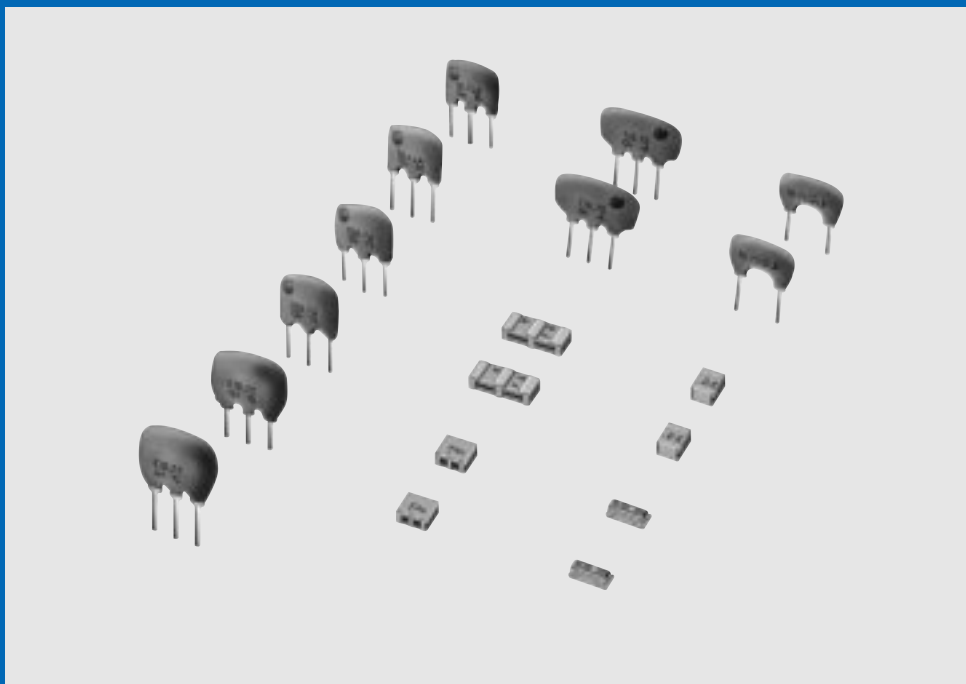


Ceramic Filters (CERAFIL[®]) for FM Receivers

CERAMIC
FILTERS
(CERAFIL[®])



muRata *Innovator
in Electronics*

Murata
Manufacturing Co., Ltd.

Cat.No.P61E-7

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● **Part Numbering** (The structure of the "Global Part Numbers" that have been adopted since June 2001 and the meaning of each code are described herein.)
 If you have any questions about details, inquire at your usual Murata sales office or distributor.

CERAFIL® for FM

(Global Part Number)

SF	E	LA	10M7	FAA0	-R0
①	②	③	④	⑤	⑥

① Product ID

Product ID	
SF	Ceramic Filters

② Oscillation/Numbers of Element

Code	Oscillation/Numbers of Element
E	2 Elements Thickness Expander mode
T	3 Elements Thickness Expander mode
K	2 Elements Thickness Expander mode (2nd Harmonic)
V	2 Elements Thickness Expander mode (3rd Over Tone)

③ Structure/Size

Code	Structure/Size
L□	Lead Type
C□	Chip Type

□ is expressed "A" or subsequent code, which indicates the size.

④ Nominal Center Frequency

Expressed by four-digit alphanumerics. The unit is in hertz (MHz).
 Decimal point is expressed by capital letter "M".

Discriminators for FM

(Global Part Number)

CD	A	LA	10M7	GA	001	-R0
①	②	③	④	⑤	⑥	⑦

① Product ID

Product ID	
CD	Discriminators

② Oscillation

Code	Oscillation
A	Thickness Expander mode

③ Structure/Size

Code	Structure/Size
L□	Lead Type
C□	Chip Type

□ is expressed "A" or subsequent code, which indicates the size.

④ Nominal Center Frequency

Expressed by four-digit alphanumerics. The unit is in hertz (MHz).
 Decimal point is expressed by capital letter "M".

⑤ Product Specification

Code	Product Specification
FAA0	Four-digit alphanumerics express pass-bandwidth, center frequency tolerance, rank, series, others.

⑥ Packaging

Code	Packaging
-B0	Bulk
-R0	Plastic Taping ø180mm
-R1	Plastic Taping ø330mm
-A0	1500pcs. /Radial Taping H ₀ =18mm
-A1	1000pcs. /Radial Taping H ₀ =18mm

Radial taping is applied to lead type and plastic taping to chip type.
 With non-standard products, two-digit alphanumerics indicating "Individual Specification" is added between "⑤ Product Specification" and "⑥ Packaging".

⑤ Product Specification

Code	Product Specification
GA	Two-digit alphanumerics express type, center frequency, rank, others

⑥ IC

Code	IC
001	Applicable IC Control Code

⑦ Packaging

Code	Packaging
-B0	Bulk
-A0	Radial Taping H ₀ =18mm
-R0	Plastic Taping (ø180mm)
-R1	Plastic Taping (ø330mm)

Radial taping is applied to lead type and plastic taping to chip type.
 With non-standard products, an alphanumerics indicating "Individual Specification" is added between "⑥ IC" and "⑦ Packaging".

Ceramic Filters (CERAFIL[®]) for FM Receivers



CERAFIL[®] Chip Type SFECV Series

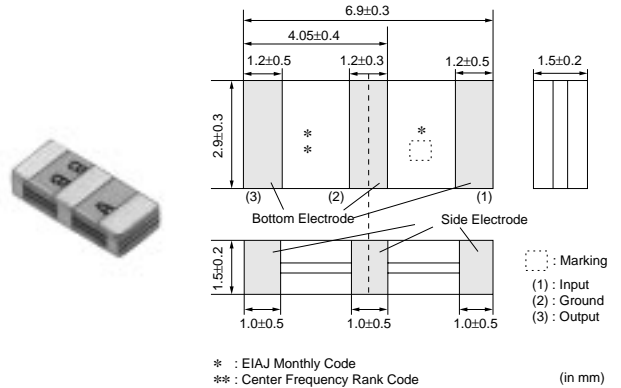
SFECV10M7 series for FM-receivers are monolithic type ceramic filters which utilize the energy trapped thickness vibration-mode of the piezoelectric ceramic. By taking advantage of the very low profile, new SFECV series and PFWCC(kHz filter for AM receiver) enable costumers to make AM/FM set so thin, and it can be of help to the total chip circuit.

■ Features

1. Super-thin. Only 1.5mm. The most suitable ceramic filter available for thinning substrates.
2. Heat resistant. Reflow soldering can be performed because of its excellent heat resistance.
3. Piezoelectric element is connected in the sandwich shape by heat resistant substrate, thus it has excellent mechanical strength, and it is suitable for automatic mounting.
4. Various bandwidths are available. Select a suitable type in accordance with the desired selectivity.
5. Electrical characteristics are the same as conventional "CERAFIL".

■ Applications

1. Small, thin radios
2. Automotive radios
3. Headphone stereos



Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)
SFECV10M7KA00-R0	10.700 ±30kHz	within110 ±30kHz	320 max.	within6.0 ±2.0dB	35 min.
SFECV10M7JA00-R0	10.700 ±30kHz	within150 ±40kHz	380 max.	10.0 max.	30 min.
SFECV10M7HA00-R0	10.700 ±30kHz	within180 ±40kHz	470 max.	within4.0 ±2.0 dB	35 min.
SFECV10M7GA00-R0	10.700 ±30kHz	within230 ±50kHz	510 max.	within3.5 ±2.0 dB	35 min.
SFECV10M7FA00-R0	10.700 ±30kHz	within280 ±50kHz	590 max.	within3.0 ±2.0 dB	35 min.

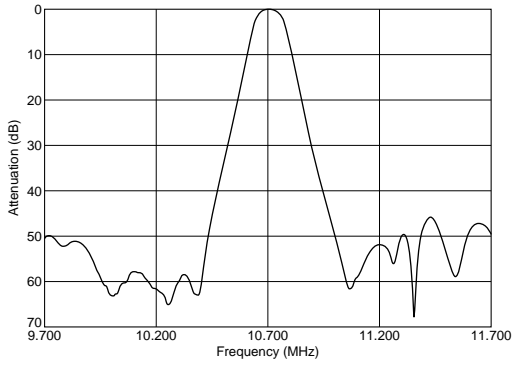
Area of Attenuation : [within 20dB] Area of Spurious Attenuation : [within 9MHz to 12MHz]
Center frequency(fo) defined by the center of 3dB bandwidth.

■ Center Frequency Rank Code

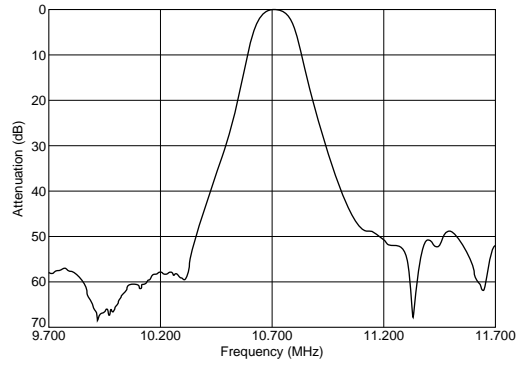
CODE	30kHz Step	25kHz Step
D	10.64MHz±30kHz	10.650MHz±25kHz
B	10.67MHz±30kHz	10.675MHz±25kHz
A	10.70MHz±30kHz	10.700MHz±25kHz
C	10.73MHz±30kHz	10.725MHz±25kHz
E	10.76MHz±30kHz	10.750MHz±25kHz
Z	Combination A,B,C,D,E	
M	Combination A,B,C	

Frequency Characteristics

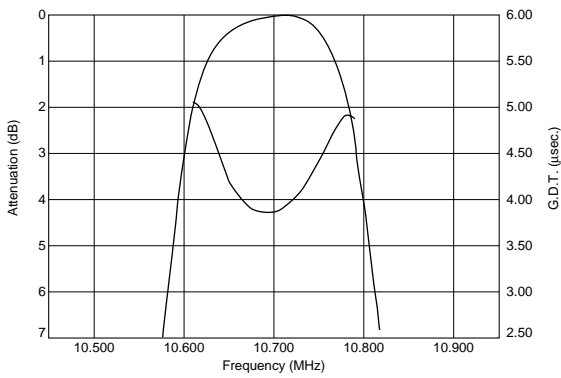
SFECV10M7KA00-R0



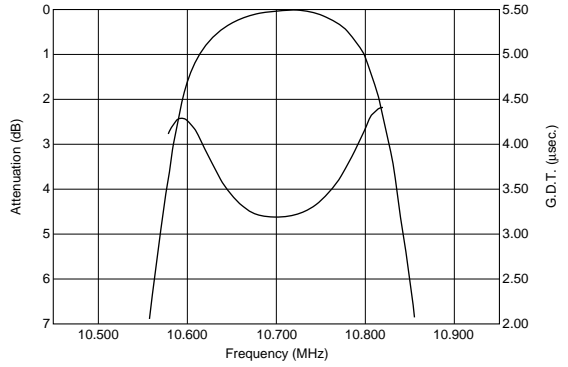
SFECV10M7JA00-R0



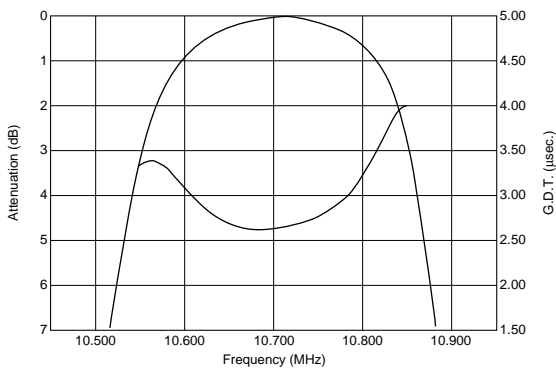
SFECV10M7HA00-R0



SFECV10M7GA00-R0

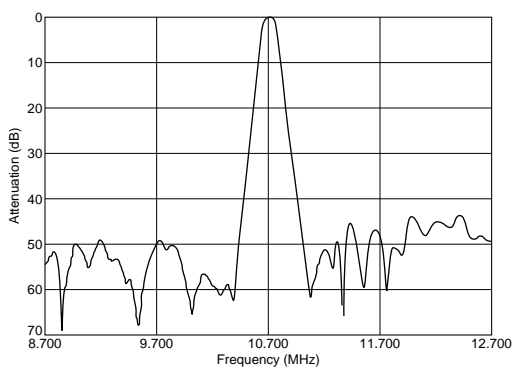


SFECV10M7FA00-R0

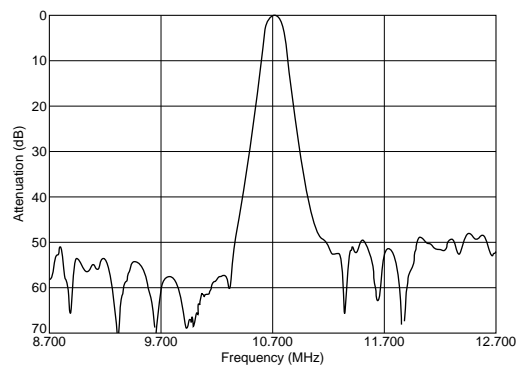


Frequency Characteristics (Spurious)

SFECV10M7KA00-R0

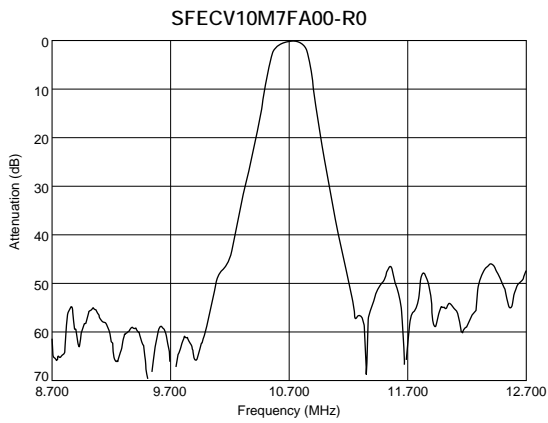
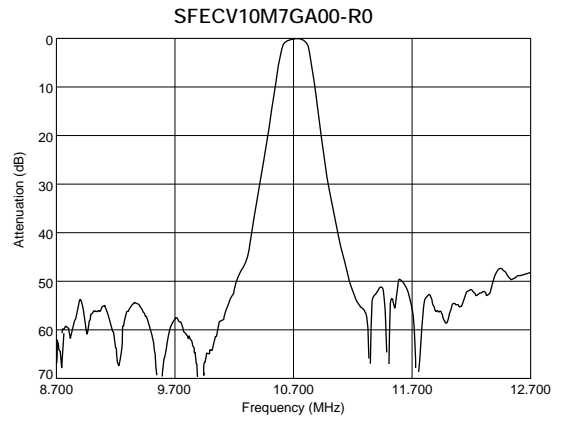
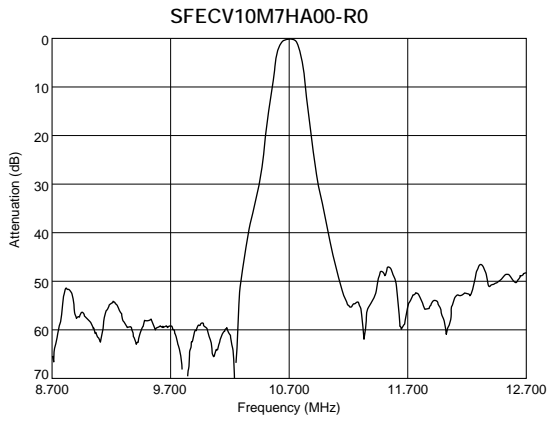


SFECV10M7JA00-R0

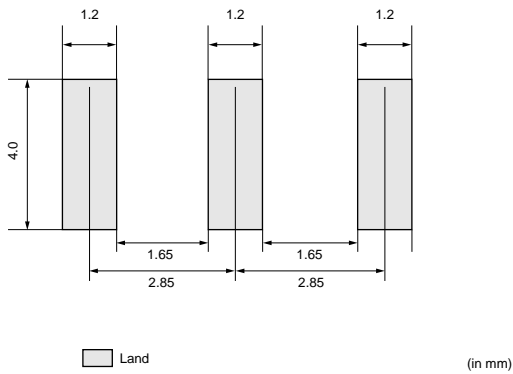


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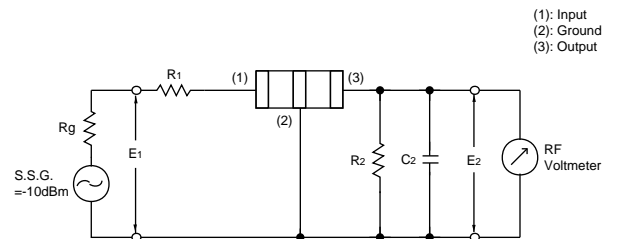
Frequency Characteristics (Spurious)



Standard Land Pattern Dimensions



Test Circuit



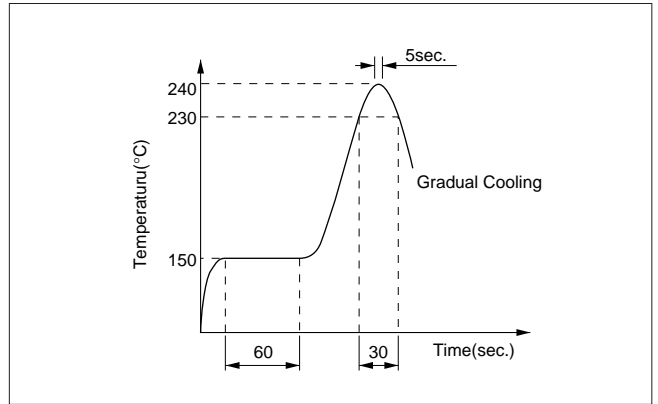
$R_g = 50\Omega$ $R_1 = 280\Omega \pm 5\%$ $R_2 = 330\Omega \pm 5\%$
 $C_2 = 10 \pm 2 \text{ pF}$ (Including stray capacitance and Input capacitance of RF Volt Meter)
 E_1 : S.S.G. S.S.G. Output Voltage

1 Chip CERAFIL® SFECV Series Notice

■ Notice (Soldering and Mounting)

1. Standard Reflow Soldering Condition

(1) Reflow



(2) Soldering Iron

Lead terminal is directly contacted with the tip of soldering iron of $280 \pm 5^\circ\text{C}$ for 3.0 ± 0.5 seconds.

2. Wash

The component cannot be withstand washing.

■ Notice (Handling)

1. The component will be damaged when an excessive stress is applied.
2. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
3. Design layout of components on the PC board to minimize the stress imposed on the warp or flexure of the board.
4. 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.
5. 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.
6. 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.
7. Do not clean or wash the component as it is not hermetically sealed.
8. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated well.
9. Do not use strong acidity flux, more than 0.2wt% chlorine content, in re-flow soldering.
10. 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.

