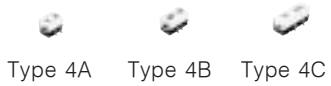
LC Filters

Japan

Series: **LC-SS**

Type: **4A, B, C, D, E, G**

Miniature video band LC filters for home video and TV



Type 4A Type 4B Type 4C

Industrial Property: Utility models 5
(including pending)

Type 4A Type 4B Type 4C

■ Features

- Surface mount type (reflow soldering)
- Immediate feasibility for custom design
- Easy mounting on PCB

Type 4D Type 4E Type 4G Type 4D Type 4E

■ Recommended Applications

- TV, VTR, Video-movies

■ Explanation of Part Numbers

Pin Terminals Type

1	2	3	4	5	6	7	8	9	10
E	L	B	4	A	0	0	1	A	N
Product Code			Size	Type	Desiegn No. (001~499)			Packaging	Option

Reflow (Surface Mount) Type

1	2	3	4	5	6	7	8	9	10
E	L	B	4	A	5	0	1	E	N
Product Code			Size	Type	Desiegn No. (501~999)			Packaging	Option

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■ LC Filters Examples

● Lowpass Filters

Part No.	Cut Off Freq. (MHz)	Trap Freq. (MHz)	Group Delay Time (ns)	Style
ELB4B052	1.0	2.50	410	Pin Terminals
ELB4C031	1.0	3.20	460	Pin Terminals
ELB4B004	1.0	3.58	265	Pin Terminals
ELB4C045	2.0	6.35	550	Pin Terminals
ELB4C027	2.0	6.40	720	Pin Terminals
ELB4C041	2.4	3.58	305	Pin Terminals
ELB4E022	2.6	3.58	800	Pin Terminals
ELB4C032	2.8	3.58	440	Pin Terminals
ELB4E021	2.8	4.43	675	Pin Terminals
ELB4C006	3.2	4.43	500	Pin Terminals
ELB4B051	3.8	7.16	280	Pin Terminals
ELB4D009	5.0	6.35	420	Pin Terminals
ELB4B095B	5.8	10.70	90	Pin Terminals
ELB4E035B	6.0	7.20	400	Pin Terminals
ELB4C046	6.0	7.20	250	Pin Terminals
ELB4C074B	6.0	13.00	180	Pin Terminals
ELB4C069B	7.2	0.70	160	Pin Terminals
ELB4B046	7.3	11.20	70	Pin Terminals
ELB4B017	7.9	12.70	55	Pin Terminals
ELB4D042B	9.8	13.00	155	Pin Terminals
ELB4C010	12.5		100	Pin Terminals
ELB4C537	1.0	2.50	800	Surface Mount
ELB4B541	1.0	3.58	260	Surface Mount
ELB4B551	1.8	4.43	360	Surface Mount

Part No.	Cut Off Freq. (MHz)	Trap Freq. (MHz)	Group Delay Time (ns)	Style
ELB4C549	2.0	5.00	220	Surface Mount
ELB4C535	2.0	6.35	550	Surface Mount
ELB4A505	2.2	10.70	100	Surface Mount
ELB4D510	2.6	3.58	780	Surface Mount
ELB4D531	2.9	3.58	585	Surface Mount
ELB4B521	3.0	3.58	200	Surface Mount
ELB4D557	3.1	4.43	250	Surface Mount
ELB4B565	4.0	14.30	135	Surface Mount
ELB4D513	5.0	6.35	400	Surface Mount
ELB4B529	5.4	13.50	100	Surface Mount
ELB4E529	5.5	7.20	465	Surface Mount
ELB4B574	6.0	14.30	120	Surface Mount
ELB4E524	6.2	8.86	350	Surface Mount
ELB4D538	6.4	8.00	260	Surface Mount
ELB4A526	7.2	14.30	50	Surface Mount
ELB4B560	7.2	14.30	135	Surface Mount
ELB4D545	7.4	14.00	220	Surface Mount
ELB4A528	8.0	13.50	50	Surface Mount
ELB4C565	8.1	11.90	130	Surface Mount
ELB4A525	8.2	28.00	50	Surface Mount
ELB4D551	10.0	13.50	240	Surface Mount
ELB4B556	10.0	14.00	75	Surface Mount
ELB4B561	13.0	28.60	60	Surface Mount
ELB4B570	25.0		40	Surface Mount

● Delay Lines

Part No.	Cut Off Freq. (MHz)	Group Delay Time (ns)	Style
ELB4C070B	10.0	100	Pin Terminals
ELB4B090	6.5	150	Pin Terminals
ELB4D032	9.5	200	Pin Terminals
ELB4D037	7.0	250	Pin Terminals
ELB4D039	6.0	300	Pin Terminals
ELB4E028	5.7	400	Pin Terminals
ELB4B516	9.7	50	Surface Mount
ELB4B568	8.0	100	Surface Mount
ELB4C039	6.4	150	Surface Mount
ELB4C561	7.8	200	Surface Mount
ELB4C562	6.0	250	Surface Mount
ELB4D553	7.2	300	Surface Mount
ELB4D544	6.0	350	Surface Mount
ELB4E530	5.7	400	Surface Mount

● Bandpass Filters

Part No.	Center Freq. (MHz)	Band Width (MHz)	Trap Freq. (MHz)	Group Delay Time (ns)	Style
ELB4B092	3.58	1.6	7.2	240	Pin Terminals
ELB4B072	3.58	1.0	4.8	420	Pin Terminals
ELB4B077	4.43	1.0		300	Pin Terminals
ELB4B014	5.16	0.8		700	Pin Terminals
ELB4C508	1.10	1.5	3.6	420	Surface Mount
ELB4C558	1.30	0.3	1.7	1450	Surface Mount
ELB4C557	1.70	0.3	1.3	1450	Surface Mount
ELB4B544	3.58	2.0	7.2	215	Surface Mount
ELB4B522	3.58	1.0	4.8	420	Surface Mount
ELB4B538	4.43	0.6	5.7	500	Surface Mount
ELB4B550	4.43	1.0		350	Surface Mount

The Part Numbers shown in the above table are a few standard devices, which are readily available.
But we introduce and design and manufacture others according to individual requirements in short time.
If you do not find the devices for your application in this catalog, please feel to inquire concerning details.

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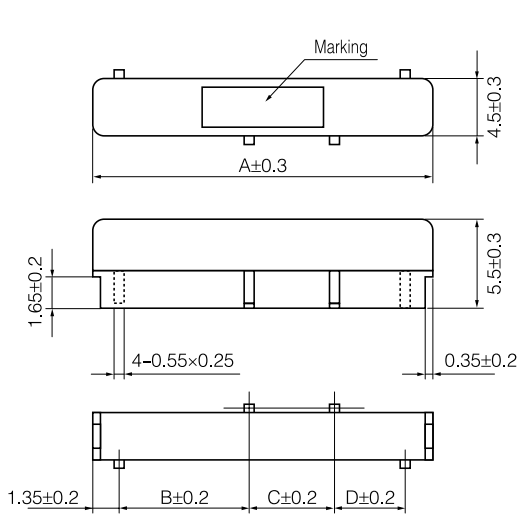
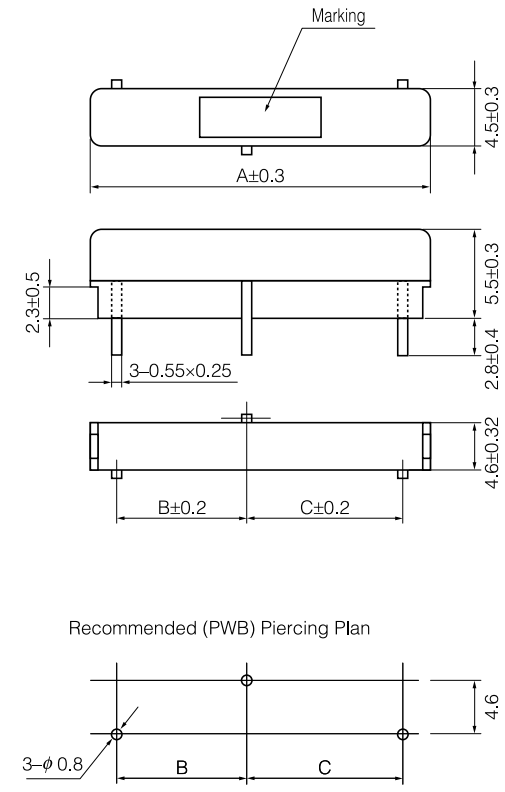
■ LC-SS Dimensions in mm (not to scale)/Surface Mount



Types	Dimensions			
	A	B	C	D
4A	6.9	2.1	2.1	0
4B	9.0	2.1	2.1	2.1
4C	13.2	4.2	4.2	2.1
4D	17.4	6.3	4.2	4.2
4E	19.5	6.3	6.3	4.2
4G	28.1	6.3	16.8	2.1

■ LC-SS Dimensions in mm (not to scale)/Pin Terminals



Types	Dimensions		
	A	B	C
4A	6.9	2.1	2.1
4B	9.0	4.2	2.1
4C	13.2	4.2	6.3
4D	17.4	6.3	8.4
4E	19.5	6.3	10.5

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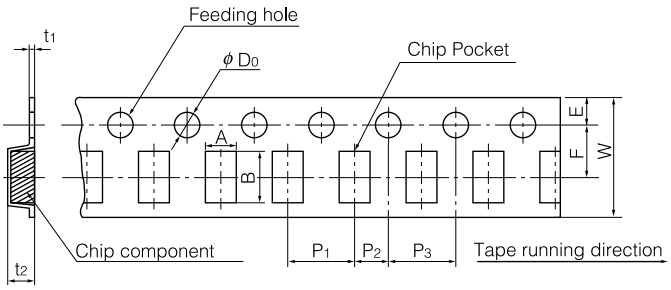
■ Packaging Methods

● Standard Packing Quantity

Types \ Packaging	Embossed Taping
4A	1500 pcs./reel (ϕ330)
4B	1500 pcs./reel (ϕ330)
4C	1000 pcs./reel (ϕ330)
4D	1000 pcs./reel (ϕ330)
4E	1000 pcs./reel (ϕ330)
4G	1000 pcs./reel (ϕ330)

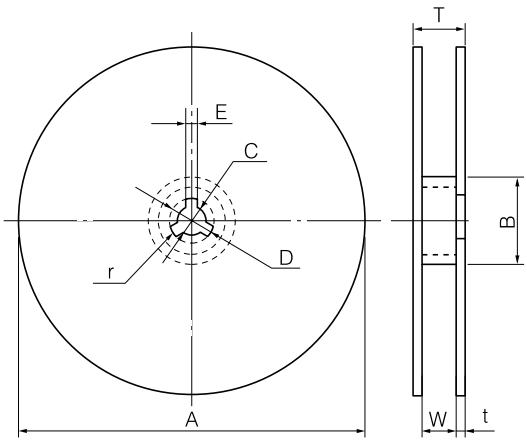
● Embossed Carrier Tape Dimensions in mm (not to scale)



Types \ Dimensions	A	B	W	F	E	P_1
4A	6.5	7.5	16	7.5	1.75	8
4B	6.5	9.6	16	7.5	1.75	8
4C	6.5	13.8	24	11.5	1.75	12
4D	6.5	17.8	24	11.5	1.75	12
4E	6.5	20.1	32	14.2	1.75	12
4G	6.5	28.7	44	20.2	1.75	12

Types \ Dimensions	P_2	P_0	ϕD_0	t_1	t_2
4A	2	4	1.5	0.4	6
4B	2	4	1.5	0.4	6
4C	2	4	1.5	0.4	6
4D	2	4	1.5	0.4	6
4E	2	4	1.5	0.4	6
4G	2	4	1.5	0.4	6

● Reel Dimensions in mm (not to scale)



Types \ Dimensions	A	B	C	D	E	W	T	t	r
4A	330	80	13	23	2	17.5	21.5	2	1
4B	330	80	13	23	2	17.5	21.5	2	1
4C	330	80	13	23	2	25.5	29.5	2	1
4D	330	80	13	23	2	25.5	29.5	2	1
4E	330	80	13	23	2	33.5	37.5	2	1
4G	330	100	13	23	2	45.5	49.5	2	1

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■ Application Examples

● For CTV

Applications	Frequency Characteristics		Group Delay Time (ns)	Type	Part No.
	Loss	Attenuation			
Y LPF	2.3 MHz/2.0 dB	3.58 MHz/35 dB	600	LPF	ELB4C067B
Digital decoder	7.0 MHz/1.0 dB	28.0 MHz/40 dB	50	LPF	ELB4A525
Digital decoder	8.1 MHz/2.0 dB	11.9 MHz/40 dB	130	LPF	ELB4C565
Digital decoder	13.0 MHz/3.0 dB	28.6 MHz/40 dB	60	LPF	ELB4B561
Digital decoder	16.0 MHz/1.5 dB	40.0 MHz/40 dB	50	LPF	ELB4B563
ED/WD	3.6 MHz/2.0 dB	7.2 MHz/40 dB	190	LPF	ELB4B562
ED/WD	4.0 MHz/1.0 dB	14.3 MHz/40 dB	135	LPF	ELB4B565
Down converter	5.3 MHz/3.0 dB	28.6 MHz/50 dB	60	LPF	ELB4B567
D/A Post Filter	5.8 MHz/2.5 dB	14.3 MHz/45 dB	110	LPF	ELB4B566
A/D Pre Filter	7.2 MHz/3.5 dB	14.3 MHz/40 dB	135	LPF	ELB4B560
A/D Pre Filter	8.2 MHz/1.0 dB	15.5 MHz/40 dB	170	LPF	ELB4C564
HD aperture	30.0 MHz/1.0 dB	60.0 MHz/20 dB	20	DL	ELB4K149B
HD delay	30.0 MHz/2.0 dB		100	DL	ELB4Y024B
HD delay (A)	30.0 MHz/1.5 dB		25	DL	ELB4Y019B
(B)	30.0 MHz/1.0 dB		5	DL	(Composite
(C)	30.0 MHz/1.0 dB		10	DL	type)
Y delay	8.0 MHz/1.5 dB	28.0 MHz/6 dB	250	DL	ELB4L166B
R, B, G delay	6.5 MHz/2.0 dB		100	DL	ELB4H065B
NTSC encoder	3.58 MHz/1 dB	7.16 MHz/40 dB	220	BPF	ELB4B569
C (NTSC)	3.58 MHz/0 dB	2.0 MHz/26 dB min.	260	BPF	ELB4K131B
C (PAL)	4.4 MHz/1 dB	3 MHz/18 dB min.	145	BPF	ELB4K133B

● For DVD Players

Applications	Frequency Characteristics		Group Delay Time (ns)	Type	Part No.
	Loss	Attenuation			
Y D/A Post Filter	6.0 MHz/3 dB	13.5 MHz/50 dB	100	LPF	ELB4K163B
C D/A Post Filter	3.6 MHz/0.2 dB	13.5 MHz/50 dB	100	BPF	ELB4K164B

● For Digital STB, Digital TV, Digital CATV etc.

Applications	Frequency Characteristics		Group Delay Time (ns)	Part No.
	Loss	Attenuation		
LPF	3.6 MHz/2.0 dB	7.2 MHz/40 dB	190	ELB4B562
LPF	6 MHz/0.5 dB	10.75 MHz/50 dB	160	ELB4C069B
LPF	6 MHz/3.0 dB	13 MHz/35 dB	40	ELB4B571
LPF	7.2 MHz/3.5 dB	14.3 MHz/40 dB	135	ELB4B560
LPF	8 MHz/1.0 dB	13 MHz/30 dB	150	ELB4D042B
LPF	8.35 MHz/–1.2 dB	13 MHz/30 dB	100	ELB4B573
LPF	12 MHz/3.5 dB	20 MHz/45 dB	75	ELB4B576
LPF	13 MHz/3.0 dB	28.6 MHz/40 dB	60	ELB4B561
LPF	25 MHz/2.0 dB	50 MHz/40 dB	40	ELB4B570
LPF	21.3 MHz/0.5 dB	39 MHz/40 dB	30	ELB4D562
BPF	15±3 MHz/2 dB	±6 MHz/20 dB	70	ELB4L185B
BPF	39±3 MHz/3 dB	±6 MHz/20 dB	65	ELB6F015

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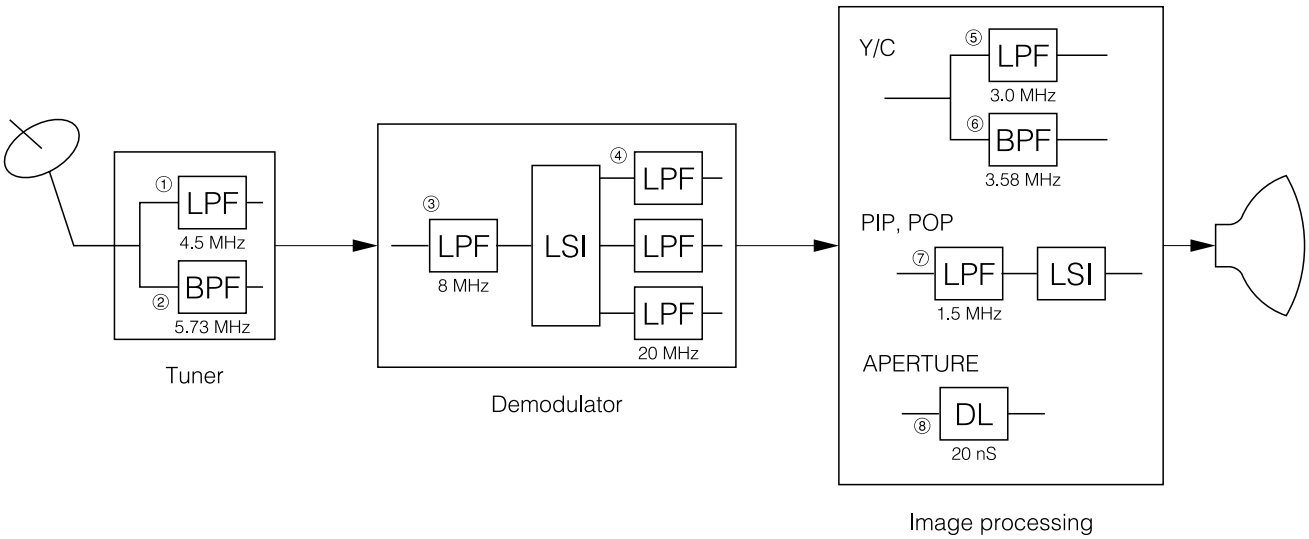
■ LC Filter's Examples for Applications

● TV, WTV, HDTV — Block Diagram —

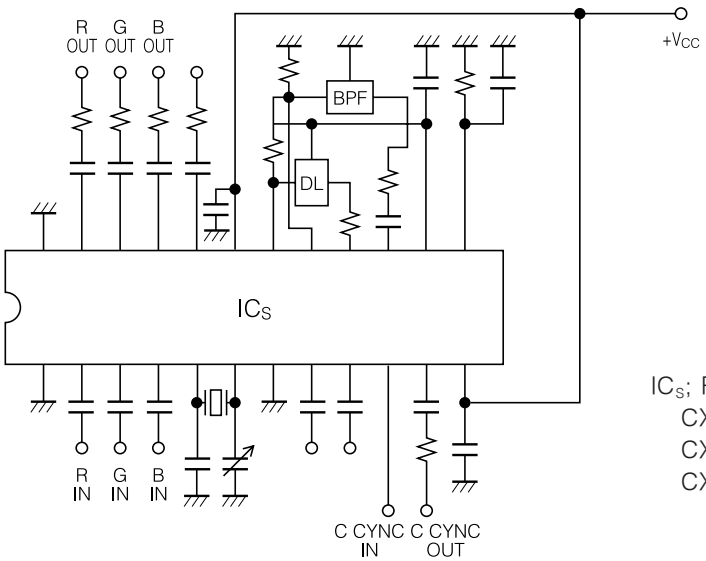


No.	Part No.
①	ELB4M100
②	ELB4K125

No.	Part No.
③	ELB4C564
④	ELB4C563

No.	Part No.
⑤	ELB4B539
⑥	ELB4B544
⑦	ELB4C524
⑧	ELB4K149

● PAL/NTSC Encoder — Application Circuit (Ref. only) —



IC_S; Ref. only
CXA1145 P/M (Sony)
CXA1219 P/M (Sony)
CXA1229 P/M (Sony)

Purpose	Style	Part No.
DL	Pin Terminals	ELB4C052
	Surface Mount	ELB4C548
BPF (NTSC)	Pin Terminals	ELB4B085
	Surface Mount	ELB4B544
BPF (PAL)	Pin Terminals	ELB4B086
	Surface Mount	ELB4B545

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