COMMON MODE CHOKE COIL

LC4/LS4/LS4M/LS4N SERIES

FEATURES

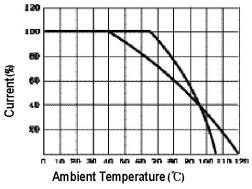
- Excellent frequency characteristics.
- Use of insulating material having superior flame resistance.
- Available either vertical mounting type or horizontal mounting type.

APPLICATIONS

- Personal computers and peripherals.
- Digital equipments.
- Switching power sources and switching power supply.
- Prevention of noise emitted from VCCI, FCC, CISPR, and VDE.
- Various types of electronic equipment.

SPECIFICATIONS

Model	Rated Voltage AC, DC (V)	Rated Current (A)	Inductance (mH) +50, -30%	Temperature Rise Max (℃)	Operating Temperature (℃)
LS(LC)403110	250V	1A	11	40℃ max.	
LS(LC)404060	250V	1.6A	6	40℃ max.	
LS(LC)405024	250V	2.4A	2.4	40℃ max.	
LS(LC)406012	250V	3.6A	1.2	40℃ max.	
LS403150 M	250V	1.2A	15	80℃ max.	
LS403110 M	250V	1.3A	11	80℃ max.	
LS404110 M/N	250V	2.0A / 1.4A	11	80/50℃ max.	
LS404060 M/N	250V	2.3A / 1.6A	6	80/50℃ max.	
LS405024 M	250V	3.6A	2.4	80℃ max.	
LS406012 M	250V	5.0A	1.2	80℃ max.	
LS404071 N	250V	2.0A	7.1	50℃ max.	
LS404110 N	250V	1.4A	10	50℃ max.	
LS404115 N	250V	1.4A	11.5	50℃ max.	
LS405100 N	250V	2.0	10	50℃ max.	



-125℃ to +105℃

Including

temperature rise

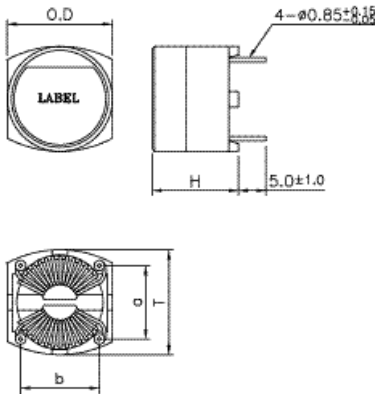
Note : All types are designed to meet the requirement of UL 1283, CSA 22.2, VDE 0565-2.
Test Voltage : 2000V AC one minute, line to line.
Insulation Resistance : 300 Mohm min. at 500V DC.
Voltage Drop : 1.0V max

■Model Number Construction

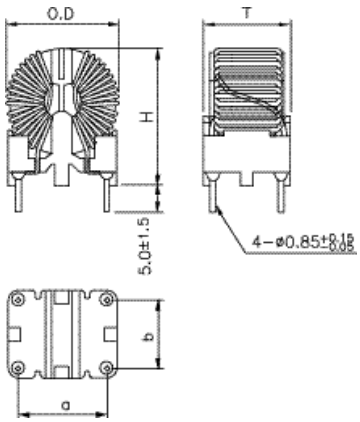
LC4	03	110
Series Description LC4:Horizontal Type LS4:Vertical Type LS4 M:Vertical Mini Type	Dia. of Copper Wire 03:Φ0.3 04:Φ0.4 05:Φ0.5	Inductance Value 110:11.0 mH 012:1.2 mH 024:2.4 mH

Shapes and Dimensions

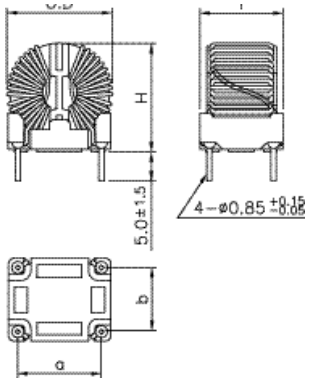
LC4-Series



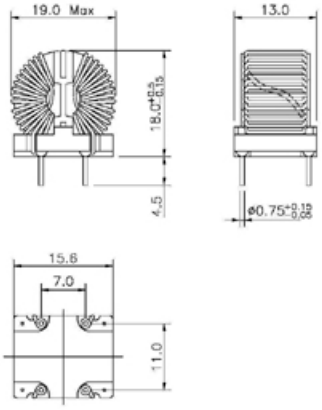
LS4-Series



LS4 M-Series



LS4 N-Series

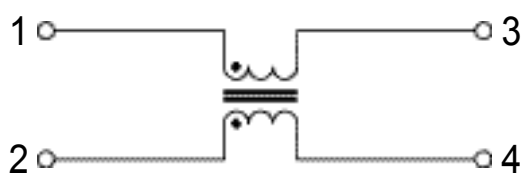


*GENERAL TOLERANCE: ±0.5
*UNIT: mm

General Tolerance : ±0.5
Unit : mm

MODEL	O.D (max.)	H (max.)	T (max)	a	b
LS(LC)403110	19(20)	21(17)	13(20)	13(14)	10(15)
LS(LC)404060	19(20)	21(17)	13(20)	13(14)	10(15)
LS(LC)405024	19(20)	21(17)	13(20)	13(14)	10(15)
LS(LC)406012	19(20)	21(17)	13(20)	13(14)	10(15)
LS403150 M	19	18.5	13	13	10
LS403110 M	19	18.5	13	13	10
LS404110 M/N	19	18.5 / 7	13	13	10
LS404060 M/N	19	18.5 / 7	13	13	10
LS405024 M	19	18.5	13	13	10
LS406012 M	19	18.5	13	13	10
LS404071 N	19	18	13	7	11
LS404110 N	19	18	13	7	11
LS404115 N	19	18	13	7	11
LS405100 N	19	18	13	7	11

Circuit Diagram



COMMON MODE CHOKE COIL

LSA (C/D)/ LHA(C) SERIES

FEATURES

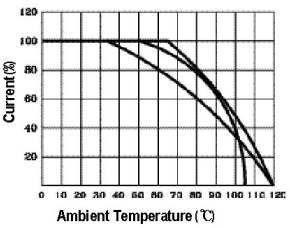
- Excellent frequency characteristics.
- Use of insulating material having superior flame resistance.
- Available either vertical mounting type or horizontal mounting type.

APPLICATIONS

- Personal computers and peripherals.
- Digital equipments.
- Switching power sources and switching power supply.
- Prevention of noise emitted from VCCI, FCC, CISPR, and VDE.
- Various types of electronic equipment.

SPECIFICATIONS

Model	Rated Voltage AC,DC(V)	Rated Current (A)	Inductance (mH)+50,-30%	Temperature Rise Max(℃)
# LHA05992/06433C	250V	1.4/2.0	99.2/43.3	50 ℃ Max
LHA07317/07110C	250V	2.7/3.6	31.7/11.0	50 ℃ Max
LHA08110C	250V	4.5	11.0	55 ℃ Max
LSA12059C	250V	7.1	5.9	50 ℃ Max
LSA13024/13013C	250V	11/12.5	2.4/1.3	60/55 ℃ Max
LS(LH)A13043C	250V	8.2	4.3	50 ℃ Max
LS(LH)A14027C	250V	10.3	2.7	50 ℃ Max
LS(LH)A15019C	250V	12.3	1.9	50 ℃ Max
LS(LH)A16017C	250V	13.8	1.7	50 ℃ Max
LS(LH)A17008C	250V	19.5	0.8	50 ℃ Max
LS(LH)A08235C/D	250V	3.0	23.5	50 ℃ Max
LS(LH)A08055C/D	250V	5.0	5.5	55 ℃ Max
LS(LH)A09211C/D	250V	3.7	21.1	50 ℃ Max
LS(LH)A10126C/D	250V	4.7	12.6	50 ℃ Max
LS(LH)A10024C/D	250V	8.0	2.4	55 ℃ Max
LS(LH)A11072C/D	250V	5.9	7.2	50 ℃ Max
# LSA05230P	250V	2.0	23.0	55 ℃ Max
LSA06140P	250V	3.0	14.0	55 ℃ Max
LSA07110P	250V	3.6	11.0	55 ℃ Max

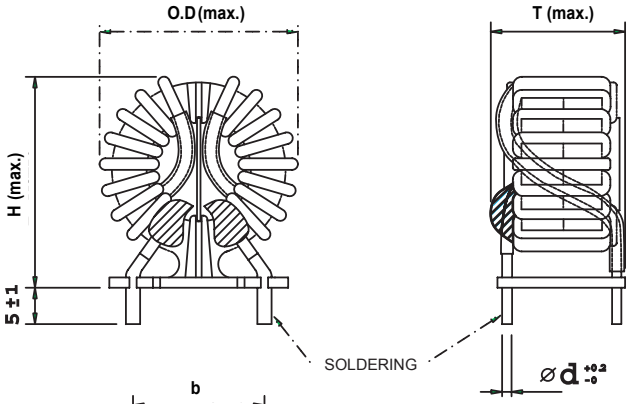


-25¡É to +105¡É
(LSA, LHA Series)
Including
temperature rise

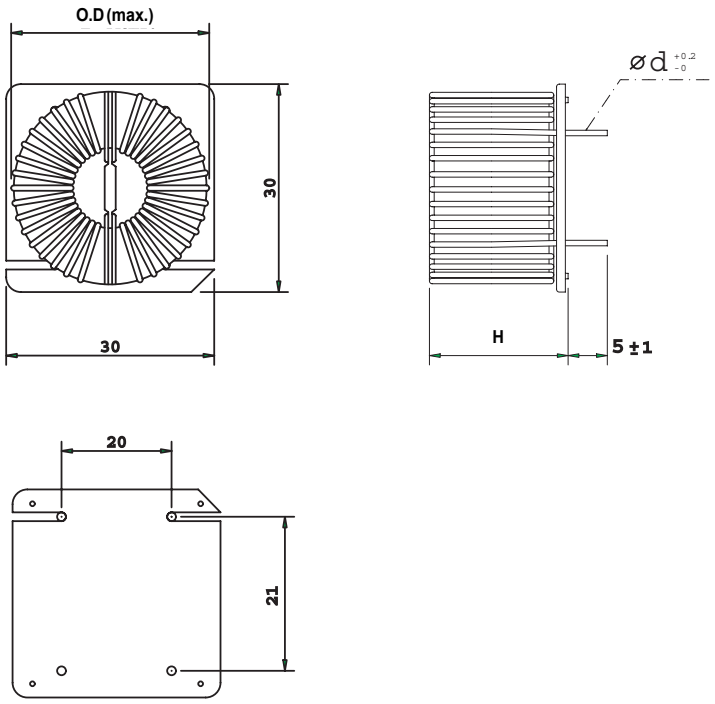
Note : Aii types are designed to meet the requirement of UL 1283,CSA 22.2, VDE 0565-2.
Test Voltage : 2000V AC one minte, Line to Line.
Insulation Resistance : 300Mohm min. at 500V DC.
Voltage Drop : 1.0V max.(Except 2.0v Max for "#")

Shapes and Dimensions

LSA****(C/D/P)

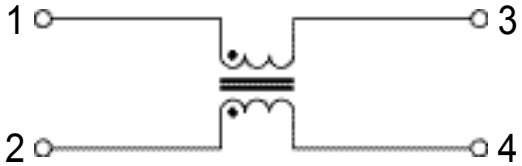


LHA****(C/D/P)



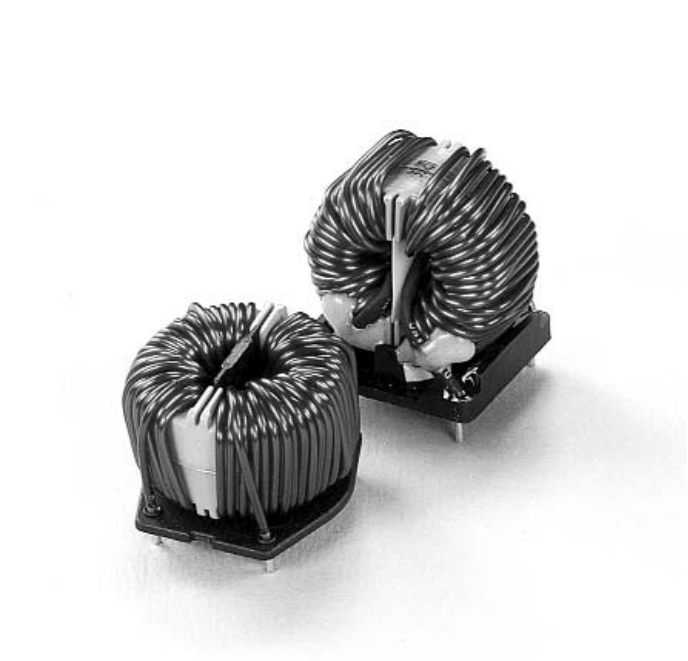
MODEL	O.D (max.)	H (max.)	T (max)	a	b	Ød
# LHA05992/06433C	31	21	-	-	-	0.5/0.6
LHA07317/07110C	31	21	-	-	-	0.7
LHA08110C	30	21	-	-	-	0.8
LSA12059C	33	33	24	-	18	1.2
LSA13024/13013C	33	33	24	-	18	1.3
LS(LH)A13043C	33(33)	33(23.5)	24(-)	-	18	1.3
LS(LH)A14027C	33(34)	33(23.5)	24(-)	-	18	1.4
LS(LH)A15019C	33(34)	33(23.5)	24(-)	-	18	1.5
LS(LH)A16017C	34(34)	33(23.5)	25(-)	-	18	1.6
LS(LH)A17008C	34(34)	33(23.5)	25(-)	-	18	1.7
LS(LH)A08235C/D	32(31)	32(23)	22(-)	12/ -	- /18	0.8
LS(LH)A08055C/D	31(30)	32(21)	22(-)	12/ -	- /18	0.8
LS(LH)A09211C/D	33(33)	32(23.5)	24(-)	12/ -	- /18	0.9
LS(LH)A10126C/D	33(33)	32(23.5)	24(-)	12/ -	- /18	1.0
LS(LH)A10024C/D	31(30)	32(21)	22(-)	12/ -	- /18	1.0
LS(LH)A11072C/D	33(33)	33(23.5)	24(-)	12/ -	- /18	1.1
# LSA05230P	30.5	34	22	14.9	12.3	0.85
LSA06140P	30.5	34	22	14.9	12.3	0.85
LSA07110P	30.5	34	22	14.9	12.3	0.85

Circuit Diagram



COMMON MODE CHOKE COIL

LS6 / LH6 SERIES



FEATURES

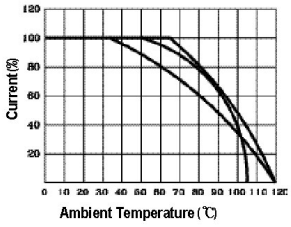
- Excellent frequency characteristics.
- Use of insulating material having superior flame resistance.
- Available either vertical mounting type or horizontal mounting type.

APPLICATIONS

- Personal computers and peripherals.
- Digital equipments.
- Switching power sources and switching power supply.
- Prevention of noise emitted from VCCI, FCC, CISPR, and VDE.
- Various types of electronic equipment.

SPECIFICATIONS

Model	Rated Voltage AC, DC (V)	Rated Current (A)	Inductance (mH) +50, -30%	Temperature Rise Max (℃)
LS(LH)606868	250V	1.8A	86.8	50℃ max.
LS(LH)607607	250V	2.2A	60.7	50℃ max.
LS(LH)608594	250V	2.5A	59.4	50℃ max.
LS(LH)609546	250V	3.0A	54.6	50℃ max.
LS(LH)609180	250V	4.0A	18.0	55℃ max.
LS(LH)610372	250V	3.5A	37.2	50℃ max.
LS(LH)611281	250V	4.8A	28.1	50℃ max.
LS(LH)612202	250V	5.5A	20.2	55℃ max.
LS(LH)613104	250V	6.0A	10.4	50℃ max.
LS(LH)614046	250V	12A	4.6	80℃ max.
LS(LH)614075	250V	7.2A	7.5	50℃ max.
LS(LH)615062	250V	8.5A	6.2	50℃ max.
LS(LH)616022	250V	12A	2.2	55℃ max.
LS(LH)617044	250V	12A	4.4	50℃ max.
LS(LH)619026	250V	14.8A	2.6	50℃ max.
LS615014	250V	13A	1.4	55℃ max.
LS615025	250V	10A	2.5	55℃ max
LS616054	250V	10A	5.4	50℃ max.

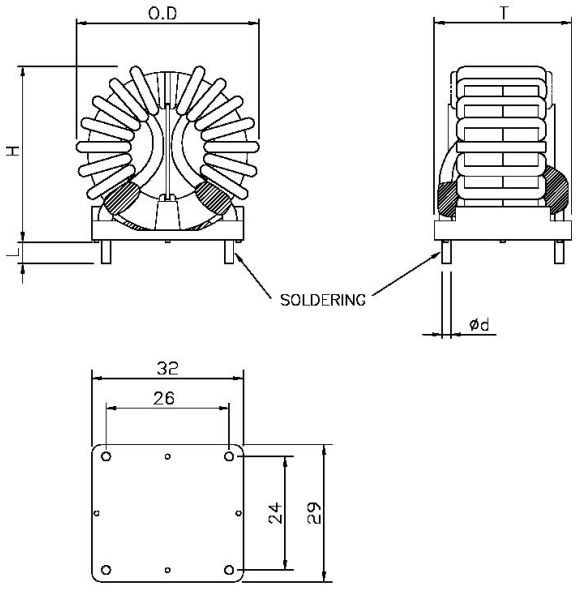


-25℃ to +120℃
(LS6, LH6 Series)
Including
temperature rise

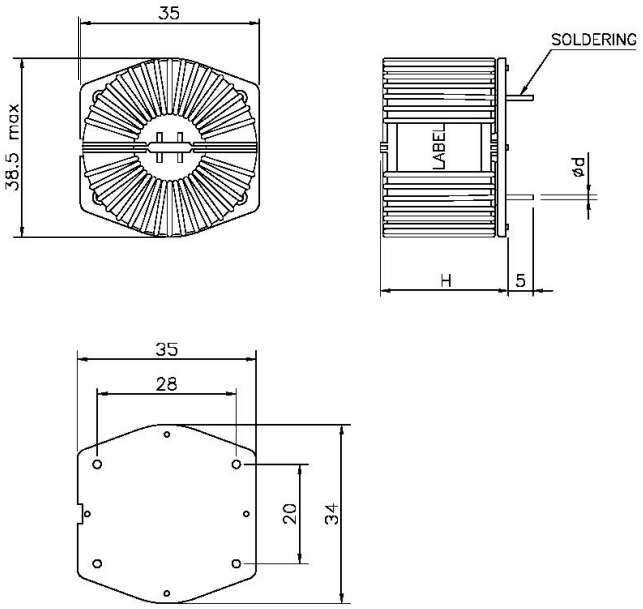
Note : All types are designed to meet the requirement of UL 1283, CSA 22.2, VDE 0565-2.
Test Voltage : 2000V AC one minite, line to line.
Insulation Resistance : 300 Mohm min. at 500V DC.
Voltage Drop : 1.0V max. (except 2.0V max for "#")

Shapes and Dimensions

LS6 Series



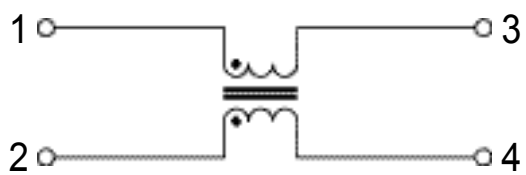
LH6 Series



* General Tolerance : ±1.5
* Unit : mm

MODEL	O.D (max.)	H (max.)	T (max)	Ød
LS(LH)606868	38.5	38(30)	30	0.6
LS(LH)607607	38.5	38(30)	30	0.7
LS(LH)608594	38.5	38(30)	30	0.8
LS(LH)609546	38.5	38(30)	30	0.9
LS(LH)609180	38.5	38(30)	30	0.9
LS(LH)610372	38.5	38(30)	30	1.0
LS(LH)611281	38.5(41)	38(30)	30	1.1
LS(LH)612202	38.5(41)	40(30)	30	1.2
LS(LH)613104	38.5(41)	40(30)	30	1.3
LS(LH)614046	38.5	38(30)	30	1.4
LS(LH)614075	38.5(41)	40(30)	30	1.4
LS(LH)615062	41	38(30)	32	1.5
LS(LH)616022	38.5	38(30)	30	1.6
LS(LH)617044	41	41(31)	32	1.7
LS(LH)619026	41	41(32)	32	1.9
LS615014	38.5	38	30	1.5
LS615025	38.5	38	30	1.5
LS616054	41	41	32	1.6

Circuit Diagram



COMMON MODE CHOKE COIL

LS3 / LH3 SERIES

FEATURES

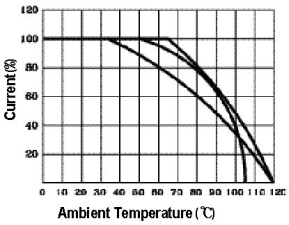
- Excellent frequency characteristics.
- Use of insulating material having superior flame resistance.
- Available either vertical mounting type or horizontal mounting type.

APPLICATIONS

- Personal computers and peripherals.
- Digital equipments.
- Switching power sources and switching power supply.
- Prevention of noise emitted from VCCI, FCC, CISPR, and VDE.
- Various types of electronic equipment.

SPECIFICATIONS

Model	Rated Voltage AC, DC (V)	Rated Current (A)	Inductance (mH) +50, -30%	emperature Rise Max (℃)
LS314164	250V	6.5A	16.4	50℃ max.
LS315118	250V	8.0A	11.8	50℃ max.
LS316100	250V	9.0A	10.0	50℃ max.
LS317071	250V	10.5A	7.1	50℃ max.
LS318062	250V	11.0A	6.2	50℃ max.
LS319046	250V	13.0A	4.6	50℃ max.
LS300038	250V	14.0A	3.8	50℃ max.
LS321028	250V	15.5A	2.8	50℃ max.
LS322020	250V	19.0A	2.0	50℃ max.
LS323017	250V	20.0A	1.7	50℃ max.
LH316042	250V	10A	4.2	35℃ max.
LH316048	250V	13A	4.8	55℃ max.
LH319024	250V	15A	2.4	35℃ max.
LH321015	250V	20A	1.5	40℃ max.

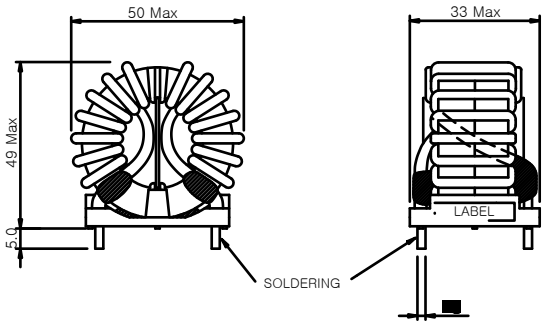


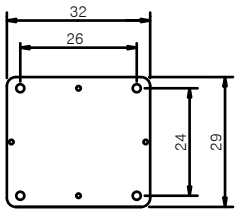
-25℃ to +120℃

Note : All types are designed to meet the requirement of UL 1283, CSA 22.2, VDE 0565-2.
Test Voltage : 2000V AC one minite, line to line.
Insulation Resistance : 300 Mohm min. at 500V DC.
Voltage Drop : 1.0V maX.

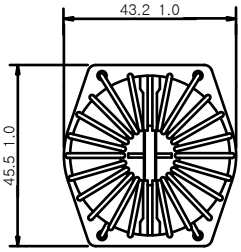
Shapes and Dimensions

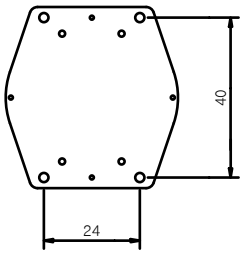
LS3 Series

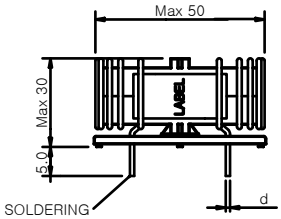




LH3 Series



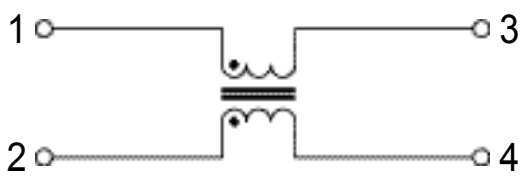




* General Tolerance : ±1.5
* Unit : mm

MODEL	Ød	MODEL	Ød
LS314164	1.4	LS321028	2.1
LS315118	1.5	LS322020	2.2
LS316100	1.6	LS323017	2.3
LS317071	1.7	LH316042	1.6
LS318062	1.8	LH316048	1.6
LS319046	1.9	LS319024	1.9
LS320038	2.0	LS321015	2.1

Circuit Diagram



EMI/HARMONICS CHOKE COIL

HCA SERIES

FEATURES

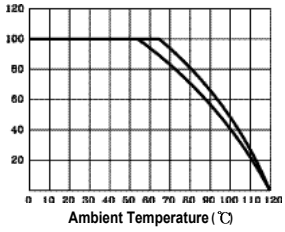
- Suitable for the products that must conform to IEC 1000-3-2 and CISPR Pub. 22 Class B.
- Excellent filtering characteristics for both normal mode and common mode.
- Miniature main PCB mounting type with light weight.
- Minimized leakage flux, suitable for display units.
- Effective for power facter collection.

APPLICATIONS

- Capacitor input type switching power supply having output up to 150W.
- CRT monitor, TV and Audio.
- Household appliances.

SPECIFICATIONS

Model	Rated Current	Differential mode Inductance (mH),1KHz, 1V (Typical value)	Common mode Inductance (mH),1KHz, 1V (Typical value)	Temperature Rise	Operating Temperature
HCA 113-016	1.3A	16	3.0	55℃ max.	-25℃ to +120℃ (Including temperature rise)
HCA 206-060	0.6A	64.2	10.8	55℃ max.	
HCA 107-028	0.7A	35.5	5.4	55℃ max.	
HCA 208-049	0.8A	54.8	9.3	65℃ max.	
HCA 209-050	0.95A	54.4	9.3	65℃ max.	

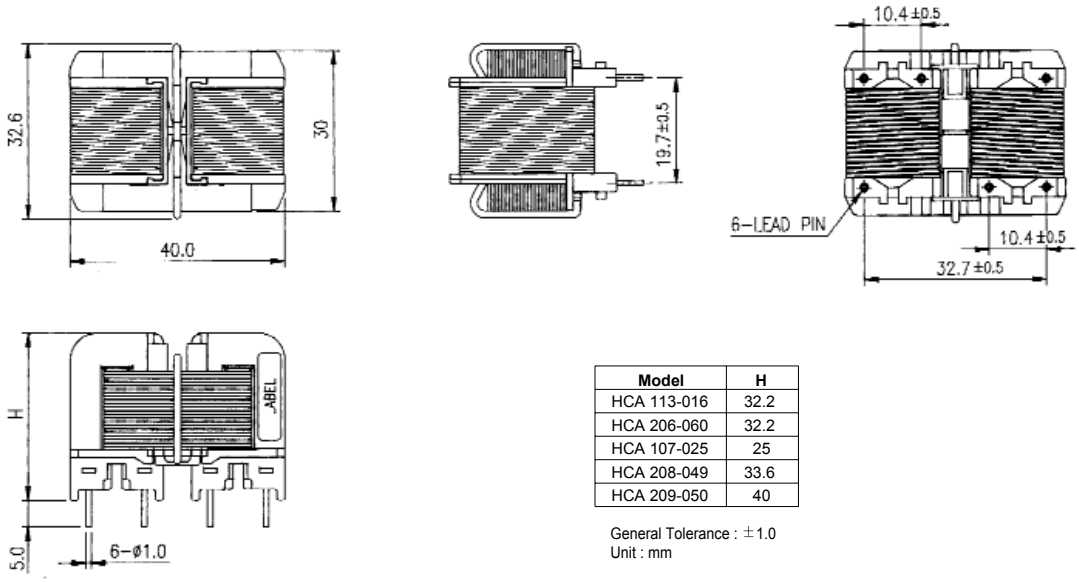


Note : Inductance, DC Resistance are expressed by nominal values.
Insulation Resistance line to line : 100Mohm min, at 500V DC.
Test Voltage : 2000V AC one minute, line to line.
Weight : HCA 113-013 / 206-060 : 120g.
HCA 107-028 : 82g
HCA 208-049 : 140g
HCA 209-050 : 189g

■Model Number Construction

HC	A	1	13	016
Series Description	Design Squence	Input Voltage 1:100V Family 2:200V Family	Current Rating:AC rms 13:1.3 amp 06:0.6 amp 07:0.7 amp 08:0.8 amp 09:0.9 amp	Normal Mode Inductance 016:16 mH 060:60 mH 028:28 mH 049:49mH 050:50 mh

Shapes and Dimensions

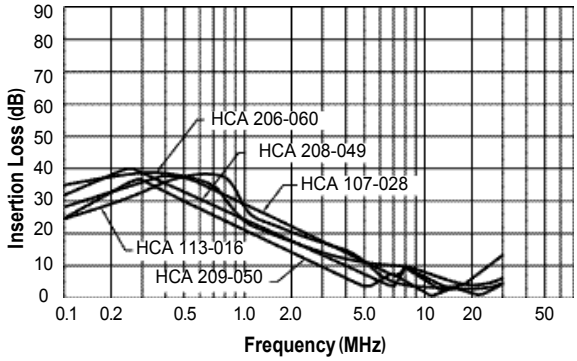


Model	H
HCA 113-016	32.2
HCA 206-060	32.2
HCA 107-025	25
HCA 208-049	33.6
HCA 209-050	40

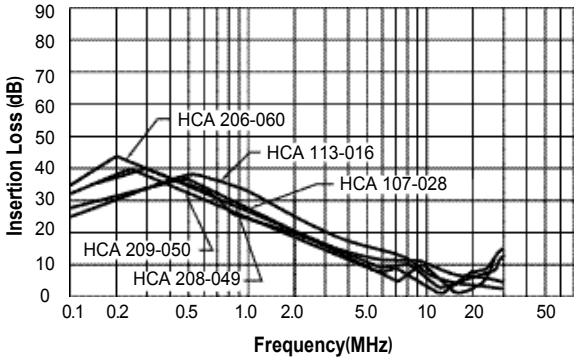
General Tolerance : ±1.0
Unit : mm

Attenuation Characteristics (Typical)

●Common Mode

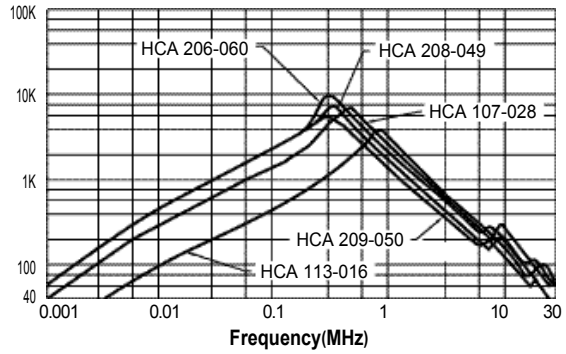


●Differential Mode

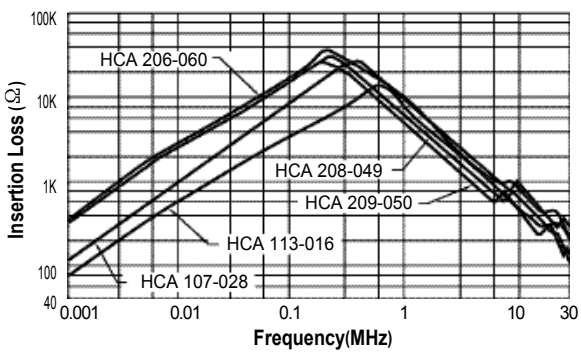


Impedance Characteristics (Typical)

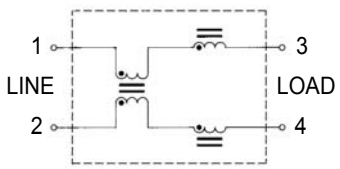
●Common Mode



●Differential Mode



●Equivalent Circuit Diagram



●Measurement Configuration (Attenuation)