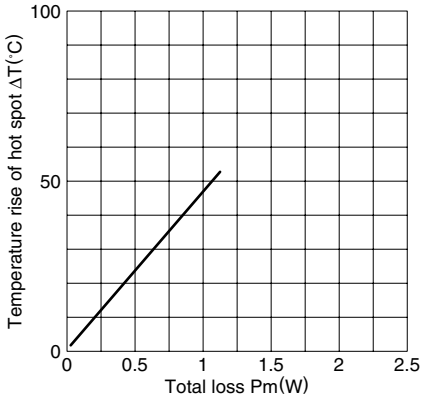
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EPC25B core (Typical)

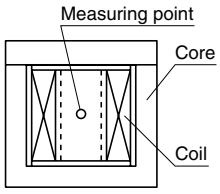


Measuring conditions
- Coil: ø0.23 2UEW 100Ts
- Frequency: 1kHz
- Level: 0.5mA

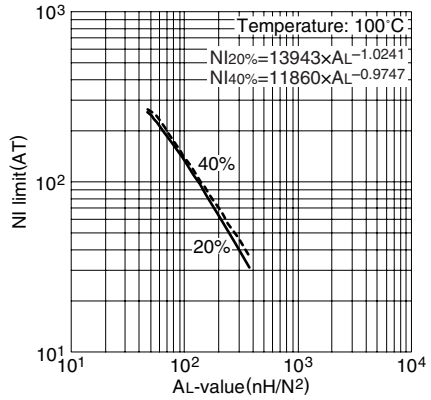
Temperature rise vs. Total loss for EPC25B core (Typical) (Ambient temperature: 25°C)



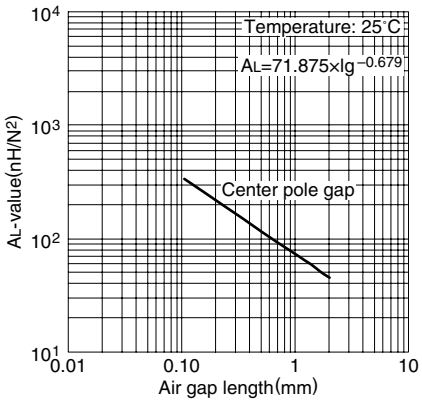
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%)RH. respectively. (approx. 400×300×300cm)



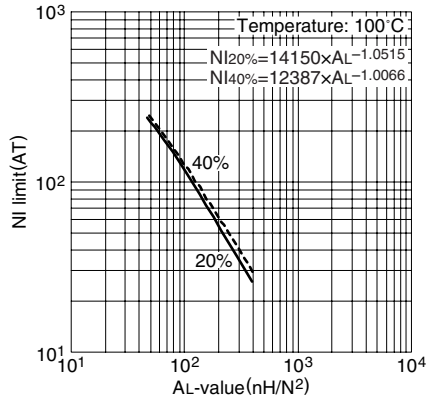
NI limit vs. AL-value for PC90EPC25B gapped core (Typical)



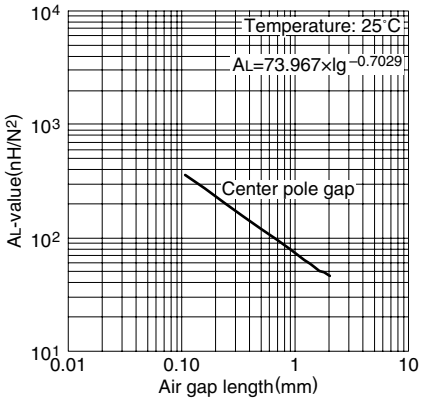
AL-value vs. Air gap length for PC90EPC25B core (Typical)



NI limit vs. AL-value for PC95EPC25B gapped core (Typical)



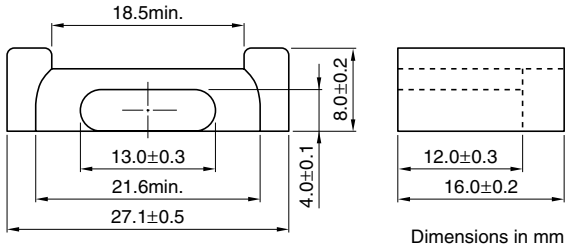
AL-value vs. Air gap length for PC95EPC25B core (Typical)



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

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

EPC Series EPC27 Cores



Dimensions in mm

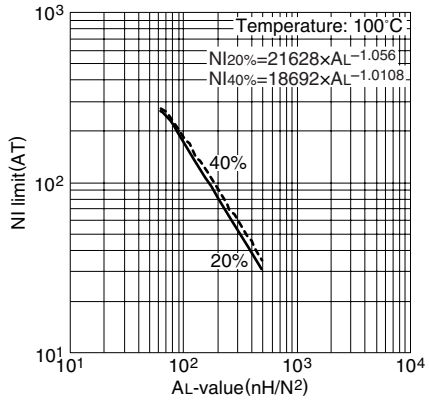
PARAMETER

Core factor	C1	mm^{-1}	1.43
Effective magnetic path length	ℓe	mm	69.4
Effective cross-sectional area	Ae	mm^2	48.6
Effective core volume	Ve	mm^3	3370
Cross-sectional center pole area	Acp	mm^2	48.6
Minimum cross-sectional area	Acp min.	mm^2	46.5
Cross-sectional winding area of core	Acw	mm^2	108
Weight (approx.)		g	18

Part No.	AL-value (nH/N2)*	Core loss (W) max. 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EPC27-Z	1540±25% (1kHz, 0.5mA)	1.53(100°C)	88.7W (100kHz)
PC90EPC27-Z	1400±25% (1kHz, 0.5mA)	2.0(100°C)	80.5W
PC95EPC27-Z	2200±25% (1kHz, 0.5mA)	2.0/1.7/2.0(25°C/80°C/120°C)	84.8W

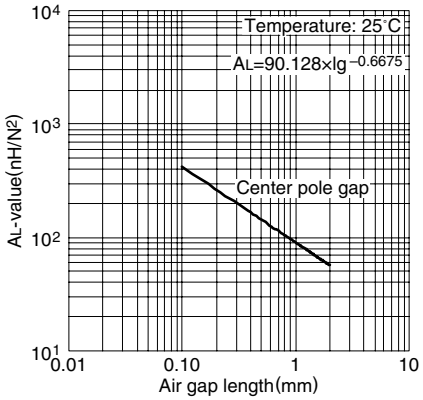
* Coil: ø0.3 2UEW 100Ts

NI limit vs. AL-value for PC47EPC27 gapped core (Typical)



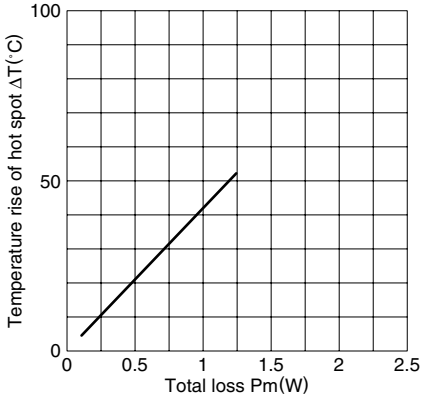
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EPC27 core (Typical)

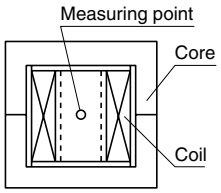


Measuring conditions
- Coil: ø0.3 2UEW 100Ts
- Frequency: 1kHz
- Level: 0.5mA

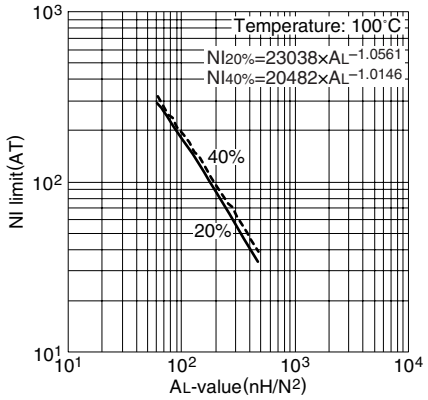
Temperature rise vs. Total loss for EPC27 core (Typical) (Ambient temperature: 25°C)



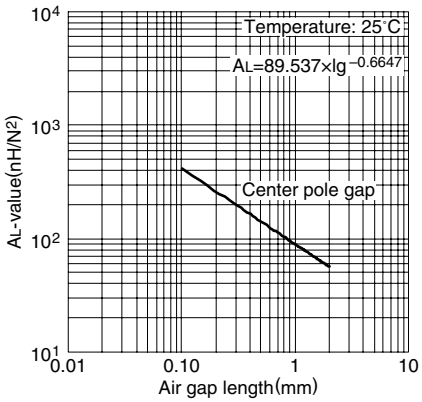
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%)RH. respectively. (approx. 400×300×300cm)



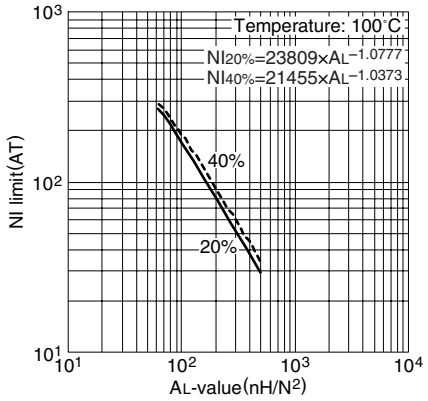
NI limit vs. AL-value for PC90EPC27 gapped core (Typical)



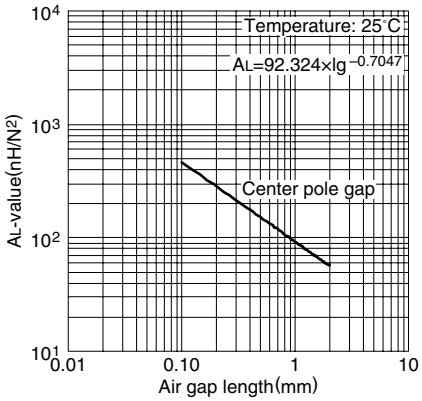
AL-value vs. Air gap length for PC90EPC27 core (Typical)



NI limit vs. AL-value for PC95EPC27 gapped core (Typical)



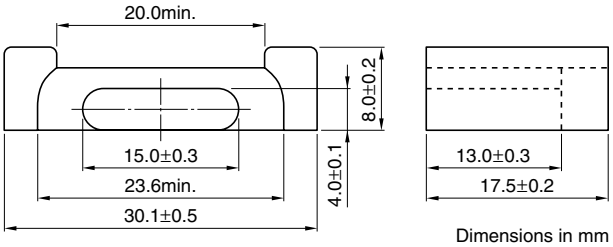
AL-value vs. Air gap length for PC95EPC27 core (Typical)



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

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

EPC Series EPC30 Cores



Dimensions in mm

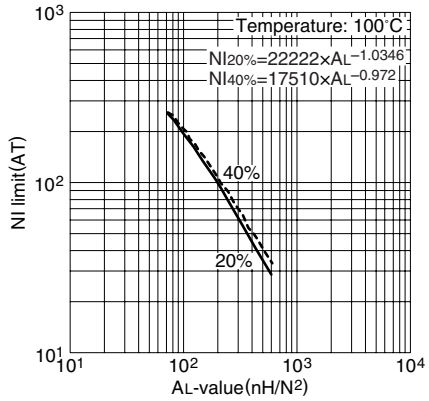
PARAMETER

Core factor	C1	mm^{-1}	1.35
Effective magnetic path length	ℓe	mm	75.3
Effective cross-sectional area	Ae	mm^2	55.6
Effective core volume	Ve	mm^3	4190
Cross-sectional center pole area	Acp	mm^2	56.6
Minimum cross-sectional area	Acp min.	mm^2	54.3
Cross-sectional winding area of core	Acw	mm^2	117
Weight (approx.)		g	23

Part No.	AL-value (nH/N^2)*	Core loss (W) max. 100kHz, 200mT	Calculated output power (forward converter mode)
PC47EPC30-Z	1570±25% (1kHz, 0.5mA)	1.99(100°C)	95.7W (100kHz)
PC90EPC30-Z	1700±25% (1kHz, 0.5mA)	2.5(100°C)	85.5W
PC95EPC30-Z	2300±25% (1kHz, 0.5mA)	2.3/2.0/2.3(25°C/80°C/120°C)	90.1W

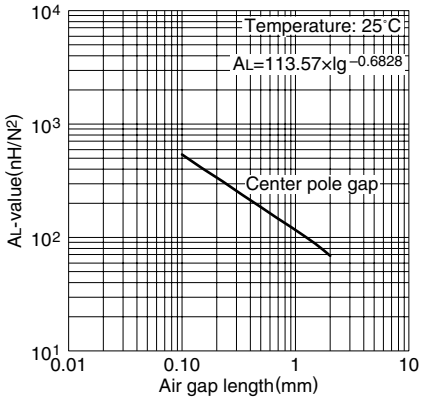
* Coil: ø0.3 2UEW 100Ts

NI limit vs. AL-value for PC47EPC30 gapped core (Typical)



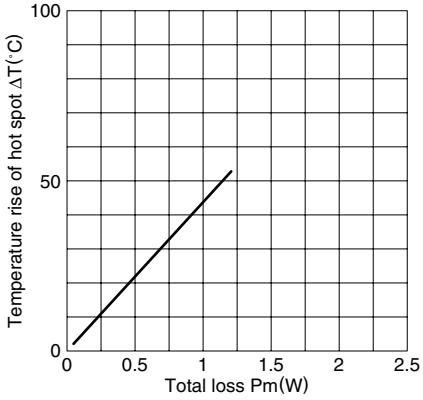
Note: NI limit shows the point where the exciting current is 20% and 40% away from its extended linear part.

AL-value vs. Air gap length for PC47EPC30 core (Typical)

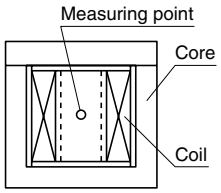


Measuring conditions
- Coil: ø0.3 2UEW 100Ts
- Frequency: 1kHz
- Level: 0.5mA

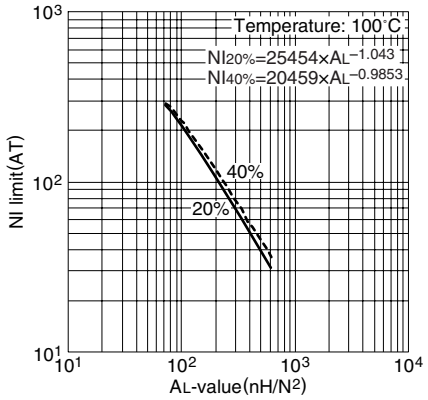
Temperature rise vs. Total loss for EPC30 core (Typical) (Ambient temperature: 25°C)



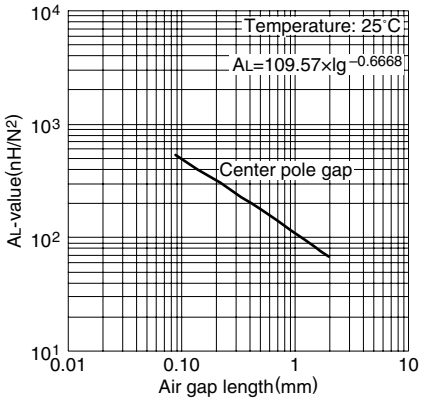
Note: The temperature rise is measured in the room whose temperature and humidity are fixed to 25°C and 45(%)RH. respectively. (approx. 400×300×300cm)



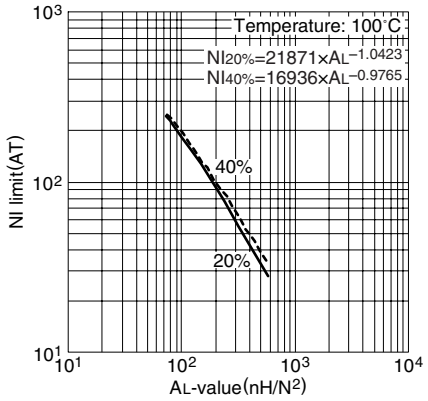
NI limit vs. AL-value for PC90EPC30 gapped core (Typical)



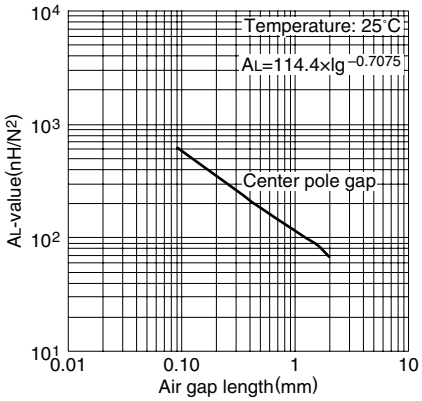
AL-value vs. Air gap length for PC90EPC30 core (Typical)



NI limit vs. AL-value for PC95EPC30 gapped core (Typical)



AL-value vs. Air gap length for PC95EPC30 core (Typical)



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

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