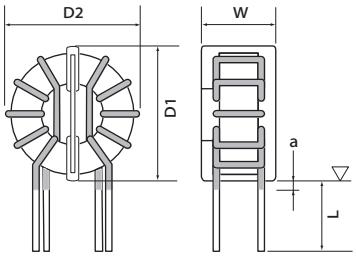
NANOCRYSTALLINE COMMON MODE COILS

FL-V New! Series

RoHS2 Compliant



◆MAJOR USES
- AC/DC Common mode filter

◆FEATURES
- Compared to conventional coils, the inductance level (100kHz) has been significantly improved.
- Compared to conventional coils, a higher impedance level has been realized within wide ranges of frequencies.
- Conforming to insulating type B and incombustibility UL94V-0

◆CORE STANDARD SPECIFICATIONS

Coil Part No.*1	Core Part No.	Rated voltage [V]	Rated Current [A]	Inductance		D.C.R. mΩ (max)	Winding mmϕ× lines	Outside Dimensions			Frequency Characteristics Graph	Temperature rise Graph
				10kHz [mH]	100kHz [mH]			D1 [mm]	D2 [mm]	W [mm]		
LDFL004272VS-□0E	F110705	250	3.5	6.0	2.7	38	0.55×1P	15.0	16.0	12.0	1,2	A
LDFL006102VS-□0E			5.5	2.3	1.0	16	0.7×1P					
LDFL006832VD-□0E	F221407	250	5.5	18.3	8.3	26	0.9×1P	27.0	31.0	17.5	3,4	B
LDFL009412VD-□0E			9	9.1	4.1	16	1.1×1P					
LDFL012282VD-□0E			12	6.2	2.8	9.5	1.3×1P					
LDFL014172VD-□0E			14	3.8	1.7	7	1.4×1P					
LDFL007652V6-□0E	F221310	250	7	16.3	6.5	22	1.0×1P	29.0	31.0	21.0	5,6	C
LDFL010302V6-□0E			10	6.7	3.0	11	1.2×1P					
LDFL012202V6-□0E			12	4.5	2.0	7.5	1.3×1P					
LDFL008123VV-□0E	F251513	250	8	25.3	11.5	26	1.1×1P	30.5	34.0	23.5	7,8	D
LDFL011742VV-□0E			11	16.2	7.4	15	1.3×1P					
LDFL013412VV-□0E			13	9.1	4.1	12	1.4×1P					
LDFL015372VBU□0E	F281815	700	15	8.1	3.7	6.7	1.7×1P	36.0	40.0	29.5	9,10	E
LDFL021252VBU□0E			21	5.4	2.5	4.5	1.9×1P					
LDFL026152VBU□0E			26	3.3	1.5	2.9	1.5×2P					
LDFL020592VJU□0E	F372315	700	20	12.9	5.9	5.7	1.5×2P	48.0	50.0	32.5	11,12	F
LDFL027282VJU□0E			27	6.2	2.8	3.1	1.7×2P					
LDFL039172VJU□0E			39	3.7	1.7	1.5	2.0×2P					

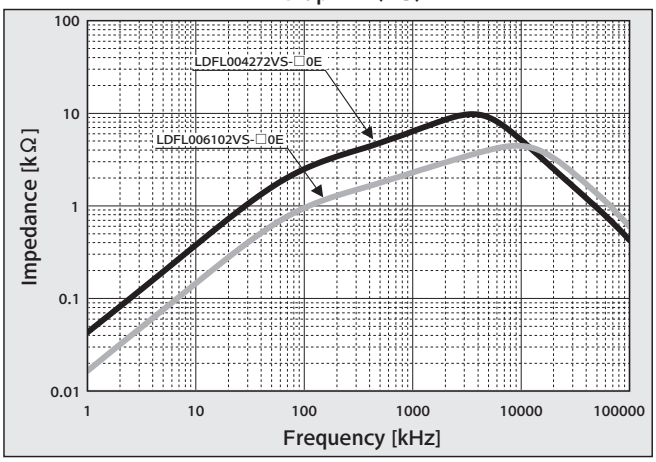
*1 For Coil Part No., vertical type=V, horizontal type=H are used

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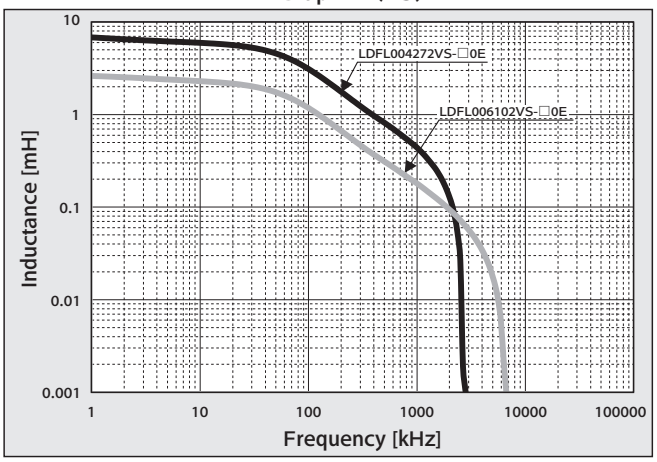
FL-V Series

Frequency Characteristics Ambient temperature : 25°C

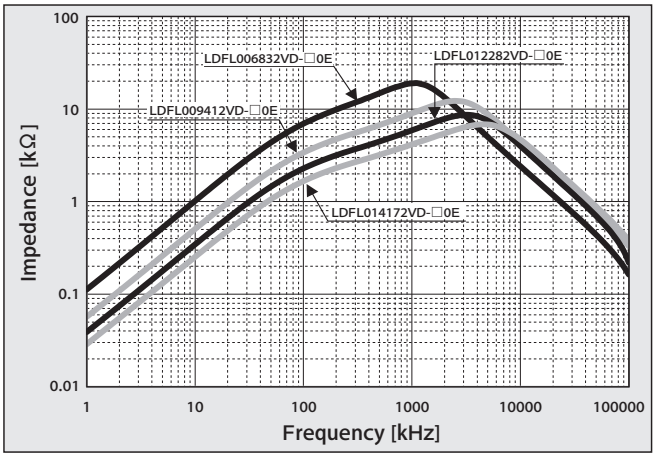
Graph-1（VS）



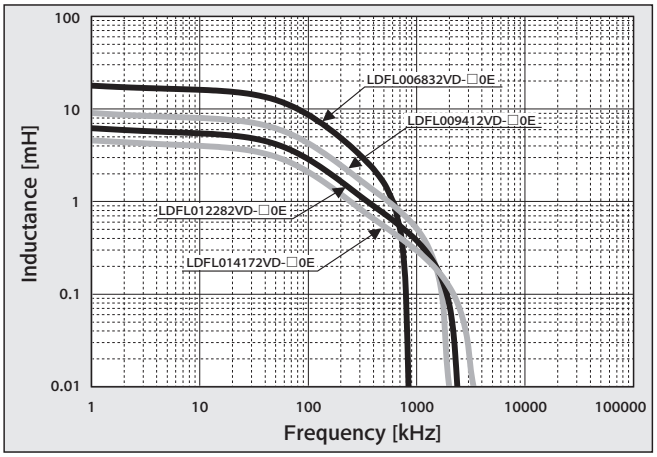
Graph-2（VS）



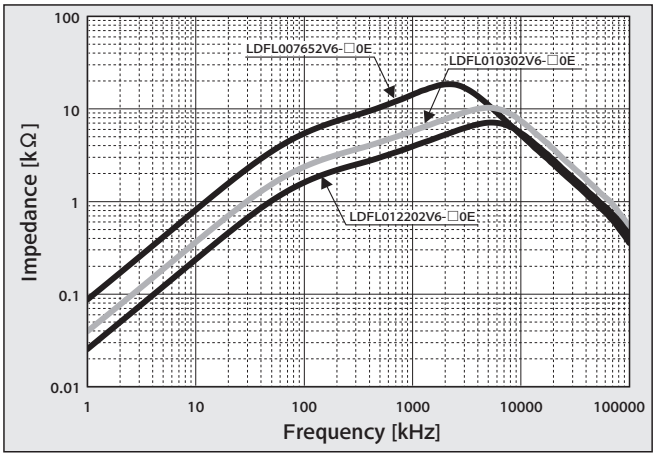
Graph-3（VD）



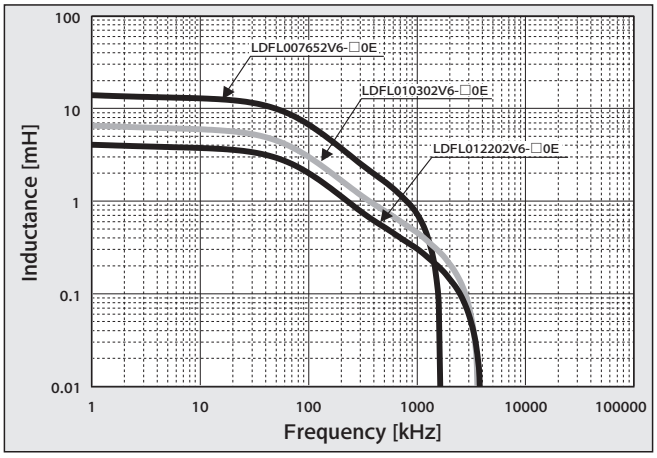
Graph-4（VD）



Graph-5（V6）



Graph-6（V6）

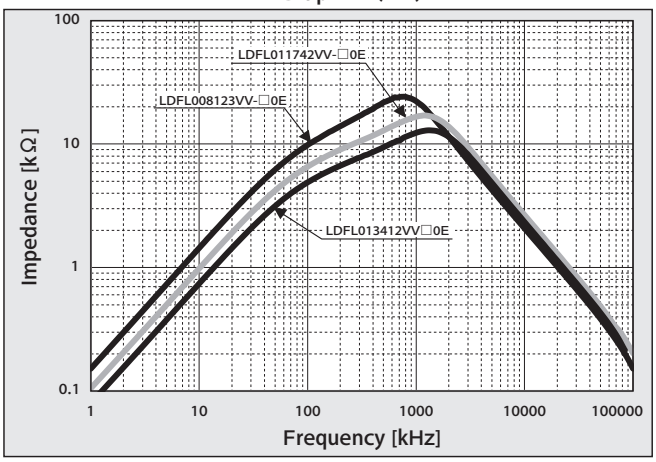


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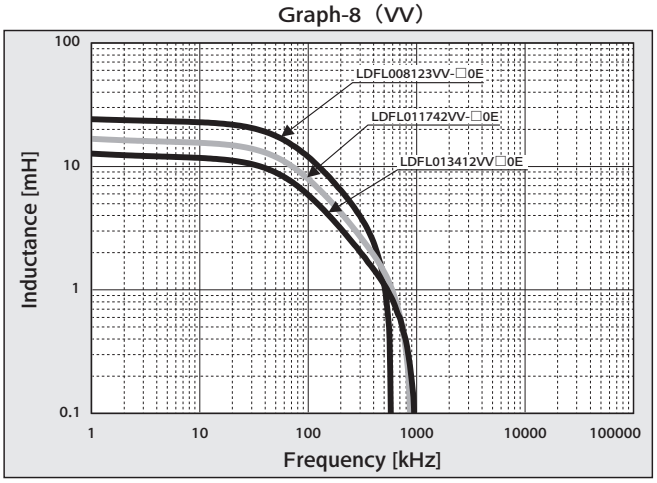
FL-V Series

Frequency Characteristics Ambient temperature : 25°C

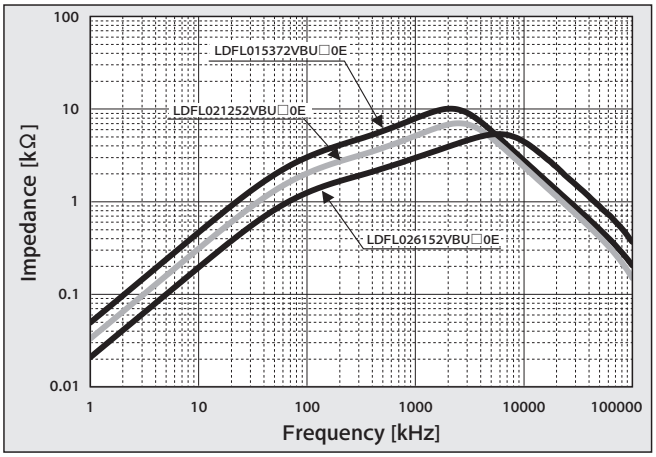
Graph-7（VV）



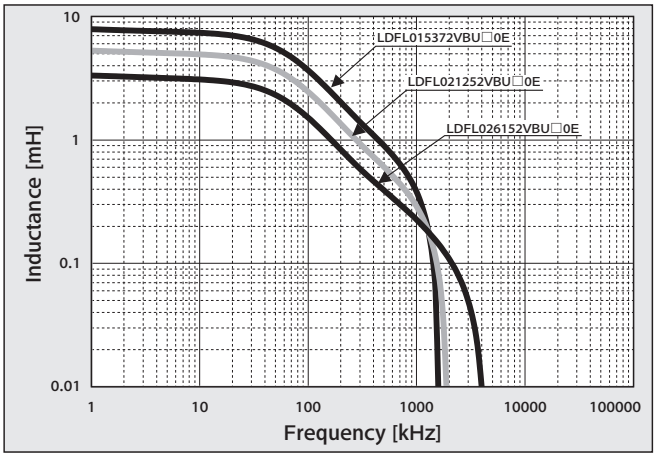
Graph-8（VV）



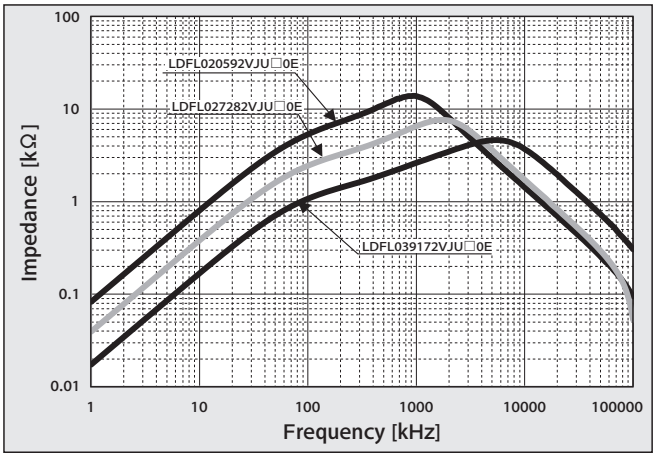
Graph-9（VBU）



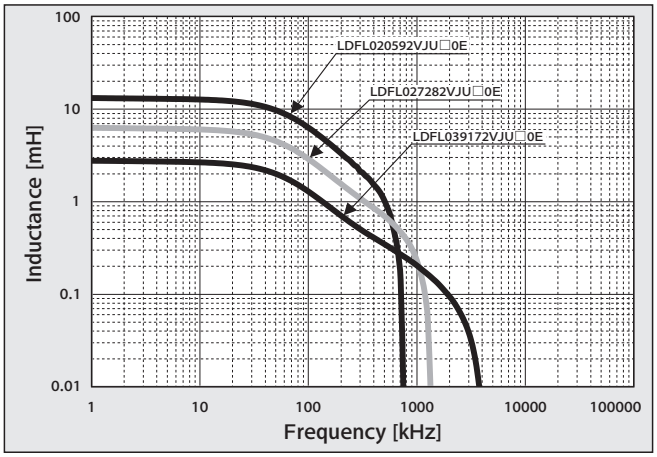
Graph-10（VBU）



Graph-11（VJU）



Graph-12（VJU）

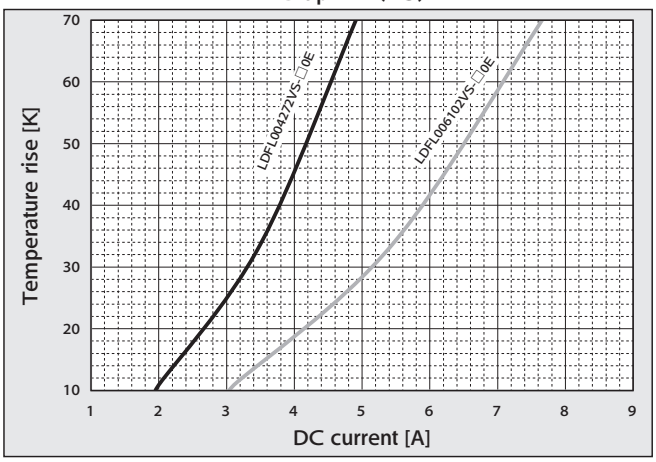


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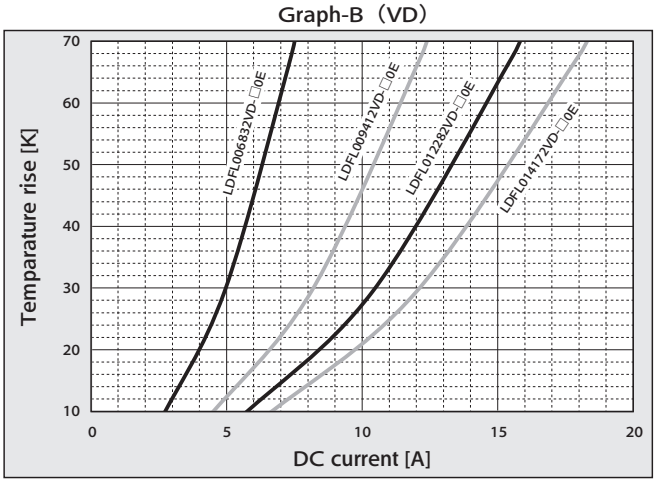
FL-V Series

Temperature rise Ambient temperature: 25°C （calm） Saturation temperature for the DC current flow
*** Installation conditions or the influence of heat emitted by surrounding components are not considered in this data.**

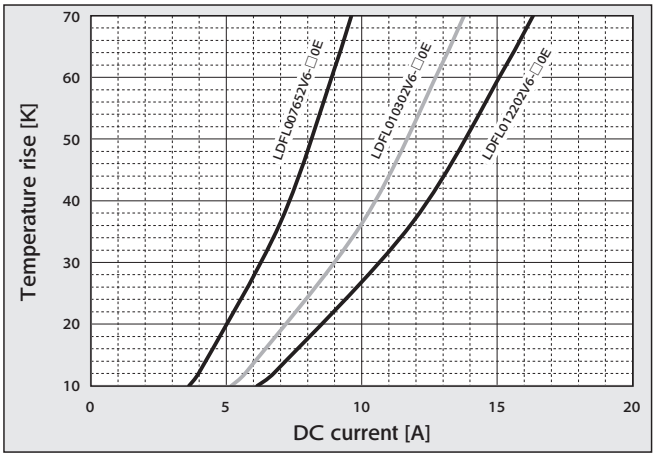
Graph-A（VS）



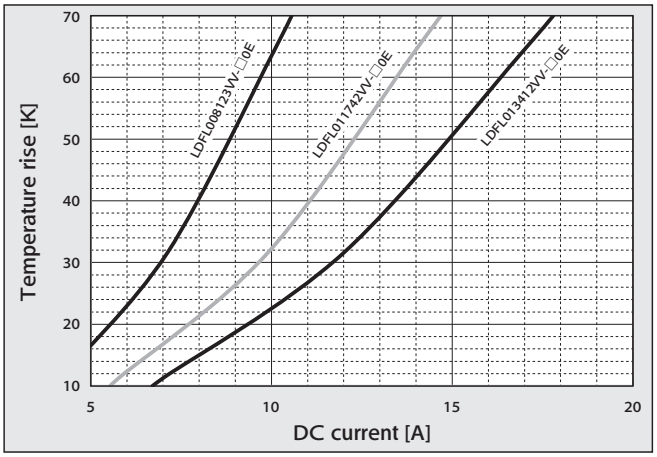
Graph-B（VD）



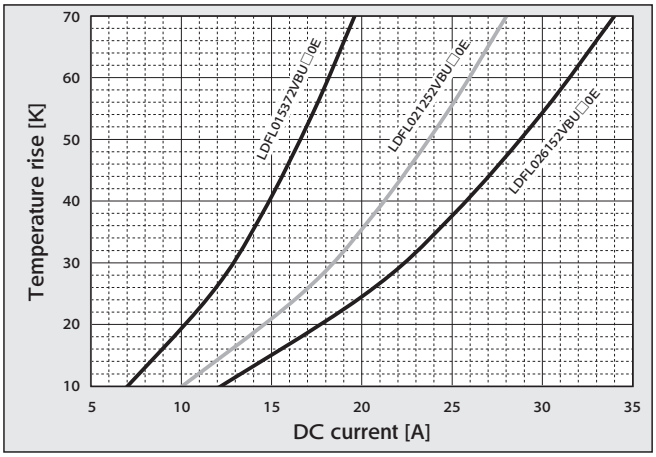
Graph-C（V6）



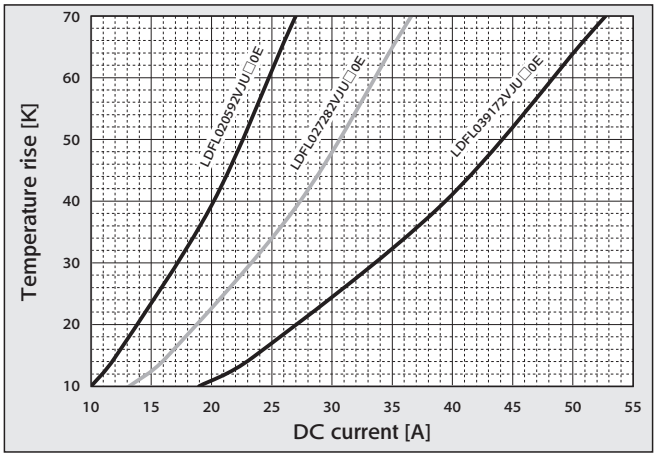
Graph-D（VV）



Graph-E（VBU）



Graph-F（VJU）

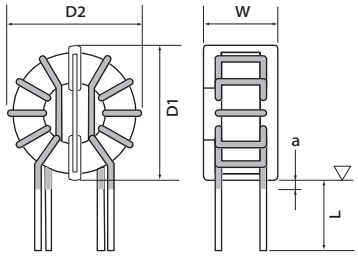


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NANOCRYSTALLINE COILS

FL Series

Standard type for single phase



Maximum outer diameter : D1(Vertical), D2(Horizontal)
Maximum width : W
Total lead length* : L=30±3mm
Soldering boundary* : a=1.5mmMAX
*The bottom of the core or coil (▽) is defined as base surface.

◆MAJOR USES

●Common mode coils for noise filter in inverter or large capacity power supply

◆FEATURES

●Small profile, light through adoption of high permeability core
●High inductance in spite of a small number of turns
●Low temperature rise and low D.C. resistance
●Stable frequency performance of noise suppression in wide frequency range
●Excellent temperature characteristics

◆COIL STANDARD SPECIFICATIONS

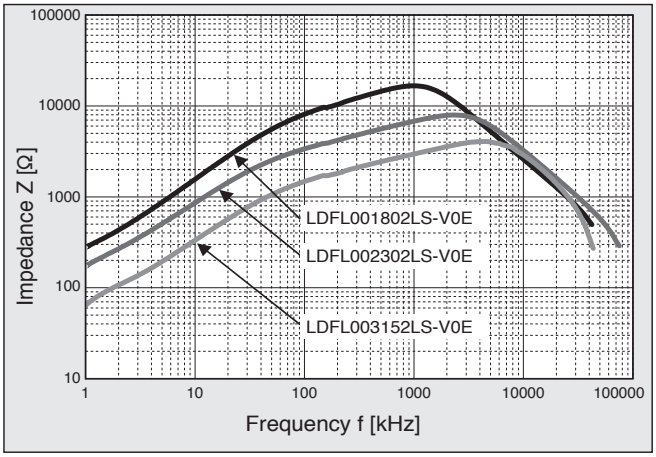
	Coil Part No. (Old Coil Part No.)	Rated Current A	Inductance		D.C.R. mΩ (max)	Winding mmϕ×lines	Outside Dimensions		
			10kHz (Typical)	100kHz (Rating)			D1 mm	D2 mm	W mm
			mH	mH					
●	LDFL001802LS-V0E (FL01393LSPBF)	1	28.0	8.0	200	0.35×1P	15.0	16.0	11.9
●	LDFL002302LS-V0E (FL02173LSPBF)	2	11.6	3.0	85	0.45×1P	15.0	16.0	11.9
●	LDFL003152LS-V0E (FL03872LSPBF)	3	5.6	1.5	45	0.55×1P	15.0	16.0	11.9
	LDFL003552L5-V0E (FL03552L5PBF)	3	22.0	5.5	56	0.7 ×1P	28.0	29.0	15.0
	LDFL003153L6-V0E (FL03153L6PBF)	3	60.0	15.0	82	0.7 ×1P	29.0	30.5	20.5
	LDFL005132L5-V0E (FL05132L5PBF)	5	5.4	1.3	16	1.0 ×1P	29.0	30.0	15.0
	LDFL005332L6-V0E (FL05332L6PBF)	5	13.0	3.3	21	1.0 ×1P	29.0	30.5	20.0
	LDFL005302LT-V0E (FL05302LTPBF)	5	13.0	3.0	17	1.1 ×1P	34.0	36.0	20.0
	LDFL005502LT-V0E (FL05502LTPBF)	5	23.0	5.0	23	1.1 ×1P	34.5	36.5	20.5
	LDFL005103LR-V0E (FL05103LRPBF)	5	39.0	10.0	33	1.1 ×1P	39.0	41.0	25.5
	LDFL008451L5-V0E (FL08451L5PBF)	8	1.8	0.45	6.5	1.3 ×1P	29.5	31.0	15.0
	LDFL008102L6-V0E (FL08102L6PBF)	8	4.2	1.0	9	1.3 ×1P	29.5	31.5	20.5
	LDFL010102LT-V0E (FL10102LTPBF)	10	5.8	1.0	8	1.5 ×1P	34.0	38.0	22.0
	LDFL010302LT-V0E (FL10302LTPBF)	10	13.0	3.0	11	1.4 ×1P	36.0	38.0	22.0
	LDFL010502LR-V0E (FL10502LRPBF)	10	24.0	5.0	15	1.5 ×1P	40.0	43.0	27.0
	LDFL010103LJ-V0E (FL10103LJPBF)	10	46.5	10.0	20	1.5 ×1P	46.5	47.5	27.5
	LDFL015102LT-V0E (FL15102LTPBF)	15	3.7	1.0	6	1.6 ×1P	34.5	38.0	20.5
	LDFL015302LR-V0E (FL15302LRPBF)	15	15.0	3.0	10	1.8 ×1P	40.0	42.5	29.0
	LDFL015502LJ-V0E (FL15502LJPBF)	15	24.8	5.0	11	1.8 ×1P	47.0	49.0	28.0
	LDFL020102LR-V0E (FL20102LRPBF)	20	4.2	1.0	5	1.5 ×2P	42.5	43.0	28.0
	LDFL020302LJ-V0E (FL20302LJPBF)	20	13.5	3.0	7	1.5 ×2P	46.5	48.0	30.0
	LDFL025252LJ-V0E (FL25252LJPBF)	25	11.6	2.5	5	1.6 ×2P	47.0	49.0	31.0
	LDFL030102LR-V0E (FL30102LRPBF)	30	4.2	1.0	5	1.7 ×2P	39.5	44.0	29.5
	LDFL030202LJ-V0E (FL30202LJPBF)	30	9.9	2.0	6	1.7 ×2P	47.0	48.5	31.0

The total lead length of the items marked with ● is 15±3mm.

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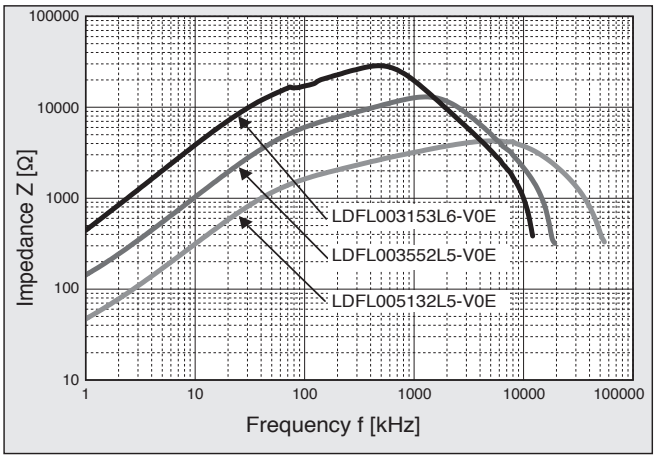
◆FREQUENCY - IMPEDANCE CHARACTERISTICS (1)

●Rated Current: 1, 2, 3 [A]



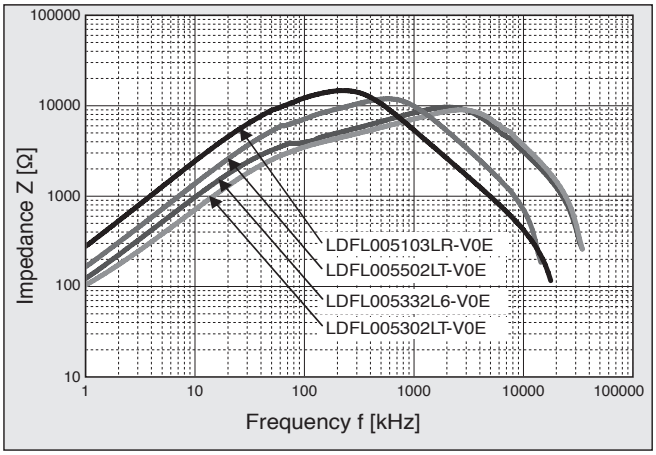
◆FREQUENCY - IMPEDANCE CHARACTERISTICS (2)

●Rated Current: 3, 5 [A]



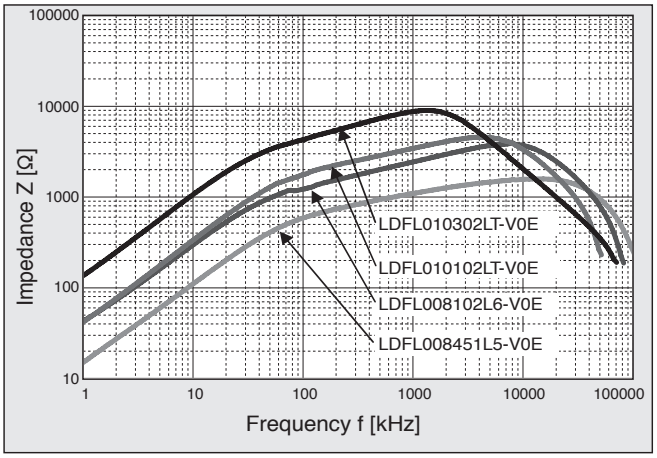
◆FREQUENCY - IMPEDANCE CHARACTERISTICS (3)

●Rated Current: 5 [A]



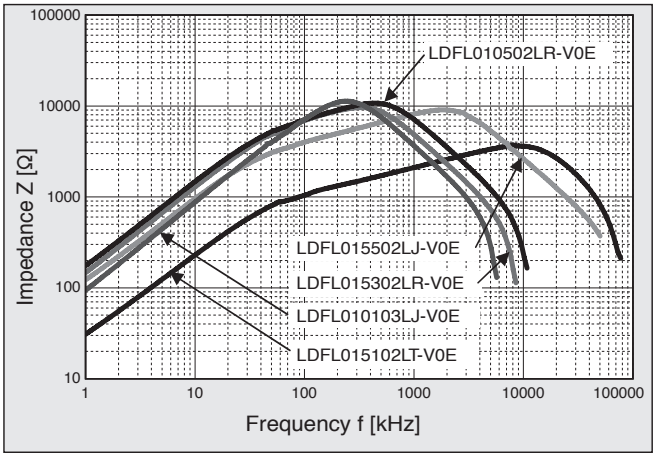
◆FREQUENCY - IMPEDANCE CHARACTERISTICS (4)

●Rated Current: 8, 10 [A]



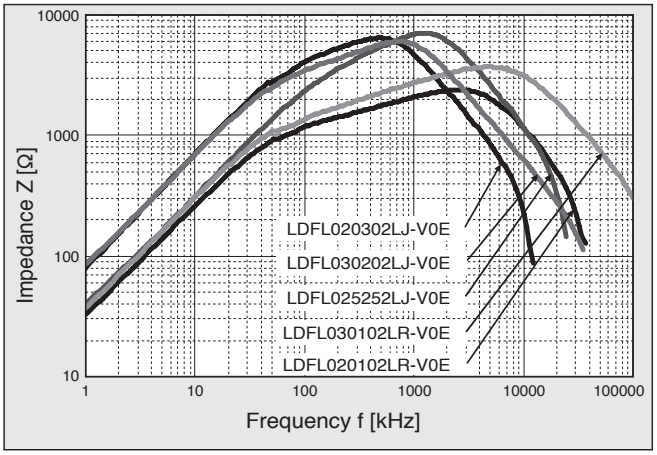
◆FREQUENCY - IMPEDANCE CHARACTERISTICS (5)

●Rated Current: 10, 15 [A]



◆FREQUENCY - IMPEDANCE CHARACTERISTICS (6)

●Rated Current: 20, 25, 30 [A]

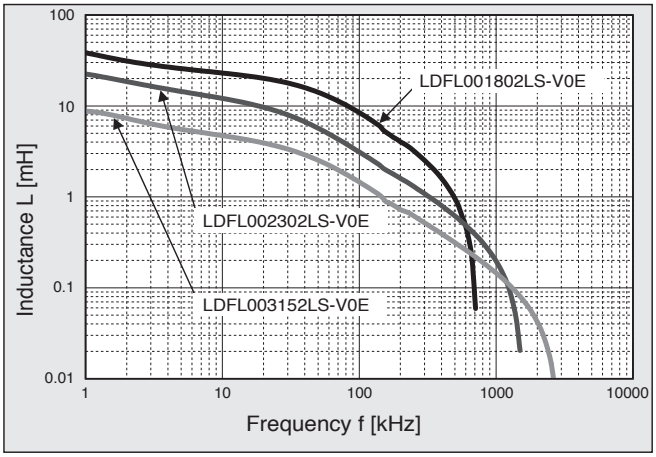


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FL Series

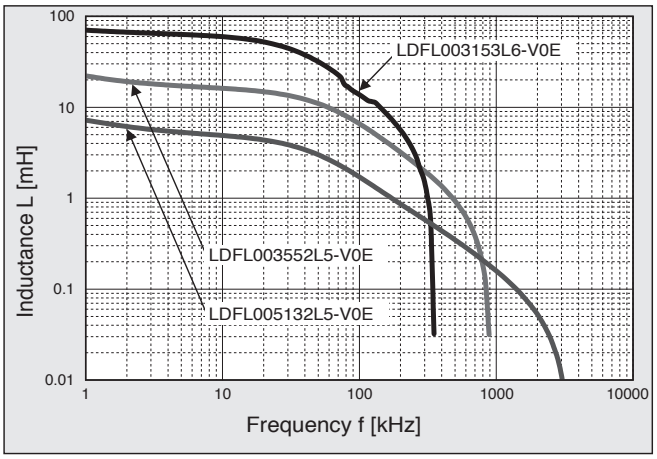
◆FREQUENCY - INDUCTANCE CHARACTERISTICS (1)

●Rated Current: 1, 2, 3 [A]



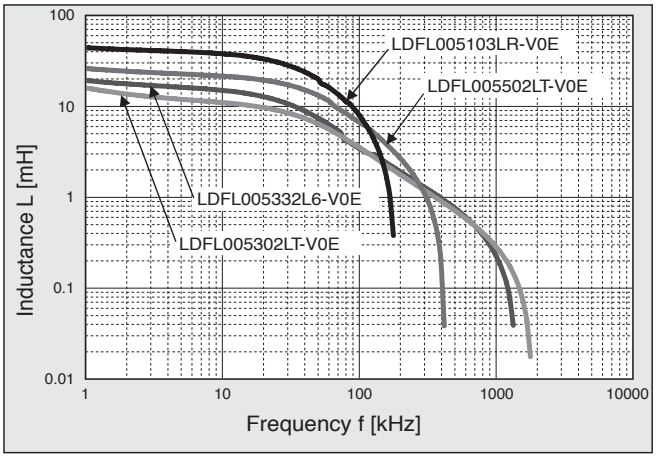
◆FREQUENCY - INDUCTANCE CHARACTERISTICS (2)

●Rated Current: 3, 5 [A]



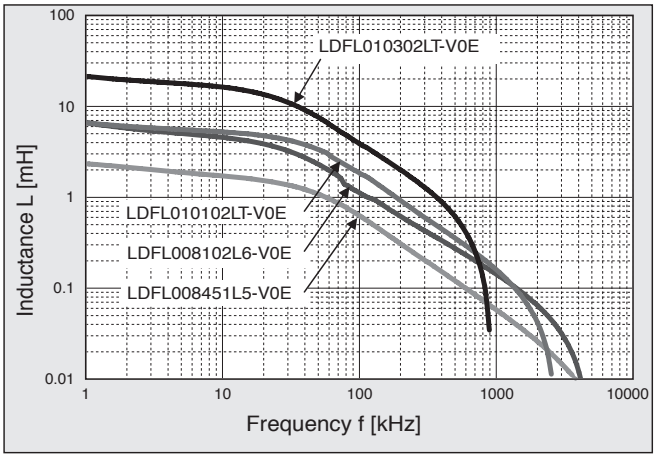
◆FREQUENCY - INDUCTANCE CHARACTERISTICS (3)

●Rated Current: 5 [A]



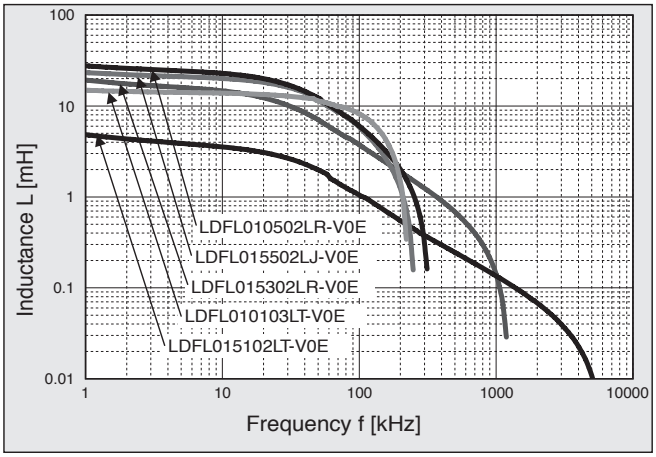
◆FREQUENCY - INDUCTANCE CHARACTERISTICS (4)

●Rated Current: 8, 10 [A]



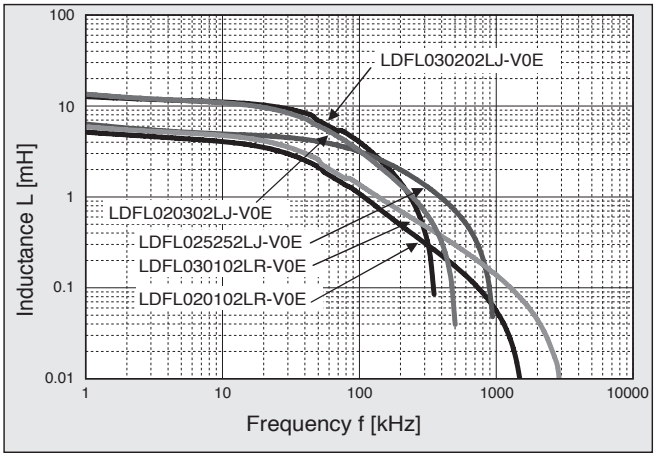
◆FREQUENCY - INDUCTANCE CHARACTERISTICS (5)

●Rated Current: 10, 15 [A]



◆FREQUENCY - INDUCTANCE CHARACTERISTICS (6)

●Rated Current: 20, 25, 30 [A]



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NANOCRYSTALLINE COILS

FL Series

High voltage type for single phase

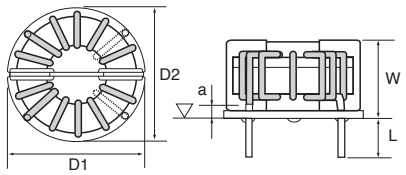
◆MAJOR USES

- Common mode coils for noise filter in inverter or large capacity power supply

◆FEATURES

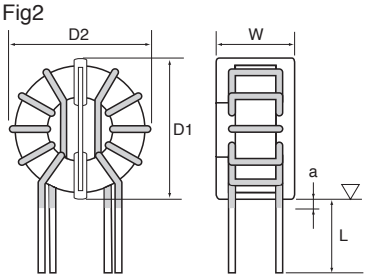
- Applicable to input voltage (700V)
- Remarkably miniaturized in profile benefited by high permeability core
- High inductance in spite of a small number of turns
- Low temperature rise and low D.C. resistance
- Stable frequency performance of noise suppression in wide frequency range
- Excellent temperature characteristics

Fig1



Maximum outer diameter : D1(Vertical), D2(Horizontal)
Maximum width : W
Total lead length* : L=15±3mm
Soldering boundary* : a=1.5mmMAX
*The bottom of the core or coil (▽) is defined as base surface.

Fig2



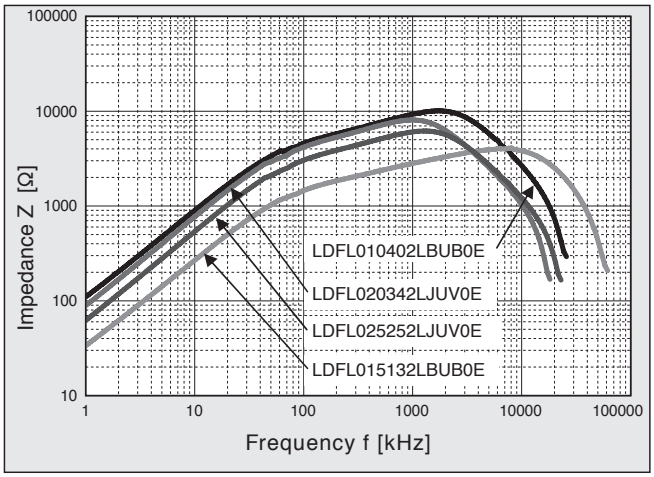
Maximum outer diameter : D1(Vertical), D2(Horizontal)
Maximum width : W
Total lead length* : L=30±3mm
Soldering boundary* : a=1.5mmMAX
*The bottom of the core or coil (▽) is defined as base surface.

◆COIL STANDARD SPECIFICATIONS

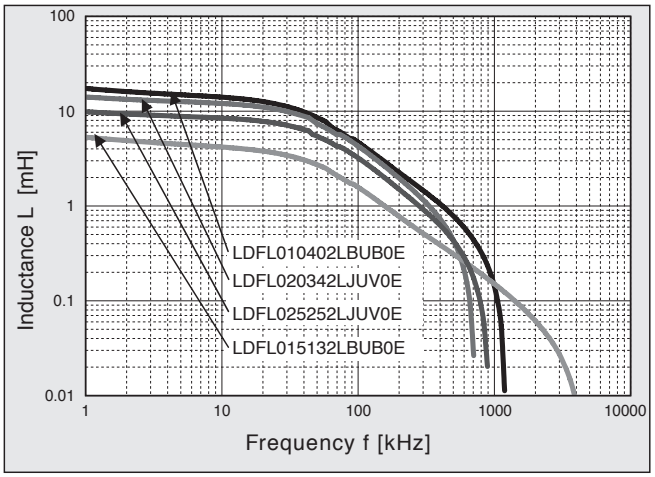
Coil Part No. (Old Coil Part No.)	Rated Current A	Inductance 10kHz (Typical) mH	Inductance 100kHz (Rating) mH	D.C.R. mΩ (max)	Winding mmφ×lines	Outside Dimensions D1 mm	D2 mm	W mm	Dimensions
LDFL010402LBUB0E (FL10402LBUBPBF)	10	16.0	4.0	12	1.5×1P	42.0	42.0	32.0	Fig1
LDFL015132LBUB0E (FL15132LBUBPBF)	15	5.1	1.3	6	1.9×1P	42.0	42.0	32.5	Fig1
LDFL020342LJUV0E (FL20342LJUPBF)	20	13.5	3.4	8	1.4×2P	49.0	49.0	31.0	Fig2
LDFL025252LJUV0E (FL25252LJUPBF)	25	9.9	2.5	6	1.6×2P	50.0	50.0	32.0	Fig2

LDFL010402LBUB0E, LDFL015132LMBB0E listed in the above table are coils of lying type with pedestal.
For LDFL020342LJUV0E, LDFL025252LJUV0E, lying type is also available. "V" changes into "H" in last the third digit of the name of items.

◆FREQUENCY - IMPEDANCE CHARACTERISTICS



◆FREQUENCY - INDUCTANCE CHARACTERISTICS



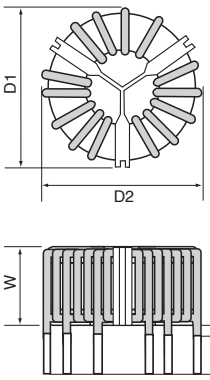
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NANOCRYSTALLINE COMMON MODE COILS

FL-V New! Series

RoHS2 Compliant

For three-phase circuit



Maximum outer diameter : D1(Vertical), D2(Horizontal)
Maximum width : W
Total lead length* : L=15±5mm
Soldering boundary* : a=1.5mmMAX
*The bottom of the core or coil (▽) is defined as base surface.

◆MAJOR USES

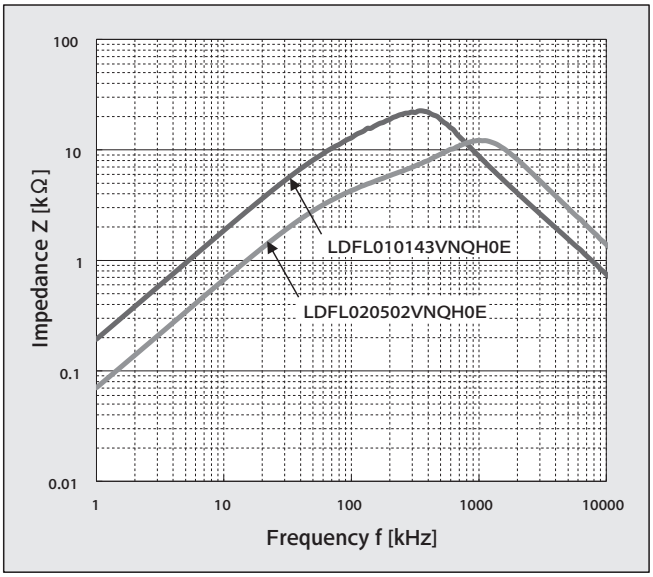
●Common mode coils for noise filter in inverter or large capacitypower supply

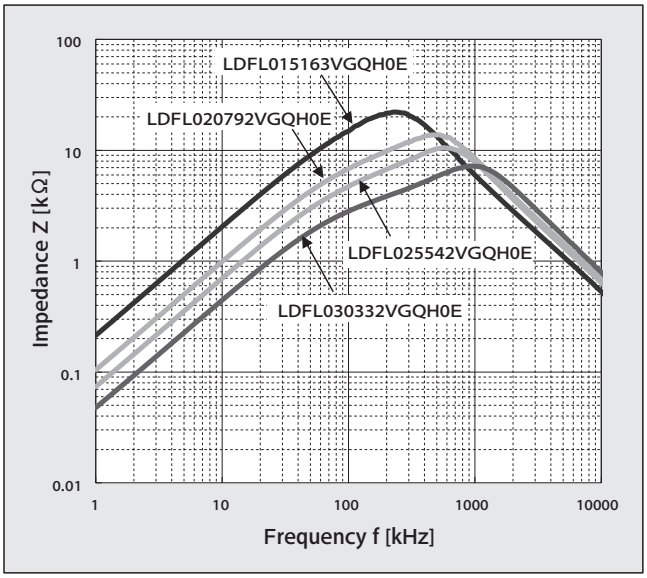
◆FEATURES

●Compared to conventional coils, the inductance level (100kHz) has been significantlyimproved.
●Compared to conventional coils, a higher impedance level has been realized withinwide ranges of frequencies.
●Conforming to insulating type B and incombustibility UL94V-0

◆CORE STANDARD SPECIFICATIONS

Coil Part No. (Old Coil Part No.)	Rated Current A	Inductance		D.C.R. mΩ (max)	Winding mmϕ×lines	Outside Dimensions		
		10kHz (Typical)	100kHz (Rating)			D1 mm	D2 mm	W mm
		mH	mH					
LDFL010143VNQH0E (FL10143VNQPBF)	10	30.7	14.0	18	1.5×1P	56.0	56.0	32.0
LDFL020502VNQH0E (FL20502VNQPBF)	20	11.1	5.0	6	2.0×1P	56.0	56.0	32.0
LDFL015163VGQH0E (FL15163VGQPBF)	15	34.5	15.7	15	2.0×1P	65.0	65.0	35.0
LDFL020792VGQH0E (FL20792VGQPBF)	20	17.3	7.9	6	2.3×1P	65.0	65.0	35.0
LDFL025542VGQH0E (FL25542VGQPBF)	25	11.7	5.4	5	1.8×2P	65.0	65.0	35.0
LDFL030332VGQH0E (FL30332VGQPBF)	30	7.2	3.3	4	2.0×2P	65.0	65.0	35.0





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FL Series

For three-phase circuit

◆MAJOR USES

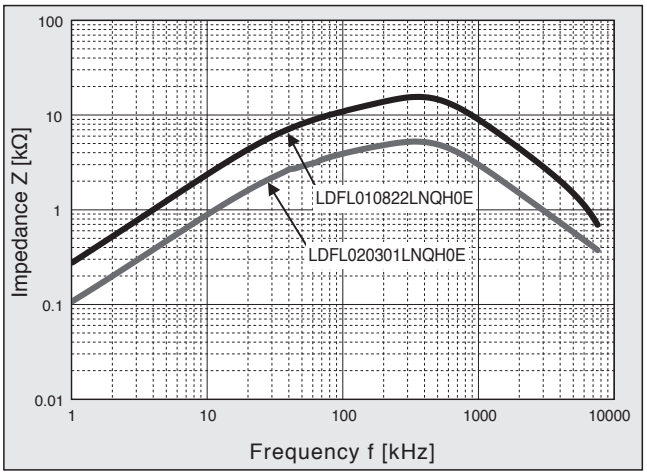
●Common mode coils for noise filter in inverter or large capacity power supply

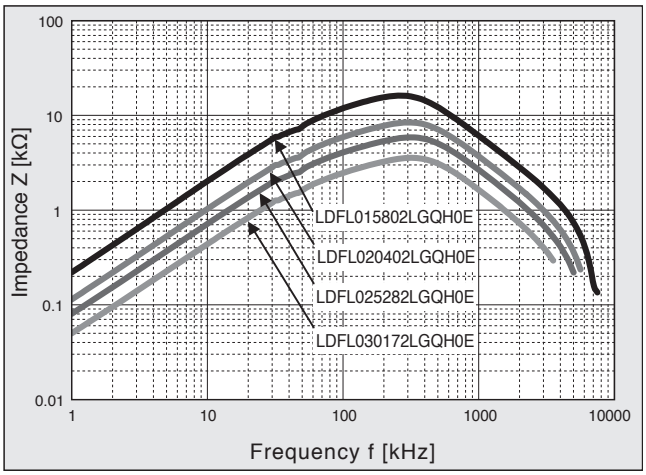
◆FEATURES

●Small profile, light through adoption of high permeability core
●High inductance in spite of a small number of turns
●Low temperature rise and low D.C. resistance
●Stable frequency performance of noise suppression in wide frequency range
●Excellent temperature characteristics
●Conforming to insulating type B and incombustibility UL94V-0

Coil Part No. (Old Coil Part No.)	Rated Current A	Inductance		D.C.R. mΩ (max)	Winding mmϕ×lines	Outside Dimensions		
		10kHz (Typical)	100kHz (Rating)			D1 mm	D2 mm	W mm
		mH	mH					
LDFL010822LNQH0E (FL10822LNQPBF)	10	27.0	8.2	18	1.5×1P	56.0	56.0	32.0
LDFL020302LNQH0E (FL20302LNQPBF)	20	11.0	3.0	6	2.0×1P	56.0	56.0	32.0
LDFL015802LGQH0E (FL15802LGQPBF)	15	30.0	8.0	15	2.0×1P	65.0	65.0	35.0
LDFL020402LGQH0E (FL20402LGQPBF)	20	16.0	4.0	6	2.3×1P	65.0	65.0	35.0
LDFL025282LGQH0E (FL25282LGQPBF)	25	10.0	2.8	5	1.8×2P	65.0	65.0	35.0
LDFL030172LGQH0E (FL30172LGQPBF)	30	7.0	1.7	4	2.0×2P	65.0	65.0	35.0

◆COIL STANDARD SPECIFICATIONS



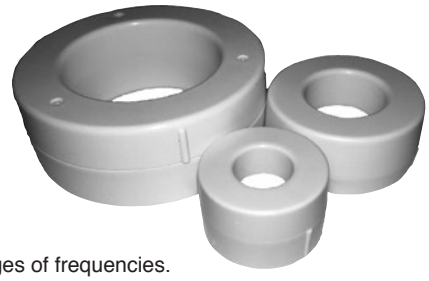


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NANOCRYSTALLINE COMMON MODE COILS

FL-V New! Series

RoHS2 Compliant



◆MAJOR USES

- ●Signal power line noise control
- ●DC power line noise control
- ●AC power line noise control
- ●Zero-phase reactor

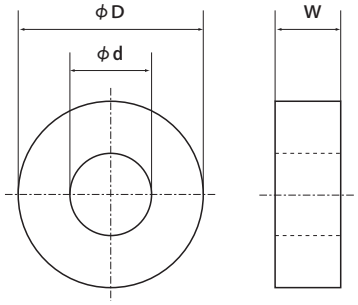
◆FEATURES

- ●Compared to conventional series, a higher impedance level has been realized withinwide ranges of frequencies.
- ●Conforming to insulating type B and incombustibility UL94V-0

◆CORE STANDARD SPECIFICATIONS

Core Part No.	Cross Sectional Area cm^2	Magnetic Path Length cm	Weight g	Nominal dimensions			Inductance Coefficient (AL Value) [μH] 100kHz at 0A
				ϕD mm	ϕd mm	W mm	
LRF251510MKCX	0.41	6.38	21	28.3	12.7	12.3	25.2
LRF251515MKCX	0.63	6.38	32	28.3	12.7	17.5	38.1
LRF322015MKCX	0.69	8.09	60	35.2	17.5	17.3	33.1
LRF372315MKCX	0.83	9.33	80	40.5	19.5	18.0	34.7
LRF462715MKCX	1.14	11.47	98	49.4	22.7	18.0	38.7
LRF462725MKCX	1.90	11.47	162	49.4	22.7	28.0	64.6
LRF624520MKCX	1.36	16.81	173	66.0	41.0	24.0	31.5

◆DIMENSIONS OF CORE



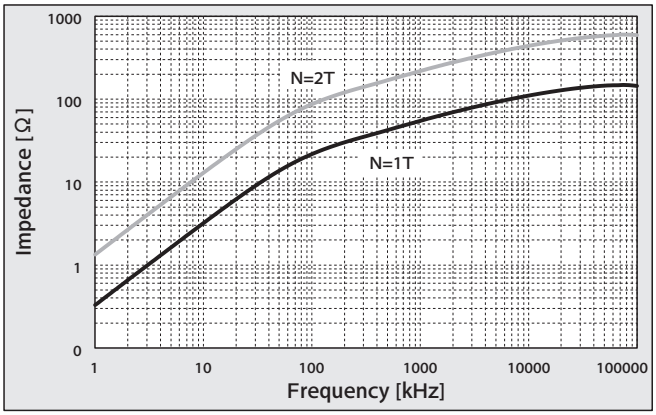
Outer diameter : ϕD
Inner diameter : ϕd
Width : W

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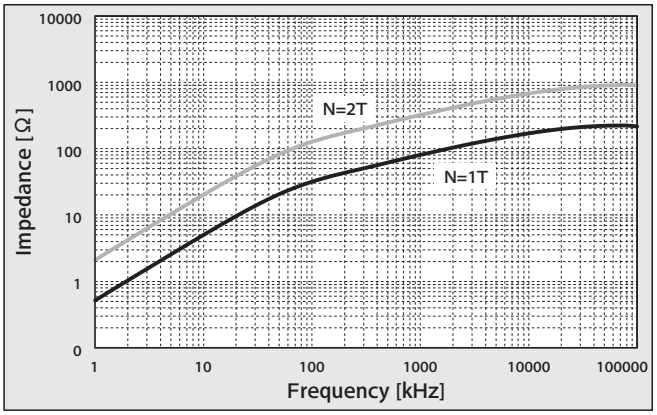
FL-V Series

◆FREQUENCY - IMPEDANCE CHARACTERISTICS

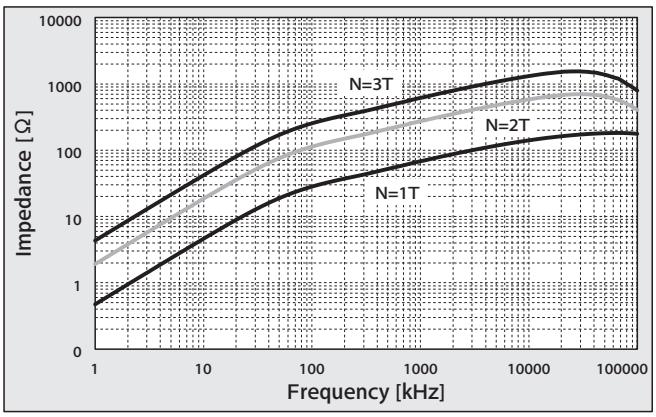
●LRF251510MKCX



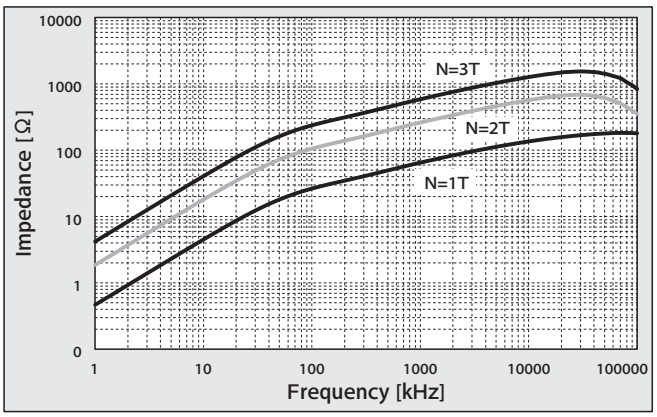
●LRF251515MKCX



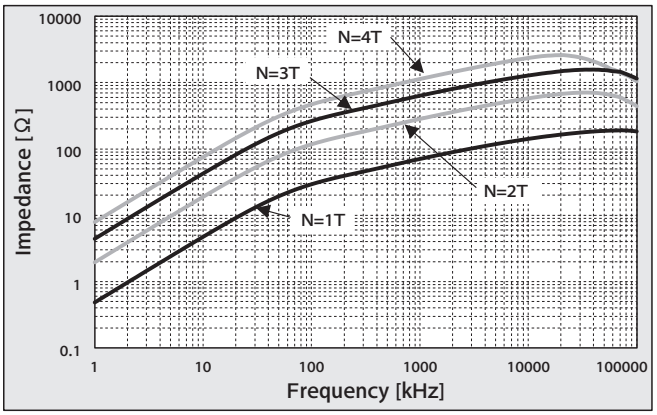
●LRF322015MKCX



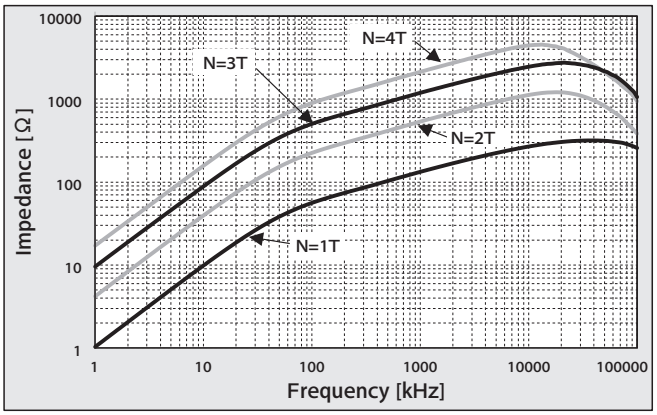
●LRF372315MKCX



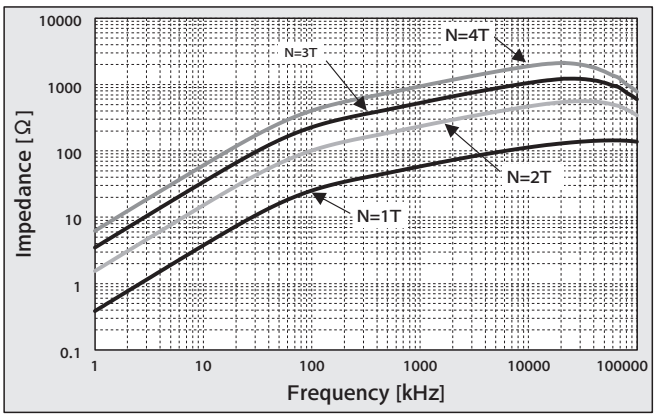
●LRF462715MKCX



●LRF462725MKCX



●LRF624520MKCX



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NANOCRYSTALLINE CORES

FL Series

RoHS2 Compliant

The FM series coils are made of nano-crystal.



◆MAJOR USES

- ●Signal power line noise control
- ●DC power line noise control
- ●AC power line noise control
- ●Filter line
- ●Zero-phase reactor

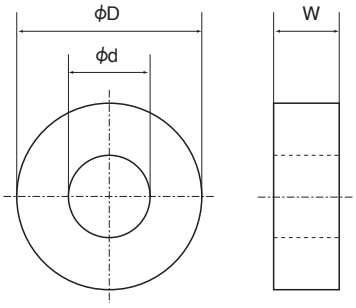
◆FEATURES

- ●The high permeability core is made of nanocrystalline soft magnetic alloy
- ●High impedance in spite of a small number of turns
- ●Excellent temperature characteristics
- ●Conforming to insulating type B and incombustibility UL94V-0

◆CORE STANDARD SPECIFICATIONS

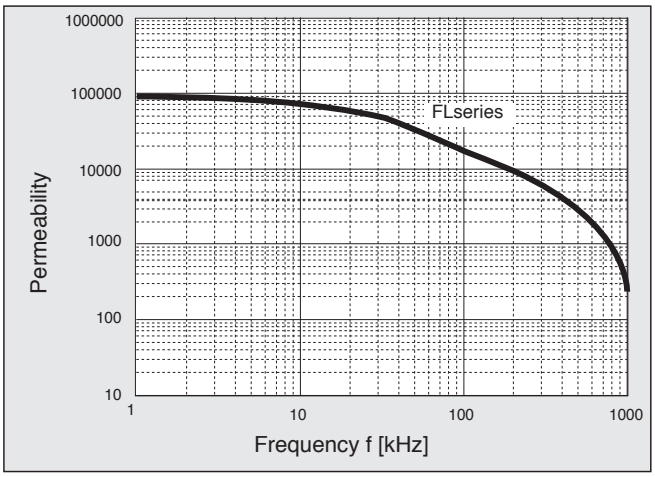
Core Part No. (Old Core Part No.)	Cross Sectional Area cm^2	Magnetic Path Length cm	Weight g	Outside Dimensions			Inductance Coefficient (AL Value) [μH/100kHz at 0A]
				ϕD mm	ϕd mm	W mm	
LRF251515MKX (F251515MKX)	0.63	6.40	35	28.3	12.7	17.5	18.3
LRF322015MKX (F322015MKX)	0.73	8.17	50	35.2	17.5	17.3	16.6
LRF372315MKX (F372315MKX)	0.85	9.42	67	40.5	19.5	18.0	17.2
LRF462715MKX (F462715MKX)	1.15	11.50	110	49.4	22.7	18.0	18.6
LRF462725MKX (F462725MKX)	1.92	11.50	176	49.4	22.7	28.0	31.0
LRF603525MKX (F603525MKX)	2.53	14.90	310	66.7	29.3	29.2	31.6
LRF624520MKX (F624520MKX)	1.36	16.80	200	66.0	41.0	24.0	15.2

◆DIMENSIONS OF CORE



Outer diameter : ϕD
Inner diameter : ϕd
Width : W

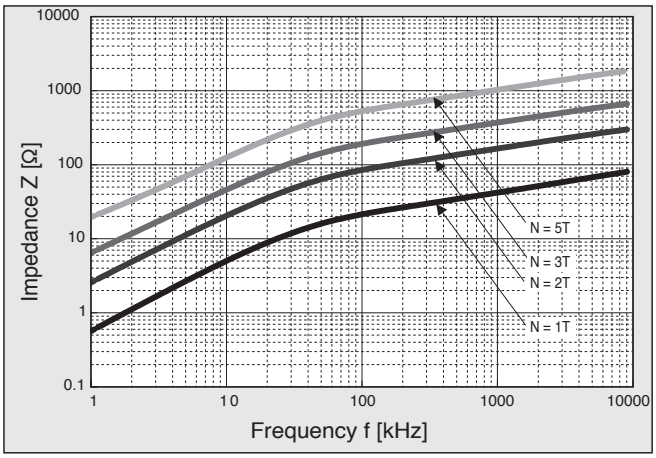
◆FREQUENCY - PERMEABILITY CHARACTERISTICS



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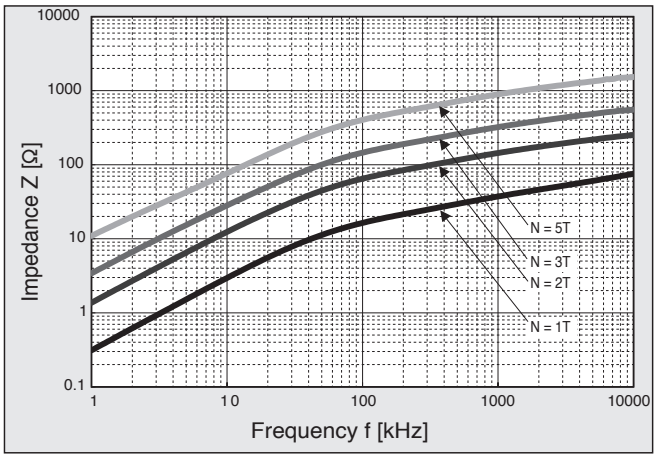
◆FREQUENCY - IMPEDANCE CHARACTERISTICS (1)

●LRF251515MKX



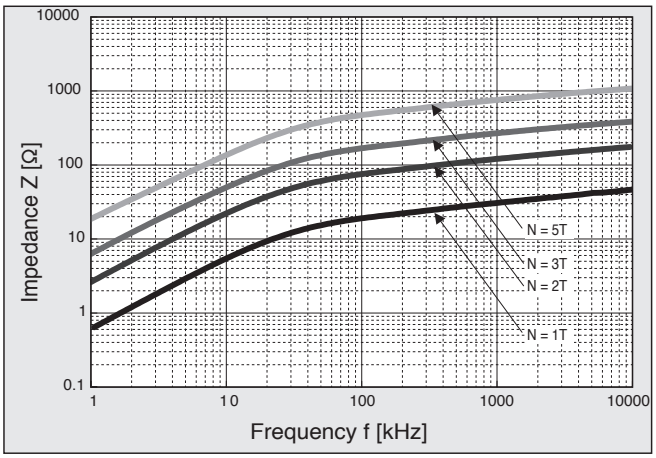
◆FREQUENCY - IMPEDANCE CHARACTERISTICS (2)

●LRF322015MKX



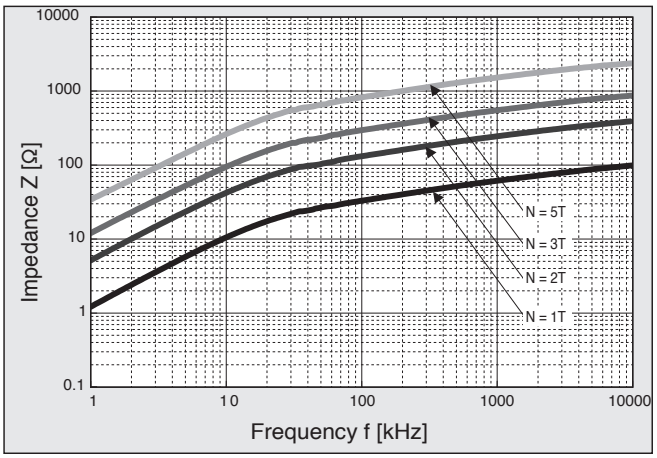
◆FREQUENCY - IMPEDANCE CHARACTERISTICS (3)

●LRF372315MKX



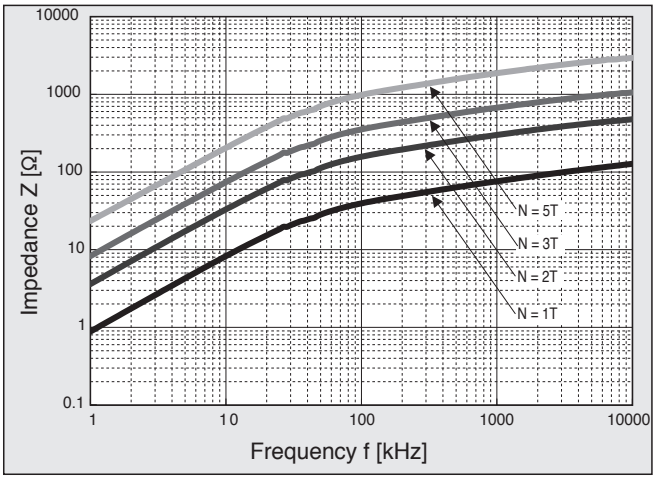
◆FREQUENCY - IMPEDANCE CHARACTERISTICS (4)

●LRF462725MKX



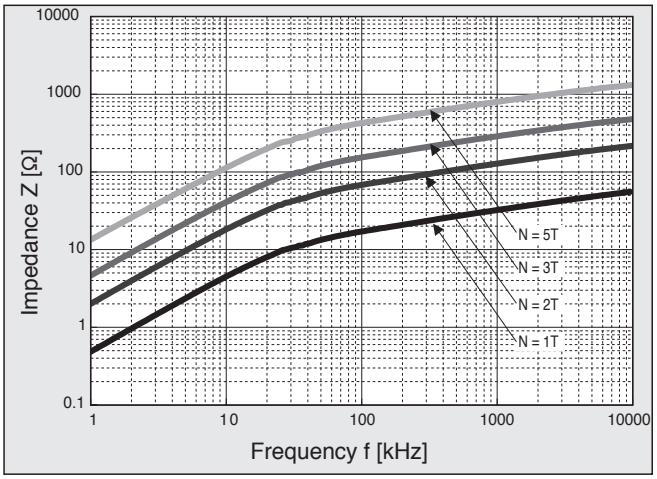
◆FREQUENCY - IMPEDANCE CHARACTERISTICS (5)

●LRF603525MKX



◆FREQUENCY - IMPEDANCE CHARACTERISTICS (6)

●LRF624520MKX



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FL Series



◆MAJOR USES
- ●Zero-phase reactor
- ●Filter line
- ●AC/DC power line noise control

◆FEATURES
- ●Holes have been created to be used to attach the chassis to the housing case.
- ●High impedance in spite of a small number of turns
- ●Excellent temperature characteristics
- ●Conforming to insulating type B and incombustibility UL94-0

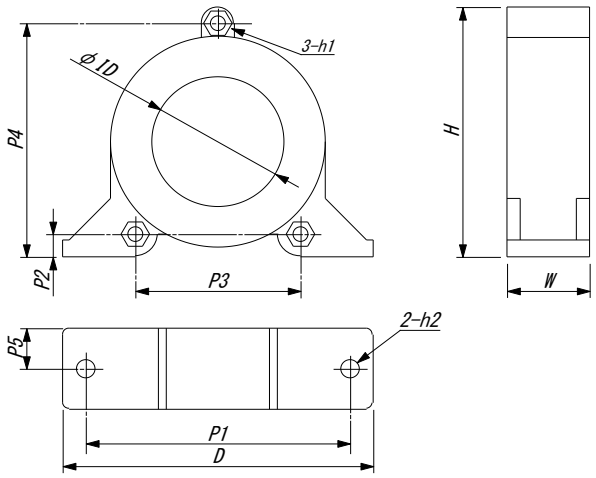
◆CORE STANDARD SPECIFICATIONS

Core Part No.	Cross Sectional Area [cm^2]	Magnetic Path Length [cm]	AL [μH/at 0A]	
			10kHz	100kHz
LRF604520MBX	1.2typ.	16.4typ.	77.0typ.	13.0typ.
LRF1108020MBX	2.2typ.	30.0typ.	85.0typ.	15.0typ.

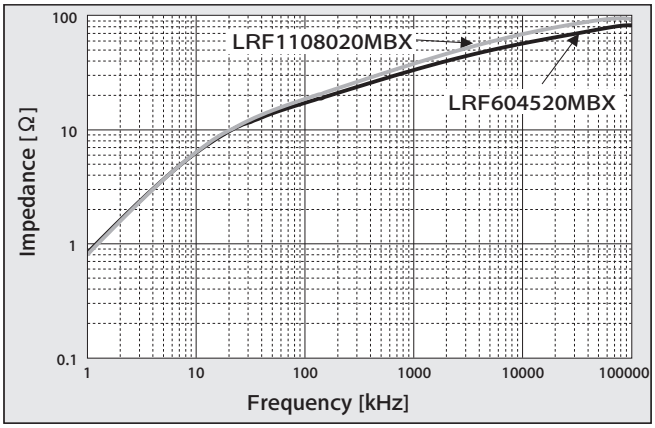
Core Part No.	Outside Dimensions [mm]								
	D	ϕID	H	W	P1	P2	P3	P4	P5
LRF604520MBX	95max.	39.5min.	78max.	26max.	80±0.5	7±0.5	50±0.5	72±0.5	12.5±0.3
LRF1108020MBX	181max.	74min.	131max.	26max.	150±0.5	20±0.5	100±0.5	124±0.5	12.5±0.3

Core Part No.	Applicable screws	
	h1	h2
LRF604520MBX	M4	M5
LRF1108020MBX	M5	M6

◆DIMENSIONS OF CORE



◆FREQUENCY - IMPEDANCE CHARACTERISTICS
(number of turns 1T)



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ELXZ250ELL332ML30S ESMQ451ELL4R7MJC5S EGXF500ELL751MM15S ESMH800VNN123MA63U EGPD500ELL132ML25H EKXG401ELL150MK20S ELHS451VSN471MR45S ELXS3B1VSN181MP25S EMHS250ARA102MKE0S KTD500B106M55A0T00 EGXF350ELL112ML15S EKMG201ELL4R7MHB5D EMZA350ARA221MHA0G EGXF401ELL120MJ20S EKMS401VSN471MA30S ELXY160ELL471MJ16S HHXJ250ARA471MJA0G APSK6R3ELL271ME08S EKMQ451VSN271MQ50S EKMR451VSN181MQ30S EKY-250ELL122MM15S EKMQ160ELL102MJC5S EKXJ401ELL181MM45S EKXJ451ELL330MK30S EKZE350ELL122MK30S ELXZ100ELL221MFB5D KTD101B226M90A0B00 EMVY250ARA220MF55G EKRG160ELL332MM15S ELXZ100ELL101MEB5D