

Ceramic Filters (CERAFIL®) for FM Receivers



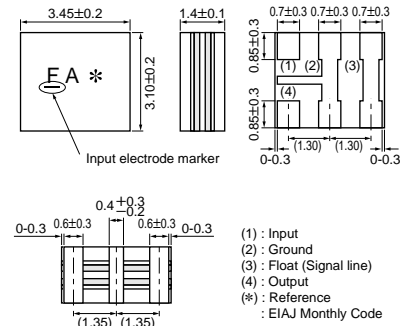
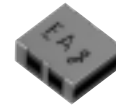
CERAFIL® Small Chip Type SF ECS Series

SF ECS10M7 series for FM-receivers are small, high performance and super thin (1.4mm) filters.

Piezoelectric element is connected in the sandwich shape by ceramics substrate.

They have 1.4mm thickness and small mounting area. (3.5x3.1mm)

New SF ECS series and PFWCC(kHz filter for AM receiver) enable customers to make AM/FM set so thin and small sized.



■ Features

1. The filters are mountable by automatic placers.
2. They are slim, at only 1.4mm thickness, and have a small mounting area (3.5x3.1mm) enabling flexible PCB design.
3. Various bandwidths are available. Select a suitable type in accordance with the desires selectivity.
4. Operating temperature range :
-20 to +80 (degree C)
Storage temperature range :
-40 to +85 (degree C)

■ Applications

1. Small, thin radios
2. Headphone stereos

Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)
SF ECS10M7HA00-R0	10.700 ±30kHz	within180 ±40kHz	470 max.	within4.5 ±2.0 dB	30 min.
SF ECS10M7GA00-R0	10.700 ±30kHz	within230 ±50kHz	510 max.	within3.5 ±2.0 dB	30 min.
SF ECS10M7FA00-R0	10.700 ±30kHz	within280 ±50kHz	590 max.	within3.0 ±2.0 dB	30 min.

Area of Attenuation : [within 20dB] Area of Spurious Attenuation : [within 9MHz to 12MHz]
Center frequency(fo) defined by the center of 3dB bandwidth.

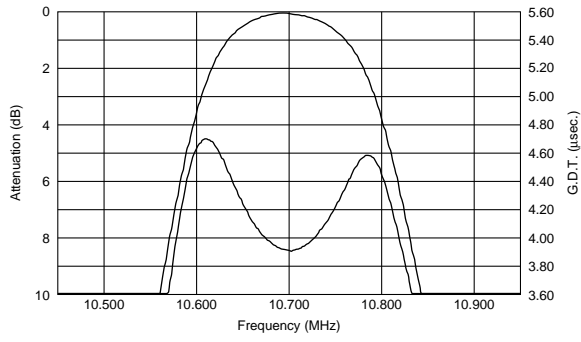
■ Center Frequency Rank Code

CODE	30kHz Step	25kHz Step
D	10.64MHz±30kHz	10.650MHz±25kHz
B	10.67MHz±30kHz	10.675MHz±25kHz
A	10.70MHz±30kHz	10.700MHz±25kHz
C	10.73MHz±30kHz	10.725MHz±25kHz
E	10.76MHz±30kHz	10.750MHz±25kHz
Z	Combination A,B,C,D,E	
M	Combination A,B,C	

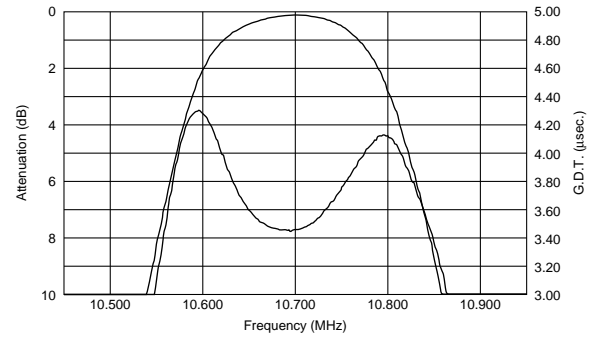
■ Frequency Characteristics

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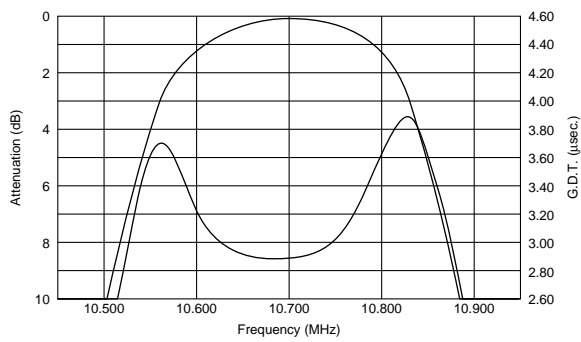
SFECS10M7HA00-R0



SFECS10M7GA00-R0

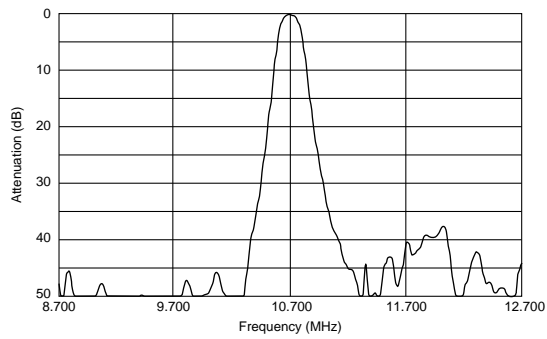


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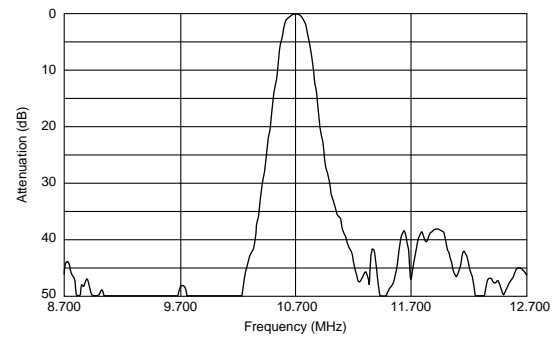


■ Frequency Characteristics (Spurious)

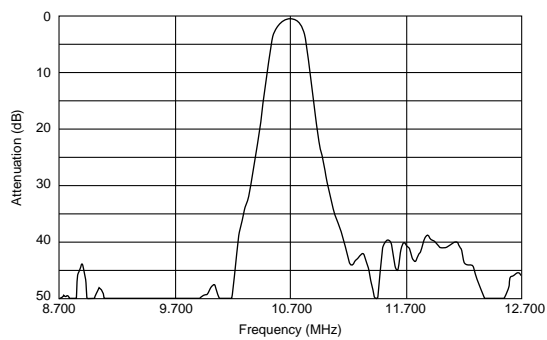
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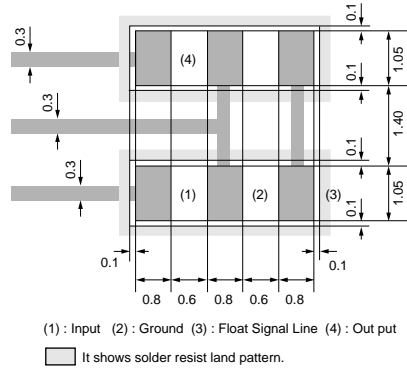
SFECS10M7GA00-R0



SFECS10M7FA00-R0

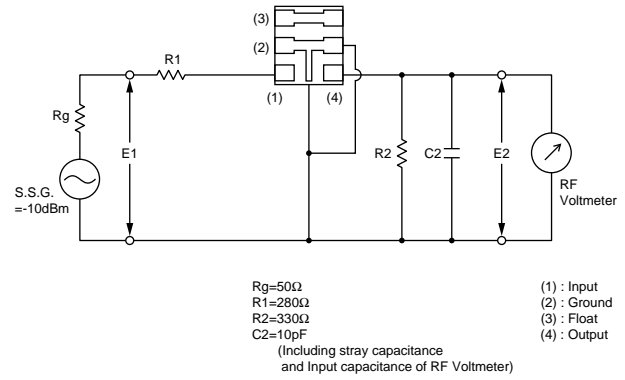


■ Standard Land Pattern Dimensions



(in mm)

■ Test Circuit



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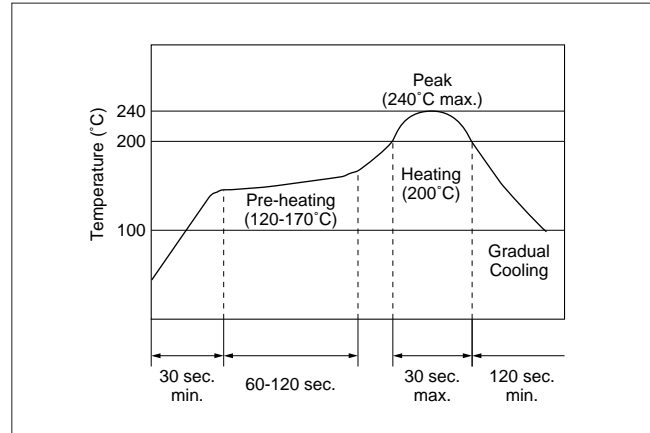
Chip CERAFIL® SF ECS Series Notice

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■ Notice (Soldering and Mounting)

1. Standard Reflow Soldering Condition

(1) Reflow



(2) Soldering Iron

Filter shall be soldered at $280 \pm 5^\circ\text{C}$ for 3.0 ± 0.5 seconds.
The soldering iron shall not touch the filter white soldering.

2. Wash

The component cannot be withstand washing.

■ Notice (Handling)

- The component will be damaged when an excessive stress is applied.
- The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
- Design layout of components on the PC board to minimize the stress imposed on the warp or flexure of the board.
- After installing chips, if solder is excessively applied to the circuit board, mechanical stress will cause destruction resistance characteristics to lower. To prevent this, be extremely careful in determining shape and dimension before designing the circuit board diagram.
- When the positioning claws and pick up nozzle are worn, the load is applied to the chip while positioning is concentrated to one positioning accuracy, etc. Careful checking and maintenance are necessary to prevent unexpected trouble.
- When correcting chips with a soldering iron, the tip of the soldering iron should not directly touch the chip component. Depending on the soldering conditions, the effective area of terminations may be reduced. The use of solder containing Ag should be done to prevent the electrode erosion.
- Do not clean or wash the component as it is not hermetically sealed.
- In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated well.
- Do not use strong acidity flux, more than 0.2wt% chlorine content, in re-flow soldering.
- Accurate test circuit values are required to measure electrical characteristics.
It may be a cause of mis-correlation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

[Component layout close to board]

