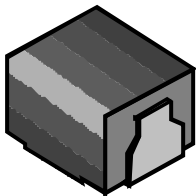
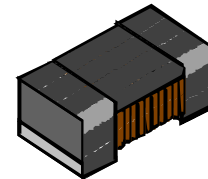
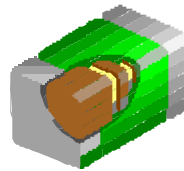
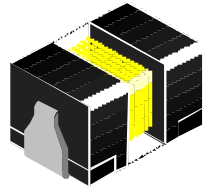


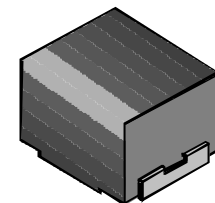
Panasonic

Chip Inductors for ADSL



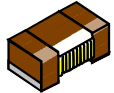
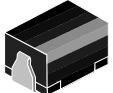

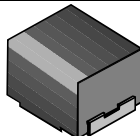

**Matsushita Electronic Components Co.,Ltd.
Inductive Products Division**

**Tajima Matsushita Electronic Co.,Ltd.
Engineering Department**



Chip Inductor's Type Code

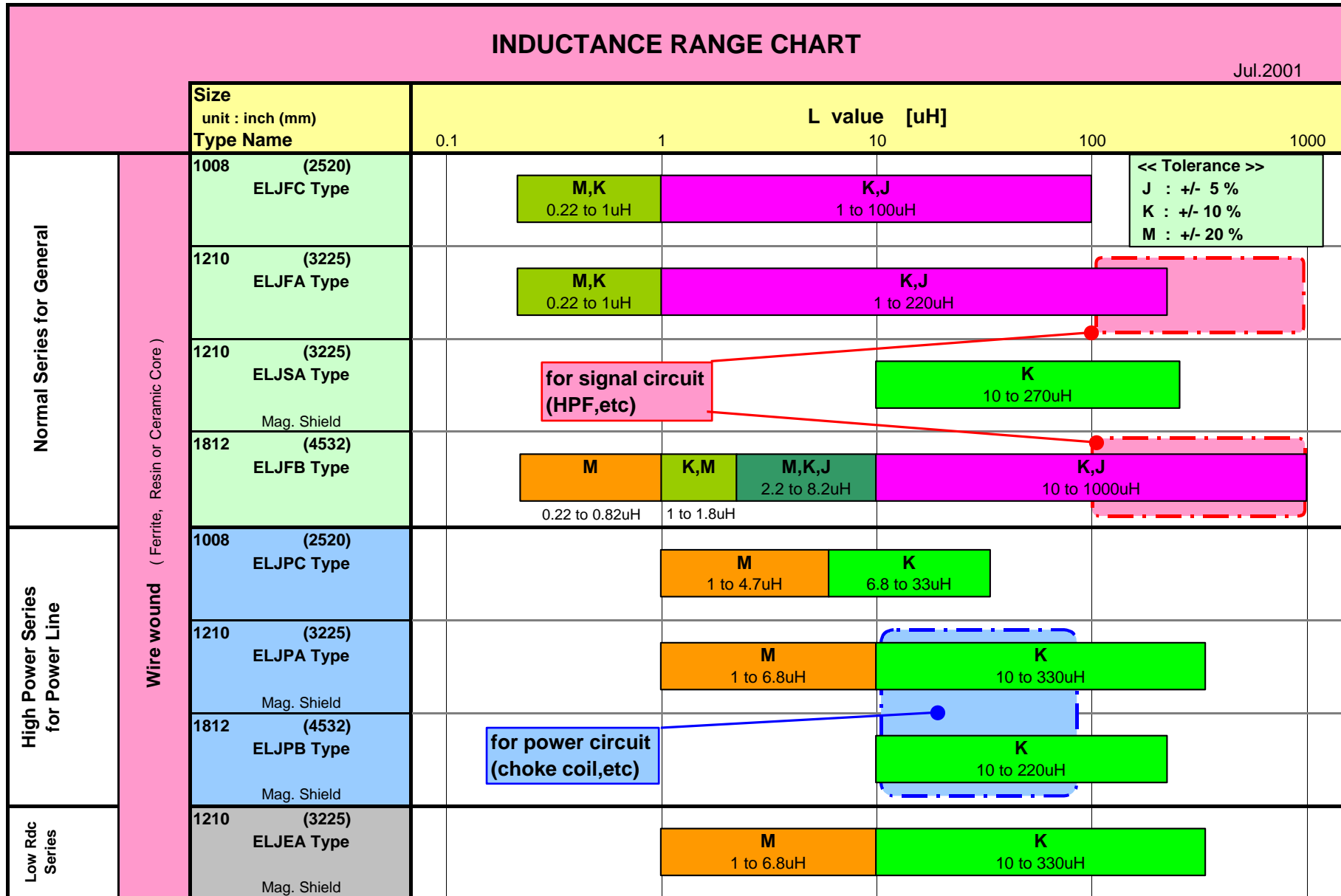
Unit : inch(mm)

Classification		Type / Size	Non Winding Type			Winding Type					
						Non Mold	Resin Mold				
			0201" (0603)	0402" (1005)	0603" (1608)	0603" (1608)	0805" (2012)	1008" (2520)	1210" (3225)	1812" (4532)	2220" (5650)
High Freq. Use	Air core (Ceramic core etc.)	**ELJRG (1.0 to 22nH) Developing now	ELJRF (1.0 to 100nH)	ELJRE (1.0 to 220nH)	NEW ELJNJ (6.8 to 220nH)	ELJND (10 to 1000nH)	ELJNC (10 to 820nH)	ELJNA (47 to 8200nH)			
	Air core Low Rdc		NEW ELJPF (2.2 to 10nH)	ELJPE (2.2 to 22nH)							
General Use	Regular (Ferrite core)				**ELJFJ (100 to 390nH) Developing now		ELJFC (0.22 to 100uH)	ELJFA (0.22 to 220uH)	ELJFB (0.22 to 1000uH)	**ELJFH (1.2 to 10mH) Developing now	
	Magnetic shield						(ELJSC)	ELJSA (10 to 270uH)			
Power Line Use	High power						ELJPC (1.0 to 33uH)	ELJPA (1.0 to 330uH)	ELJPB (1.0 to 220uH)	**ELJPH (10 to 1000uH) Developing now	
	High Power Low Rdc						**ELJLC (1 to 100uH) Developing now	ELJEA (1.0 to 330uH)		**ELJEH (1.5 to 100mH) Developing now	









for XDSL use

Note : Symbol (). Custom design is available

Panasonic's Chip Inductors for General & Power Line use [for XDSL]



Chip Inductor's reference table

Size [inch(mm)] / type		type / Size [inch(mm)]	Panasonic						
			1210 (3225)				1812 (4532)		
			ELJNA*****	ELJFA*****	ELJSA*****	ELJPA*****	ELJFB*****	ELJPB*****	
		use	S	S	S	P	S	P	
TDK	1210 (3225)	NL3225****	S						
		NLC3225****	P						
	1812 (4532)	NL4532****	S						
		NLC4532****	P						
Murata	1210 (3225)	LQH3N*****	S						
		LQH3C*****	P						
	1812 (4532)	LQH4N*****	S						
		LQH4C*****	P						

P/N reference table "for xDSL" [1210(3225mm) , for power]

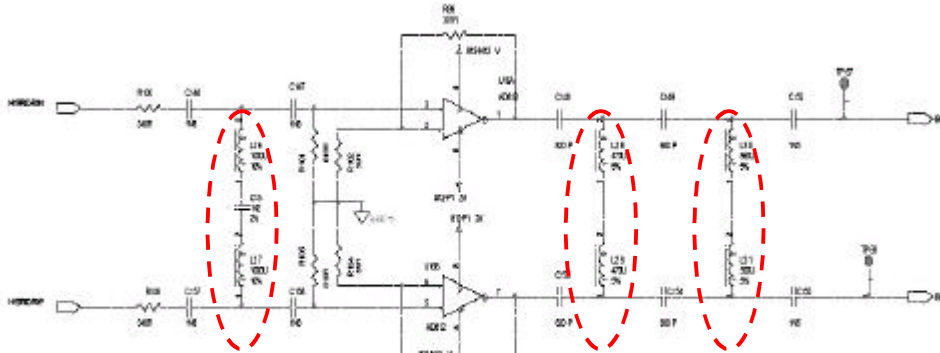
Panasonic Jun. 29. 2001

L (uH)	Murata " LQH3C series " for power use							Panasonic " ELJPA series " for power use						Tdk " NLC322522T series " for power use							
	P/N	Freq. (MHz)	Q min.	Freq. (MHz)	SRF (MHz) min.	DCR (ohm) max.	IDC (mA) max.	P/N	Freq. (MHz)	Q min.	Freq. (MHz)	SRF (MHz) min.	DCR (ohm) max.	IDC (mA) max.	P/N	Freq. (MHz)	Q min.	Freq. (MHz)	SRF (MHz) min.	DCR (ohm) max.	IDC (mA) max.
1	LQH3C1R0M24	1			100	0.078	1000	ELJPA1R0MF	7.96	7	7.96	150	0.15	600	NLC322522T-1R0M	7.96	10	7.96	100	0.104	850
1.5								ELJPA1R5MF	7.96	7	7.96	110	0.18	550	NLC322522T-1R5M	7.96	10	7.96	80	0.143	700
2.2	LQH3C2R2M24	1			64	0.1261	790	ELJPA2R2MF	7.96	7	7.96	80	0.23	500	NLC322522T-2R2M	7.96	10	7.96	68	0.169	600
3.3								ELJPA3R3MF	7.96	7	7.96	58	0.28	400	NLC322522T-3R3M	7.96	10	7.96	54	0.208	500
4.7	LQH3C4R7M24	1			43	0.195	650	ELJPA4R7MF	7.96	7	7.96	46	0.34	350	NLC322522T-4R7M	7.96	15	7.96	46	0.26	430
6.8								ELJPA6R8MF	7.96	7	7.96	38	0.42	300	NLC322522T-6R8M	7.96	15	7.96	38	0.351	360
10	LQH3C100KM24	1			26	0.39	450	ELJPA100KF	2.52	15	2.52	23	0.50	240	NLC322522T-100K	2.52	15	2.52	30	0.468	300
12								ELJPA120KF	2.52	15	2.52	21	0.60	230							
15								ELJPA150KF	2.52	15	2.52	18	0.74	220	NLC322522T-150K	2.52	15	2.52	26	0.728	250
18								ELJPA180KF	2.52	15	2.52	17	0.90	205							
22	LQH3C220KM34	1			19	0.923	250	ELJPA220KF	2.52	15	2.52	15	1.15	185	NLC322522T-220K	2.52	15	2.52	21	1.001	210
27								ELJPA270KF	2.52	15	2.52	13	1.45	165							
33								ELJPA330KF	2.52	15	2.52	12	1.65	155	NLC322522T-330K	2.52	15	2.52	17	1.43	170
39								ELJPA390KF	2.52	15	2.52	11	1.90	145							
47	LQH3C470KM34	1			15	1.69	170	ELJPA470KF	2.52	15	2.52	9.5	2.25	135	NLC322522T-470K	2.52	15	2.52	14	2.132	150
56								ELJPA560KF	2.52	15	2.52	8.5	3.3	110							
68								ELJPA680KF	2.52	15	2.52	7.5	3.7	105	NLC322522T-680K	2.52	15	2.52	12	3.64	120
82								ELJPA820KF	2.52	15	2.52	7	4.2	100							
100	LQH3C101KM34	1			10	4.55	100	ELJPA101KF	0.796	20	0.796	6.5	5	90	NLC322522T-101K	0.796	15	0.796	10	4.81	100
120								ELJPA121KF	0.796	20	0.796	6	7	75							
150								ELJPA151KF	0.796	20	0.796	5.5	8	70	NLC322522T-151K	0.796	20	0.796	8	7.93	85
180								ELJPA181KF	0.796	20	0.796	5	9.5	65							
220	LQH3C221KM34	1			6.8	10.92	70	ELJPA221KF	0.796	20	0.796	4	11	60	NLC322522T-221K	0.796	20	0.796	7	10.92	70
270								ELJPA271KF	0.796	20	0.796	3.5	14.5	55							
330	LQH3C331KM34	1			5.6	13	60	ELJPA331KF	0.796	20	0.796	3	16	50	NLC322522T-331K	0.796	20	0.796	6	15.99	60
390	LQH3C391KM34	1			5	231.4	60														
470	LQH3C471KM34	0.1			5	257.4	60								NLC322522T-471K	0.796	20	0.796	4	28.6	45
560	LQH3C561KM34	0.1			5	28.6	60														
680															NLC322522T-681K	0.796	20	0.796	3	36.4	35

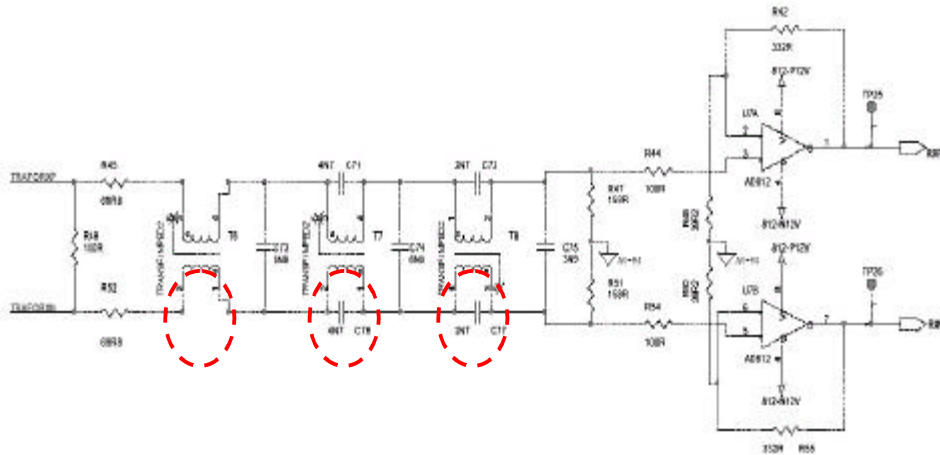
ADSL Circuit

DSL Portion (HPF)

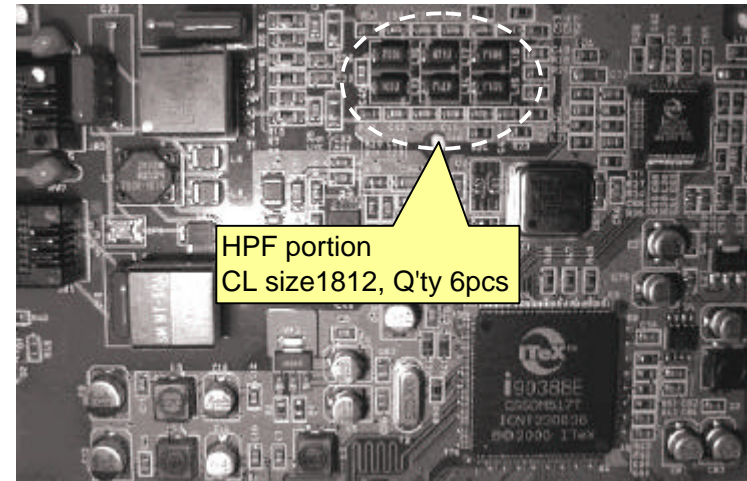
(CPE Side) 6 Inductors for filtering



(CO Side) 3 Transformers for filtering

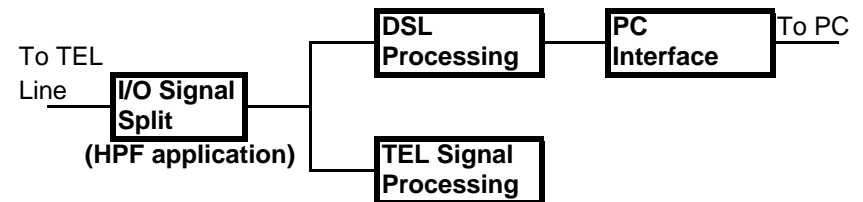


(Actual usage) PCI board made by Samsung.



*Main Inductor Application in ADSL

- 1. Analog Signal processing**
HPF (To split TEL line signal to DSL and TEL signal)
- 2. Choke Coil in Power Circuit**
Choke Coil for IC driving circuit.



1. Enquiry Analysis

Customer	Size				L	P/N
	2520	3225	4532	5650		
ALCATEL	X	X	X		1R0, 181, 471, 561	FC1R0J, PA1R0M, FA181J, FB471J, FB561J, etc
			○	○	1R0, 150, 471, 561, 102	TDK / NLC3225-1R0, NL4532-471, 561102, etc
APRO korea			X		151	FB151K
CONEXANT			X		2R2, 6R8	FB2R2K, FB6R8K
			○		2R2, 120	Craft / 1812LS 222XKBC, 123XKBC
EFFICIENT NETWORK		X			121	SA121K
Ericsson Linkoping		X			-	FA-BOX
GARNET SYSTEM		X	X		R12, 181, 471, 561, 102	NAR12M, FB181J, FB471J, FB561J, FB102J
HYUNDAI CORP		X	X		1R0	PA1R0M, FB1R0M
LUCENT TECH USA		X		X	100, 470, 221	FA470J, PA470K, PH100K, PH221K
		○			3R3, 100, 470	PA3R3, PA100K, PA470K
MARCONI				X	122	FH122J
			○		1R0, 100, 560, 101, 821, 122	TDK / NL&NLC 565050
NORTEL HARLOW		X	X		150, 101, 391	PA101K, PB150K, FB391J
SAMSUNG			X		471, 561, 102	FB471J, FB561J, FB102J
			○		471, 561, 102	ABC / ?
SIEMENS	X	X			3R3	FC3R3J, FA3R3J
ST MICRO			X		391, 471, 561, 102	FB391J, FB471J, FB561J, FB102J
			○		471, 561, 102	TDK / NL?
UM COMPO korea		X	X		R47, 1R0, 151, 471, 561	FAR47K, FA1R0J, PA1R0M, FB151K, 471J, 561J
WONG'S ELECT		X	X		4R7, 470, 471, 102	FA4R7K, FA470K, FB471J, FB102J
NEC			X		121, 681, 821, 102	FB121K, FB681K, FB821K, FB102K
			○		121, 681, 821, 102	Craft / 1812LS 124XJ, 684XJ, 824XJ, 105XD
ECHO STAR					101	(PB101)? Craft / 1812LS 104XKBC
GlobeSpan			○		100, 330, 470	(PA100K, PA330K, PA470K)? TDK / NL?, MURATA / LQH4N filter : 100 to 1000uH , power : about 10uH

Notes: 1.Upper row shows actual enquiry, lower row shows reference information.

2.Data from Alcatel Reference

ADSL/ISDN MTB-20140 "CO"

Q'ty	Man	Man's P/N or SpareP/N
7	TDK	NLC322522T-1R0M or NL322522T-1R0J
1	TDK	NLFC201614T-1R0M or NL322522T-1R0J
1	TDK	NLC322522T-R47K
1	TDK	NLC565050T-150K
1	TDK	NLC453232T-150K or NLC453232T-100K

MTB-20140 / ATU-R "CPE"

Q'ty	Man	Man's P/N or SpareP/N
1	TDK	NLC322522T-R47K
2	TDK	NL453232T-102J
2	TDK	NL453232T-471J
2	TDK	NL453232T-561J
7	TDK	NLC322522T-1R0M or NL322522T-1R0J
1	TDK	NLC453232T-150K or NLC453232T-100K
1	TDK	NLC565050T-150K
1	TDK	NLFC201614T-1R0M or NL322522T-1R0J

MTB-20131 / ATU-R v31 "CPE"

Q'ty	Man	Man's P/N or SpareP/N
4	Toko	380LB-1R0K
2	TDK	NL453232-102J
2	TDK	NL453232-471J
2	TDK	NL453232-561J

MTB-20131 / ATU-C v20 LT "CO"

Q'ty	Man	Man's P/N or SpareP/N
5	Toko	380LB-1R0K

MTK20131 rev8 LT "CO"

Q'ty	Man	Man's P/N or SpareP/N
1	Toko	380LB-1R0K
3	TDK	NLC453232T-1R0K

MTK20131 rev8 NT "CO"

Q'ty	Man	Man's P/N or SpareP/N
2	Toko	380LB-1R0K
3	TDK	NLC453232T-1R0K

3.L value & size check

L	2520	3225	4532	5650
0.12		x		
0.47		x		
1	x	x	x	*
1.2				
1.5				
1.8				
2.2			x/*	
2.7				
3.3	x	x/*		
3.9				
4.7		x		*
5.6				
6.8			x	
8.2				
10		*	*	x/*
12			*	
15			x	
18				
22				
27				
33			*	
39				
47		x/*	*	
56				*
68				
82				
100		x	*	*
120		x	x/*	
150			x	*
180		x	x	
220				x
270				
330				
390			x/*	
470			x/*	
560			x/*	
680			x/*	
820			x/*	*
1000			x/*	
1200				x/*

Power line (Choke)

Main Size
4532(1812")

Filtering

Filtering(HPF)

Competitor's P/N(example)
TDK: NL & NLC3225/4532/5650
Coil Craft: 1812LS(4532)
MURATA: LQH4N(4532)