

LF 2012 Series [Preliminary]

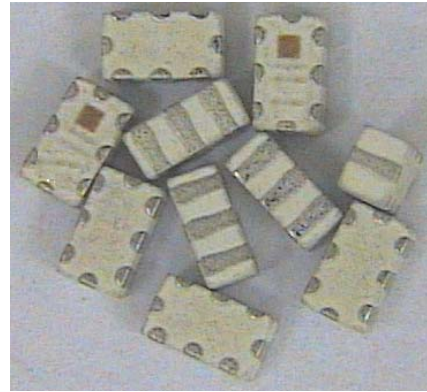
Multilayer Chip Low-Pass Filters

Features

- ❖ Monolithic structure replacing discrete inductors and capacitors.
- ❖ RoHS compliant

Applications

- ❖ 400MHz wireless communication systems, including Remote control automation, Automatic Meter Reader, etc.



Target Specifications

Part Number	Freq. Range (MHz)	Insertion Loss @ BW (dB)	VSWR @ BW	Frequency (MHz)	Attenuation (dB)
LF2012-ER40FAA_	310~435	1.3 max.	2.0 max.	620~626	20 min.
				627~631	30 min.
				635~865	25 min.
				866~870	30 min.
				870~940	25 min.
				940~950	35 min.
				950~1250	25 min.
				1255~1260	30 min.
				1265~1299	25 min.
				1299~1309	35 min.
				1309~1570	25 min.
				1570~1575	35 min.
				1580~1733	25 min.
				1733~1739	30 min.
				1739~1885	25 min.
				1885~1890	30 min.
				1895~2166	25 min.
				2166~2173	35 min.
				2173~2195	25 min.
				2195~2205	35 min.
2210~2505	25 min.				
2510~2520	30 min.				
2525~2600	25 min.				
2600~2607	30 min.				
2607~2825	25 min.				
2825~2835	35 min.				
2835~3033	25 min.				
3033~3041	35 min.				

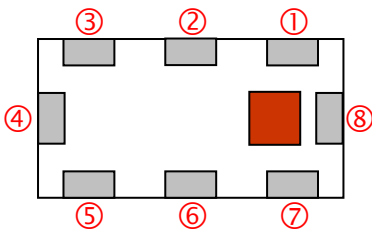
Q'ty/Reel (pcs) : 4,000
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : -40 ~ +85 °C
 Storage Period : 12 months max.
 Power Capacity : 2W max.

Part Number

LF 2012 - E R40 FAA □ /LF
 ① ② ③ ④ ⑤ ⑥ ⑦

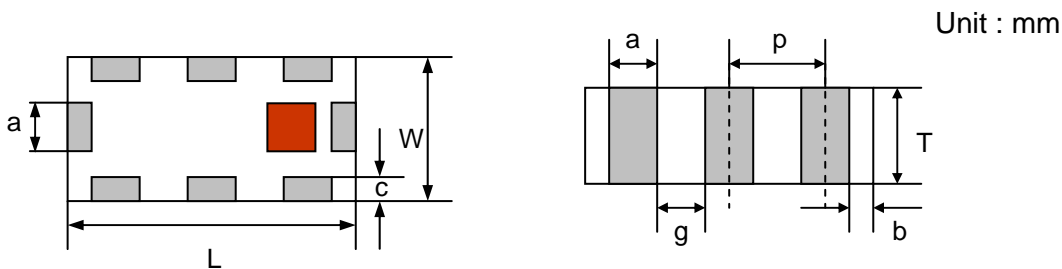
① Type	LF : Low Pass Filter	② Dimensions (L × W)	2.0 × 1.2 mm
③ Material Code	E	④ Frequency Range	R40=400MHz
⑤ Specification Code	FAA	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	/LF=lead-free		

Terminal Configuration

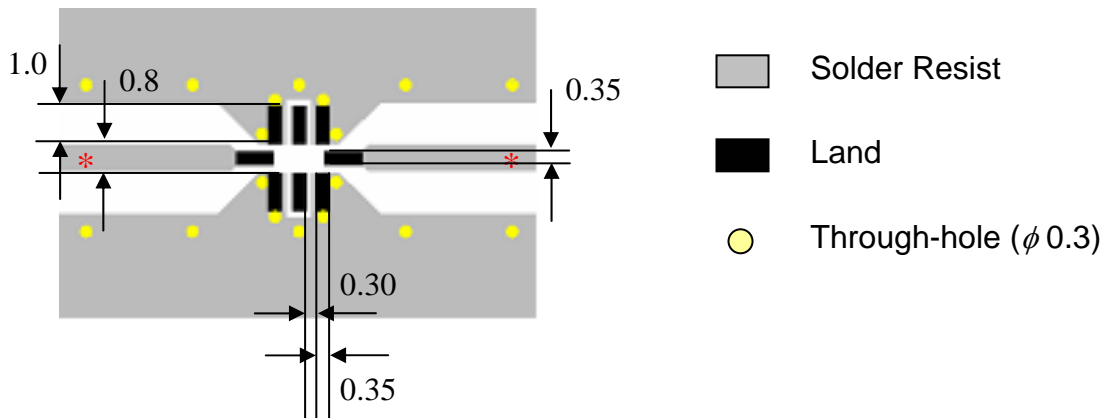


No.	Terminal Name	No.	Terminal Name
①	GND	⑤	GND
②	NC	⑥	NC
③	GND	⑦	GND
④	OUT	⑧	IN

Dimensions and Recommended PC Board Pattern

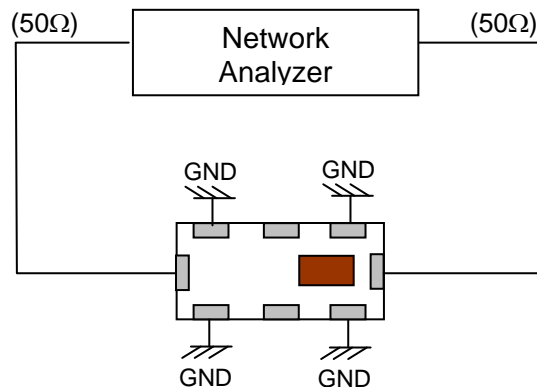


Mark	L	W	T	a	b	c	g	p
Dimensions	2.0 ± 0.1	1.25 ± 0.1	0.95 ± 0.1	0.3 ± 0.1	0.2 ± 0.1	0.3+0.1 /-0.2	0.35 ± 0.1	0.65 ± 0.05

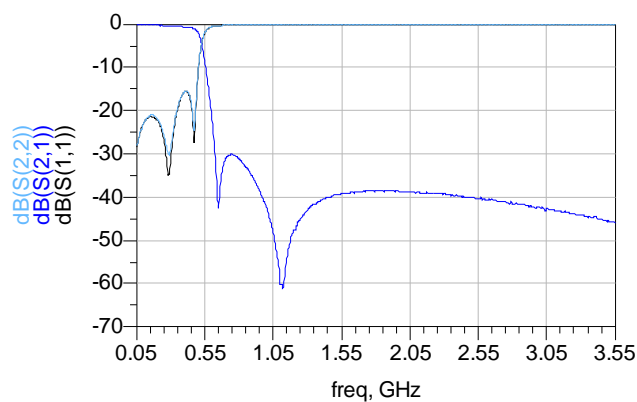


* Line width should be designed to match $50\ \Omega$ characteristic impedance, depending on PCB material and thickness.

Measuring Diagram



Typical Electrical Characteristics(T=25°C)

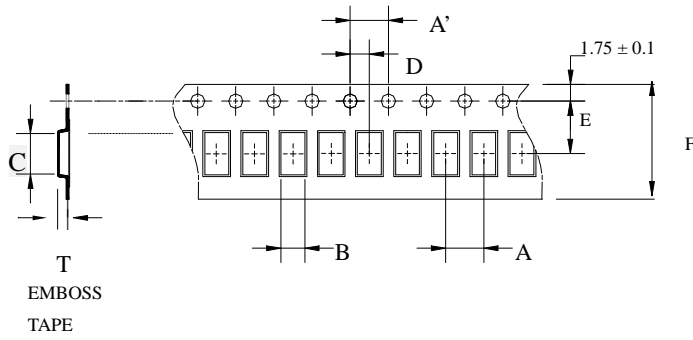


Notes

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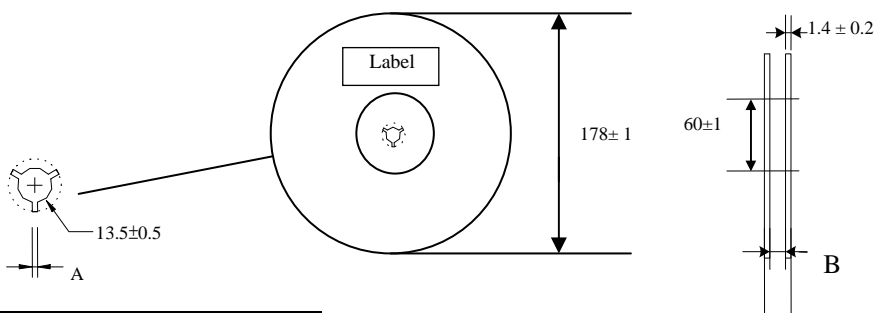
Taping Specifications

❖Tape Dimensions (Unit: mm) & Quantity



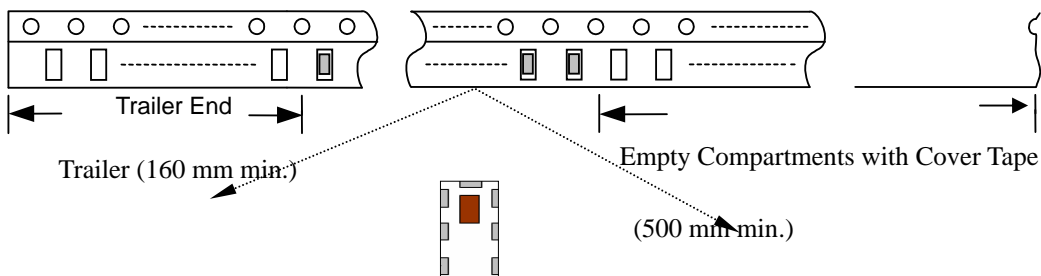
Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
2012	4.0±	4.0±	1.35±	2.15±	2.0±	3.5±	8.0±	1.08±	4,000pcs	Plastic (Embossed)
	0.1	0.1	0.05	0.05	0.05	0.1	0.1	0.05		

❖Reel Dimensions (Unit: mm)

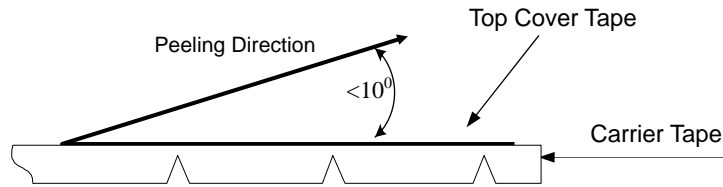


Type	A	B
2012	2.3±0.5	9.0±0.3

❖Leader and Trailer Tape



❖ **Peel-off Force**



Peel-off force should be in the range of 0.1 – 0.6 N at a peel-off speed of 300 ± 10 mm/min .

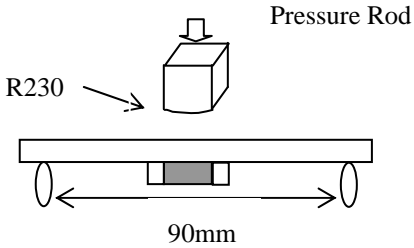
❖ **Storage Conditions**

- (1) Temperature: $+5 \sim 35^{\circ}\text{C}$, relative humidity (RH): 45~75%.
- (2) Non-corrosive environment

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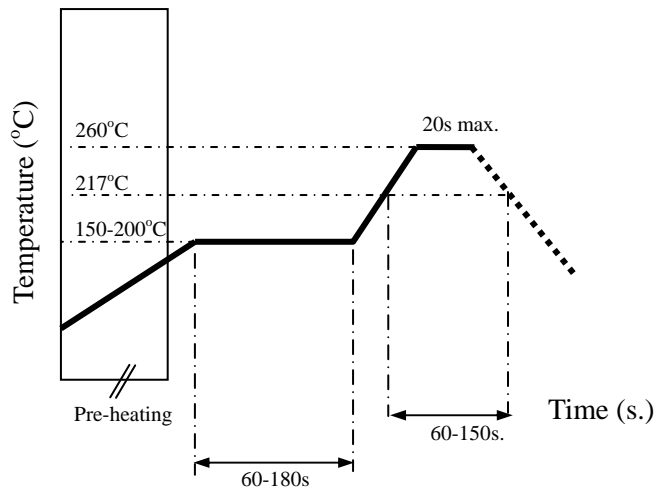
Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	<ol style="list-style-type: none"> No apparent damage More than 95% of the terminal electrode shall be covered with new solder 	<ol style="list-style-type: none"> Preheat: $120 \pm 5^\circ\text{C}$ Solder: $245 \pm 5^\circ\text{C}$ for 5 ± 1 sec
Soldering strength (Termination Adhesion)	<ol style="list-style-type: none"> 1kg minimum 	<ol style="list-style-type: none"> Solder specimen onto test jig. Apply push force at 0.5mm/s until electrode pads are peeled off or ceramic are broken. Pushing force is applied to longitude direction
Deflection (Substrate Bending)	<ol style="list-style-type: none"> No apparent damage 	<ol style="list-style-type: none"> Solder specimen onto test jig (FR4, 0.8mm) using the recommend soldering profile. Apply a bending force of 2mm deflection 
Heat/Humidity Resistance	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> Temperature: $85 \pm 2^\circ\text{C}$ Humidity: 90% ~ 95% RH Duration: 1000 ± 48hrs Recovery: 1-2hrs
Thermal shock (Temperature Cycle)	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> One cycle/step 1 : $125 \pm 5^\circ\text{C}$ for 30 min step 2 : $-40 \pm 5^\circ\text{C}$ for 30 min No of cycles : 100 Recovery: 1-2 hrs
Low Temperature Resistance	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> Temperature: $-40 \pm 5^\circ\text{C}$ Duration: 500 ± 24hrs Recovery: 1-2hrs

Soldering Conditions

❖ Typical Soldering Profile for Lead-free Process

Reflow Soldering :



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