

CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment



muRata

*Innovator
in Electronics*

Murata
Manufacturing Co., Ltd.

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● Part Numbering

CERAFIL[®] for FM

(Part Number)

SF	E	LF	10M7	FAA0	-B0
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
V	2 Elements Thickness Expander mode (2nd Harmonic)
K	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 structure/size.

④ Nominal Center Frequency

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

CERAFIL[®] for TV/VCR

(Part Number)

SF	S	RA	4M50	CF	00	-B0
①	②	③	④	⑤	⑥	⑦

① Product ID

Product ID	
SF	Ceramic Filters

② Oscillation/Numbers of Element

Code	Oscillation/Numbers of Element
S	2 Elements Thickness Shear mode
T	3 Elements Thickness Expander mode

③ Structure/Size

Code	Structure/Size
R□	Lead Type
K□	Chip Type

□ is expressed "A" or subsequent code, which indicates the structure/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 "⑤Product Specification" and "⑥Packaging".

⑤ Product Specification Code (1)

Code	Product Specification Code (1)
AF	Standard Bandwidth Type
BF	Tight Bandwidth Type
CF	Standard Bandwidth Type
DF	Broad Bandwidth Type
EF	Ultra-broad Bandwidth Type

The code AF is only applied to SFT series.

⑥ Product Specification Code (2)

Code	Product Specification Code (2)
00	Standard Type

⑦ Packaging

Code	Packaging
-B0	Bulk
-A0	Radial Taping H ₀ =18mm
-R1	Plastic Taping ø=330mm

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 "⑥Product Specification Code (2)" and "⑦Packaging".

CERAFIL[®] for AM

(Part Number)

PF	W	LF	450K	P2A	-B0
①	②	③	④	⑤	⑥

① Product ID

Product ID	
PF	Ceramic Filters
SF	Ceramic Filters
CF	Ceramic Filters

② Oscillation/Numbers of Element

Code	Oscillation/Numbers of Element
S	1 Element Length mode
W	2 Elements Length mode
U	1 Element Area Expansion mode
Z	2 Elements Area Expansion mode
P	4 Elements Area Expansion mode

③ Structure/Size

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

□ is "A" or subsequent code, which indicates the structure/size. It varies depending on vibration mode and number of elements.

④ Nominal Center Frequency

Expressed by four-digit alphanumerics. The unit is in hertz (Hz). Capital letter "K" following three figures expresses the unit of "kHz".

CERAFIL[®] for Search-stop Signal Detection

(Part Number)

BF	U	LA	450K	C	-B0
①	②	③	④	⑤	⑥

① Product ID

Product ID	
BF	Resonator

② Oscillation/Numbers of Element

Code	Oscillation/Numbers of Element
U	1 Element Area Expansion mode

③ Structure/Size

Code	Structure/Size
LA	Lead Type Standard

④ Nominal Center Frequency

Code	Nominal Center Frequency
450K	450kHz

⑤ Product Specification

Code	Product Specification
P2A	Standard Type

□□A indicates standard type.

⑥ Packaging

Code	Packaging
-B0	Bulk
-R0	Plastic Taping (ø180mm)
-R1	Plastic Taping (ø330mm)
-A0	Radial Taping H ₀ =18mm
-M0	Magazine Cassette

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

⑤ Product Specification

Code	Product Specification
C□	Bandwidth

With standard type, □ is omitted.

⑥ Packaging

Code	Packaging
-B0	Bulk

Radial taping is applied to lead type and plastic taping to chip type. With non-standard products, "Individual Specification (serial number)" and "Lead Shape (Lead Bend : B)" are added between "⑤Product Specification" and "⑥Package Specification Code" upon specification.

Ceramic Traps

(Part Number)

TP	S	RA	4M50	B	00	-B0
①	②	③	④	⑤	⑥	⑦

①Product ID

Product ID	
TP	Ceramic Traps

②Function

Code	Function
S	Single Traps
T	Triple Traps
W	Double Traps

③Structure/Size

Code	Structure/Size
R□	Lead Type
K□	Chip Type

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

④Nominal Center Frequency

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

⑤Product Specification Code (1)

Code	Product Specification (1)
B	Broad-bandwidth Type
C	Low-capacitance Type

⑥Product Specification Code (2)

Code	Product Specification Code (2)
00	Standard Type

⑦Packaging

Code	Packaging
-B0	Bulk
-A0	Radial Taping H ₀ =18mm
-R1	Plastic Taping ø=330mm

Radial taping is applied to lead type and plastic taping to chip type.
With non-standard products, three-digit alphanumerics indicating "Individual Specification" is added between "⑥Product Specification Code (2)" and "⑦Packaging".

Discriminators for FM

(Part Number)

CD	A	LF	10M7	GA	001	-B0
①	②	③	④	⑤	⑥	⑦

①Product ID

Product ID	
CD	Discriminators

②Oscillation

Code	Oscillation
A	Thickness Expander mode
S	Thickness Shear mode

③Structure/Size

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

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

④Nominal Center Frequency

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

⑤Product Specification

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

⑥IC

Code	IC
001	Applicable IC Control Code

⑦Packaging

Code	Packaging
-B0	Bulk
-A0	Radial Taping H ₀ =18mm
-R0	Plastic Taping ø=180mm
-R1	Plastic Taping ø=330mm

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 "⑥IC" and "⑦Packaging".

Discriminators for TV/VCR

(Part Number)

CD	S	RF	4M50	E	K	048	-A0
①	②	③	④	⑤	⑥	⑦	⑧

① Product ID

Product ID	
CD	Discriminators

② Oscillation

Code	Oscillation
S	Thickness Shear mode

③ Structure/Size

Code	Structure/Size
R□	Lead Type

□ is expressed "A" or subsequent code, which indicates the structure/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 (1)

Code	Product Specification Code (1)
C	Three-terminals
E	Two-terminals

⑥ Product Specification Code (2)

Code	Product Specification Code (2)
K	Specification

⑦ IC

Code	IC
048	Applicable IC control code

⑧ Packaging

Code	Packaging
-B0	Bulk
-A0	Radial Taping H ₀ =18mm

With non-standard products, a letter Indicating "Individual Specification" is added between "⑦IC" and "⑧Packaging".

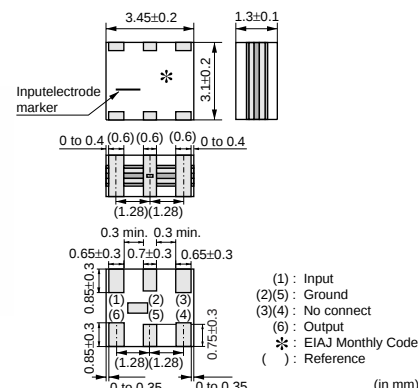
CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment



CERAFIL® 10.7MHz Small Chip Type SFECF Series

SFECF10M7 series for FM-receivers are small, high performance and super thin (1.4mm max.) filters. Piezoelectric element is connected in the sandwich shape by ceramics substrate. They have 1.4mm max. thickness and small mounting area. (3.45x3.1mm)

SFECF series and CDSCB series (MHz Discriminator) enable customers to make VICS/RKE/TPMS set so thin and small sized.



■ Features

1. The filters are mountable by automatic placers.
2. They are slim, at only 1.4mm max. thickness, and have a small mounting area (3.45x3.1mm) enabling flexible PCB design.
3. Various bandwidths are available. Select a suitable type in accordance with the desired selectivity.
4. Operating temperature range: -20 to +80 (degree C)
Storage temperature range: -40 to +85 (degree C)

Part Number	Center Frequency (fo) (MHz)	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Ripple (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFECF10M7HA00-R0	10.700 ±30kHz	-	180 ±40kHz	470 max.	4.0 ±2.0dB	1.0 max.	30 min.	330
SFECF10M7GA00-R0	10.700 ±30kHz	-	230 ±50kHz	510 max.	3.5 ±2.0dB	1.0 max.	30 min.	330
SFECF10M7FA00-R0	10.700 ±30kHz	-	280 ±50kHz	590 max.	3.0 ±2.0dB	1.0 max.	30 min.	330
SFECF10M7EA00-R0	10.700 ±30kHz	-	330 ±50kHz	700 max.	3.0 ±2.0dB	1.0 max.	30 min.	330
SFECF10M7DF00-R0	-	10.700	fn±150 min.	990 max.	6.0 max. [at fn]	3.0 max.	20 min.	330

Area of Attenuation: [within 20dB] Area of Spurious Attenuation: [within 9MHz to 12MHz]

Area of Insertion Loss: at minimum loss point Area of Ripple: within 3dB B.W.

Center frequency (fo) defined by the center of 3dB bandwidth.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

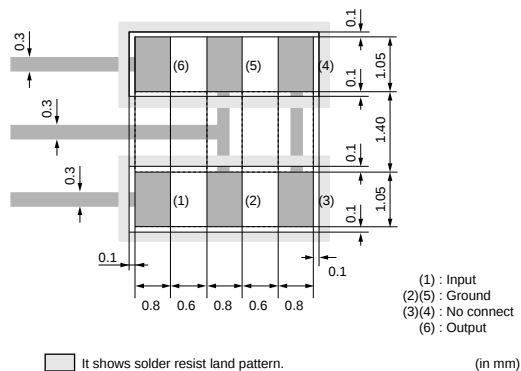
■ Standard Center Frequency Rank Code

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	

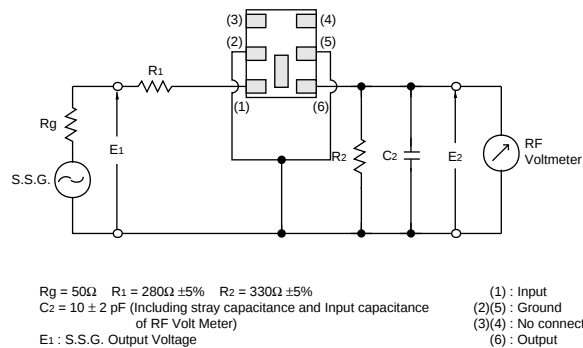
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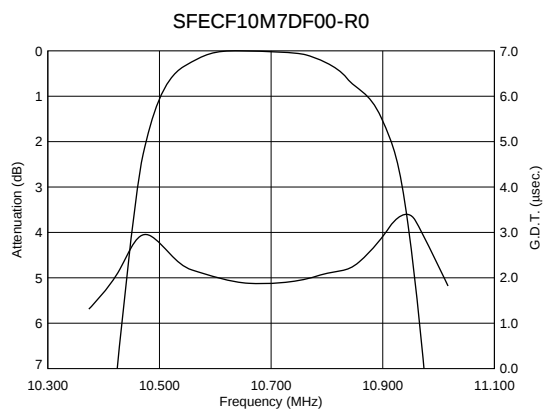
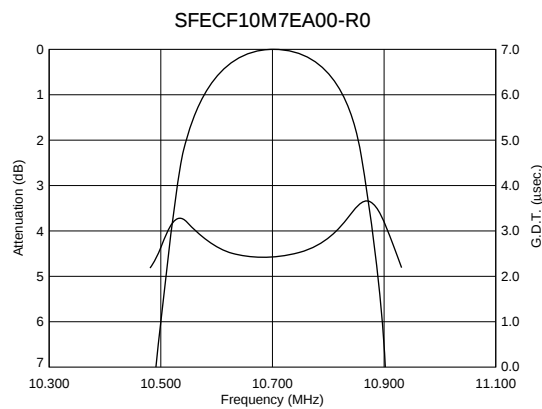
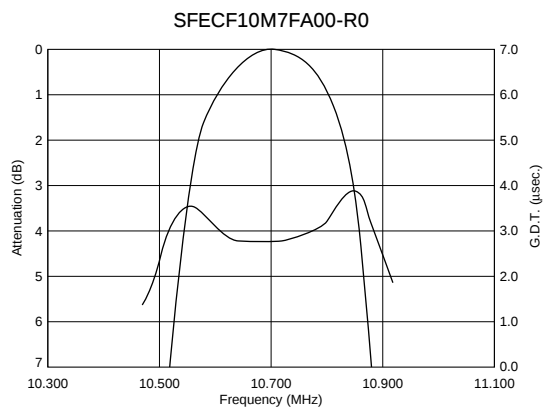
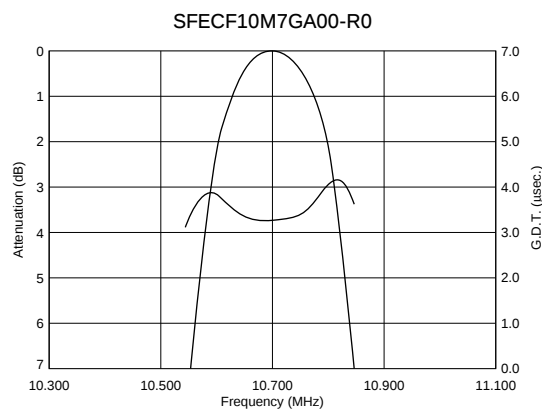
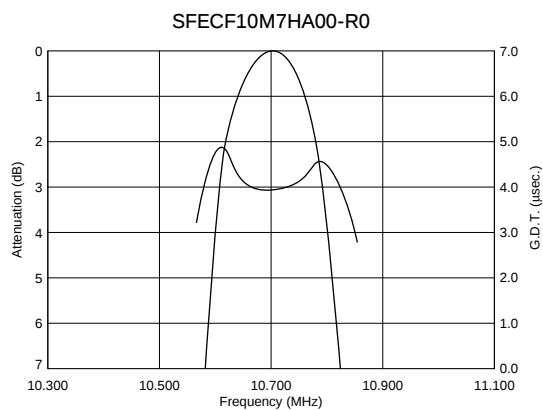
Standard Land Pattern Dimensions



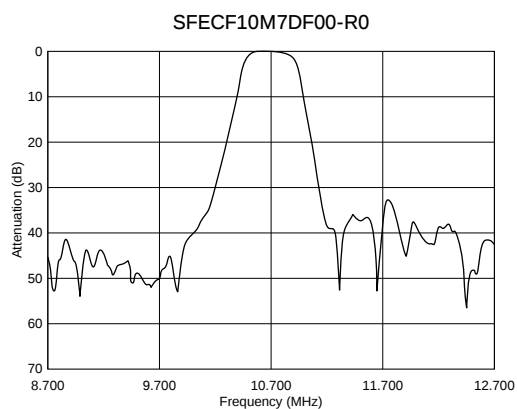
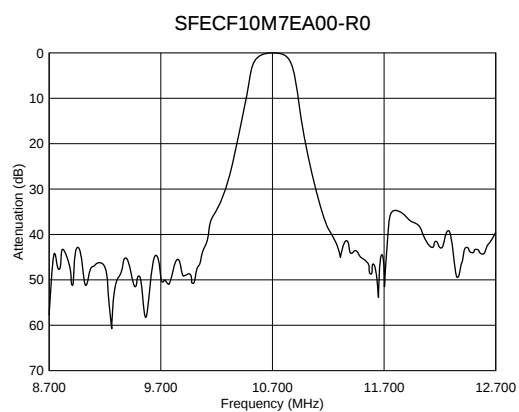
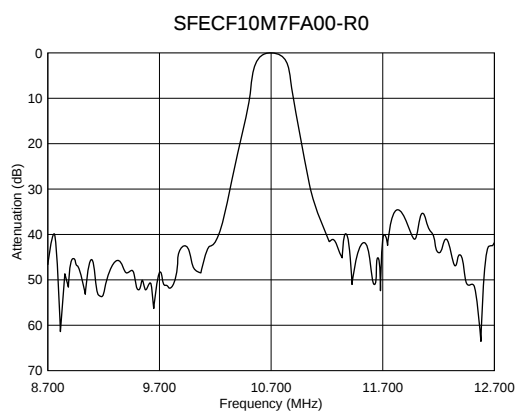
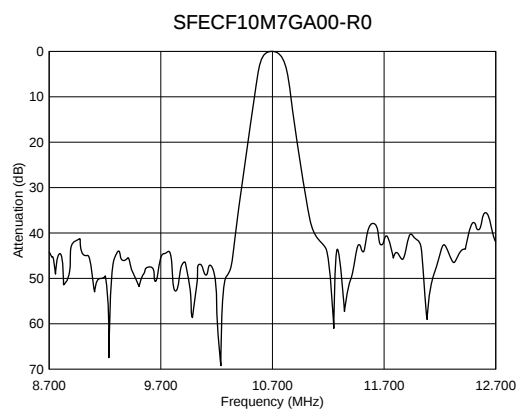
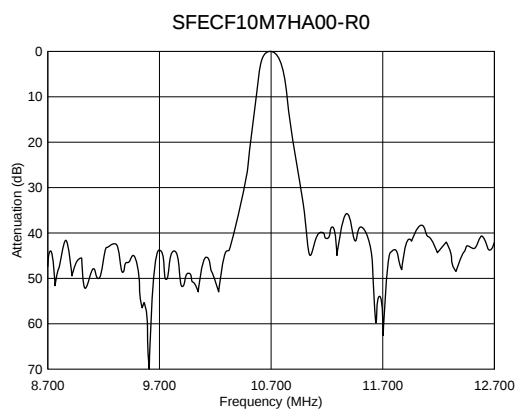
Test Circuit



Frequency Characteristics



■ Frequency Characteristics (Spurious)



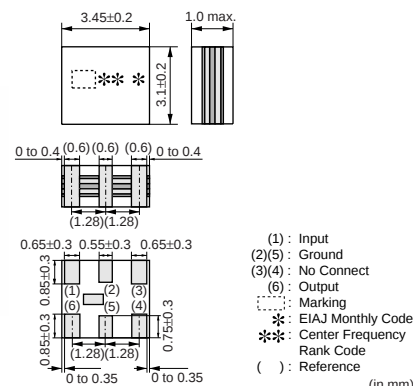
CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment



2

CERAFIL® 10.7MHz Ultra Thin Chip Type SFECD Series

SFECD10M7 series for FM-receivers are small, high performance and ultra thin (1.0mm max.) filters. Piezoelectric element is connected in the sandwich shape by very thin ceramics substrate. They have 1.0mm max. thickness and small mounting area. (3.45x3.1mm)
SFECD series enable customers to make RF modules so thin and small sized.



■ Features

1. The filters are mountable by automatic placers.
2. They are slim, at only 1.0mm max. thickness, and have a small mounting area (3.45x3.1mm) enabling flexible PCB design.
3. Operating temperature range: -20 to +80 (degree C)
Storage temperature range: -40 to +85 (degree C)

■ Applications

1. Card type radios
2. Card type RKE modules
3. Card type PHS modules

Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Ripple (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFECD10M7FA00-R0	10.700 ±30kHz	280 ±50kHz	590 max.	3.0 ±2.0dB	1.0 max.	30 min.	330

Area of Attenuation: [within 20dB] Area of Spurious Attenuation: [within 9MHz to 12MHz]

Area of Insertion Loss: at minimum loss point Area of Ripple: within 3dB B.W.

Center frequency (fo) defined by the center of 3dB bandwidth.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

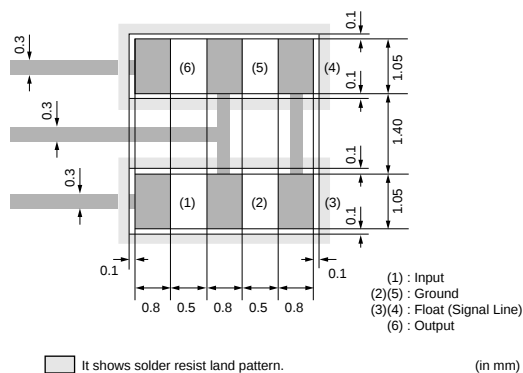
■ Standard Center Frequency Rank Code

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	

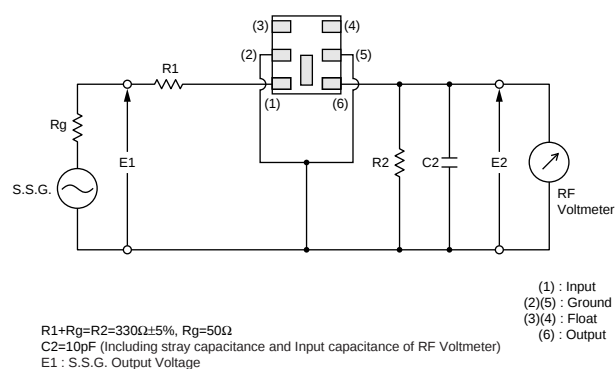
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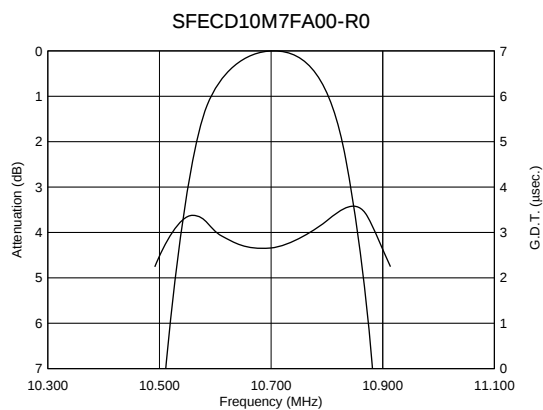
Standard Land Pattern Dimensions



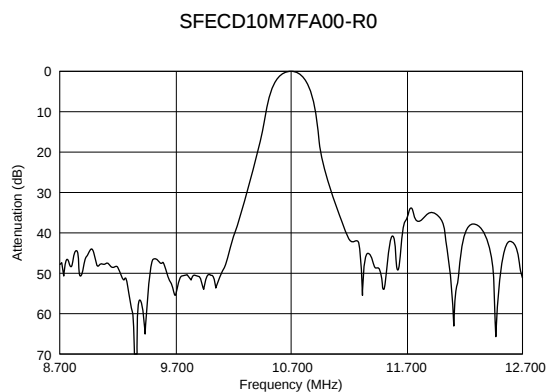
Test Circuit



Frequency Characteristics



Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

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CERAFIL® 10.7MHz Chip Type SFECV Series

3

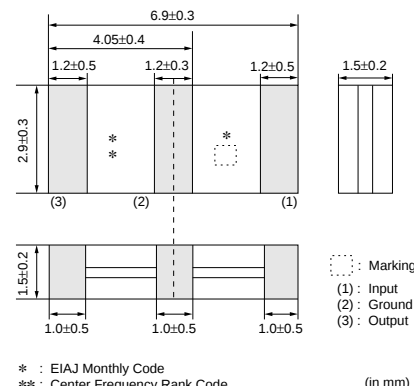
SFECV10M7 series for FM-receivers are monolithic type ceramic filters which utilize the thickness expander mode of the piezoelectric ceramic. SFECV series and PFWCC (kHz filter for AM receiver) enable customers to make AM/FM set so thin, and it can be of help to the total chip circuit.

■ Features

1. 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.
2. Various bandwidths are available. Select a suitable type in accordance with the desired selectivity.

■ 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)	Input/Output Impedance (ohm)
SFECV15M0EQ0001-R0	15.000 ±50kHz	300 min.	750 max.	7.0 max.	30 min.	330
SFECV10M7KA00-R0	10.700 ±30kHz	110 ±30kHz	320 max.	6.0 ±2.0dB	35 min.	330
SFECV10M7JA00-R0	10.700 ±30kHz	150 ±40kHz	380 max.	5.5 ±2.0dB	35 min.	330
SFECV10M7HA00-R0	10.700 ±30kHz	180 ±40kHz	470 max.	4.0 ±2.0dB	35 min.	330
SFECV10M7GA00-R0	10.700 ±30kHz	230 ±50kHz	510 max.	3.5 ±2.0dB	35 min.	330
SFECV10M7FA00-R0	10.700 ±30kHz	280 ±50kHz	590 max.	3.0 ±2.0dB	35 min.	330
SFECV10M7CQ0C01-R0	10.700 ±40kHz	500 ±40kHz	950 max.	2.0 +2.0/-1.0dB	20 min.	470
SFECV10M7DF0021-R0	-	fn±175 min.	950 max.	3.0 ±2.0dB	20 min.	470

Area of Attenuation: [within 20dB]

Area of Spurious Attenuation: [within 9MHz to 12MHz], SFECV15M0EQ0001-R0: [within 14MHz to fo/fo to 16MHz], SFECV10M7CQ0C01-R0: [within 5MHz to 12MHz]

Area of Insertion Loss: at minimum loss point

Center frequency (fo) defined by the center of 3dB bandwidth.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

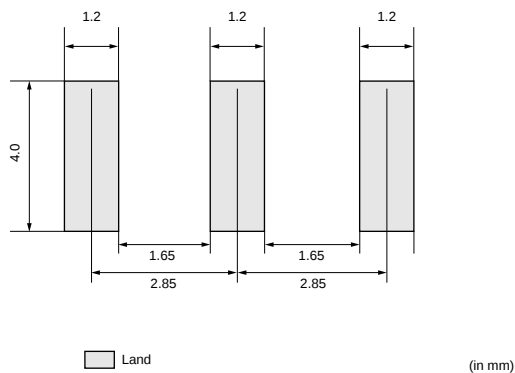
■ Standard Center Frequency Rank Code

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	

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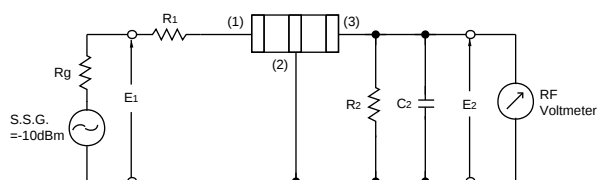
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Standard Land Pattern Dimensions



Test Circuit

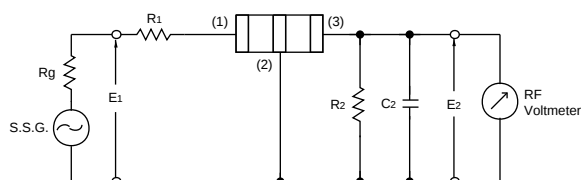
SFECV10M7_A00-R0



$R_g = 50\Omega$ $R_1 = 280\Omega \pm 5\%$ $R_2 = 330\Omega \pm 5\%$
 $C_2 = 10 \pm 2$ pF (Including stray capacitance and Input capacitance of RF Volt Meter)
 E1 : S.S.G. Output Voltage
 (1) : Input
 (2) : Ground
 (3) : Output

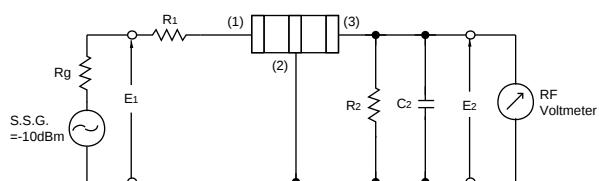
SFECV10M7CQ0C01-R0

SFECV10M7DF0021-R0



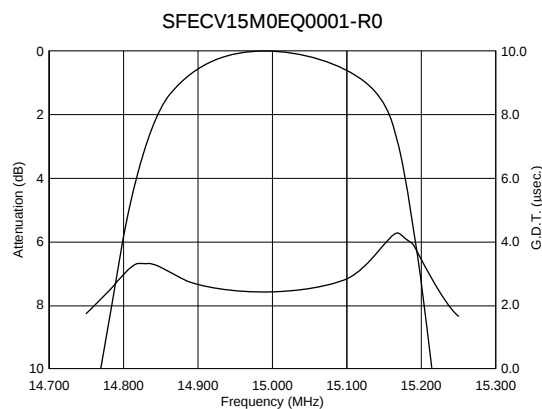
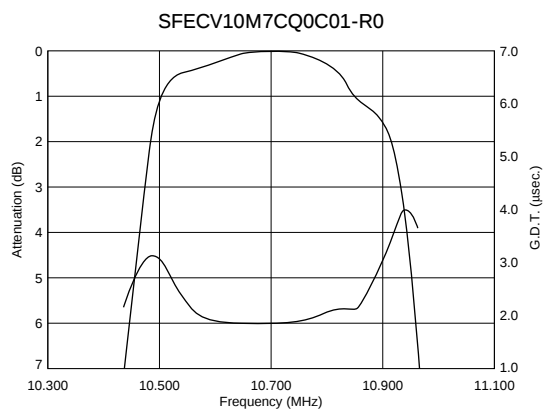
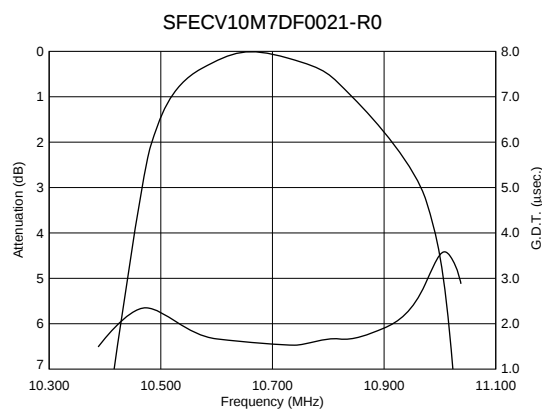
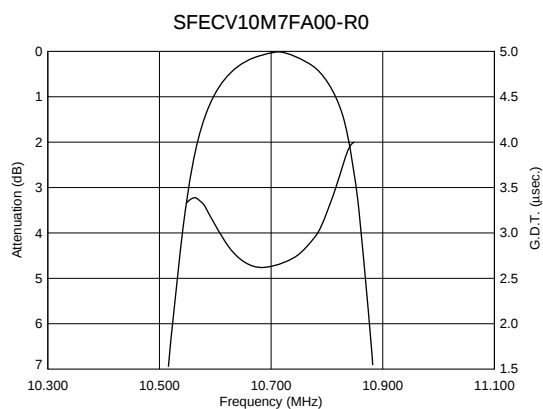
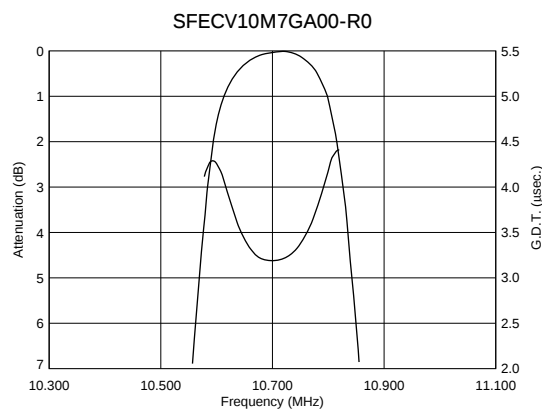
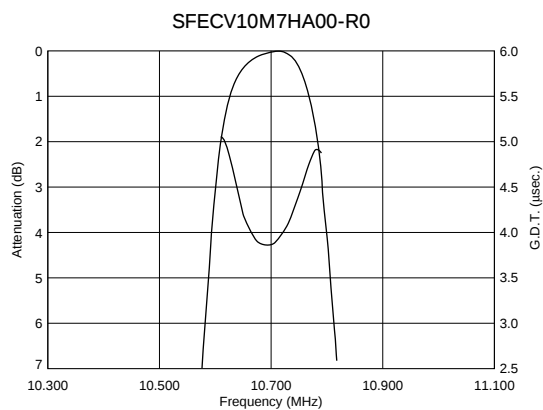
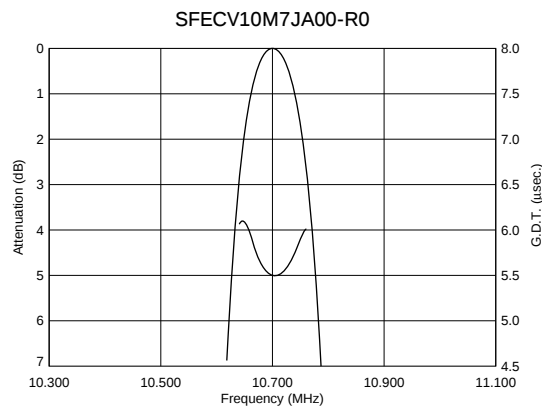
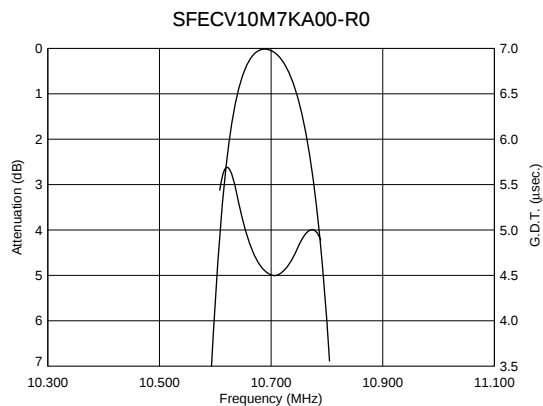
$R_g = 50\Omega$ $R_1 = 420\Omega \pm 5\%$ $R_2 = 470\Omega \pm 5\%$
 $C_2 = 10 \pm 2$ pF (Including stray capacitance and Input capacitance of RF Volt Meter)
 E1 : S.S.G. Output Voltage
 (1) : Input
 (2) : Ground
 (3) : Output

SFECV15M0EQ0001-R0

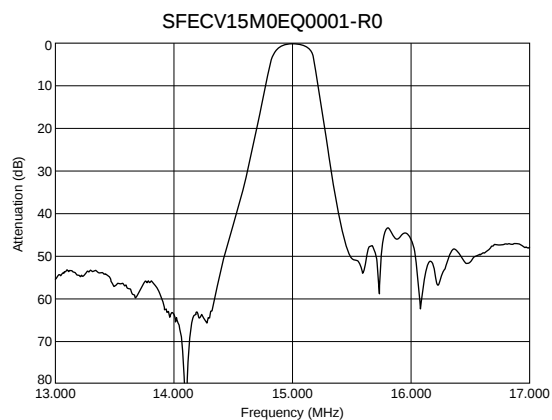
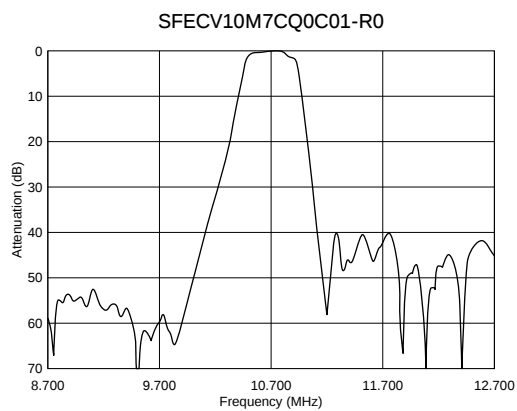
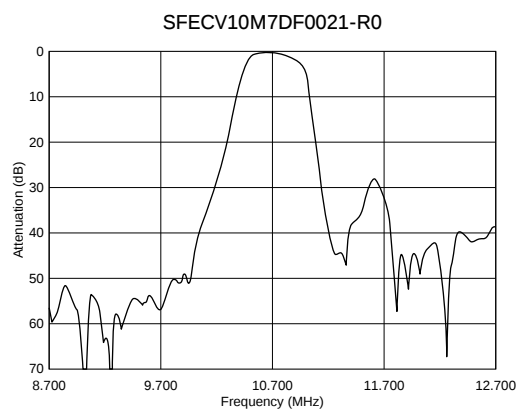
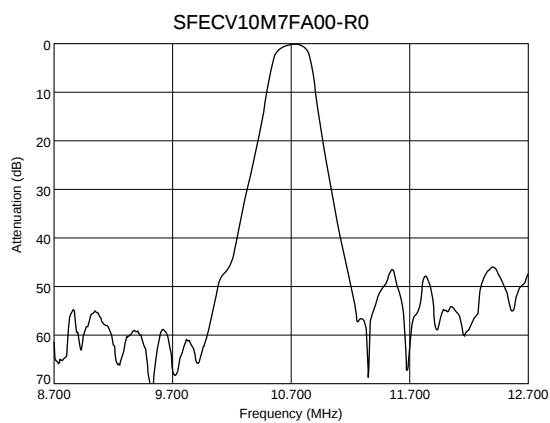
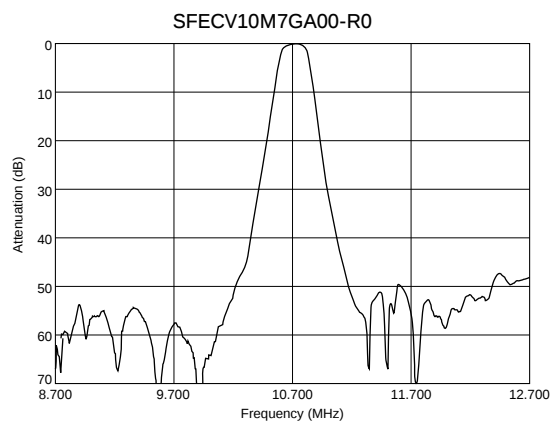
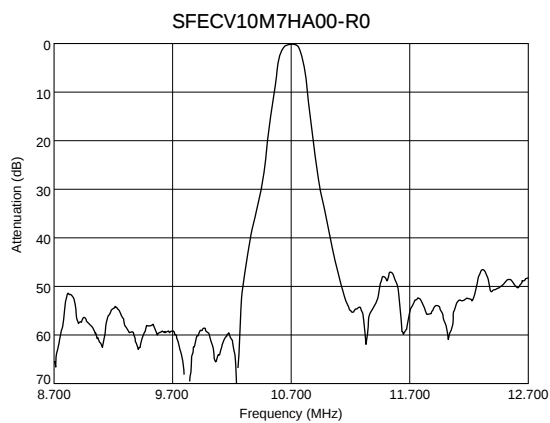
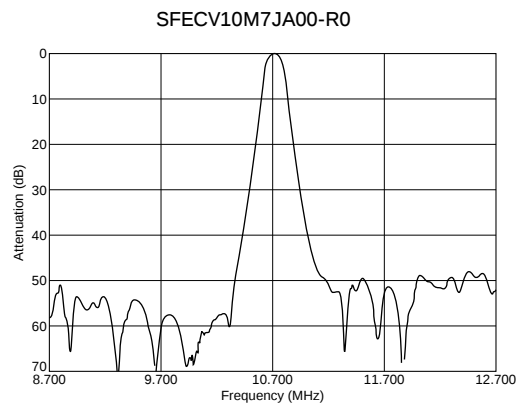
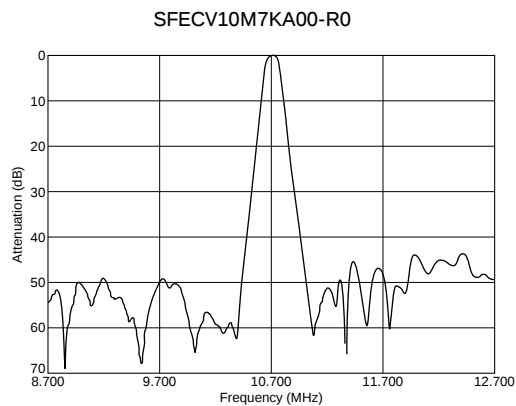


$R_g = 50\Omega$ $R_1 = 280\Omega \pm 5\%$ $R_2 = 330\Omega \pm 5\%$
 $C_2 = 10 \pm 2$ pF (Including stray capacitance and Input capacitance of RF Volt Meter)
 E1 : S.S.G. Output Voltage
 (1) : Input
 (2) : Ground
 (3) : Output

■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

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CERAFIL® 10.7MHz Standard Lead Type

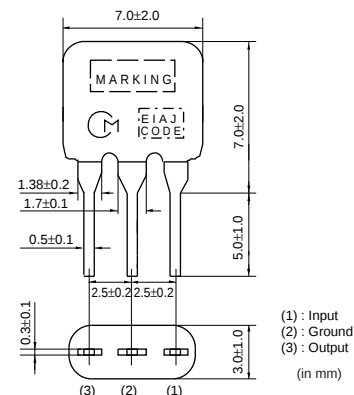
SFELF10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

■ Features

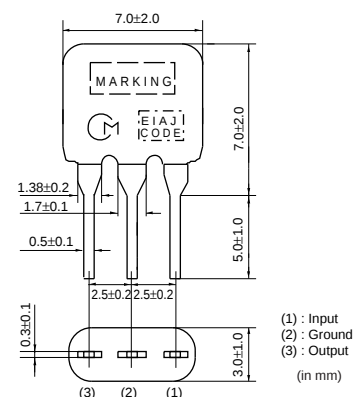
1. These miniature filters have high mechanical strength.
2. Low loss, favorable waveform symmetry, and high selectivity
3. Various band widths are available for applications in wide to narrow bands.
4. Small dispersion and stable characteristics
5. Change in center frequency is typically within $\pm 30\text{ppm}/(\text{degree C})$ at -20 to $+80$ (degree C).
6. High reliability



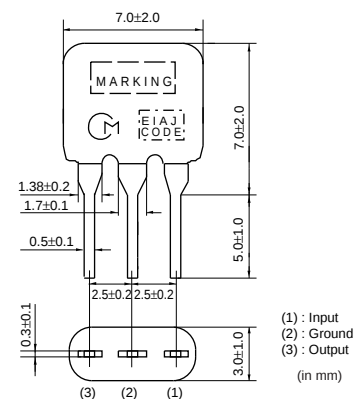
SFELF10M7HA00-B0



SFELF10M7GA00-B0



SFELF10M7FA00-B0



Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFELF10M7HA00-B0	10.700 ±30kHz	180 ±40kHz	520 max.	7.0 max.	40 min.	330
SFELF10M7GA00-B0	10.700 ±30kHz	230 ±50kHz	570 max.	4.0 ±2.0dB	40 min.	330
SFELF10M7FA00-B0	10.700 ±30kHz	280 ±50kHz	650 max.	4.0 ±2.0dB	30 min.	330

Area of Attenuation: [within 20dB] Area of Spurious Attenuation: [within 9MHz to 12MHz]

Area of Insertion Loss: at minimum loss point

Center frequency (fo) defined by the center of 3dB bandwidth.

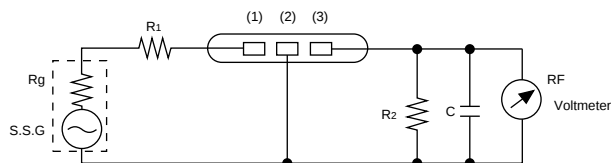
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A, B, C, D, E		
M	Combination A, B, C		

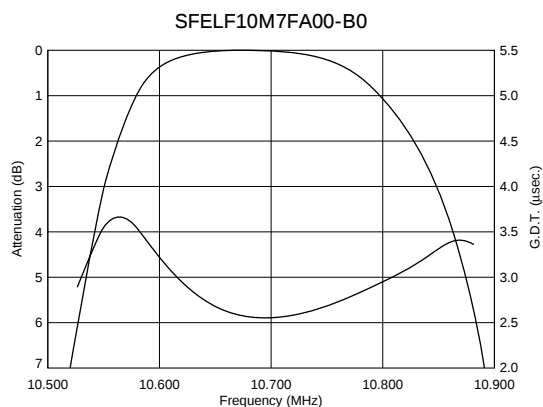
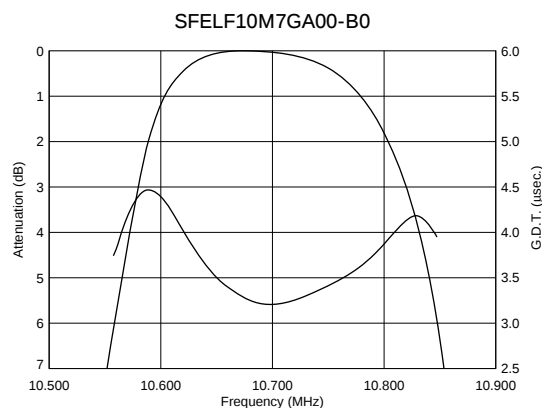
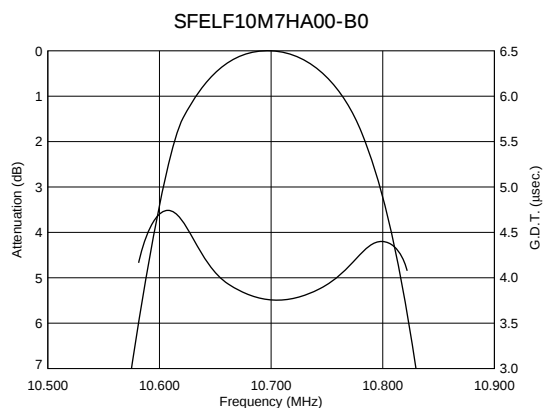
■ Test Circuit



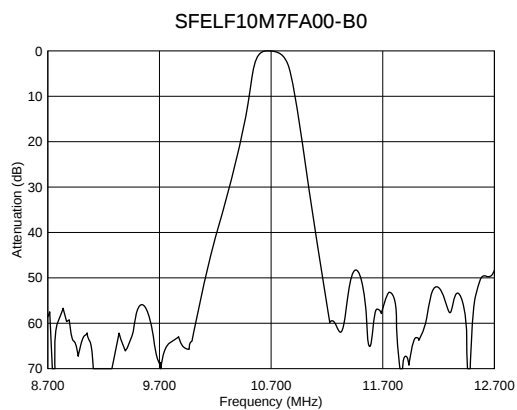
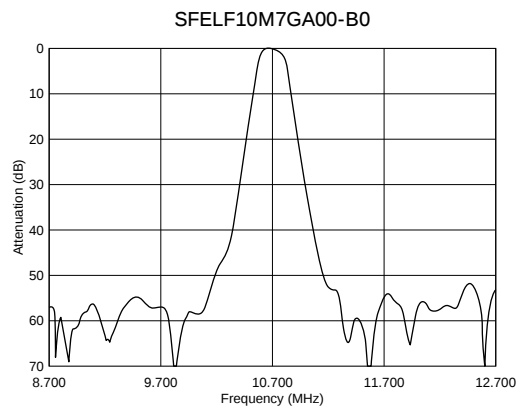
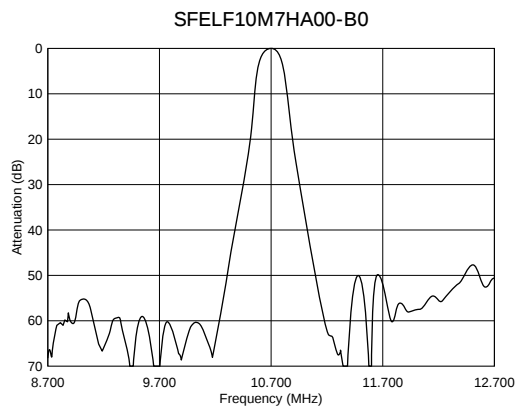
$R_g + R_1 = R_2 =$ Input and Output Impedance
 $C = 10\text{pF}$ (Including stray capacitance and input capacitance of RF voltmeter.)

(1) : Input
(2) : Ground
(3) : Output

■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

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CERAFIL® 10.7MHz Low Loss Type

5

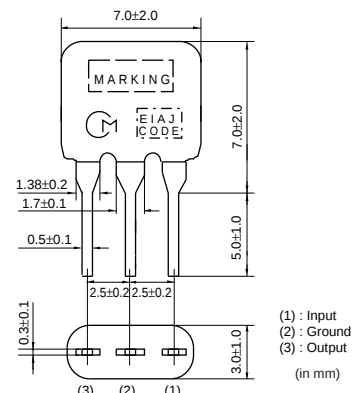
SFELF10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

■ Features

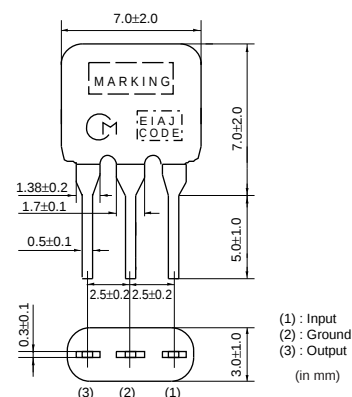
1. Insertion loss is 1 to 1.5dB lower than conventional products. These types are useful for elevating the sensitivity of sets.
2. Small dispersion and stable characteristics
3. Excellent shape factor of frequency response
4. Good waveform symmetry



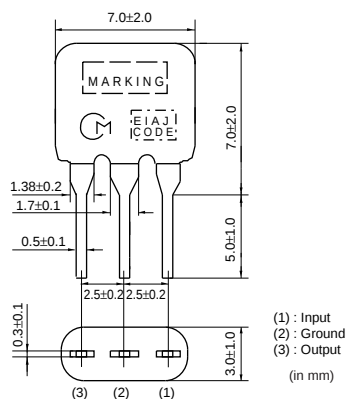
SFELF10M7JAA0-B0



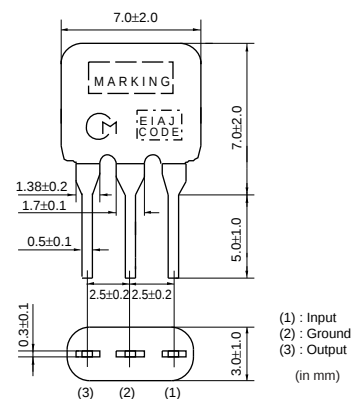
SFELF10M7HAA0-B0



SFELF10M7GAA0-B0



SFELF10M7FAA0-B0



Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFELF10M7JAA0-B0	10.700 ±30kHz	150 ±40kHz	360 max.	4.5 ±2.0dB	35 min.	330
SFELF10M7HAA0-B0	10.700 ±30kHz	180 ±40kHz	470 max.	3.5 ±1.5dB	35 min.	330
SFELF10M7GAA0-B0	10.700 ±30kHz	230 ±50kHz	520 max.	3.0 ±2.0dB	35 min.	330
SFELF10M7FAA0-B0	10.700 ±30kHz	280 ±50kHz	590 max.	2.5 ±2.0dB	30 min.	330

Area of Attenuation: [within 20dB] Area of Spurious Attenuation: [within 9MHz to 12MHz]

Area of Insertion Loss: at minimum loss point

Center frequency (fo) defined by the center of 3dB bandwidth.

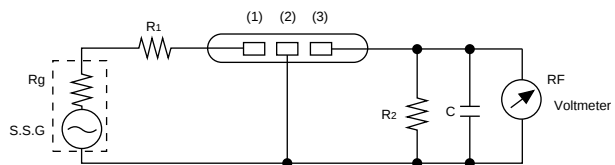
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A, B, C, D, E		
M	Combination A, B, C		

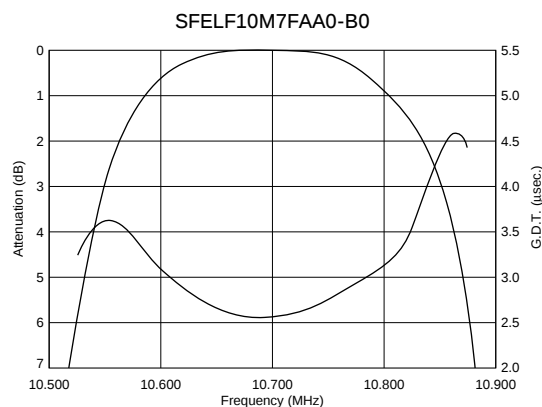
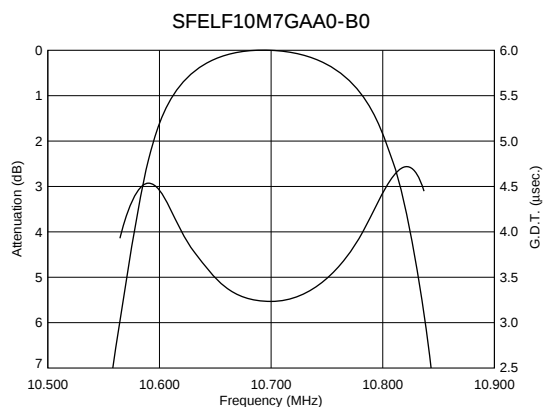
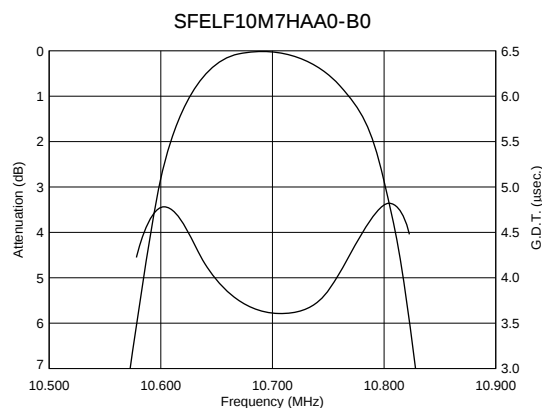
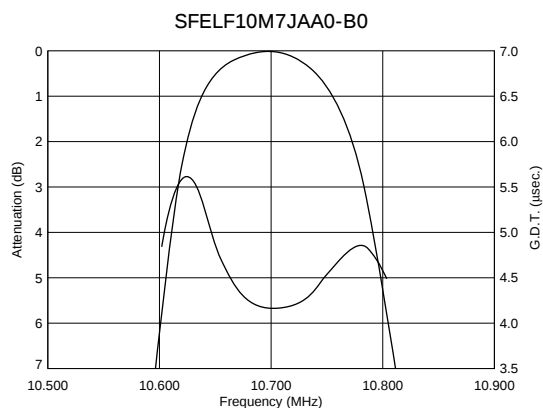
■ Test Circuit



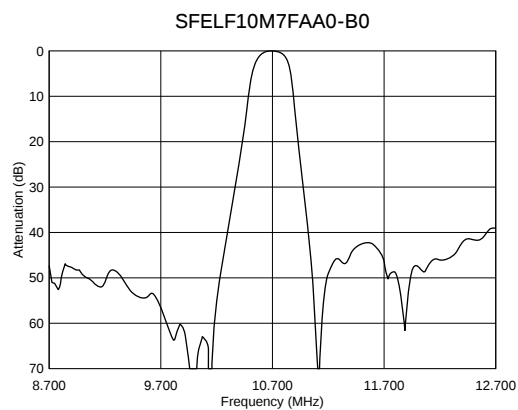
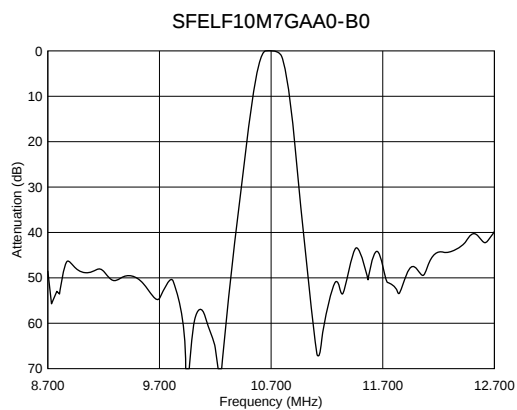
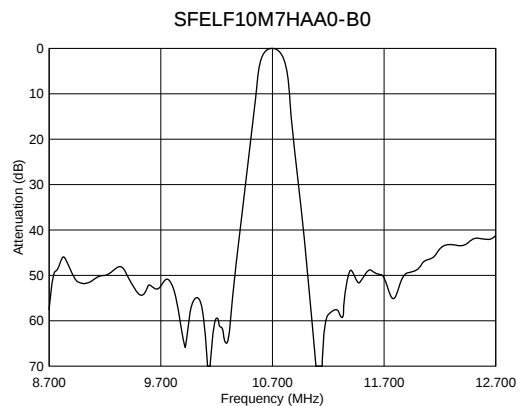
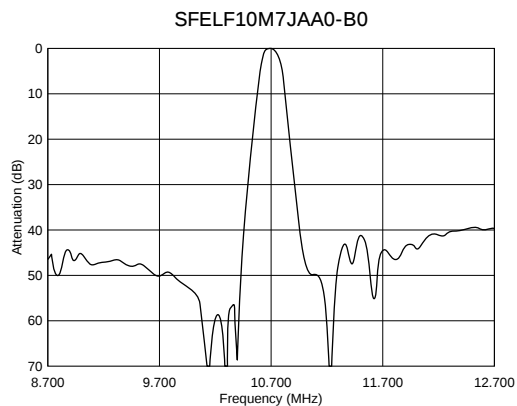
$R_g + R_1 = R_2 =$ Input and Output Impedance
 $C = 10\text{pF}$ (Including stray capacitance and input capacitance of RF voltmeter.)

(1) : Input
(2) : Ground
(3) : Output

■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



CERAFIL[®] (Filters/Traps/Discriminators) for Audio/Visual Equipment

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CERAFIL[®] 10.7MHz Low Profile Type

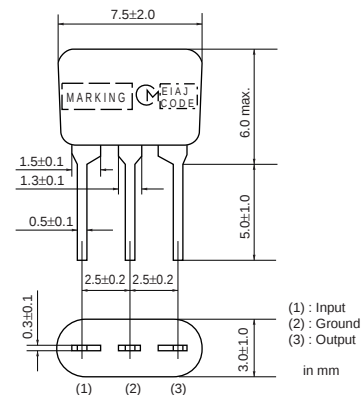
SFELG10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

■ Features

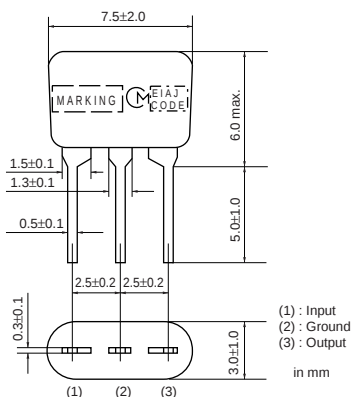
1. Installed height is 6.0mm, making it well suited for compact, thin sets.
2. Environmental reliability is the same as those of the ceramic filter SFELF10M7 series.



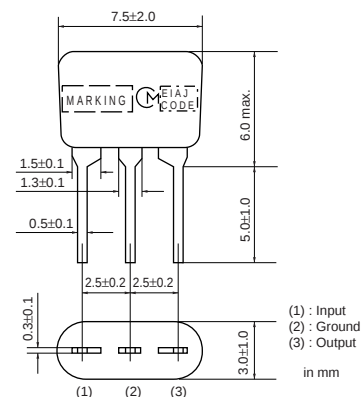
SFELG10M7KA00-B0



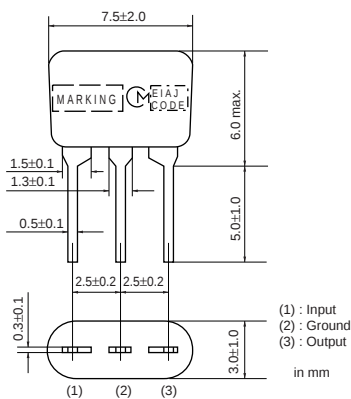
SFELG10M7JA00-B0



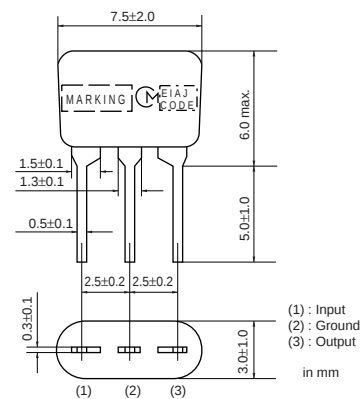
SFELG10M7HA00-B0



SFELG10M7GA00-B0



SFELG10M7FA00-B0



Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFELG10M7KA00-B0	10.700 ±30kHz	110 ±30kHz	350 max.	7.0 ±2.0dB	30 min.	330
SFELG10M7JA00-B0	10.700 ±30kHz	150 ±40kHz	360 max.	4.5 ±2.0dB	35 min.	330
SFELG10M7HA00-B0	10.700 ±30kHz	180 ±40kHz	470 max.	3.5 ±2.0dB	35 min.	330
SFELG10M7GA00-B0	10.700 ±30kHz	230 ±50kHz	570 max.	3.0 ±2.0dB	40 min.	330
SFELG10M7FA00-B0	10.700 ±30kHz	280 ±50kHz	650 max.	3.0 ±2.0dB	30 min.	330

Area of Attenuation: [within 20dB] Area of Spurious Attenuation: [within 9MHz to 12MHz]

Area of Insertion Loss: at minimum loss point

Center frequency (fo) defined by the center of 3dB bandwidth.

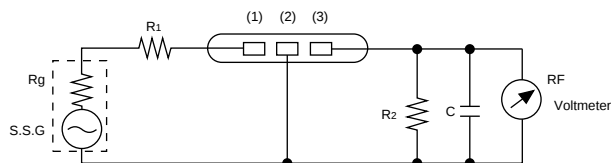
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A, B, C, D, E		
M	Combination A, B, C		

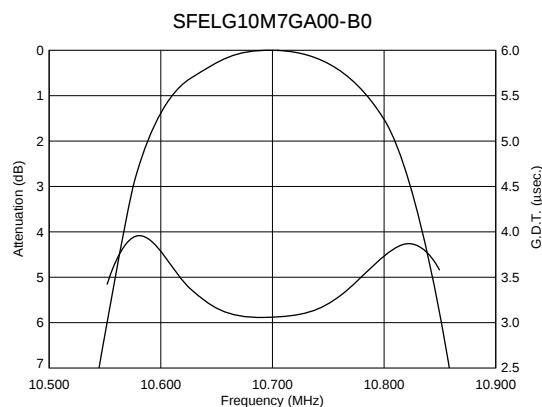
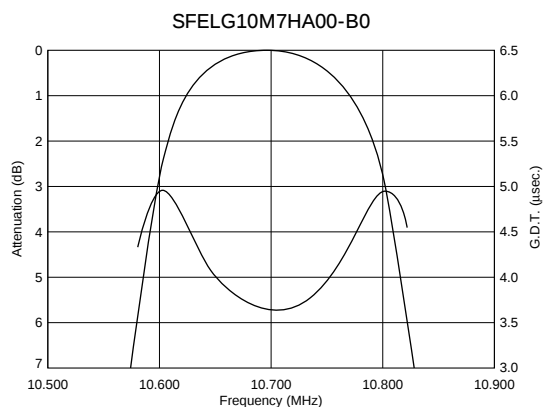
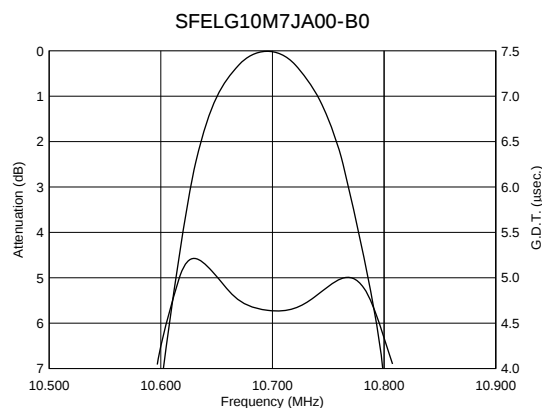
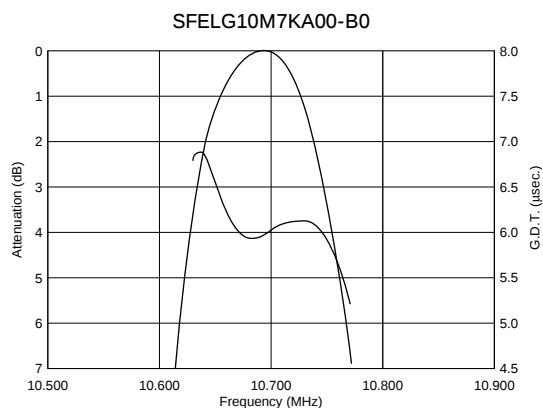
Test Circuit



$R_g + R_1 = R_2 =$ Input and Output Impedance
 $C = 10\text{pF}$ (Including stray capacitance and input capacitance of RF voltmeter.)

(1) : Input
(2) : Ground
(3) : Output

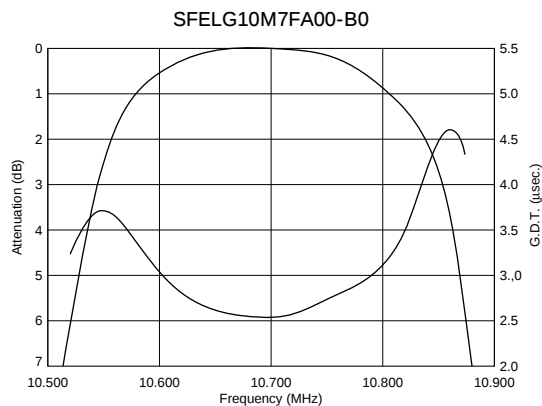
Frequency Characteristics



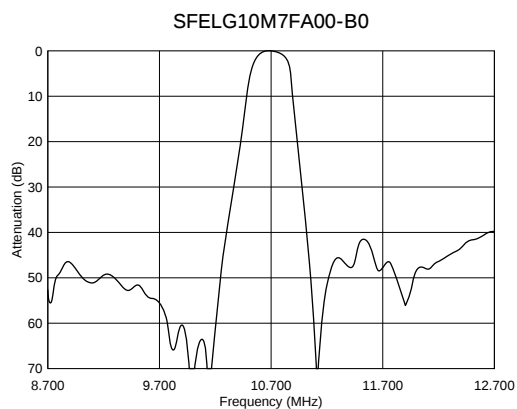
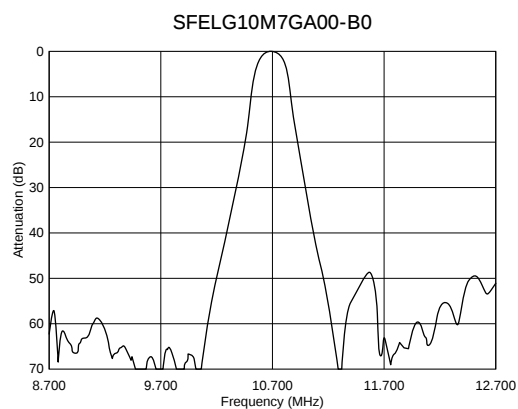
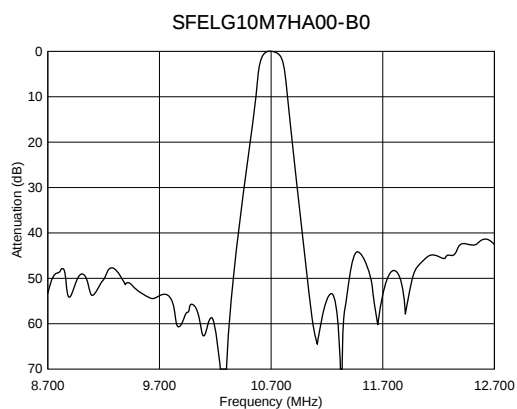
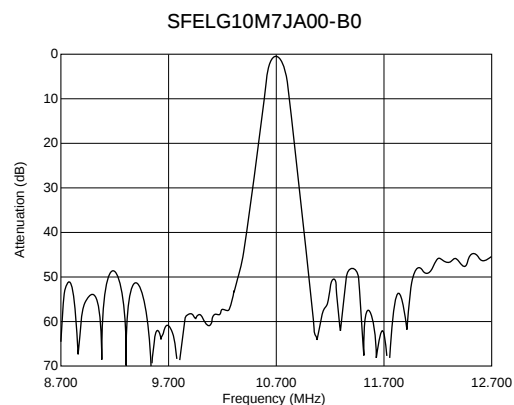
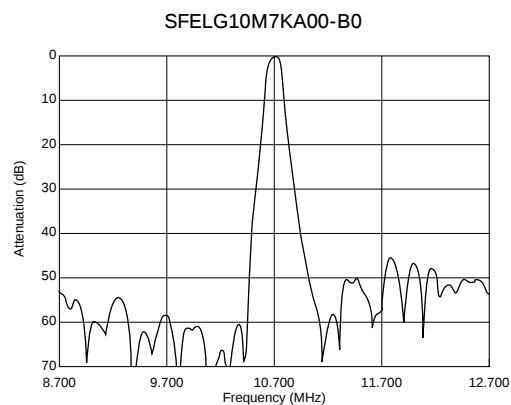
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Frequency Characteristics



Frequency Characteristics (Spurious)



CERAFIL[®] (Filters/Traps/Discriminators) for Audio/Visual Equipment



CERAFIL[®] 10.7MHz Low Spurious Response Type

SFELF10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

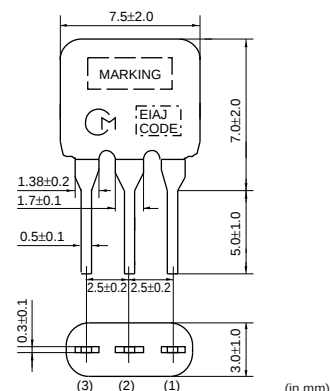
■ Features

These types have lower spurious response compared to the standard filters.

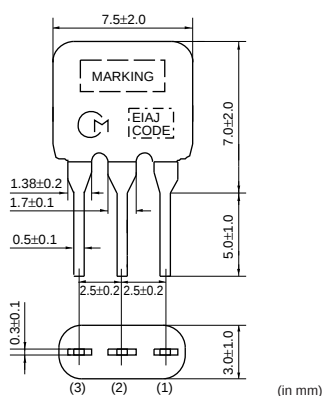
7



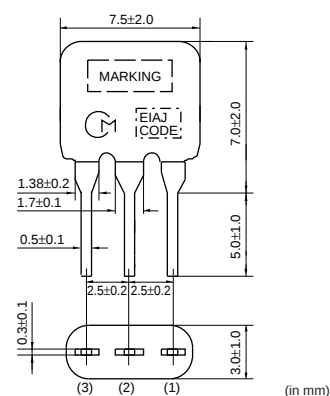
SFELF10M7KAB0-B0



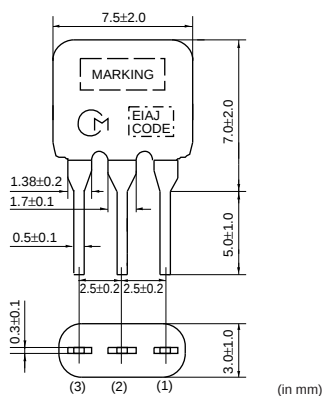
SFELF10M7JAB0-B0



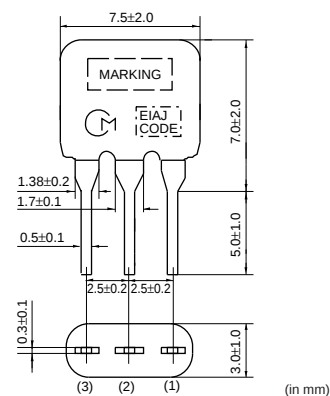
SFELF10M7HAB0-B0



SFELF10M7GAB0-B0



SFELF10M7FAB0-B0



Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFELF10M7KAB0-B0	10.700 ±30kHz	110 ±30kHz	350 max.	7.0 ±2.0dB	45/30 min.	330
SFELF10M7JAB0-B0	10.700 ±30kHz	150 ±40kHz	380 max.	5.5 ±2.0dB	45 min.	330
SFELF10M7HAB0-B0	10.700 ±30kHz	180 ±40kHz	520 max.	5.0 ±2.0dB	45 min.	330
SFELF10M7GAB0-B0	10.700 ±30kHz	230 ±50kHz	570 max.	3.0 ±2.0dB	45 min.	330
SFELF10M7FAB0-B0	10.700 ±30kHz	280 ±50kHz	650 max.	3.0 ±2.0dB	45 min.	330

Area of Attenuation: [within 20dB]

Area of Spurious Attenuation: [within 9MHz to 12MHz], SFELF10M7KAB0-B0: [within 9MHz to fo/fo to 12MHz]

Area of Insertion Loss: at minimum loss point

Center frequency (fo) defined by the center of 3dB bandwidth.

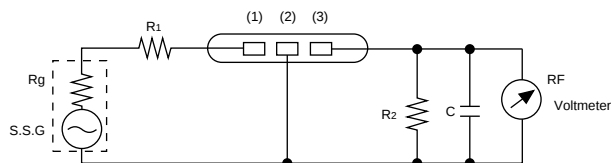
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A, B, C, D, E		
M	Combination A, B, C		

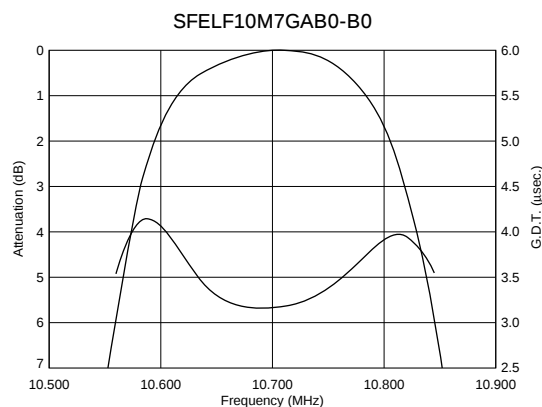
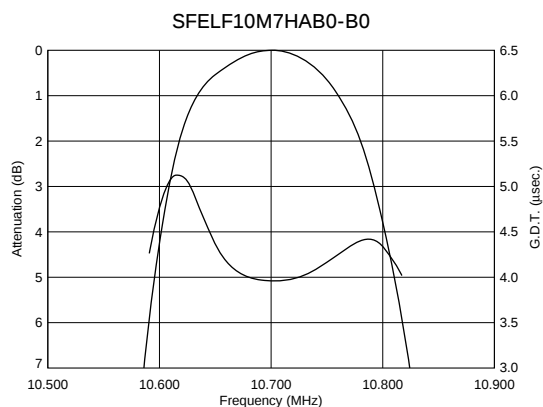
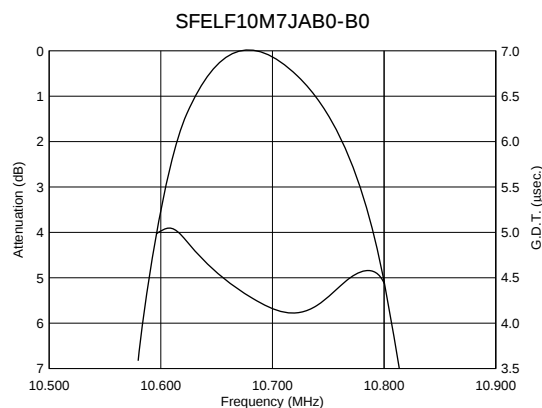
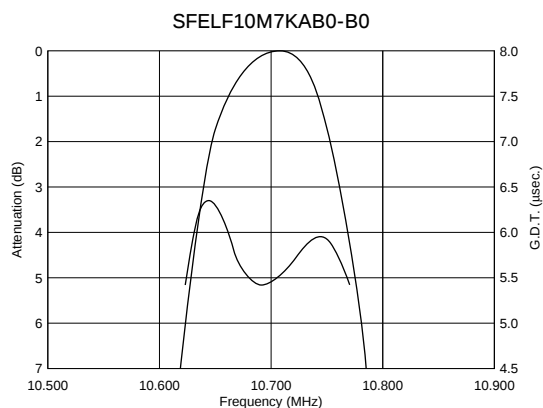
■ Test Circuit



$R_g + R_1 = R_2 =$ Input and Output Impedance
 $C = 10\text{pF}$ (Including stray capacitance and input capacitance of RF voltmeter.)

(1) : Input
(2) : Ground
(3) : Output

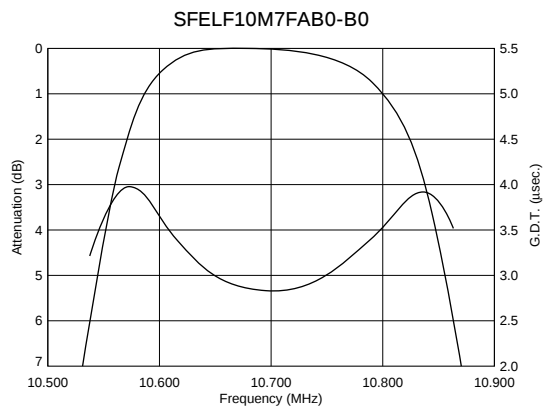
■ Frequency Characteristics



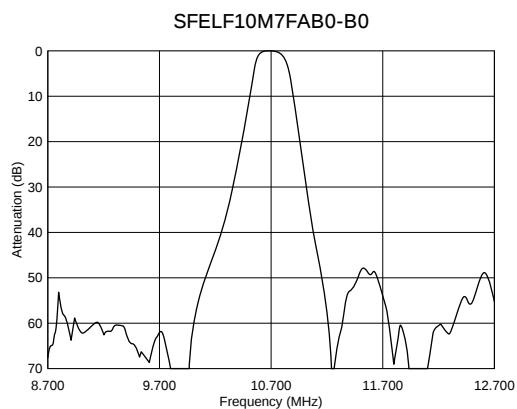
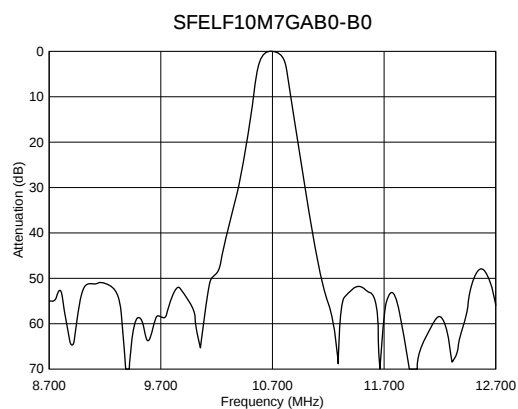
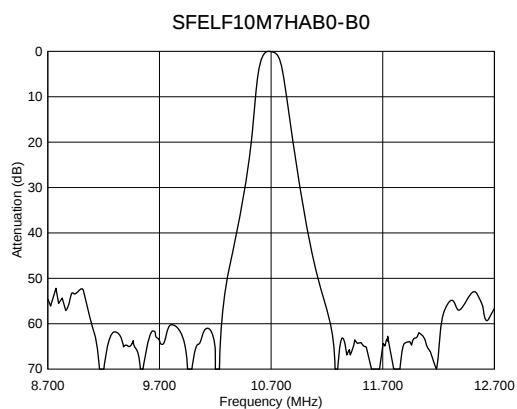
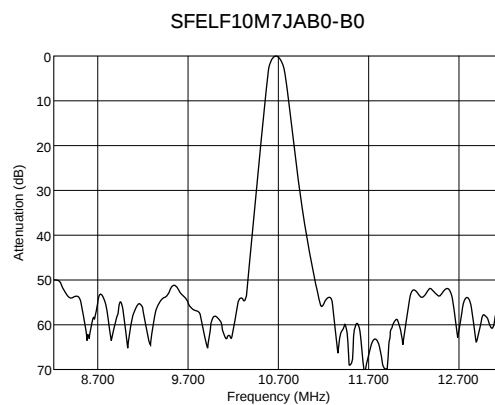
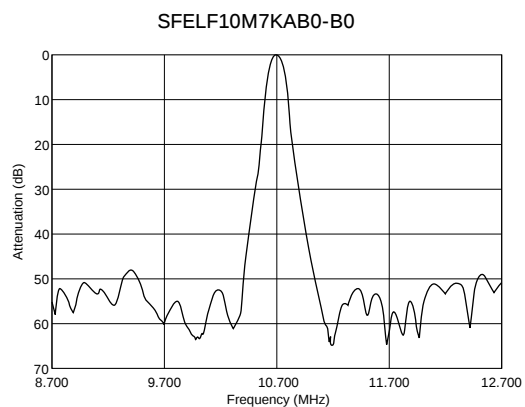
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Frequency Characteristics



Frequency Characteristics (Spurious)



CERAFIL[®] (Filters/Traps/Discriminators) for Audio/Visual Equipment

muRata

CERAFIL[®] 10.7MHz Wide Bandwidth Type

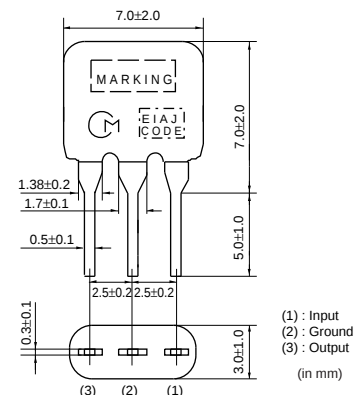
SFELF10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

■ Features

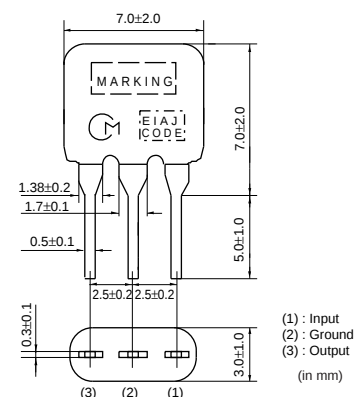
Realizes widerband characteristics not obtained by conventional ceramic filters.



SFELF10M7EA00-B0



SFELF10M7DF00-B0



Part Number	Center Frequency (fo) (MHz)	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFELF10M7EA00-B0	10.700 ±30kHz	-	330 ±50kHz	680 max.	4.0 ±2.0dB	30 min.	330
SFELF10M7DF00-B0	-	10.700	fn±175 min.	950 max.	3.0 ±2.0dB	20 min.	470

Area of Attenuation: [within 20dB]

Area of Spurious Attenuation: SFELF10M7EA00-B0: [within 8MHz to 12MHz], SFELF10M7DF00-B0: [within 5MHz to 15MHz]

Area of Insertion Loss: at minimum loss point

Center frequency (fo) defined by the center of 3dB bandwidth.

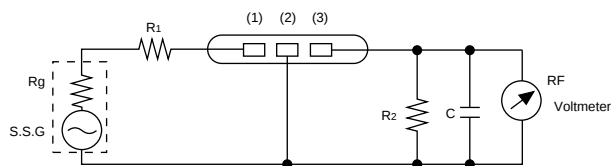
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code (SFELF10M7EA00-B0)

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A, B, C, D, E		
M	Combination A, B, C		

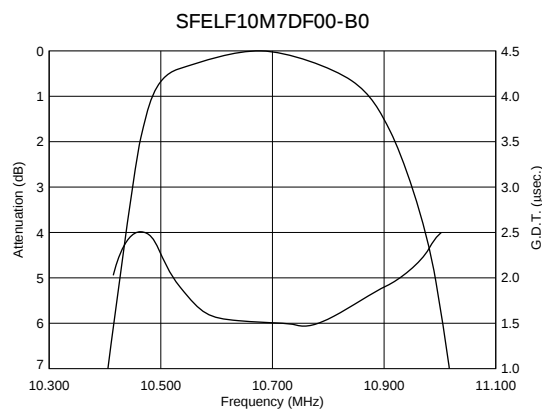
■ Test Circuit



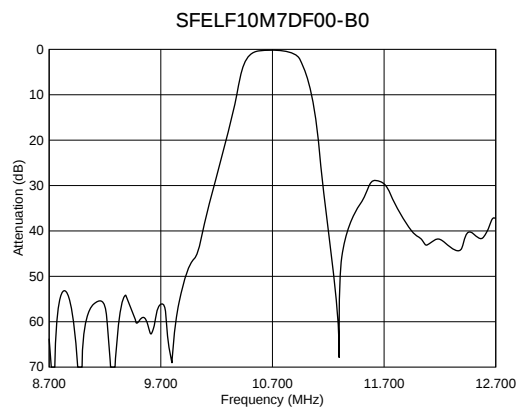
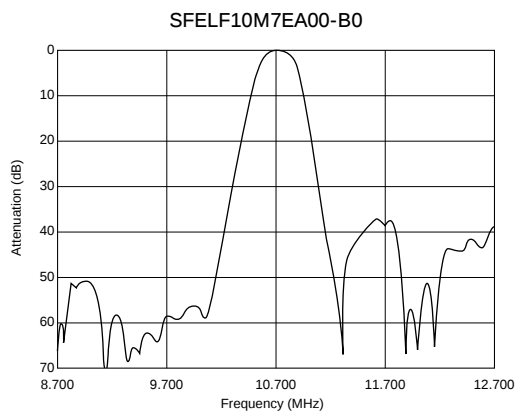
$R_g + R_1 = R_2 =$ Input and Output Impedance
 $C = 10\text{pF}$ (Including stray capacitance and input capacitance of RF voltmeter.)

(1) : Input
(2) : Ground
(3) : Output

■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

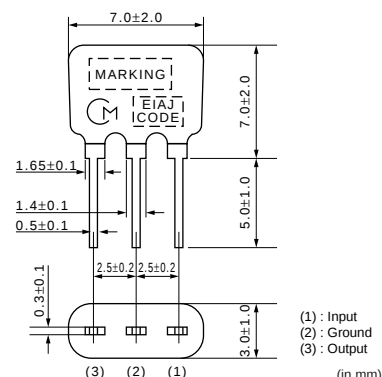
muRata

CERAFIL® 10.7MHz Narrow Bandwidth Type

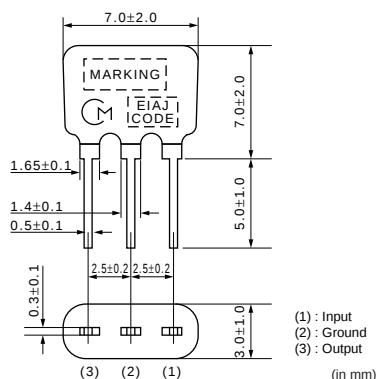
■ Features

SFELF10M7LFTA/KAH0, SFVLF/SFKLF series realizes narrower band characteristics not obtained by conventional ceramic filters. Besides, low spurious and temperature characteristics is stable. This series suits for European car-audio or AM up conversion use that needs narrow band characteristics.

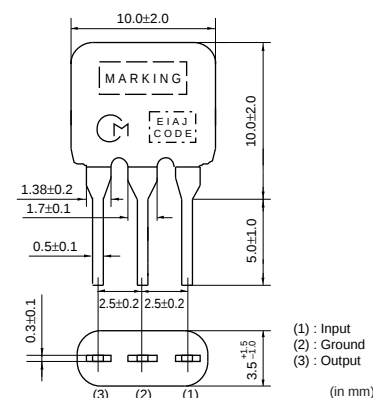
SFVLF10M7MF00-B0



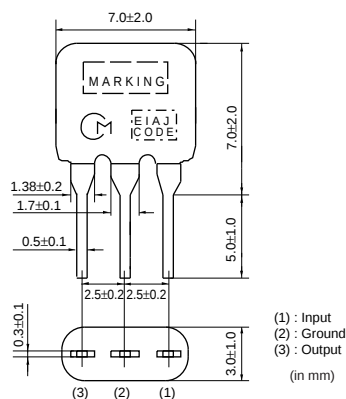
SFVLF10M7LF00-B0



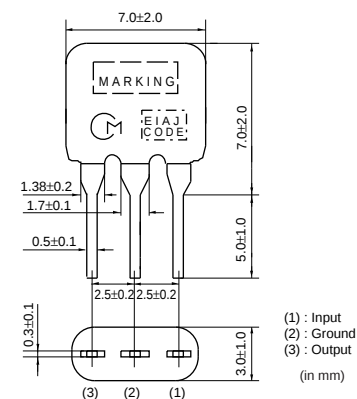
SFKLF10M7NL00-B0



SFELF10M7LFTA-B0



SFELF10M7KAH0-B0



Part Number	Center Frequency (fo) (MHz)	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFVLF10M7MF00-B0	-	10.700	fn±13 min.	135 max.	5.0 ±2.0dB	35 min.	330
SFVLF10M7LF00-B0	-	10.700	fn±25 min.	-	5.5 ±2.5dB	30 min.	330
SFKLF10M7NL00-B0	10.700 ±15kHz	-	20 min.	95 max.	6.0 max.	24 min.	600
SFELF10M7LFTA-B0	-	10.700	fn±25 min.	280 max.	7.0 ±2.0dB	30 min.	330
SFELF10M7KAH0-B0	10.700 ±30kHz	-	110 ±30kHz	350 max.	7.0 ±2.0dB	30 min.	330

Area of Attenuation: [within 20dB]

Area of Spurious Attenuation: [within 9MHz to 12MHz], SFKLF10M7NL00-B0: [within fo-1.0MHz to fo+1.0MHz]

Area of Insertion Loss: at minimum loss point

Center frequency (fo) defined by the center of 3dB bandwidth.

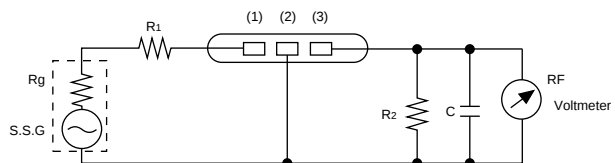
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code (SFELF10M7KAH0-B0)

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A, B, C, D, E		
M	Combination A, B, C		

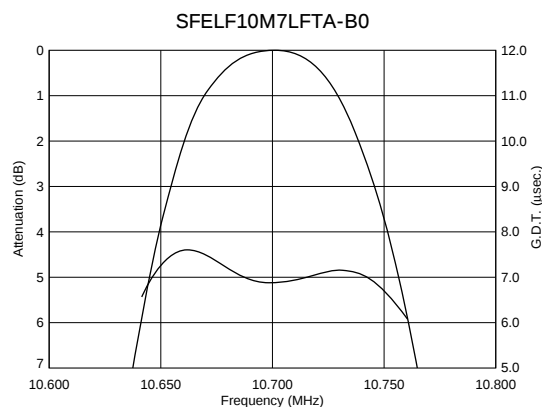
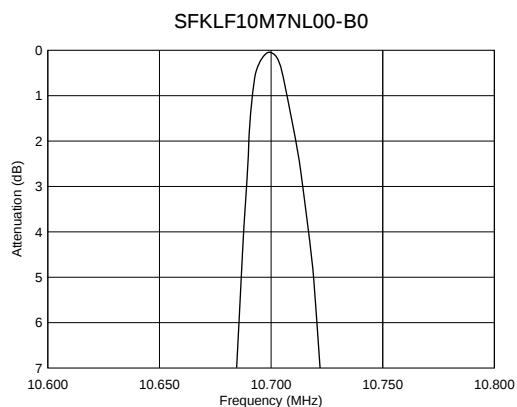
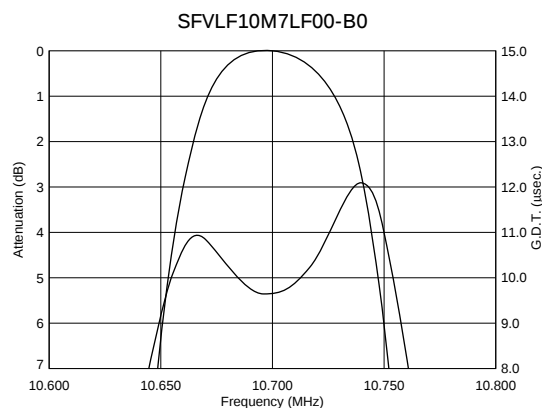
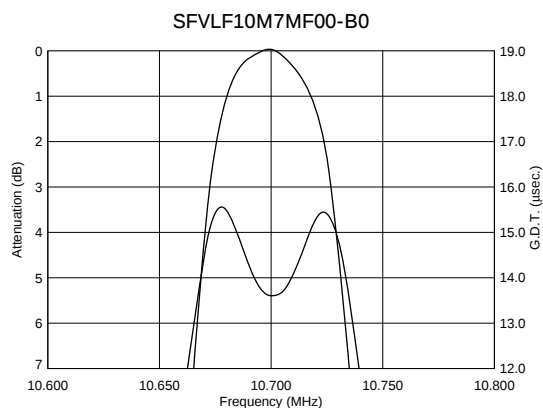
■ Test Circuit



$R_g + R_1 = R_2 =$ Input and Output Impedance
 $C = 10\text{pF}$ (Including stray capacitance and input capacitance of RF voltmeter.)

(1) : Input
(2) : Ground
(3) : Output

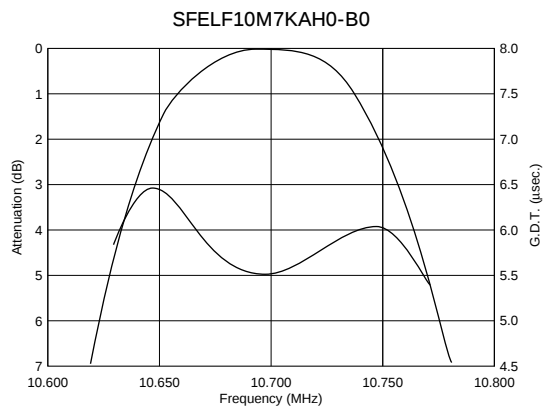
■ Frequency Characteristics



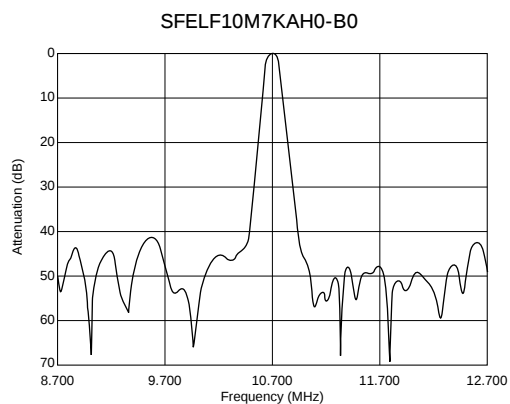
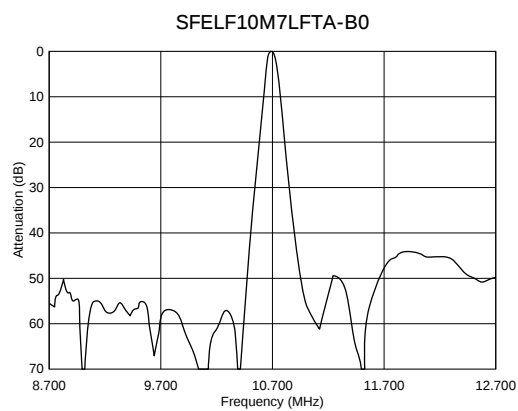
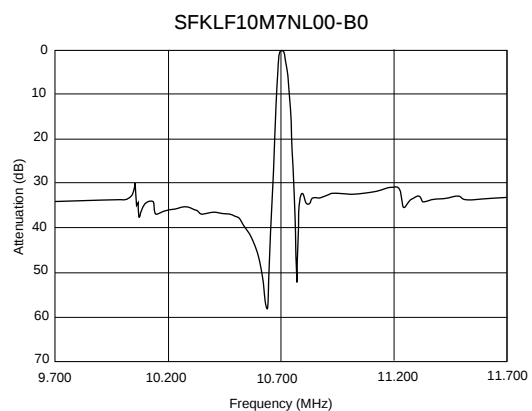
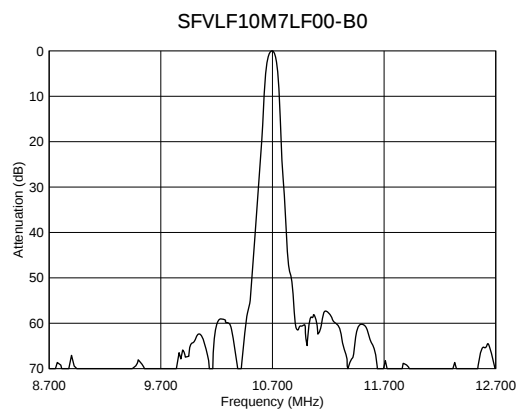
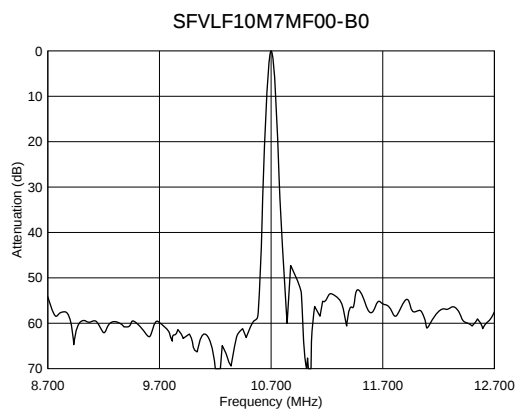
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Frequency Characteristics



Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

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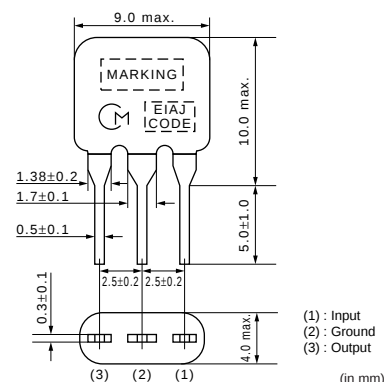
CERAFIL® 10.7MHz for FM-IF Tuners

SFELF10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

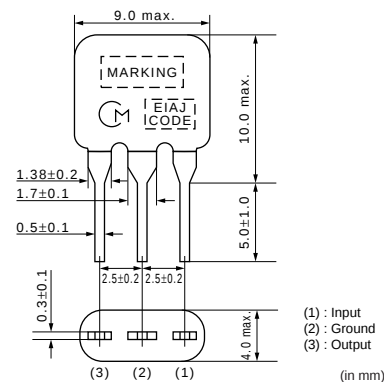
■ Features

1. Little dispersion of amplitude characteristics and phase characteristics (G. D. T. characteristics)
2. The SFELF_X series has GDT characteristics and is useful for obtaining low distortion. SFELF_L series, in these ceramic filters, being in harmony with flatness of GDT, roundness of the amplitude and selectivity characteristics, therefore, these ceramic filters are suitable to high-grade stereo tuners. Even in mismatching conditions, they can keep little distortion because of low Q_m of ceramic material. The SFELF_G series is based on SFELF_FA00/GA00/HA00, and it obtains high selectivity with low loss. There is little dispersion of amplitude and GDT characteristics, and low distortion rate can be obtained.
3. All products are inspected the flatness of GDT characteristics.

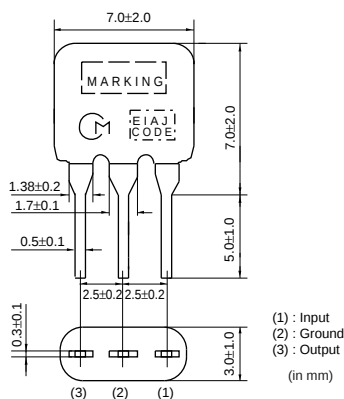
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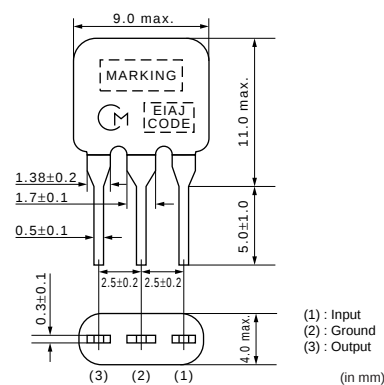
SFELF10M7HAXD-B0



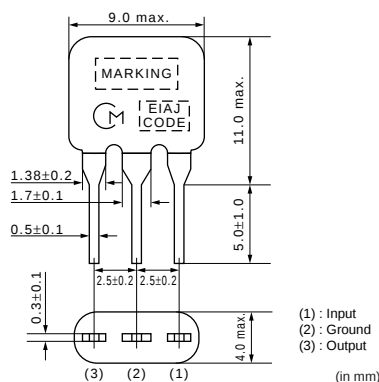
SFELF10M7HA0G-B0



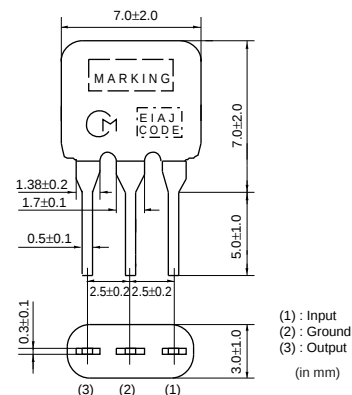
SFELF10M7GAXX-B0



SFELF10M7GAXA-B0



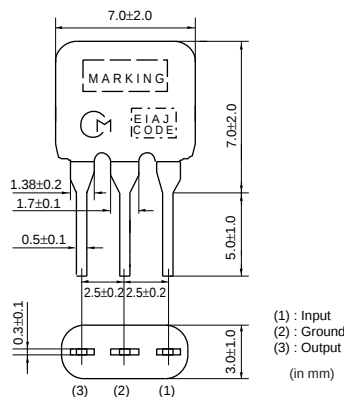
SFELF10M7GALP03-B0



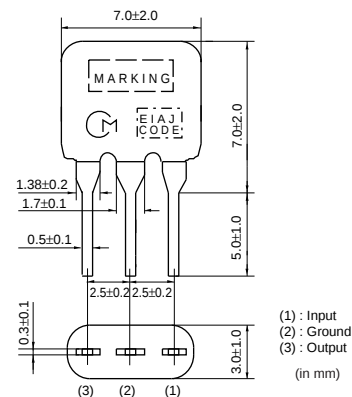
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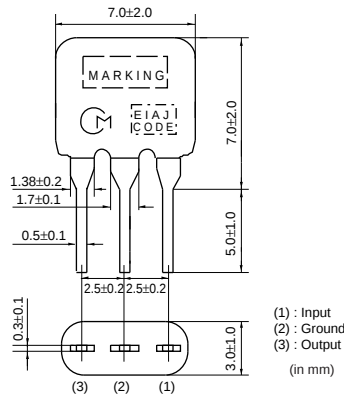
SFELF10M7GALM-B0



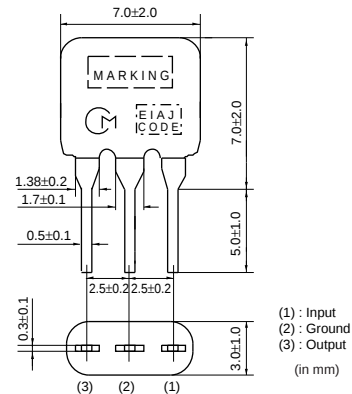
SFELF10M7GA0G-B0



SFELF10M7FALL-B0



SFELF10M7FA0G-B0



Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	GDT Bandwidth (kHz)	Input/Output Impedance (ohm)
SFELF10M7JAXE-B0	10.700 ±30kHz	150 ±30kHz	500 max.	14.0 max.	35 min.	fo±50 min.[within 0.15μsec.]	330
SFELF10M7HAXD-B0	10.700 ±30kHz	180 ±30kHz	530 max.	14.0 max.	33 min.	fo±60 min.[within 0.15μsec.]	330
SFELF10M7HA0G-B0	10.700 ±30kHz	180 ±40kHz	520 max.	7.0 max.	40 min.	fo±45 min.[within 0.5μsec.]	330
SFELF10M7GAXX-B0	10.700 ±30kHz	250 ±40kHz	670 max.	12.0 max.	25 min.	fo±110 min.[within 0.2μsec.]	330
SFELF10M7GAXA-B0	10.700 ±30kHz	220 ±40kHz	610 max.	12.5 max.	30 min.	fo±80 min.[within 0.15μsec.]	330
SFELF10M7GALP03-B0	10.700 ±30kHz	250 ±50kHz	650 max.	10.0 max.	30 min.	fo±65 min.[within 0.25μsec.]	330
SFELF10M7GALM-B0	10.700 ±30kHz	230 ±50kHz	600 max.	9.0 ±2.0dB	30 min.	fo±60 min.[within 0.25μsec.]	330
SFELF10M7GA0G-B0	10.700 ±30kHz	230 ±50kHz	600 max.	7.0 max.	40 min.	fo±60 min.[within 0.5μsec.]	330
SFELF10M7FALL-B0	10.700 ±30kHz	280 ±50kHz	700 max.	7.0 ±2.0dB	25 min.	fo±70 min.[within 0.25μsec.]	330
SFELF10M7FA0G-B0	10.700 ±30kHz	280 ±50kHz	650 max.	4.0 ±2.0dB	30 min.	fo±85 min.[within 0.5μsec.]	330

Area of Attenuation: [within 20dB]

Area of Spurious Attenuation: [within 9MHz to 12MHz], SFELF10M7GAXA-B0: [within 8MHz to 12MHz]

Area of Insertion Loss: at minimum loss point

Center frequency (fo) defined by the center of 3dB bandwidth.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

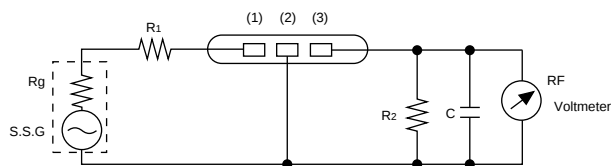
Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A, B, C, D, E		
M	Combination A, B, C		

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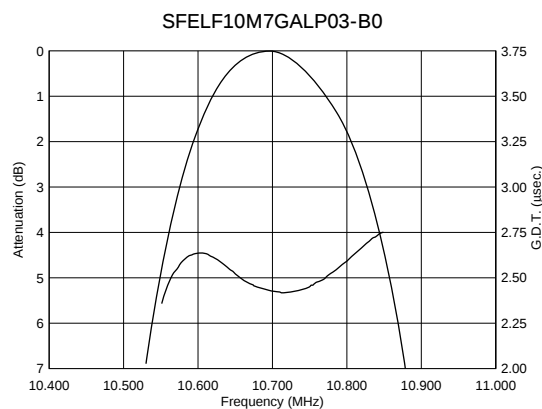
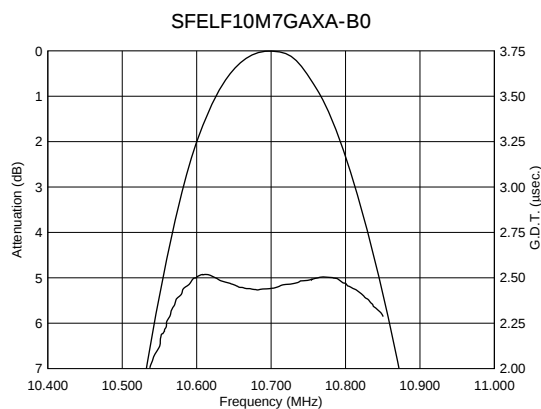
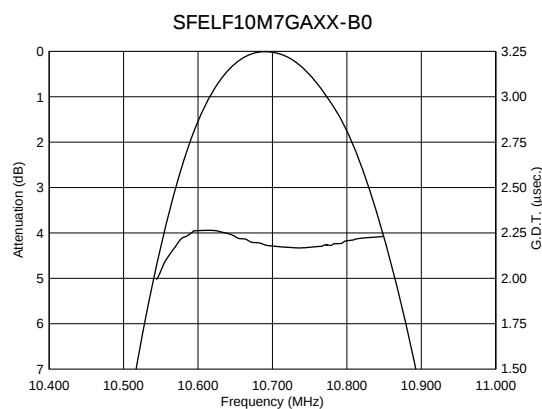
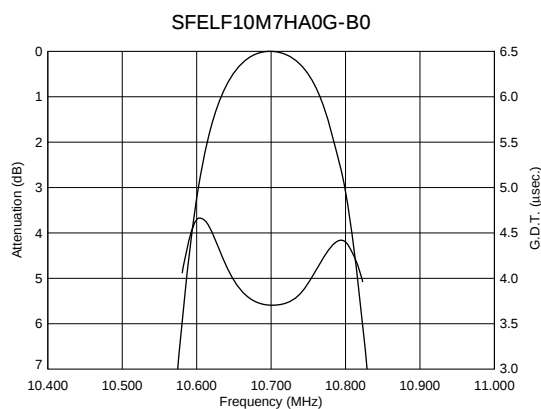
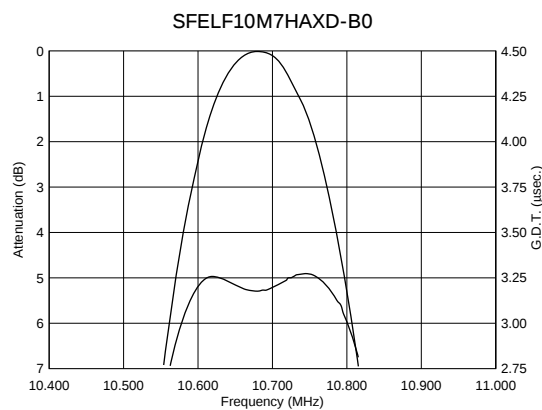
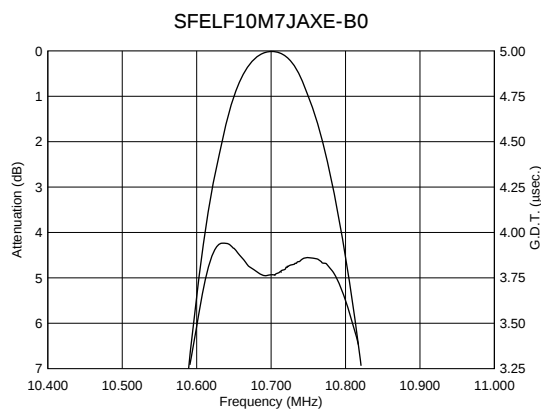
Test Circuit



$R_g + R_1 = R_2 =$ Input and Output Impedance
 $C = 10\text{pF}$ (Including stray capacitance and input capacitance of RF voltmeter.)

(1) : Input
(2) : Ground
(3) : Output

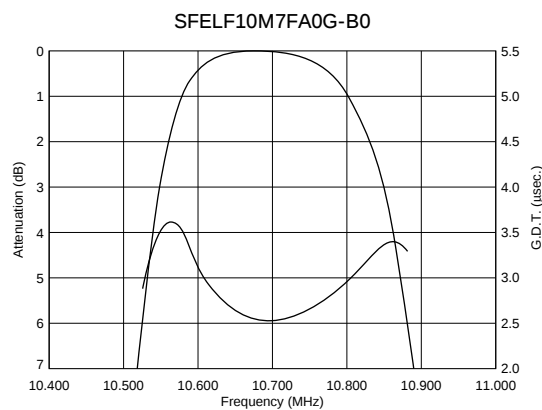
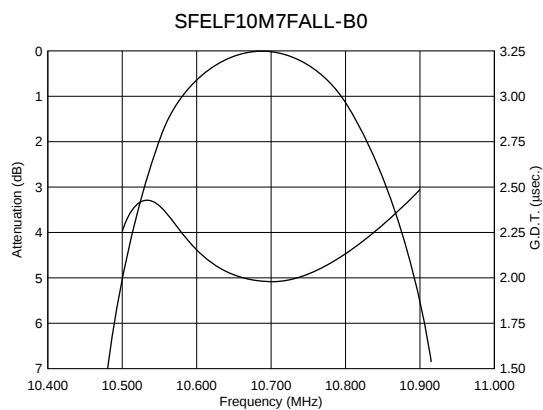
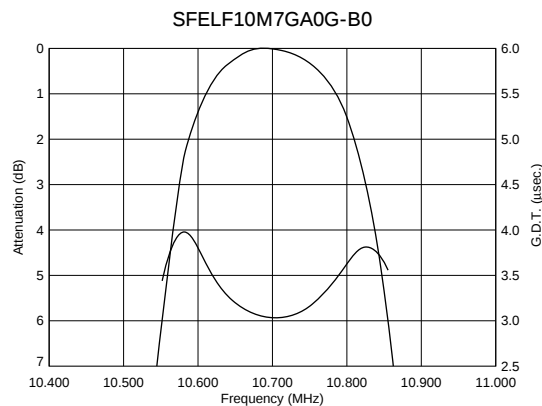
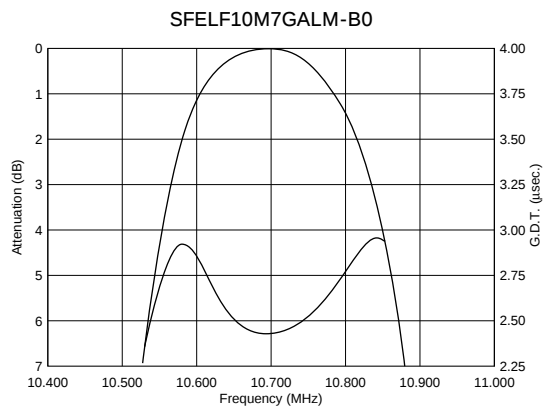
Frequency Characteristics



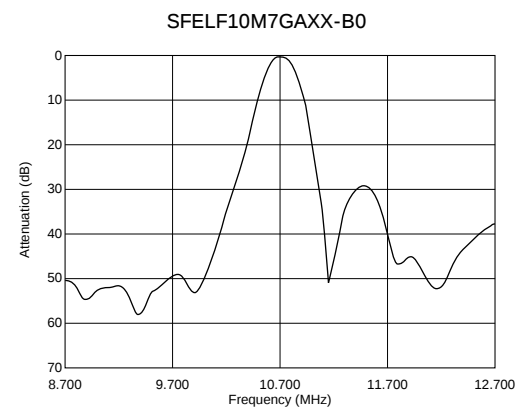
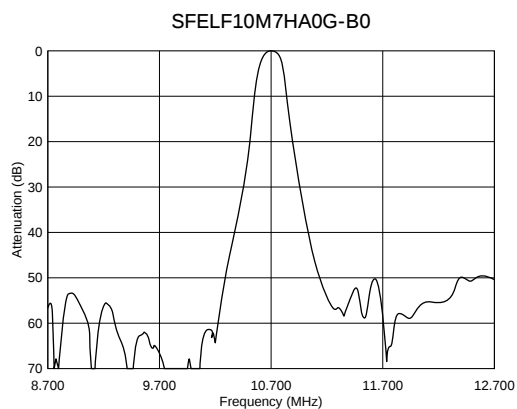
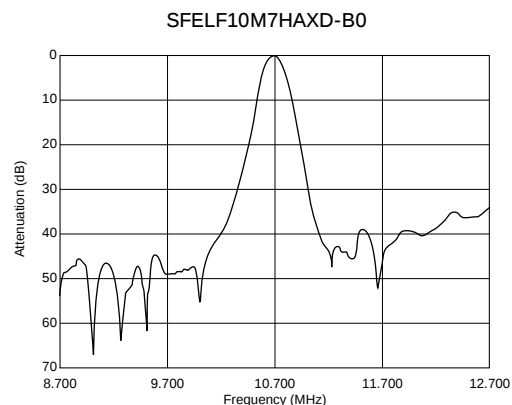
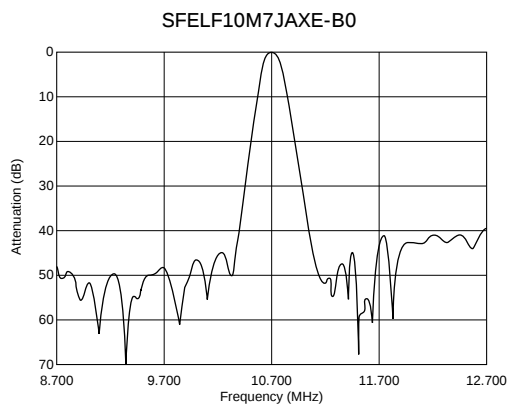
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Frequency Characteristics



Frequency Characteristics (Spurious)

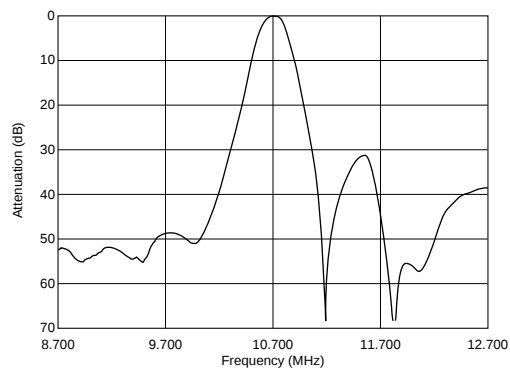


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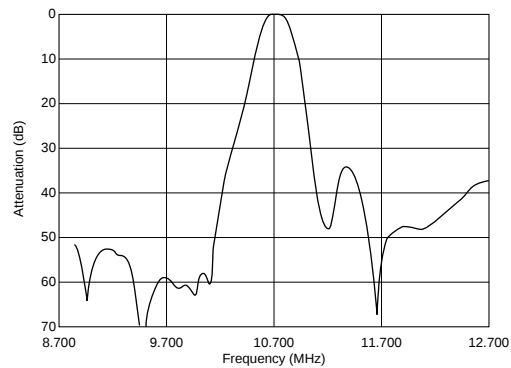
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Frequency Characteristics (Spurious)

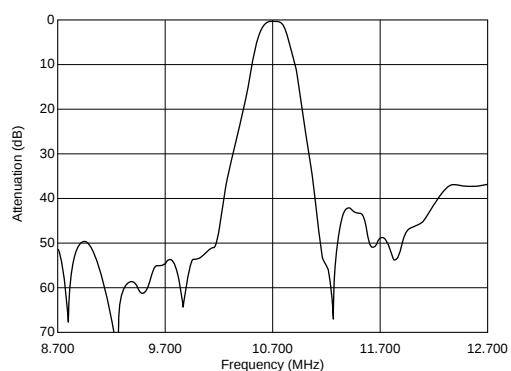
SFELF10M7GAXA-B0



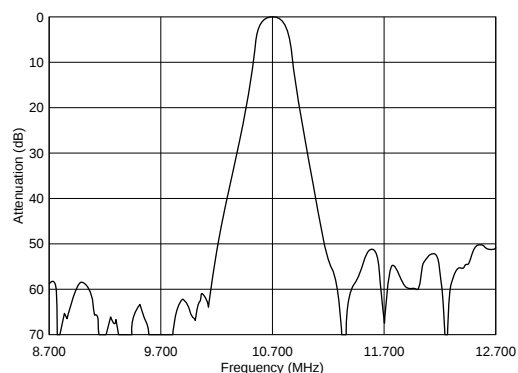
SFELF10M7GALP03-B0



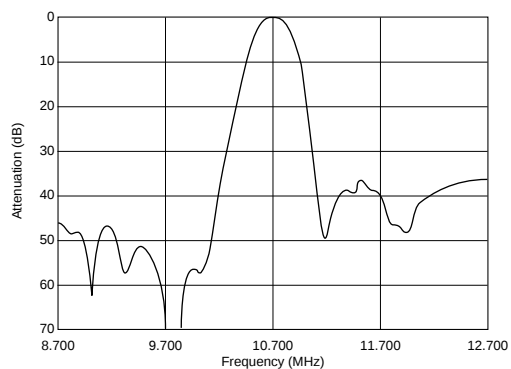
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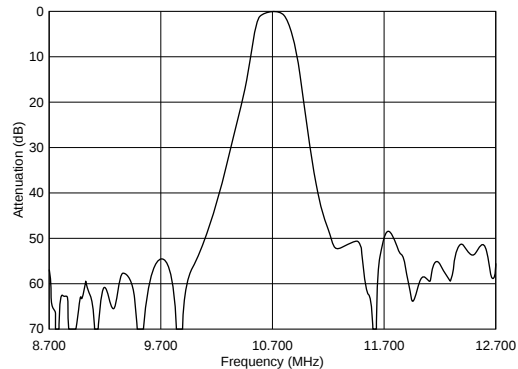
SFELF10M7GA0G-B0



SFELF10M7FALL-B0



SFELF10M7FA0G-B0



CERAFIL[®] (Filters/Traps/Discriminators) for Audio/Visual Equipment

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CERAFIL[®] 10.7MHz High Selectivity Type SFTLF Series

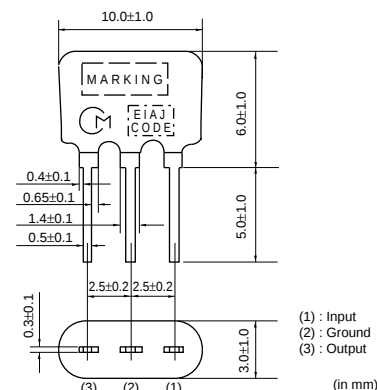
SFTLF10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

■ Features

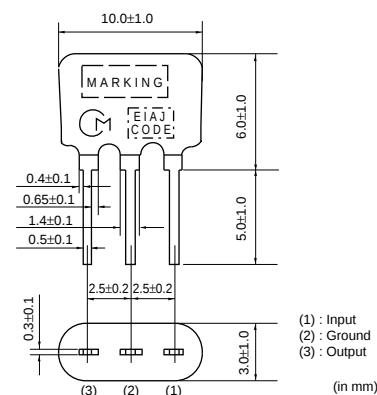
1. It has an excellent shape factor, and it is possible to obtain 1.5 times more excellent selectivity than SFELF10M7 series (by detuning ± 300 or 400kHz).
2. Good performance of spurious suppression
3. Having the same terminal pitch as the SFELF10M7 series, it easily replaces that series.
4. By replacing two SFELF10M7 series filters with one SFTLF10M7 filter, more compact sets can be made.
5. Well-suited for 1-chip ICs



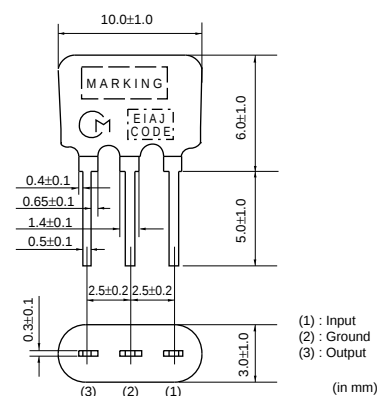
SFTLF10M7HA00-B0



SFTLF10M7GA00-B0



SFTLF10M7FA00-B0



Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFTLF10M7HA00-B0	10.700 ±30kHz	180 ±40kHz	510 max.	5.5 ±2.5dB	50 min.	330
SFTLF10M7GA00-B0	10.700 ±30kHz	230 ±40kHz	650 max.	6.0 ±2.0dB	50 min.	330
SFTLF10M7FA00-B0	10.700 ±30kHz	280 ±50kHz	700 max.	6.0 ±2.0dB	50 min.	330

Area of Attenuation: [within 40dB] Area of Spurious Attenuation: [within 9MHz to 12MHz]

Area of Insertion Loss: at minimum loss point

Center frequency (fo) defined by the center of 3dB bandwidth.

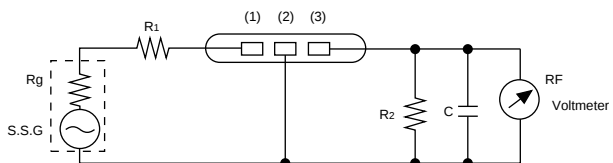
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A, B, C, D, E		
M	Combination A, B, C		

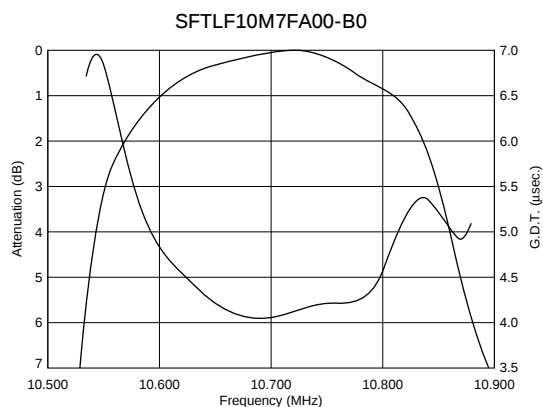
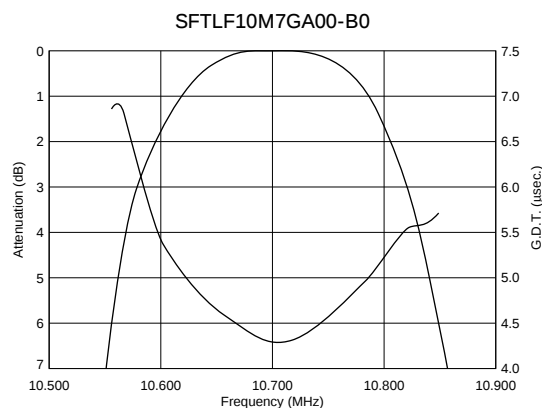
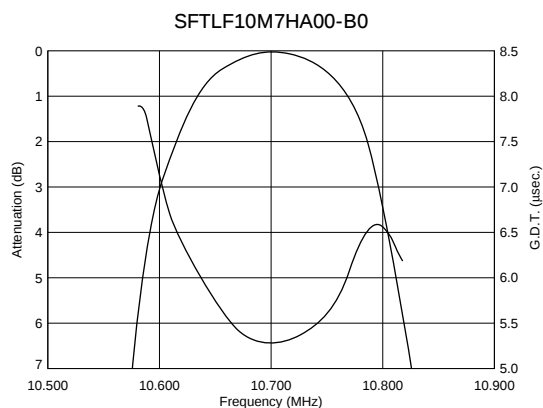
■ Test Circuit



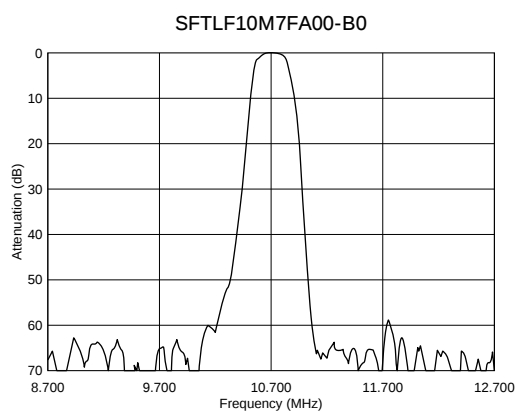
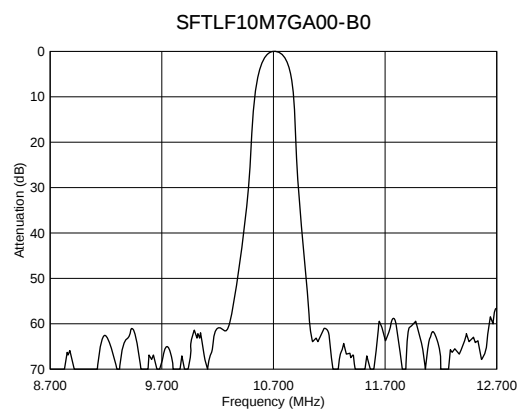
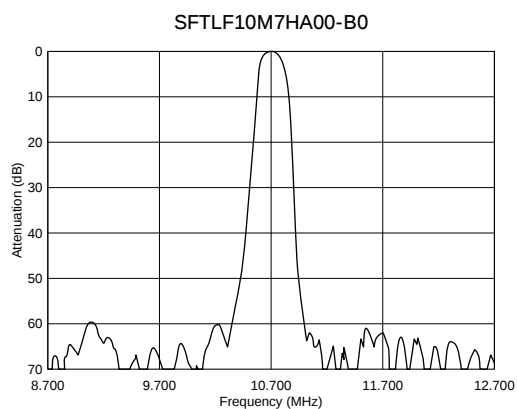
$R_g + R_1 = R_2 =$ Input and Output Impedance
 $C = 10\text{pF}$ (Including stray capacitance and input capacitance of RF voltmeter.)

(1) : Input
(2) : Ground
(3) : Output

■ Frequency Characteristics

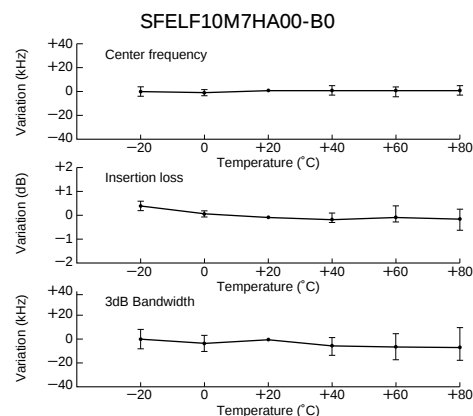
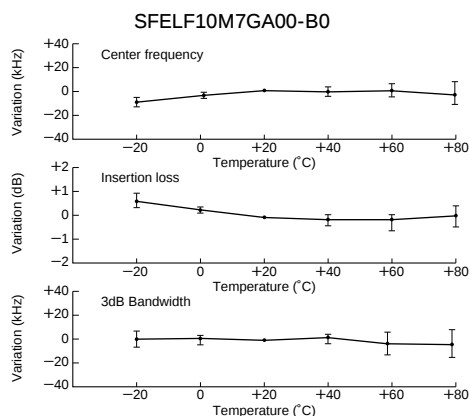


■ Frequency Characteristics (Spurious)



CERAFIL® 10.7MHz Related Data on Lead Type

■ Temperature Characteristics

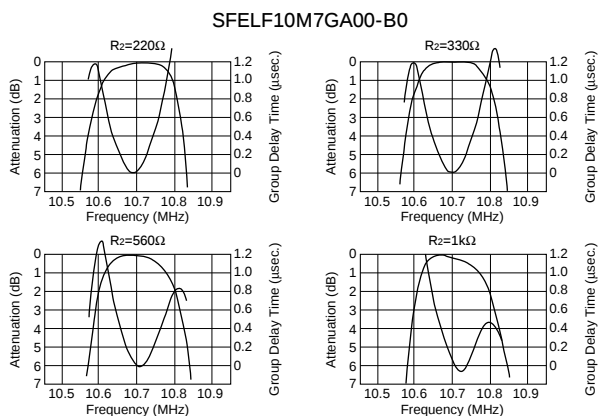


■ Matching Conditions

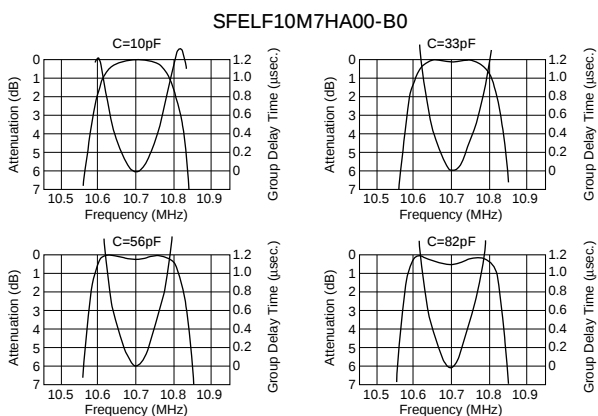
- When using ceramic filters, it is most important to match the input/output load to impedance 330 ohm (SFELF10M7DF00-B0 is 470 ohm and SFKLF10M7NL00-B0 is 600 ohm matching).
Waveform symmetry is damaged when reactance is added to the input/output load.
- Two ceramic filters directly connected can be used for high selectivity. For reducing waveform variation, it is recommended to input a buffer AMP between ceramic filters.

•The SFELF10M7 and SFTLF10M7 series are of input/output symmetric structure so that in theory there is no input/output directionality. Actual circuits may use different input/output loading conditions (for example, mismatched impedance) or capacitance load. In such cases, the waveform will be a little changed by the direction of the input/output of the ceramic filters.

■ Loaded Resistance and Waveform ($R_g+R_1=330\text{ ohm}$)



■ Loaded Capacitance and Waveform ($R_g+R_1=R_2=330\text{ ohm}$)



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CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

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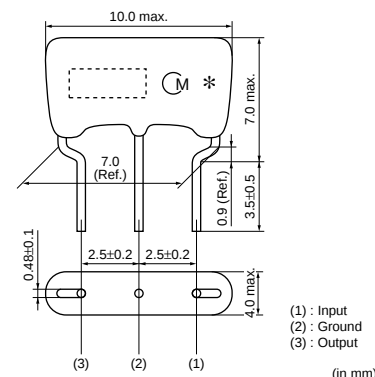
CERAFIL® 4.5-6.5MHz Standard Lead Type SFSRA Series

As part of the environment protection activity, solder for terminal plating and terminal-element connection inside of ceramic filter SFSRA series contains no lead (Pb).

This series also features thickness shear mode same as SFSRH series (current type), which provides very low spurious response within video signal band.

■ Features

1. Excellent spurious suppression characteristics within video signal band.
2. Available 4 pass bandwidth variation to meet various requests.
3. Low profile (H=7.0mm max.)
4. Lead dimension: Improved mounting reliability (cut & clinch) due to round terminal.



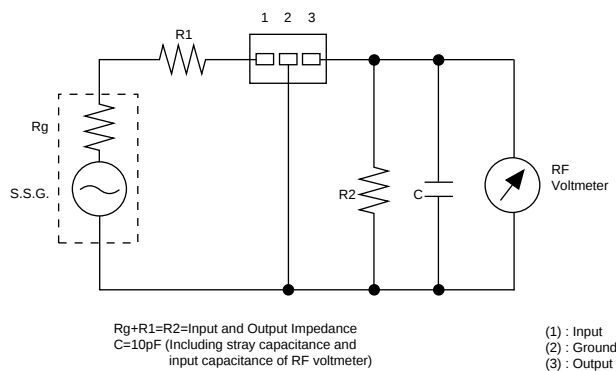
Part Number	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	20dB Bandwidth (kHz)	Insertion Loss (dB)	Spurious Attenuation(1) (dB)	Spurious Attenuation(2) (dB)	Input/Output Impedance (ohm)
SFSRA4M50BF00-B0	4.500	fn±40 min.	420 max.	8.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.0MHz]	1000
SFSRA4M50CF00-B0	4.500	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.0MHz]	1000
SFSRA4M50DF00-B0	4.500	fn±70 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.0MHz]	1000
SFSRA4M50EF00-B0	4.500	fn±125 min.	850 max.	6.0 max.	25 min. [within 0 to fn]	18 min. [within fn to 7.0MHz]	1000
SFSRA5M50BF00-B0	5.500	fn±50 min.	400 max.	8.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.5MHz]	600
SFSRA5M50CF00-B0	5.500	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.5MHz]	600
SFSRA5M50DF00-B0	5.500	fn±80 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.5MHz]	600
SFSRA5M74BF00-B0	5.742	fn±50 min.	400 max.	8.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.5MHz]	600
SFSRA5M74CF00-B0	5.742	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.5MHz]	600
SFSRA6M00BF00-B0	6.000	fn±50 min.	420 max.	8.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 8.0MHz]	600
SFSRA6M00CF00-B0	6.000	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 8.0MHz]	470
SFSRA6M00DF00-B0	6.000	fn±80 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 8.0MHz]	470
SFSRA6M50BF00-B0	6.500	fn±50 min.	470 max.	8.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 8.5MHz]	470
SFSRA6M50CF00-B0	6.500	fn±70 min.	650 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 8.5MHz]	470
SFSRA6M50DF00-B0	6.500	fn±80 min.	800 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 8.5MHz]	470

Area of Insertion Loss: at minimum loss point

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

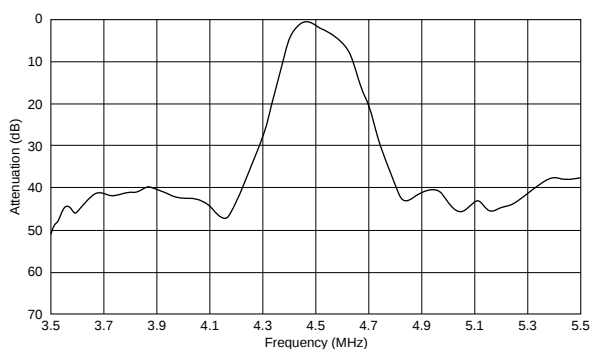
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Test Circuit

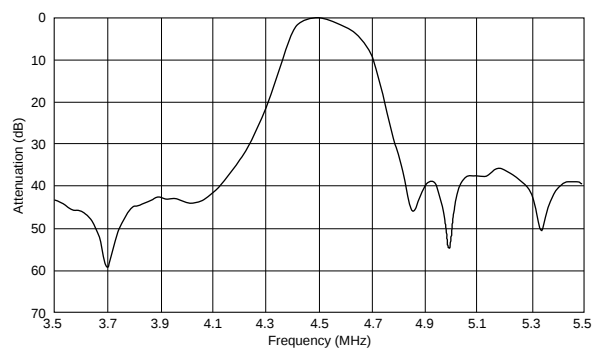


■ Frequency Characteristics

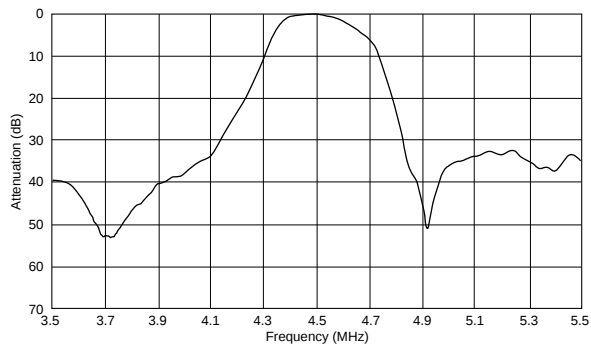
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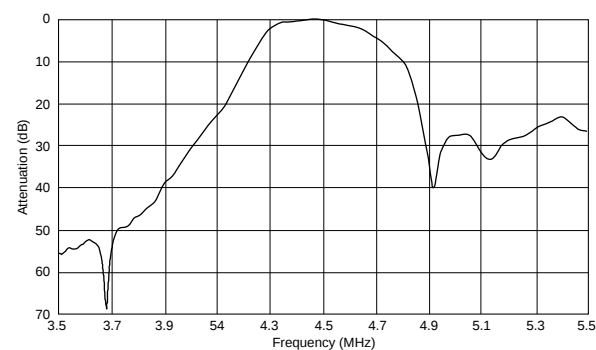
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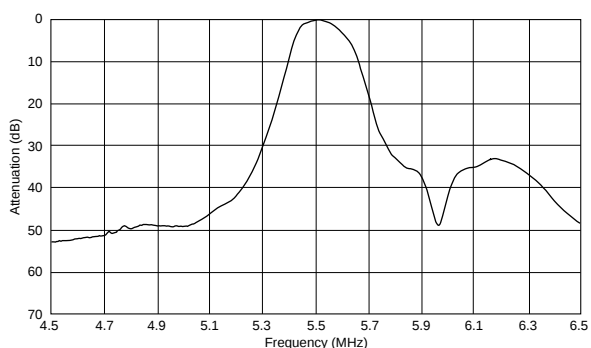
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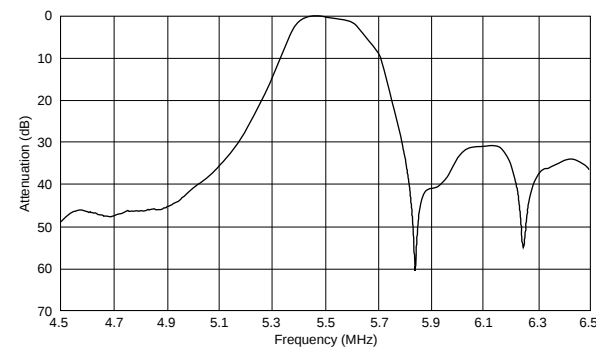
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SFSRA5M50BF00-B0



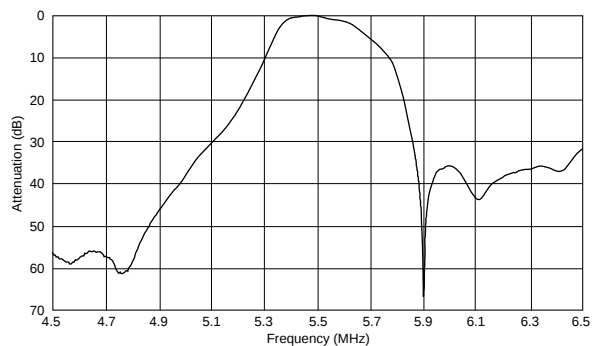
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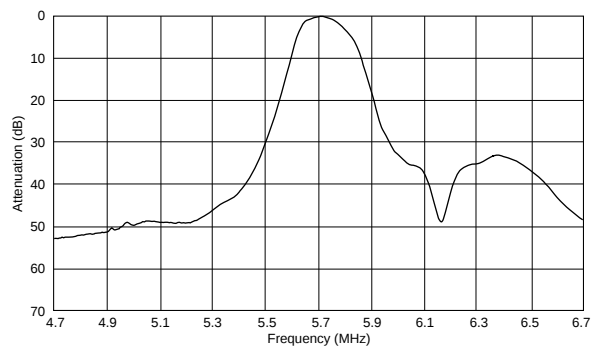
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Frequency Characteristics

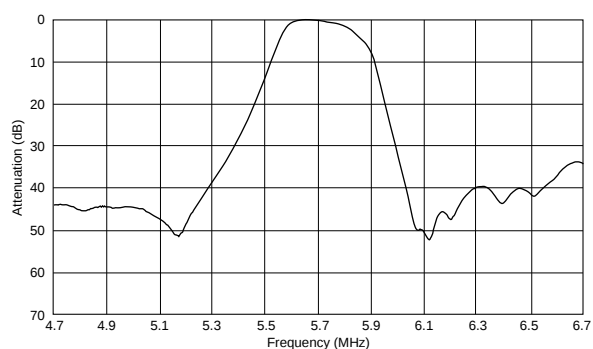
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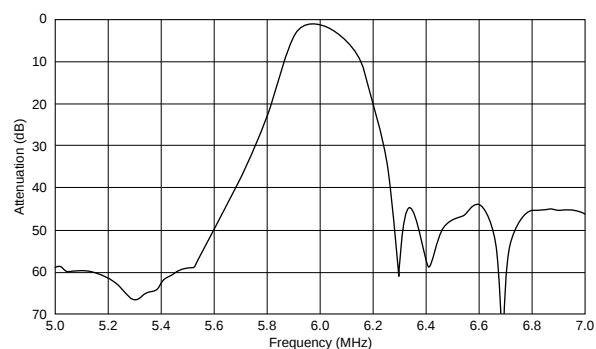
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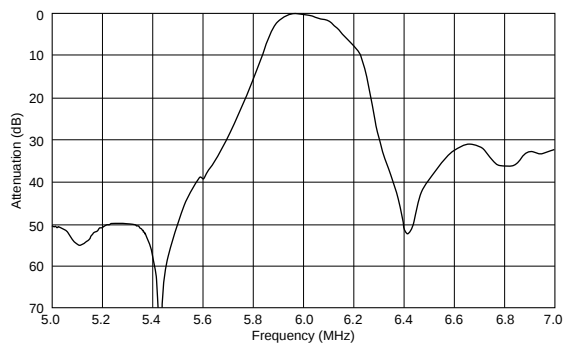
SFSRA5M74CF00-B0



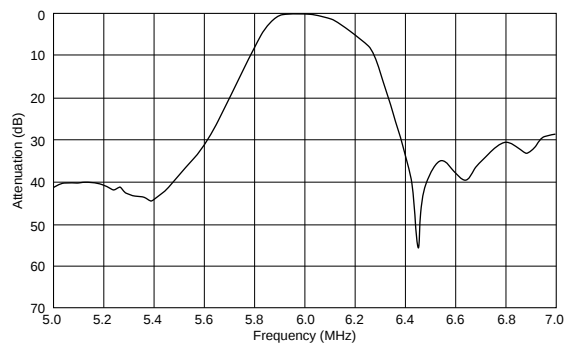
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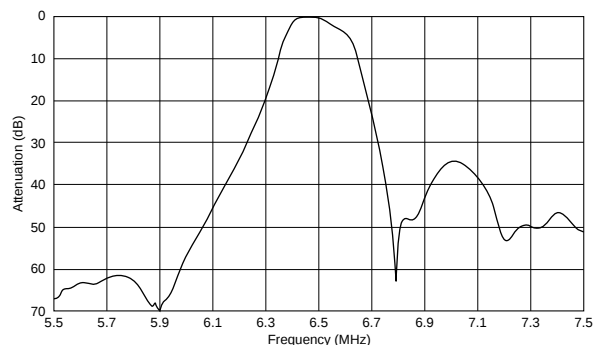
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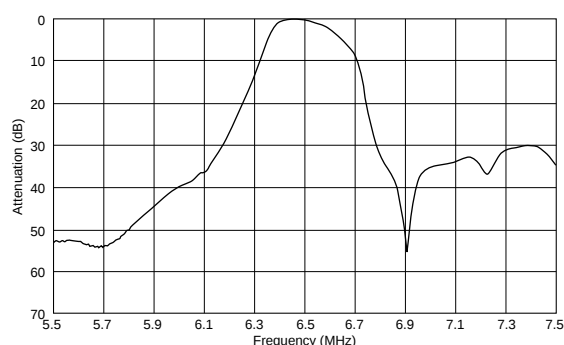
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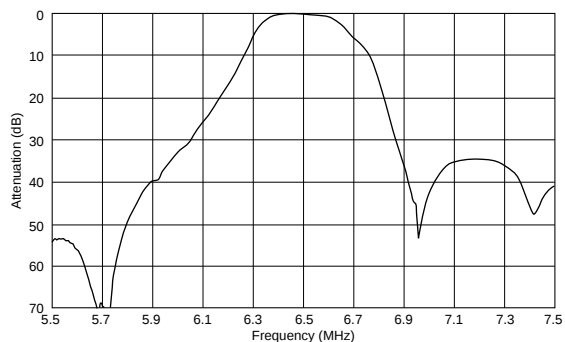


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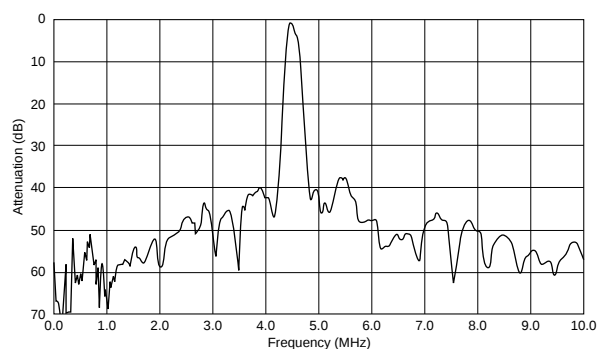
Frequency Characteristics

SFSRA6M50DF00-B0

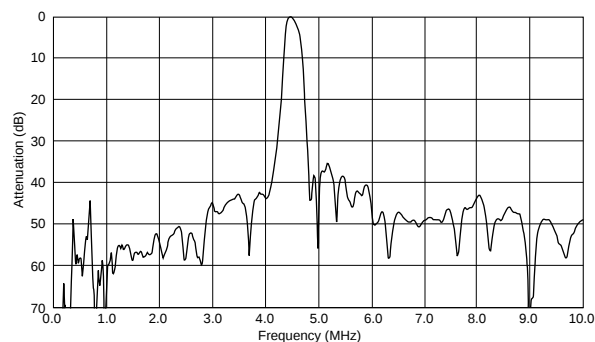


Frequency Characteristics (Spurious)

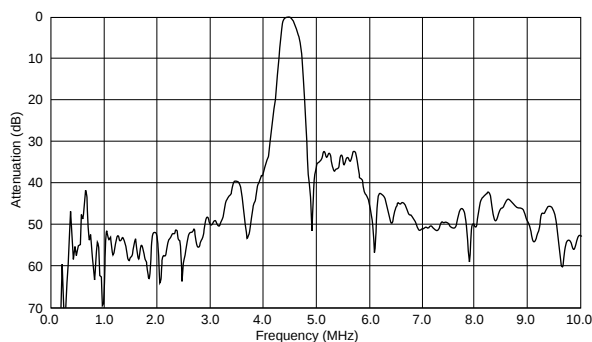
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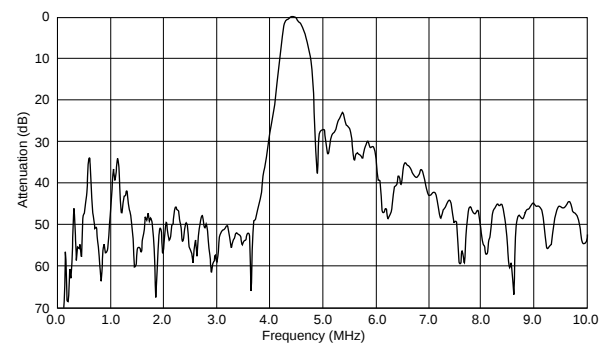
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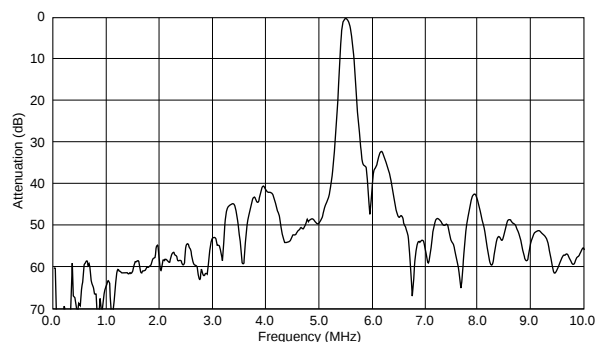
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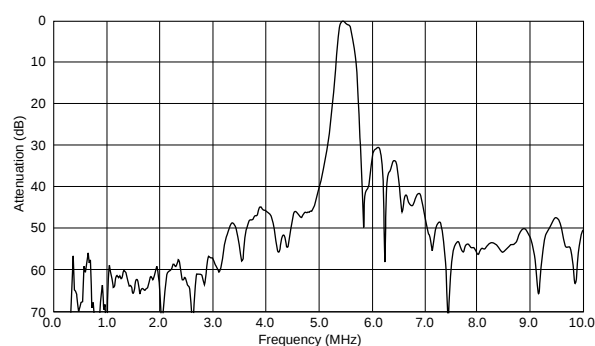
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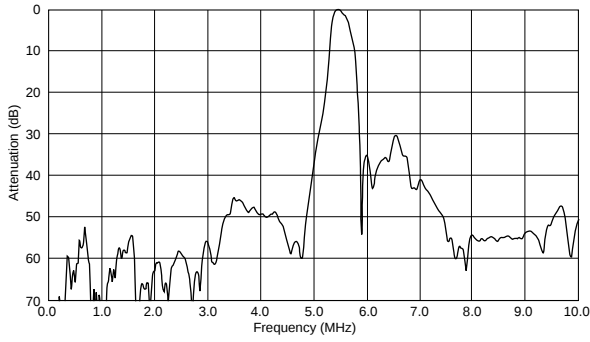


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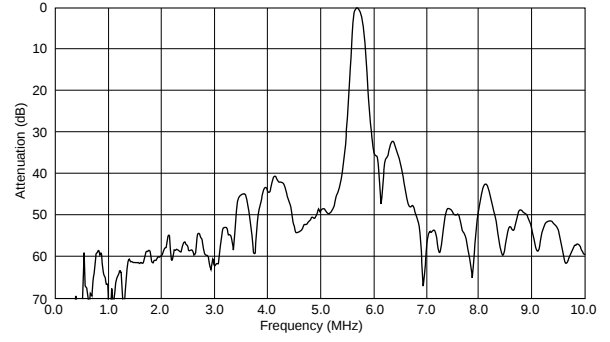
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■ Frequency Characteristics (Spurious)

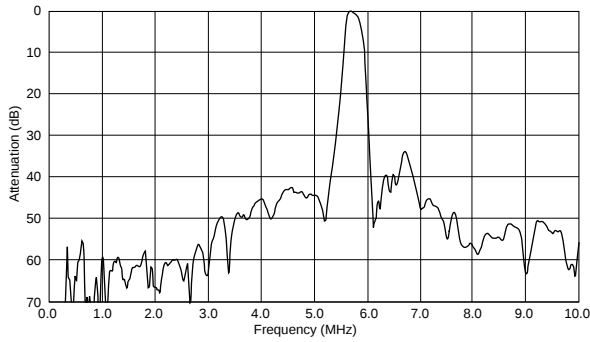
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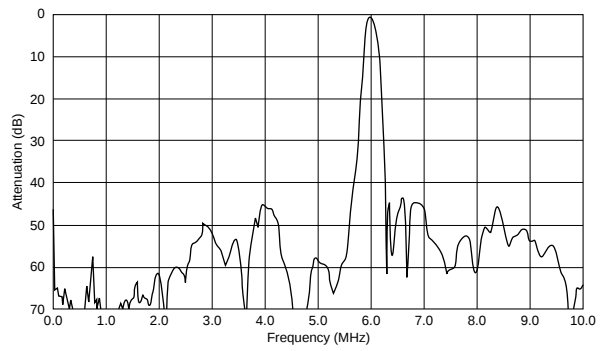
SFSRA5M74BF00-B0



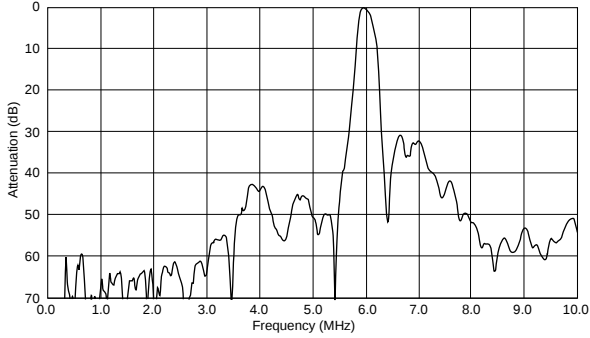
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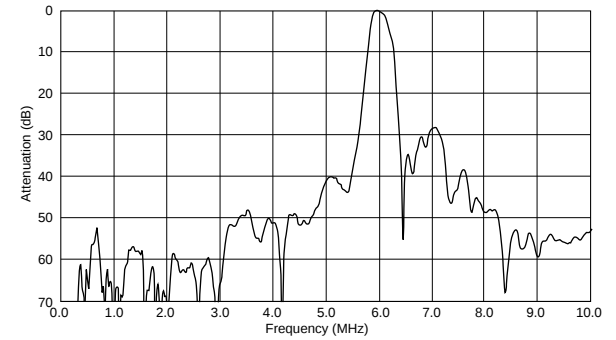
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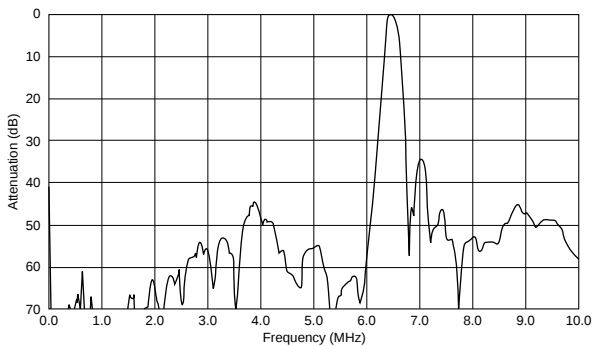
SFSRA6M00CF00-B0



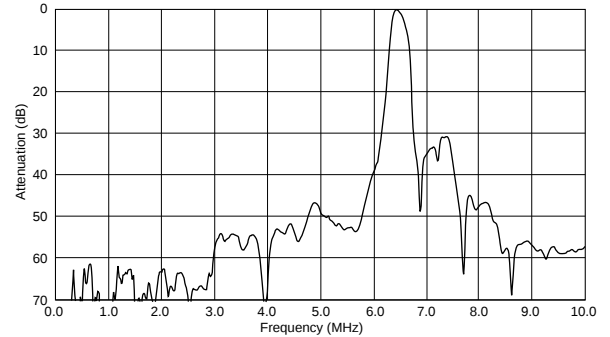
SFSRA6M00DF00-B0



SFSRA6M50BF00-B0



SFSRA6M50CF00-B0

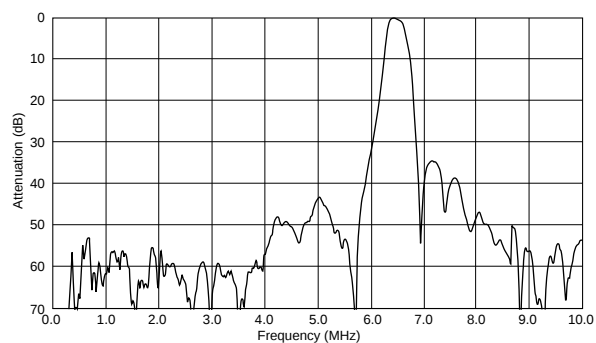


Continued on the following page. ➤

☐ Continued from the preceding page.

■ Frequency Characteristics (Spurious)

SFSRA6M50DF00-B0



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment



CERAFIL® 3.5-6.5MHz for Chroma Signal SFSRA/F Series

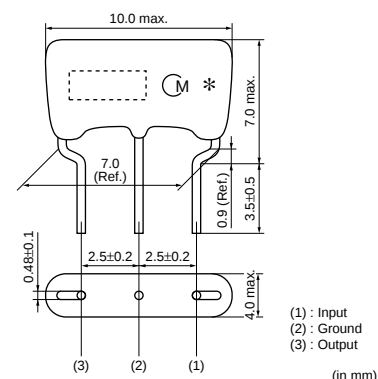
Chroma signals frequency conversion process is involved in VCRs video signal processing circuit. These SFSRA/SFSRF series are suitable for B.P.F.

■ Features

1. Frequency adjustment free
2. Responsible for VHS. 8mm VCR system



SFSRA Series



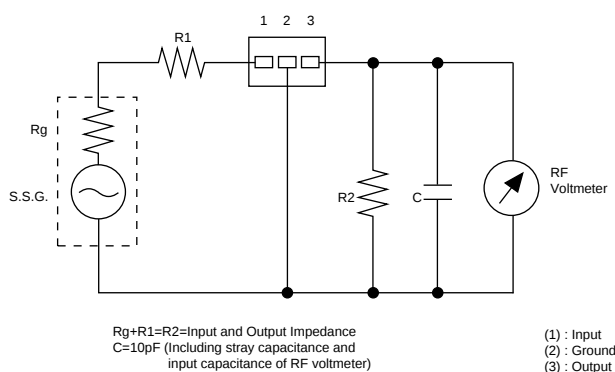
Part Number	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	20dB Bandwidth (kHz)	Insertion Loss (dB)	Spurious Attenuation(1) (dB)	Spurious Attenuation(2) (dB)	Input/Output Impedance (ohm)
SFSRA4M43CF00-B0	4.430	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.0MHz]	1000
SFSRF3M58CF00-B0	3.580	fn±40 min.	530 max.	6.0 max.	25 min. [within 0 to fn]	15 min. [within fn to 6.0MHz]	1000

Area of Insertion Loss: at minimum loss point

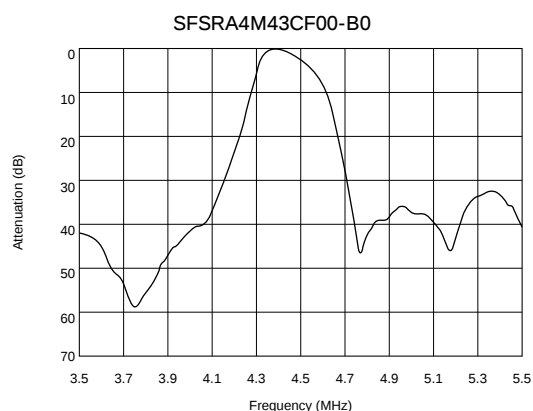
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

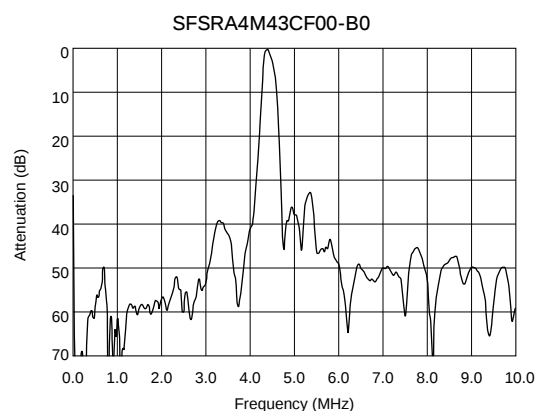
■ Test Circuit



■ Frequency Characteristics



■ Frequency Characteristics (Spurious)

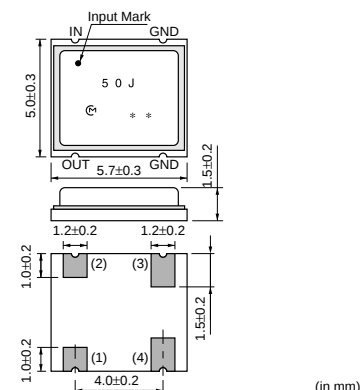


CERAFIL[®] (Filters/Traps/Discriminators) for Audio/Visual Equipment



CERAFIL[®] 455kHz Chip Type PFWCC Series

PFWCC series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability, and adjustment-free operation. Additionally its easy matching with IC helps create an easy circuit design. This is the most recommendable for portable radio with small package. Especially, reflowable with SMD package.



■ Features

1. Center frequency range between 450 and 470kHz are available standard tolerance of ± 2 kHz.
2. For frequency synthesizers, center frequencies of 450, 459 and 468kHz are available standard tolerance of ± 1 kHz.

Part Number	Center Frequency (fo) (kHz)	3dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	Input/Output Impedance (ohm)	Element
PFWCC450KS2A-R0	450 ± 2.0 kHz	5.5 ± 1.5 kHz	17 min.[fo+9kHz]	17 min.[fo-9kHz]	6.0 max.	3000	2

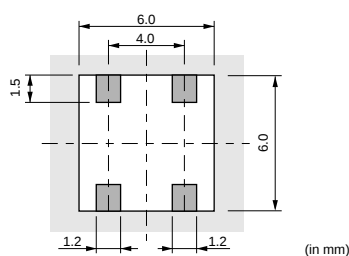
Area of Insertion Loss: at minimum loss point

Center frequency (fo) is defined by the center of 3dB bandwidth.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Land Pattern Dimensions



The solder resist should be printed except for the land pattern on the P.C.B.

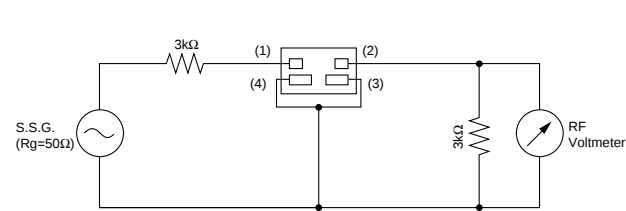
The material of P.C.B. is the epoxy resin of glass fabric base (t=0.8mm)

■ Recommended IFT

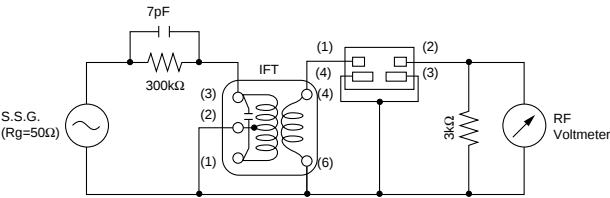
Item \ Type	PFWCC/PFSLF					
	7×7mm IFT			5×5mm IFT		
Winding Specification	(1)―(2)	(2)―(3)	(4)―(6)	(1)―(2)	(2)―(3)	(4)―(6)
S(3) (2) (1) (4)S (6) (Bottom view)	85T	67T	23T	84T	98T	33T
No load Qu	90			65		
Tuning Capacitance	180pF			180pF		

• Maching of CERAFIL® PF series with IFT is decided by the IFT secondary side impedance, |Z2|. Set the |Z2| at about 4.2kΩ.

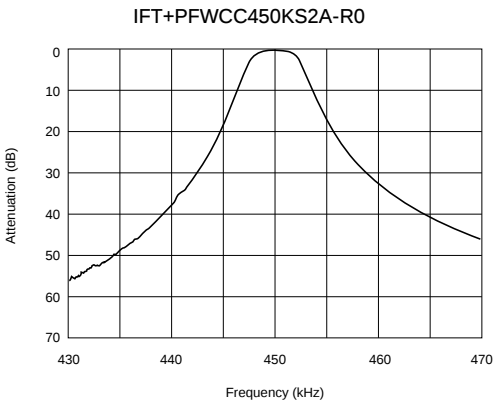
■ Test Circuit (CERAFIL® Only)



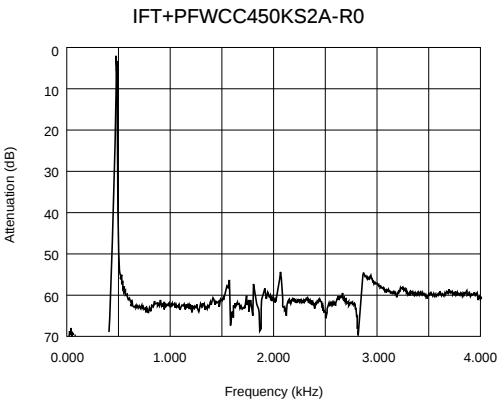
■ Test Circuit (CERAFIL® with IFT)



■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

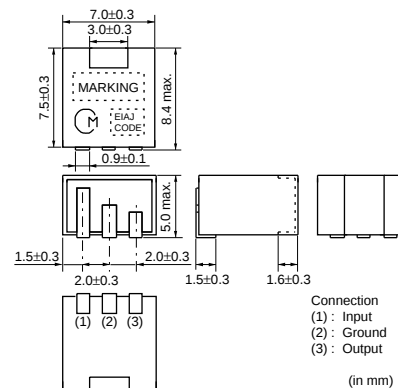


CERAFIL® 455kHz Chip Type SFPKA Series

SFPKA series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability and adjustment-free operation. Additionally its easy matching with IC helps create an easy circuit design.

■ Features

1. The filters are mountable by automatic placers and can be reflow soldered and withstand washing.
2. The filters are wide bandwidth and high selectivity. So they are suitable for car radio and multi band radio.



Part Number	Center Frequency (fo) (kHz)	6dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	Input/Output Impedance (ohm)	Element
SFPKA450KH1A-R1	450 ±1.0kHz	fn±3.0 min.	40 min.[fn+9kHz]	40 min.[fn-9kHz]	6.0 max.	2000	4
SFPKA450KG1A-R1	450 ±1.0kHz	fn±4.5 min.	40 min.[fn+10kHz]	40 min.[fn-10kHz]	6.0 max.	1500	4
SFPKA450KF4A-R1	450 ±1.5kHz	fn±6.0 min.	40 min.[fn+12.5kHz]	40 min.[fn-12.5kHz]	6.0 max.	1500	4

Area of Insertion Loss: at minimum loss point

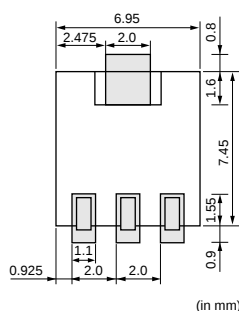
Center frequency (fo) is defined by the center of 6dB bandwidth.

(fn) means nominal center frequency (450kHz).

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Land Pattern Dimensions

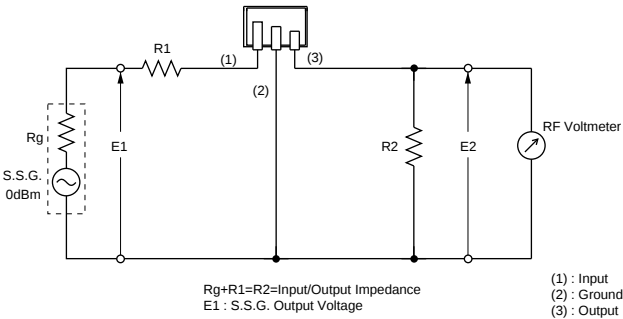


■ Recommended IFT

Item	Type	SFPKA		
		(1)—(2)	(2)—(3)	(4)—(6)
Winding Specification		(1)—(2)	(2)—(3)	(4)—(6)
S(3) (2) (1)	(4)S (6) (1)	60T	125T	28T
(Bottom view)				
No load Qu		40		
Tuning Capacitance		180pF		

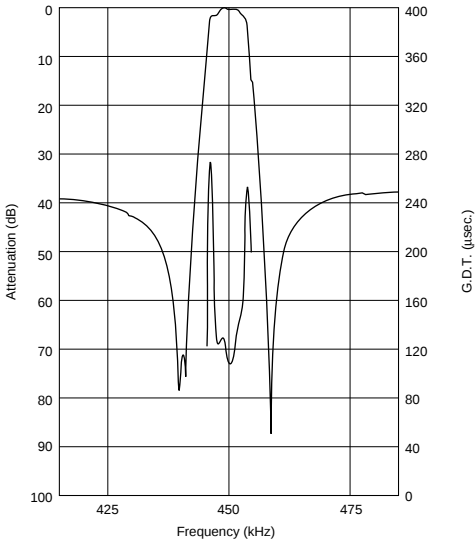
• Matching of CERAFIL® SFPKA series with IFT is decided by the Qu of IFT and IFT secondary side impedance, [Z2]. Set the Qu at about 40 because a Qu value which is too high (e.g., 90) may produce ripple in the waveform. It is recommended to match the impedance of [Z2] with that of the CERAFIL®.

■ Test Circuit

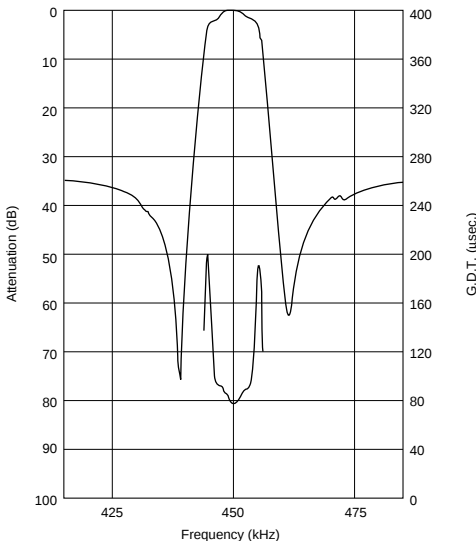


■ Frequency Characteristics

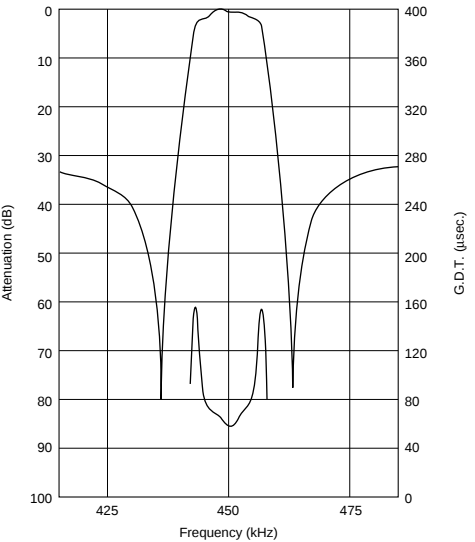
SFPKA450KH1A-R1



SFPKA450KG1A-R1



SFPKA450KF4A-R1



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

muRata

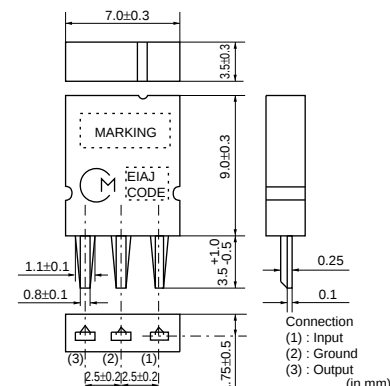
CERAFIL® 455kHz SFULA/SFZLA Series

SFULA/SFZLA series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability, and adjustment-free operation. Additionally its easy matching with IC helps create an easy circuit design.

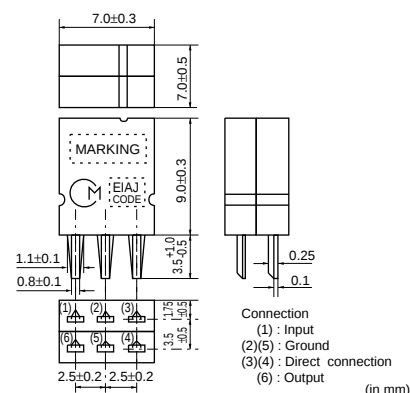
■ Features

1. Center frequency range between 450 to 470kHz are available standard tolerance of ± 2 kHz.
2. For frequency synthesizers, center frequencies of 450, 459 and 468kHz are available standard tolerance of ± 1 kHz.

SFULA Series



SFZLA Series



Part Number	Center Frequency (fo) (kHz)	3dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	Input/Output Impedance (ohm)	Element
SFULA455KU2A-B0	455 ± 2.0 kHz	10.0 ± 3.0 kHz	4 min. [fo+10kHz]	6 min. [fo-10kHz]	5.0 max.	3000	1
SFULA455KU2B-B0	462 ± 2.0 kHz	10.0 ± 3.0 kHz	4 min. [fo+10kHz]	6 min. [fo-10kHz]	5.0 max.	3000	1
SFZLA455KN2A-B0	455.5 ± 2.0 kHz	4.0 ± 1.0 kHz	23 min. [fo+9kHz]	23 min. [fo-9kHz]	7.0 max.	3000	2
SFZLA455KS2A-B0	456 ± 2.0 kHz	5.5 ± 1.0 kHz	18 min. [fo+9kHz]	18 min. [fo-9kHz]	7.0 max.	3000	2
SFZLA455KT2A-B0	456 ± 2.0 kHz	7.0 ± 1.0 kHz	16 min. [fo+9kHz]	16 min. [fo-9kHz]	6.0 max.	3000	2

Area of Insertion Loss: at minimum loss point

Center frequency (fo) is defined by the center of 3dB bandwidth.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Frequency Characteristics (CERAFIL® with IFT)

Part Number	6dB Band Width (kHz)	Selectivity		Input Level (at 0.6mV output) (dB)
		+9kHz off (dB)	-9kHz off (dB)	
IFT+SFULA455KU2B-B0	6.5	20	23	78
IFT+SFZLA455KN2A-B0	5.0	38		78
IFT+SFZLA455KS2A-B0	7.0	33		78
IFT+SFZLA455KT2A-B0	8.5	27		78

Typ. value

■ Recommended IFT

Type		SFULA□B			SFZLA□A		
Item		7×7mm IFT					
Winding Specification		(1)—(2)	(2)—(3)	(4)—(6)	(1)—(2)	(2)—(3)	(4)—(6)
S(3) (2) (1)  (4)S (6) (Bottom view)		70T	115T	7T	68T	84T	14T
No load Qu		105			90		
Tuning Capacitance		180pF			180pF		

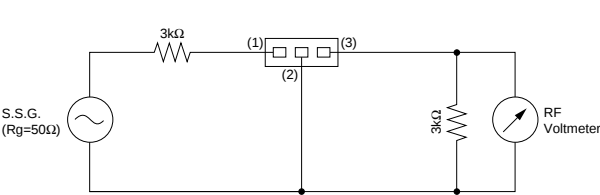
• Maching of CERAFIL® SFULA/SFZLA series with IFT is decided by the IFT secondary side impedance, |Z2|. The design target values of |Z2| are :

For SFULA□B : 300Ω

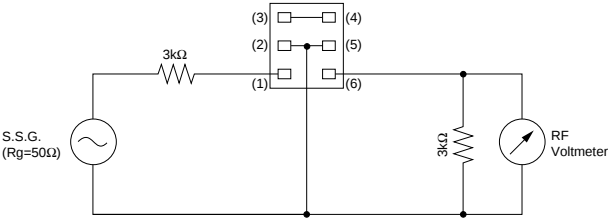
For SFZLA□A : 1kΩ

■ Test Circuit (CERAFIL® Only)

SFULA Series

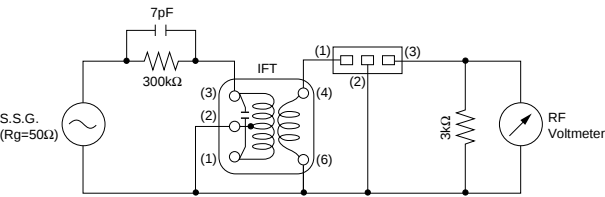


SFZLA Series

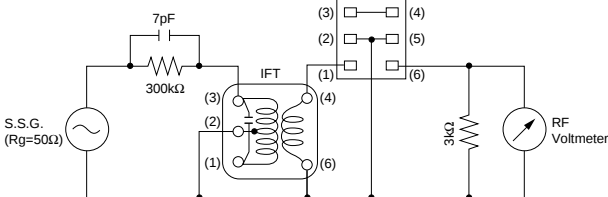


■ Test Circuit (CERAFIL® with IFT)

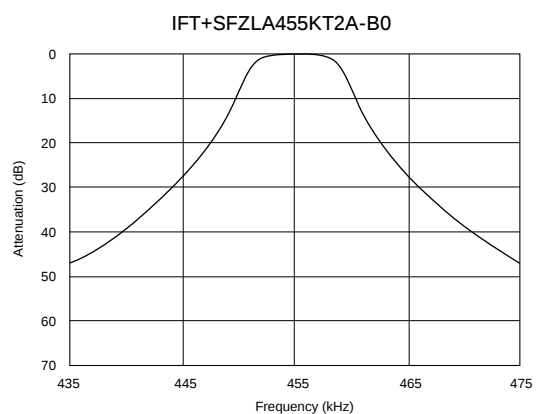
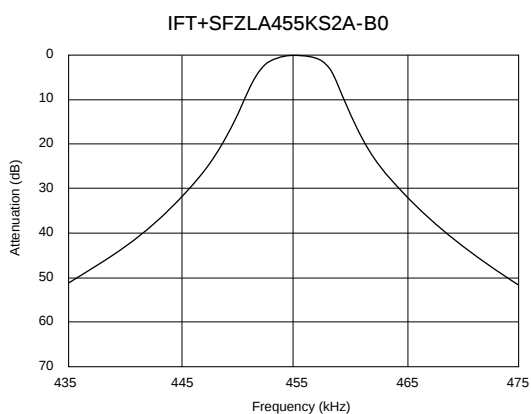
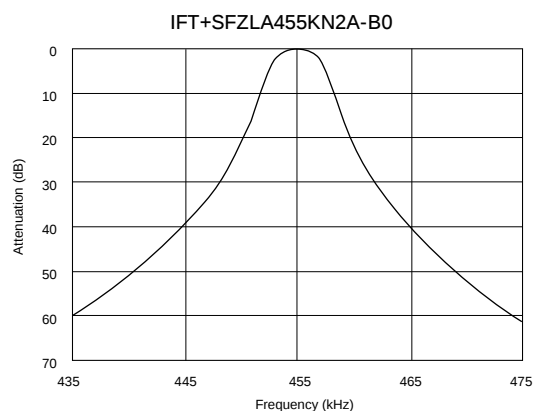
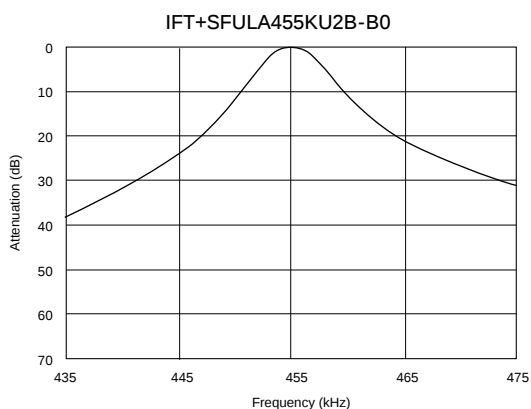
SFULA Series



SFZLA Series

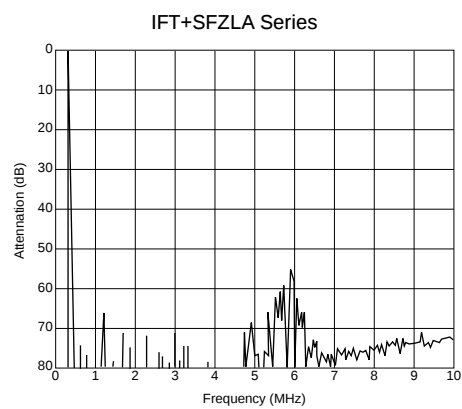
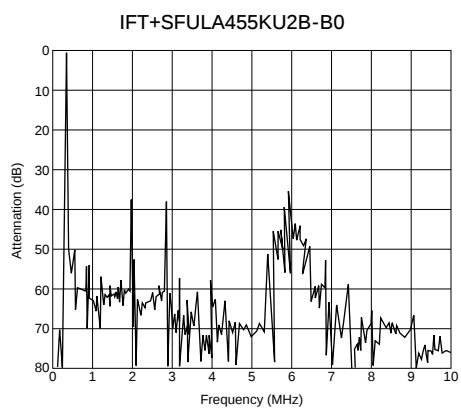


■ Frequency Characteristics



17

■ Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment



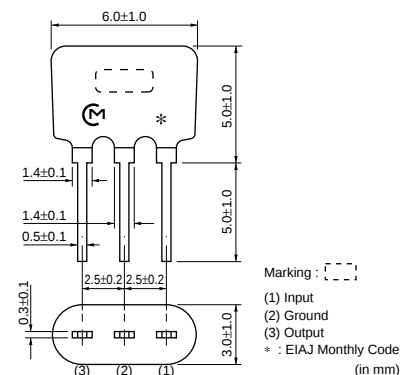
CERAFIL® 455kHz PFSLF/PFWLF Series

PFSLF/PFWLF series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability, and adjustment-free operation. Additionally its easy matching with IC helps create an easy circuit design. This is the most recommendable for portable radios with small package.

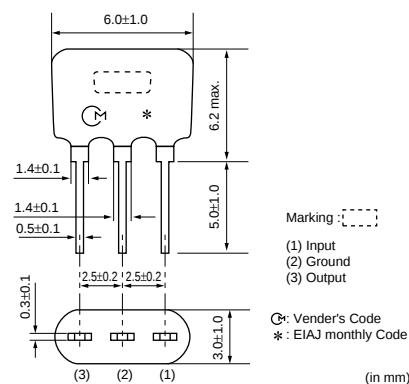
■ Features

1. Center frequency range between 450 to 470kHz are available standard tolerance of ± 2 kHz.
2. For frequency synthesizers, center frequencies of 450, 459 and 468kHz are available standard tolerance of ± 1 kHz.

PFSLF Series



PFWLF Series



Part Number	Center Frequency (fo) (kHz)	3dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	Input/Output Impedance (ohm)	Element
PFSLF455KP2A-B0	455 ± 2.0 kHz	4.5 ± 1.5 kHz	8 min. [fo+9kHz]	8 min. [fo-9kHz]	5.0 max.	3000	1
PFWLF450KP2A-B0	450 ± 2.0 kHz	4.5 ± 1.5 kHz	19 min. [fo+9kHz]	19 min. [fo-9kHz]	7.0 max.	3000	2
PFWLF450KS2A-B0	450 ± 2.0 kHz	5.5 ± 1.5 kHz	17 min. [fo+9kHz]	17 min. [fo-9kHz]	6.0 max.	3000	2

Area of Insertion Loss: at minimum loss point

Center frequency (fo) is defined by the center of 3dB bandwidth.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Recommended IFT

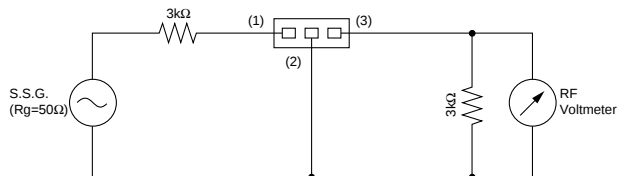
PFSLF455KP2A-B0

Item \ Type		PFWCC/PFSLF					
		7×7mm IFT			5×5mm IFT		
Winding Specification		(1)―(2)	(2)―(3)	(4)―(6)	(1)―(2)	(2)―(3)	(4)―(6)
S(3) (2) (1)  (Bottom view)		85T	67T	23T	84T	98T	33T
No load Q _u		90			65		
Tuning Capacitance		180pF			180pF		

• Maching of CERAFIL® PF₂ series with IFT is decided by the IFT secondary side impedance, |Z₂|. Set the |Z₂| at about 4.2kΩ.

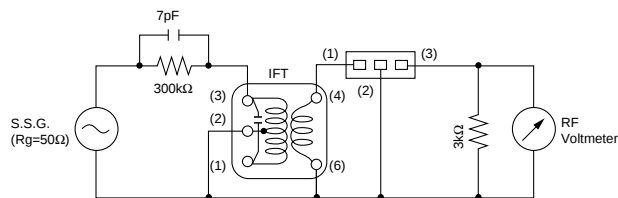
■ Test Circuit (CERAFIL® Only)

PFSLF/PFWLF Series



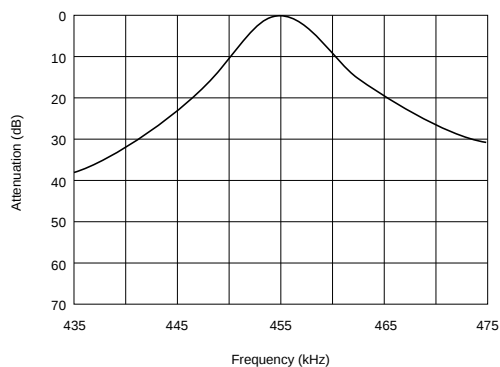
■ Test Circuit (CERAFIL® with IFT)

PFSLF/PFWLF Series

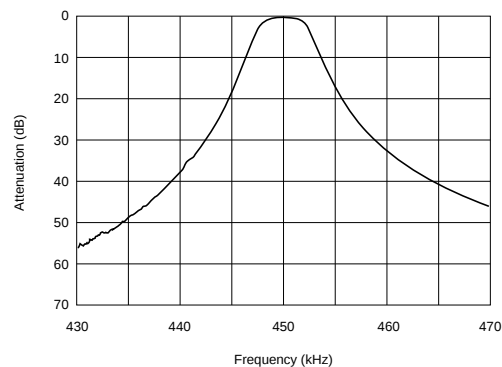


■ Frequency Characteristics

IFT+PFSLF455KP2A-B0

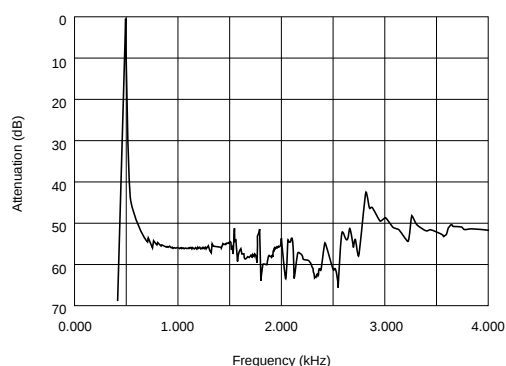


IFT+PFWLF450KS2A-B0

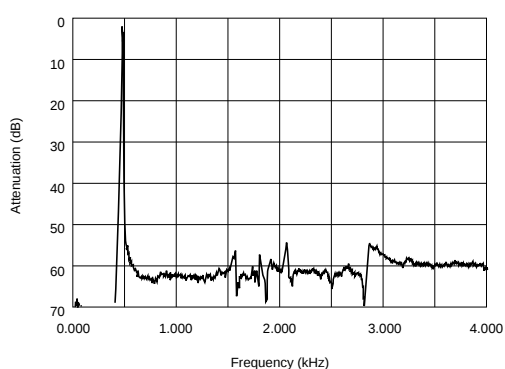


■ Frequency Characteristics (Spurious)

IFT+PFSLF455KP2A-B0



IFT+PFWLF450KS2A-B0



CERAFIL[®] (Filters/Traps/Discriminators) for Audio/Visual Equipment

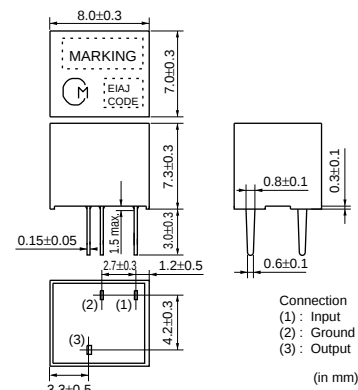


CERAFIL[®] 455kHz SFPLA/CFWLA Series

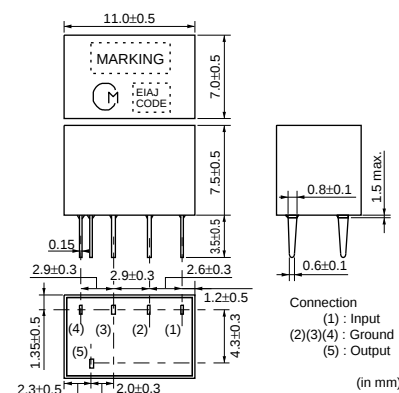
SFPLA/CFWLA series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability, high attenuation, and adjustment-free operation. Additionally its easy matching with IC helps create an easy circuit design. This is the most recommendable for car-stereo and all band radio with high attenuation.



SFPLA Series



CFWLA Series



Part Number	Center Frequency (fo) (kHz)	6dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	Input/Output Impedance (ohm)	Element
SFPLA450KJ1A-B0	450 ±1.0kHz	fn±2.0 min.	40 min.[fn+7.5kHz]	40 min.[fn-7.5kHz]	6.0 max.	2000	4
SFPLA450KH1A-B0	450 ±1.0kHz	fn±3.0 min.	40 min.[fn+9kHz]	40 min.[fn-9kHz]	6.0 max.	2000	4
CFWLA450KJFA-B0	450 (fn)	fn±2.0 min.	50 min.[fn+7.5kHz]	50 min.[fn-7.5kHz]	7.0 max.	2000	6
CFWLA450KHFA-B0	450 (fn)	fn±3.0 min.	50 min.[fn+9kHz]	50 min.[fn-9kHz]	6.0 max.	2000	6

Area of Insertion Loss: at minimum loss point

Center frequency (fo) is defined by the center of 6dB bandwidth.

(fn) means nominal center frequency (450kHz).

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

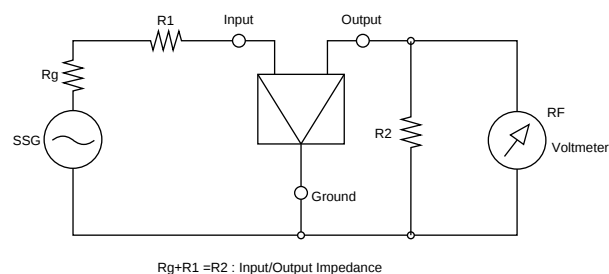
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Recommended IFT

Item	Type	SFPLA/CFWLA		
		7×7mm IFT		
Winding Specification	(1)---(2)	(2)---(3)	(4)---(6)	
S(3) (2) (1)	(4)S (6)	60T	125T	28T
(Bottom view)				
No load Qu		40		
Tuning Capacitance		180pF		

• Matching of CERAFIL[®] SFPLA/CFWLA series with IFT is decided by the Qu of IFT and IFT secondary side impedance, [Z2]. Set the Qu at about 40 because a Qu value which is too high (e.g., 90) may produce ripple in the waveform. It is recommended to match the impedance of [Z2] with that of the CERAFIL[®].

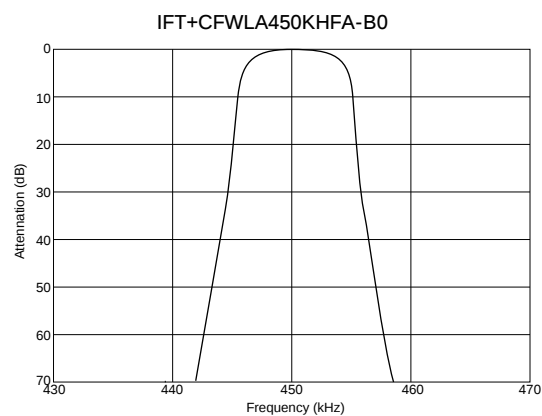
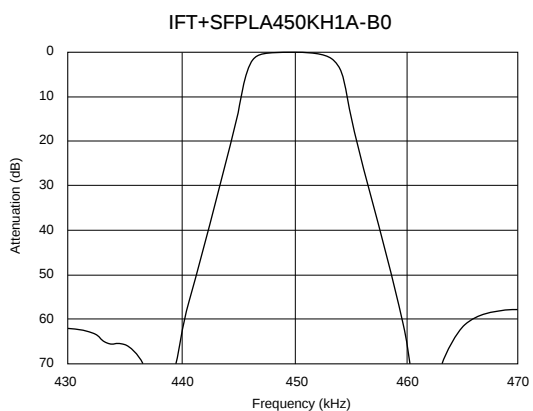
■ Test Circuit



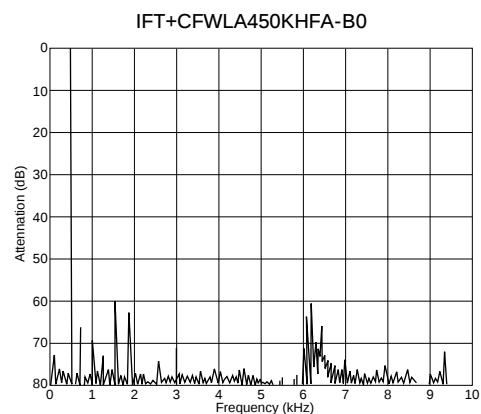
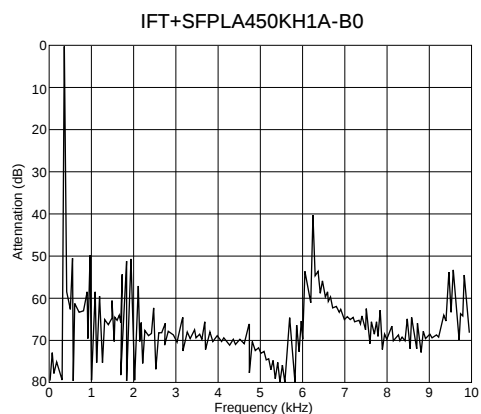
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■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

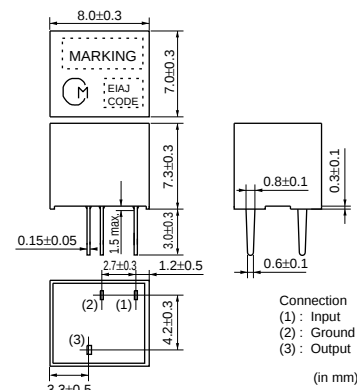
muRata

CERAFIL® 455kHz for AM Stereo Wide Bandwidth Type SFPLA/CFWLA/CFULA Series

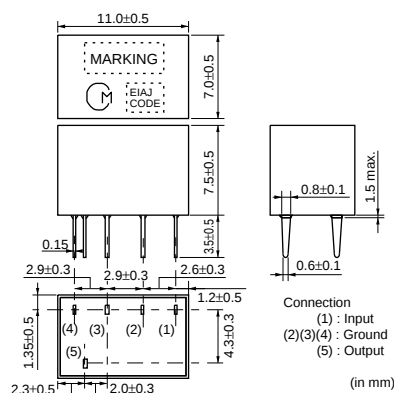
SFPLA/CFULA/CFWLA series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability, high attenuation, and adjustment-free operation. Additionally its easy matching with IC helps create an easy circuit design. Especially, CFULA/CFWLA_Y series is the frequency fidelity in the high sound area of an AM stereo will be improved with wide band, flat group delay time characteristics.



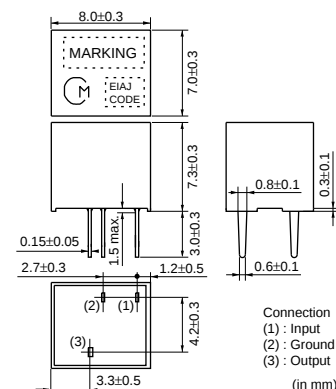
SFPLA Series



CFWLA Series



CFULA Series



Part Number	Center Frequency (fo) (kHz)	6dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	GDT 20μsec. Bandwidth (kHz)	Input/Output Impedance (ohm)	Element
SFPLA450KG1A-B0	450 ±1.0kHz	fn±4.5 min.	30 min.[fn+9kHz]	30 min.[fn-9kHz]	6.0 max.	-	2000	4
SFPLA450KF1A-B0	450 ±1.0kHz	fn±6.0 min.	40 min.[fn+12.5kHz]	40 min.[fn-12.5kHz]	6.0 max.	-	2000	4
SFPLA450KE1A-B0	450 ±1.0kHz	fn±7.5 min.	40 min.[fn+15kHz]	40 min.[fn-15kHz]	6.0 max.	-	1500	4
SFPLA450KD1A-B0	450 ±1.0kHz	fn±10.0 min.	40 min.[fn+20kHz]	40 min.[fn-20kHz]	4.0 max.	-	1500	4
CFULA450KG1Y-B0	450 ±1.0kHz	fn±4.5 min.	40 min.[fn+15kHz]	40 min.[fn-15kHz]	10.0 max.	fn±3.0	2000	4
CFULA450KF1Y-B0	450 ±1.0kHz	fn±6.0 min.	40 min.[fn+17.5kHz]	40 min.[fn-17.5kHz]	9.0 max.	fn±4.0	2000	4
CFULA450KD1Y-B0	450 ±1.0kHz	fn±10.0 min.	40 min.[fn+25kHz]	40 min.[fn-25kHz]	7.0 max.	fn±7.0	1500	4
CFWLA450KG1Y-B0	450 ±1.0kHz	fn±4.5 min.	50 min.[fn+15kHz]	50 min.[fn-15kHz]	11.0 max.	fn±4.0	2000	6
CFWLA450KF1Y-B0	450 ±1.0kHz	fn±6.0 min.	50 min.[fn+17.5kHz]	50 min.[fn-17.5kHz]	10.0 max.	fn±5.0	2000	6
CFWLA450KD1Y-B0	450 ±1.0kHz	fn±10.0 min.	50 min.[fn+25kHz]	50 min.[fn-25kHz]	8.0 max.	fn±8.0	1500	6
CFWLA450KGFA-B0	450 (fn)	fn±4.5 min.	50 min.[fn+10kHz]	50 min.[fn-10kHz]	6.0 max.	-	2000	6
CFWLA450KFFA-B0	450 (fn)	fn±6.0 min.	50 min.[fn+12.5kHz]	50 min.[fn-12.5kHz]	6.0 max.	-	2000	6
CFWLA450KEFA-B0	450 (fn)	fn±7.5 min.	50 min.[fn+15kHz]	50 min.[fn-15kHz]	6.0 max.	-	1500	6
CFWLA450KDFA-B0	450 (fn)	fn±10.0 min.	50 min.[fn+20kHz]	50 min.[fn-20kHz]	4.0 max.	-	1500	6

Area of Insertion Loss: at minimum loss point

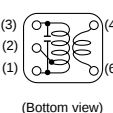
Center frequency (fo) is defined by the center of 6dB bandwidth.

(fn) means nominal center frequency (450kHz).

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

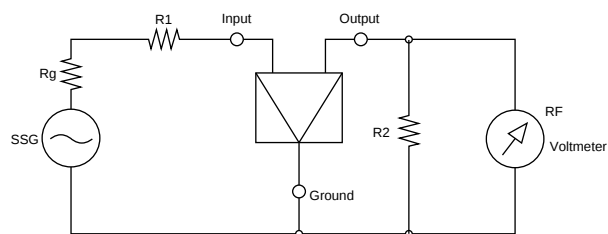
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Recommended IFT

Item	Type	SFPLA/CFULA/CFWLA		
		7×7mm IFT		
Winding Specification		(1)–(2)	(2)–(3)	(4)–(6)
 (Bottom view)		60T	125T	28T
No load Q_u		40		
Tuning Capacitance		180pF		

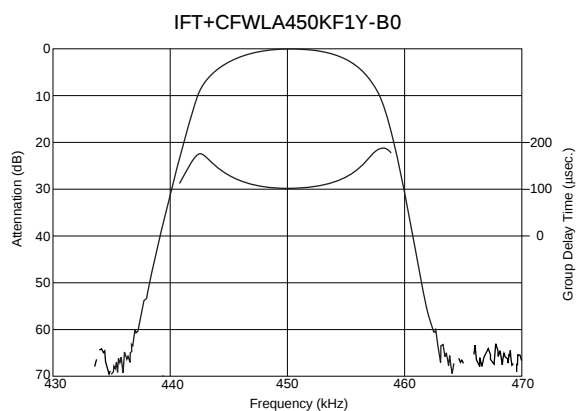
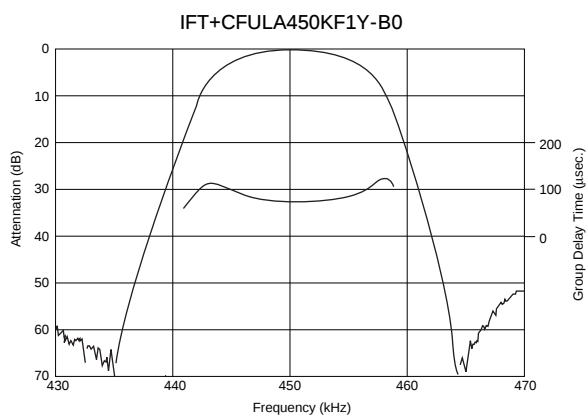
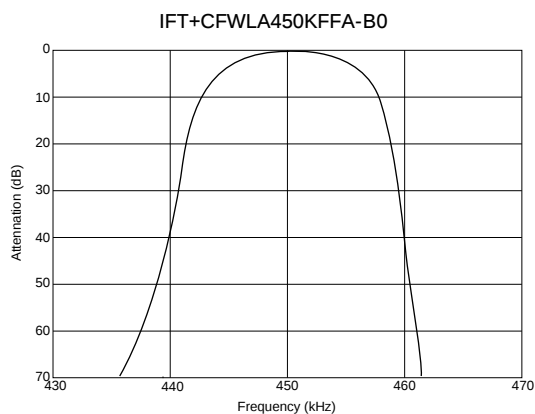
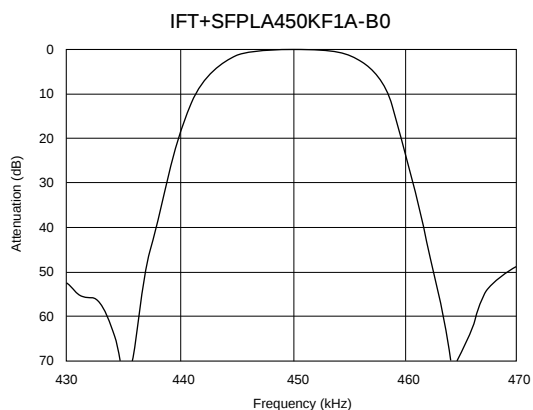
• Matching of CERAFIL® SFPLA/CFULA/CFWLA series with IFT is decided by the Q_u of IFT and IFT secondary side impedance, $|Z_2|$. Set the Q_u at about 40 because a Q_u value which is too high (e.g., 90) may produce ripple in the waveform. It is recommended to match the impedance of $|Z_2|$ with that of the CERAFIL®.

■ Test Circuit



$R_g + R_1 = R_2$: Input/Output Impedance

■ Frequency Characteristics



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

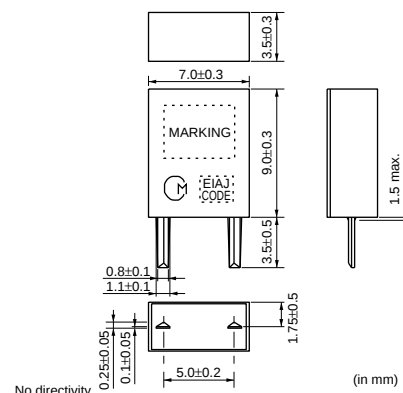
muRata

CERAFIL® 455kHz for AM Search-stop Signal Detection

BFULA series are narrow bandwidth filters. This filter is used in the application which detects the carrier peak with a narrow bandwidth amplifier, or an electronic tuner as a stop signal detector.

■ Features

Most suitable for IC Station Detectors (SD)



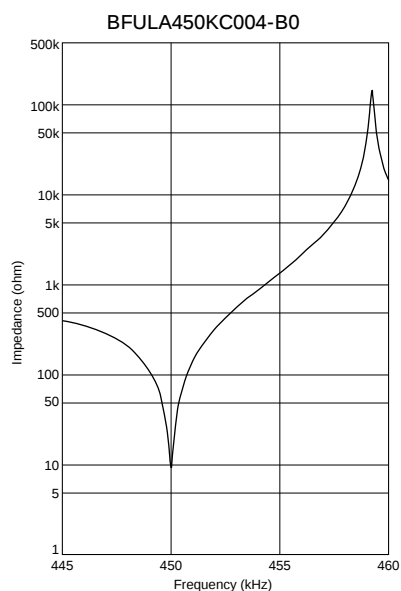
Part Number	Resonant Frequency (Fr) (kHz)	Delta F (Fa-Fr) (kHz)	Resonant Resistance (ohm)	Capacitance (pF)
BFULA450KC-B0	450 ±1.0kHz	14.0 ±2.0kHz	20 max.	360 ±20%
BFULA450KC004-B0	450 ±0.8kHz	9.0 ±2.0kHz	30 max.	360 ±20%
BFULA450KK003-B0	450 ±1.0kHz	27.5 ±4.5kHz	30 max.	550 ±20%

fa-fr: Difference between the anti-resonant frequency and the resonant frequency.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

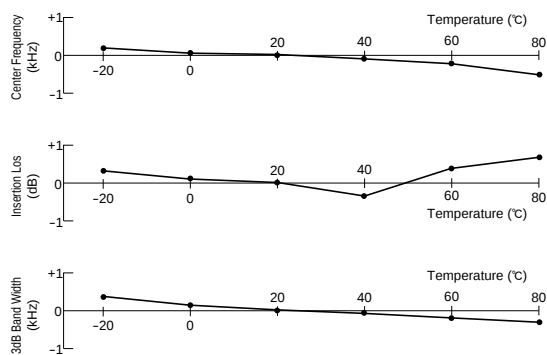
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page."

■ Impedance Characteristics

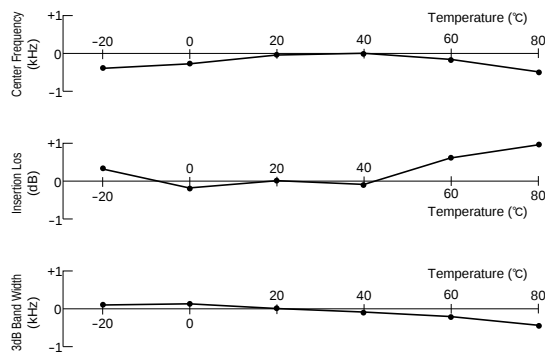


CERAFIL® 455kHz SF/PF Series Temperature Characteristics

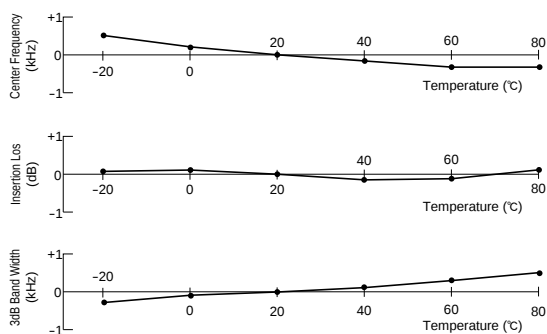
■ SFZLA455KS2A-B0



■ SFPLA450KH1A-B0

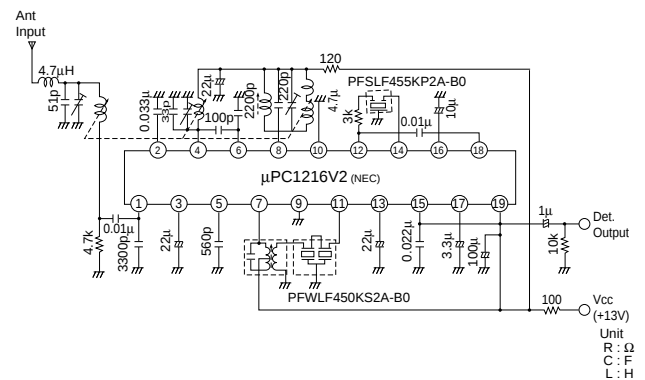


■ PFWLF450KS2A-B0



■ Car Radio

PFSLF455KP2A-B0/PFWLF450KS2A-B0



■ Portable Radio

The schematic diagram illustrates the internal circuitry of a portable FM/AM radio receiver. Key components include:

- FM Section:** FM BPF, FM FRONT END (pins 9, 7, 6, 14, 17), FM IF AMP DETECTOR (pins 2, 19), FM DISCRIMINATOR (pin 19), TUNING METER (pin 19), RIPPLE FILTER (pin 25), and REGULATOR (pin 26).
- AM Section:** AM ANT, AM FRONT END (pins 10, 13), AM IF AMP DETECTOR (pins 10, 16), AM IF (pins 16, 22), AGC AMP (pins 23, 21), DEP OUT (pin 23), VOL (pin 4), AF PRE/POWER AMP (pin 27), and SP (pin 27).
- Power and Control:** REG OUT (pin 8), REG IN (pin 15), REG VCC (pin 26), and FM/AM BAND SELECT (pin 15).
- IC Pinout:** The CXA1019M (SONY) IC has 28 pins. The pinout table is as follows:

Pin	Function
1	REG IN
2	FM IF AMP DETECTOR
3	AF PRE/POWER AMP
4	VOL
5	AM IF
6	FM FRONT END
7	FM FRONT END
8	REG OUT
9	FM FRONT END
10	AM IF AMP DETECTOR
11	AM IF
12	FM FRONT END
13	AM FRONT END
14	FM FRONT END
15	REG VCC
16	AM IF AMP DETECTOR
17	FM FRONT END
18	AM IF
19	FM DISCRIMINATOR
20	AM IF
21	AGC AMP
22	AM IF
23	DEP OUT
24	AF PRE/POWER AMP
25	RIPPLE FILTER
26	REG VCC
27	SP
28	REG IN

Unit:
R : Ω
C : F
L : H

Continued on the following page. 

CERAFIL[®] (Filters/Traps/Discriminators) for Audio/Visual Equipment

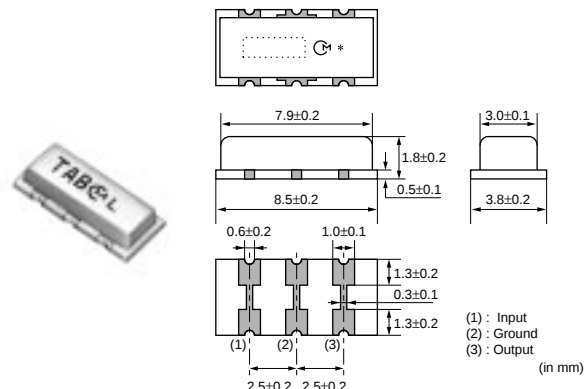
muRata

Ceramic Trap 4.5-6.5MHz Chip Type TPSKA Series

SMD ceramic trap TPSKA_B is small and thin SMD trap sealed with a metal cap. Recommended for LCD-TV's, and small and thin tuners.

■ Features

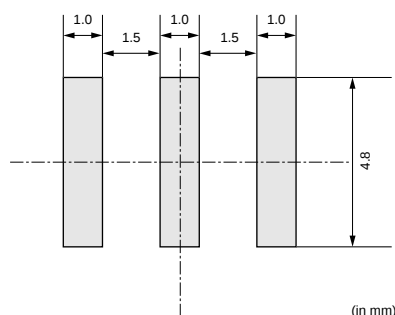
1. High attenuation and high performance group delay time
2. Small and thin package
3. Reflow-solderable



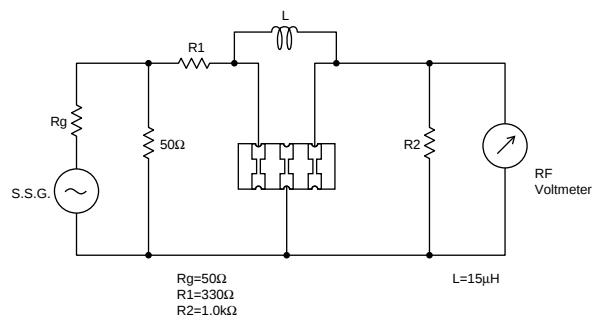
Part Number	Nominal Center Frequency (fn1) (MHz)	Attenuation (at fn1) (dB)	30dB Attenuation BW (fn1) (kHz)
TPSKA4M50B00-R1	4.500	35 min.	50 min.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

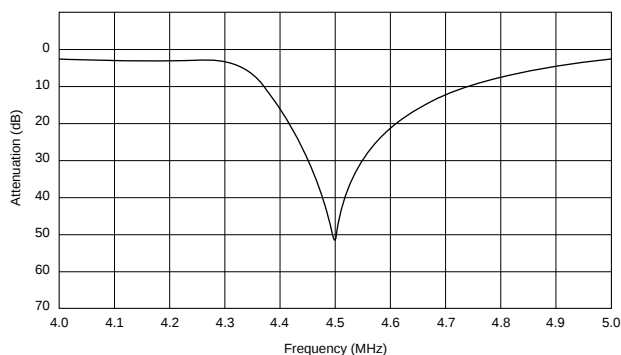
■ Standard Land Pattern Dimensions



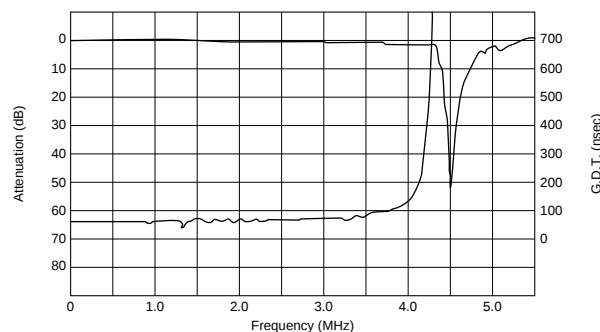
■ Test Circuit



■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

muRata

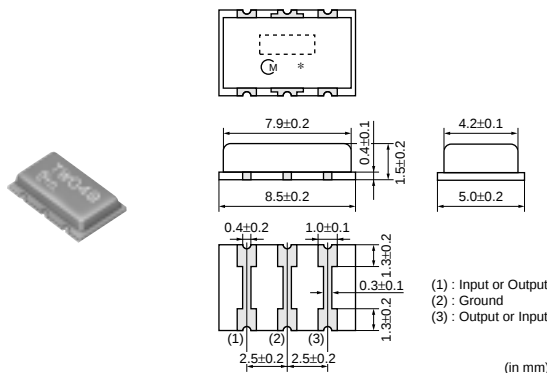
Ceramic Trap 4.5-6.5MHz Chip Type Double Traps TPWKA Series

SMD ceramic trap TPWKA is small and thin SMD trap sealed with a metal cap. Recommended for LCD-TV's, and small and thin tuners.

This series consist of 2 wafers with 2 trap frequencies. Recommended for Multi standard set.

■ Features

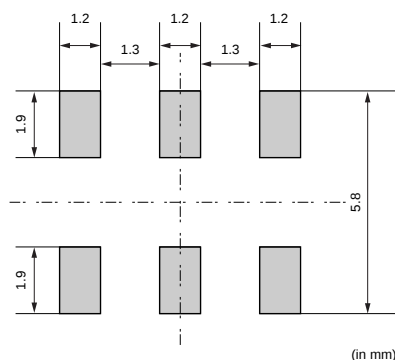
1. Good performance of attenuation
2. Small and thin package
3. Reflow-solderable



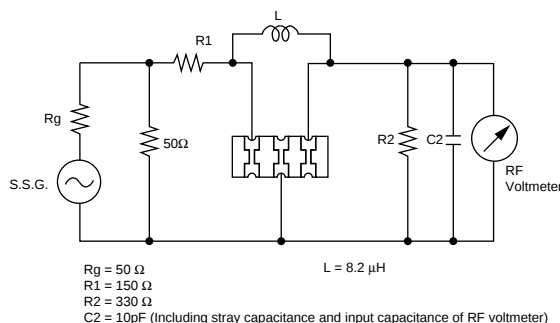
Part Number	Nominal Center Frequency (fn1) (MHz)	Nominal Center Frequency (fn2) (MHz)	Attenuation (at fn1) (dB)	Attenuation (at fn2) (dB)	30dB Attenuation BW (fn1) (kHz)
TPWKA5M50B04-R1	5.500	5.742	30 min.	30 min.	50 min.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

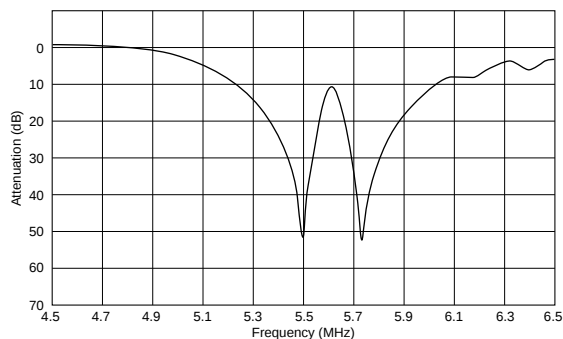
■ Standard Land Pattern Dimensions



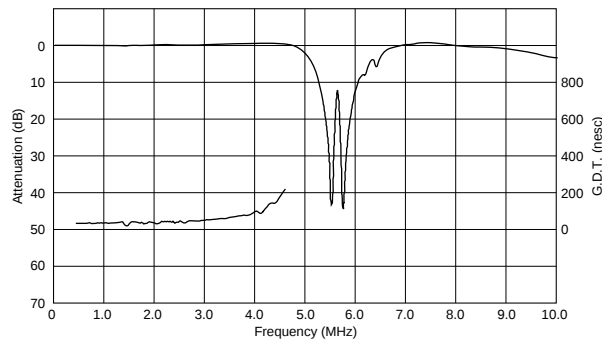
■ Test Circuit



■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

muRata

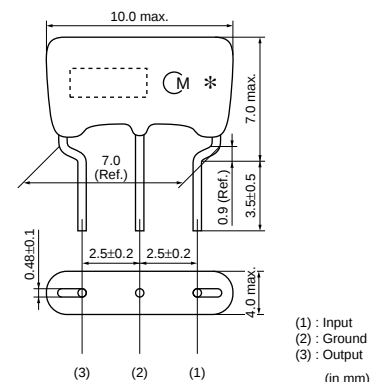
Ceramic Trap 4.5-6.5MHz Standard Lead Type TPSRA Series

As part of the environment protection activity, solder for terminal plating and terminal-element connection inside of ceramic filter TPSRA series contain no lead (Pb).

This series consist of two trap element on one wafer. Suitable for the sound IF trap of CTV/VCR.

■ Features

1. Good performance of attenuation
2. Shape factor can be changed by the value of Inductor "L".
3. Three-terminals type.
4. Low profile (H=7.0mm max.)
5. Lead dimension:
Improved mounting reliability (cut & clinch) due to round terminal.

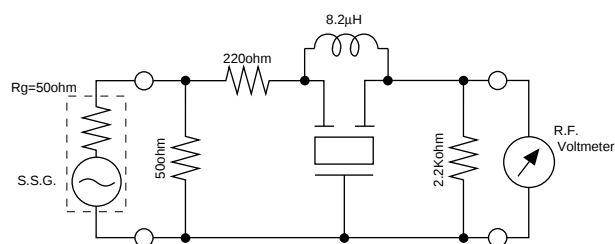


Part Number	Nominal Center Frequency (fn1) (MHz)	Attenuation (at fn1) (dB)	30dB Attenuation BW (fn1) (kHz)
TPSRA4M50B00-B0	4.500	35 min.	50 min.
TPSRA4M50C00-B0	4.500	30 min.	-
TPSRA5M50B00-B0	5.500	35 min.	70 min.
TPSRA5M74B00-B0	5.742	35 min.	70 min.
TPSRA6M00B00-B0	6.000	35 min.	70 min.
TPSRA6M50B00-B0	6.500	35 min.	70 min.

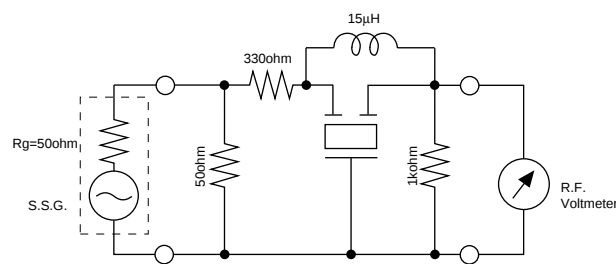
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters. The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Test Circuit

TPSRA4M50B00-B0



TPSRA4M50C00-B0

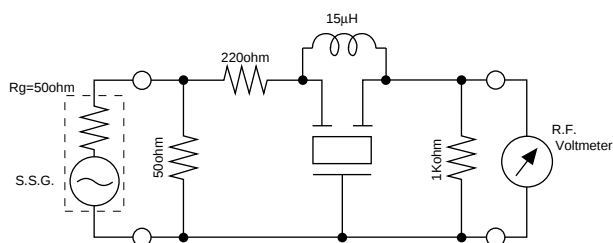


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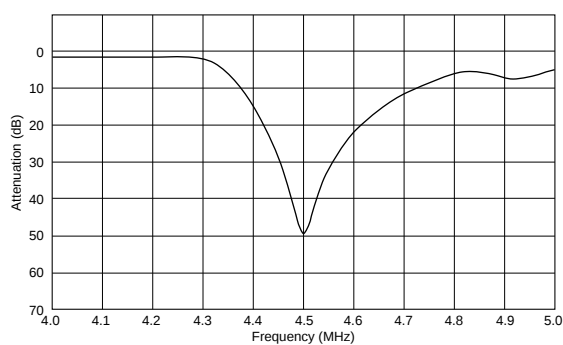
Test Circuit

TPSRA5M50/5M74/6M00/6M50B00-B0

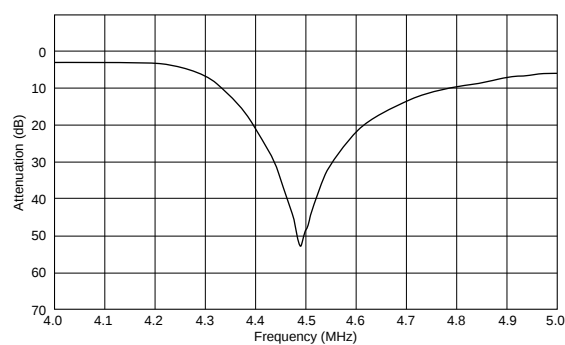


Frequency Characteristics

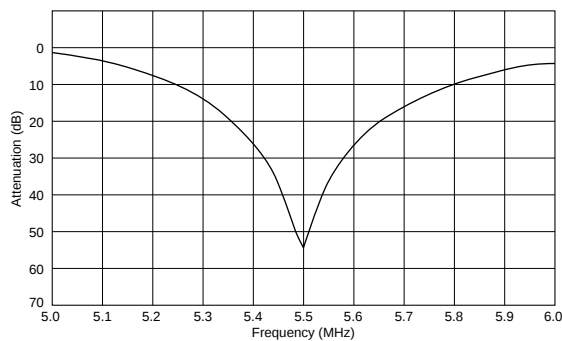
TPSRA4M50B00-B0



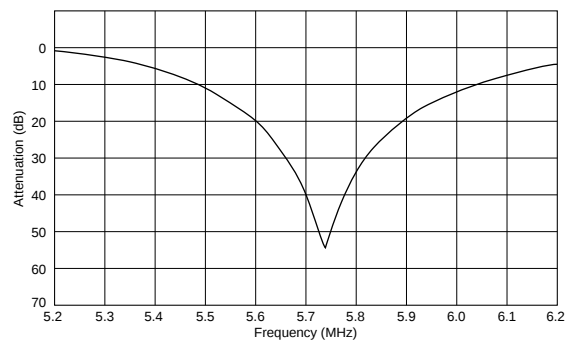
TPSRA4M50C00-B0



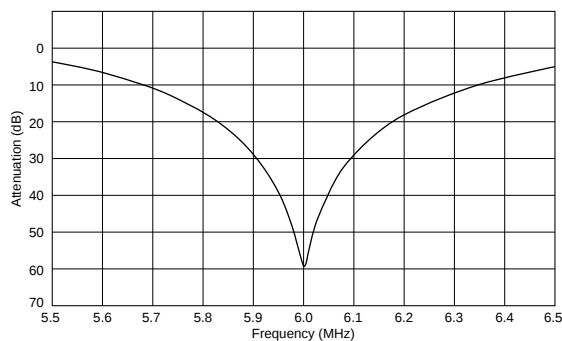
TPSRA5M50B00-B0



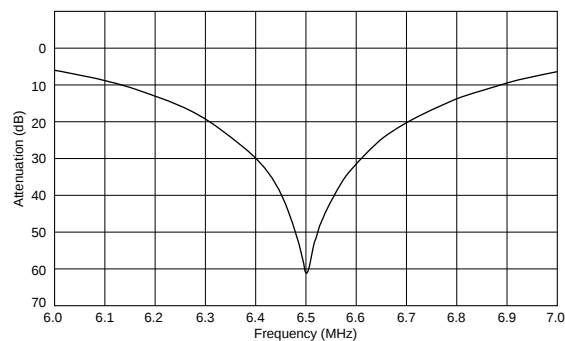
TPSRA5M74B00-B0



TPSRA6M00B00-B0



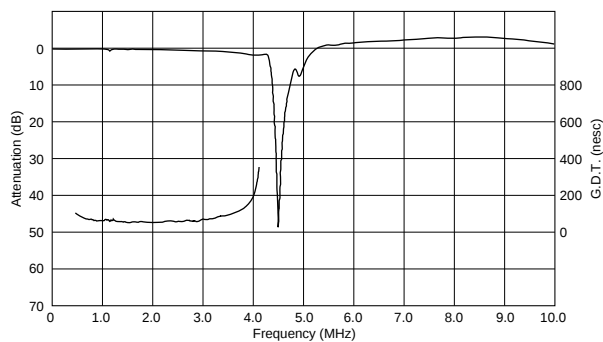
TPSRA6M50B00-B0



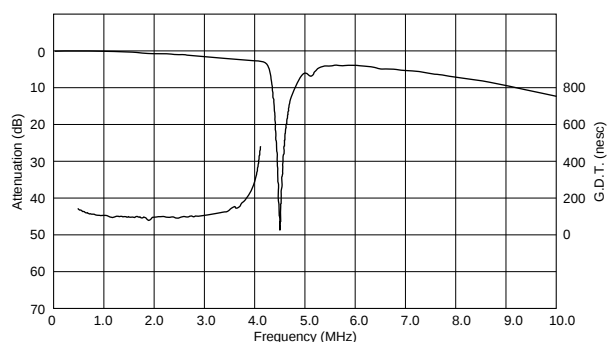
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Frequency Characteristics (Spurious)

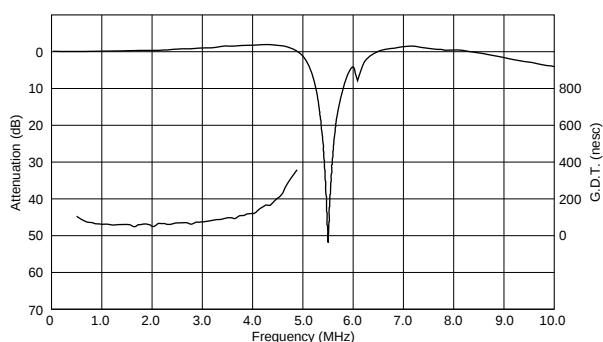
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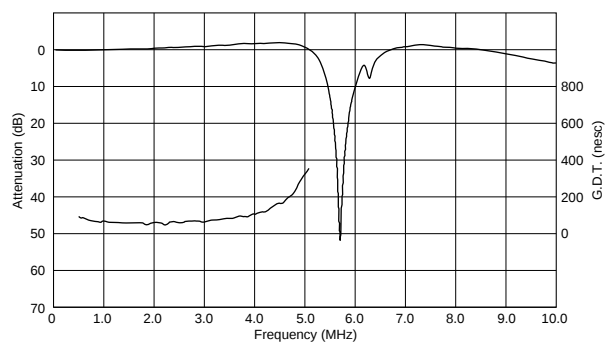
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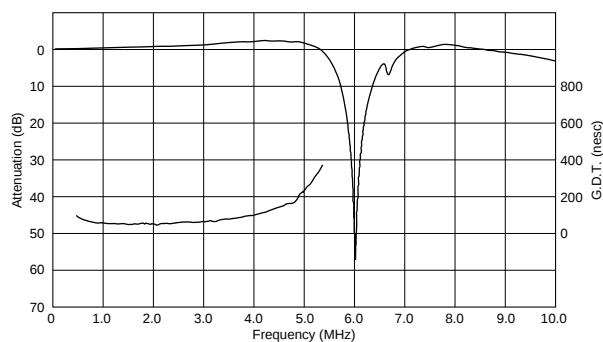
TPSRA5M50B00-B0



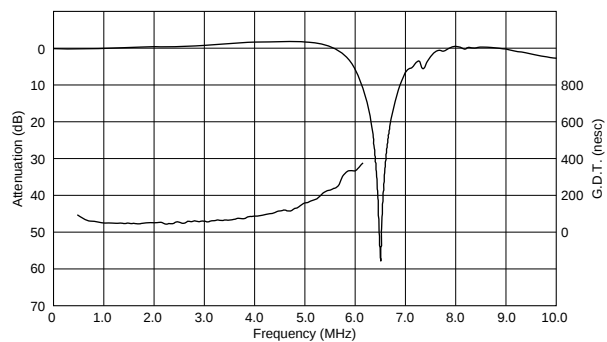
TPSRA5M74B00-B0



TPSRA6M00B00-B0



TPSRA6M50B00-B0



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

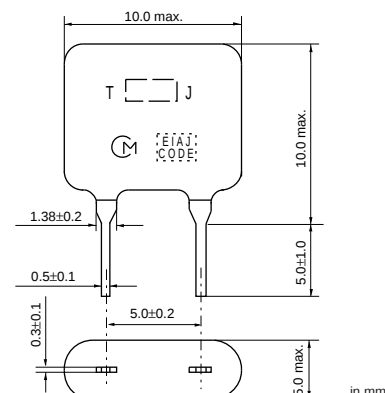
muRata

Ceramic Trap 3.5-6.5MHz Two Lead Type TPSRF_J Series

Ceramic Trap TPSRF_J series are two-terminals type.
Which are recommended for the attenuation of sound IF
in B/W TV and the attenuation of chroma signal in
Video Camcorder.

■ Features

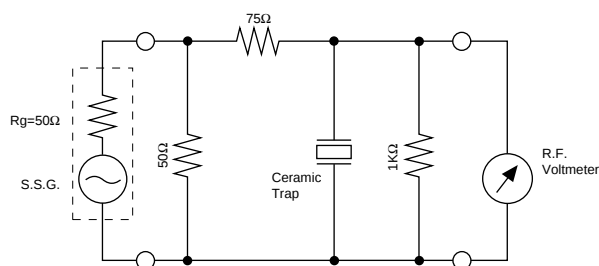
1. Small-size, lightweight
2. High performance, durability
3. Easy to design due to two-terminals type



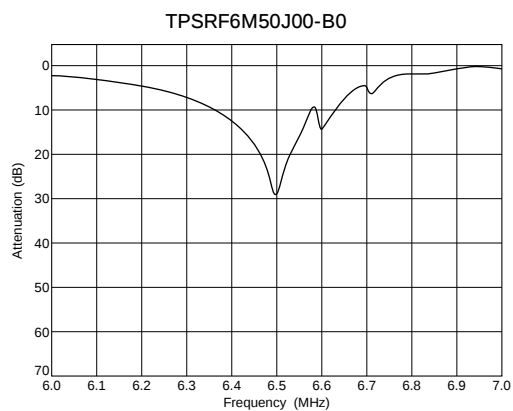
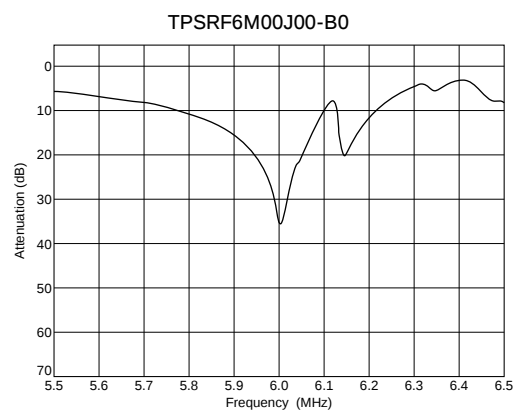
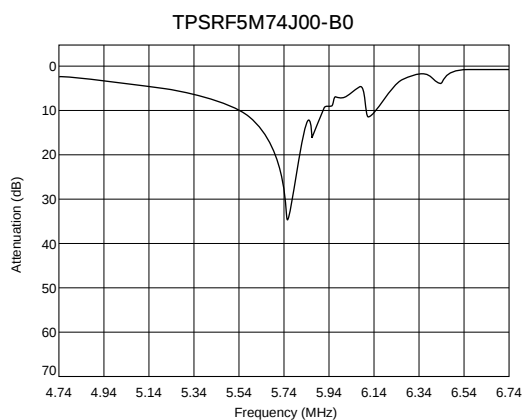
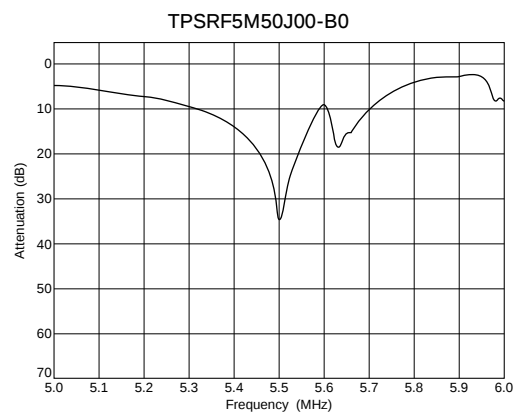
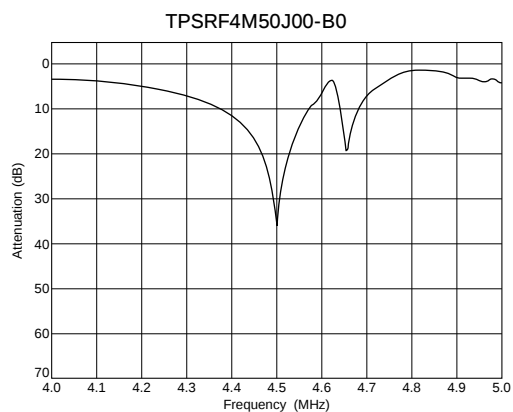
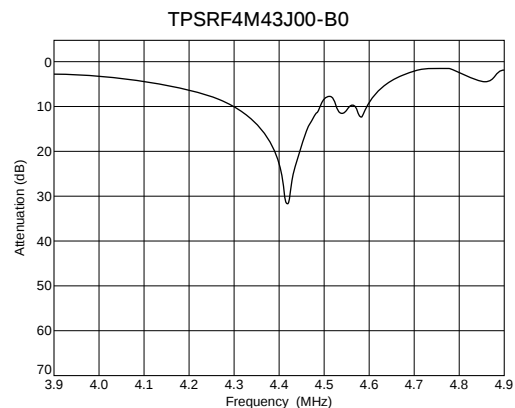
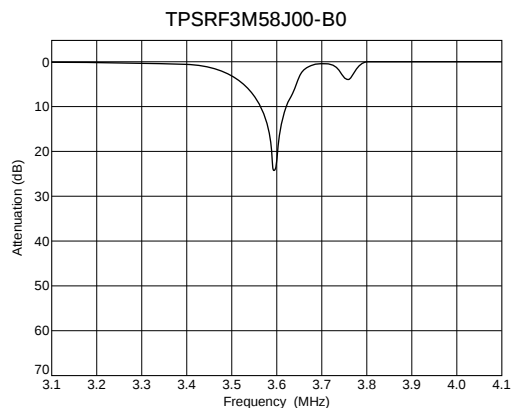
Part Number	Nominal Center Frequency (fn1) (MHz)	Attenuation (at fn1) (dB)	30dB Attenuation BW (fn1) (kHz)
TPSRF3M58J00-B0	3.580	20 min.	20 min.[20dB Att.BW]
TPSRF4M43J00-B0	4.430	20 min.	40 min.[20dB Att.BW]
TPSRF4M50J00-B0	4.500	20 min.	30 min.[20dB Att.BW]
TPSRF5M50J00-B0	5.500	20 min.	30 min.[20dB Att.BW]
TPSRF5M74J00-B0	5.742	20 min.	30 min.[20dB Att.BW]
TPSRF6M00J00-B0	6.000	20 min.	40 min.[20dB Att.BW]
TPSRF6M50J00-B0	6.500	20 min.	40 min.[20dB Att.BW]

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

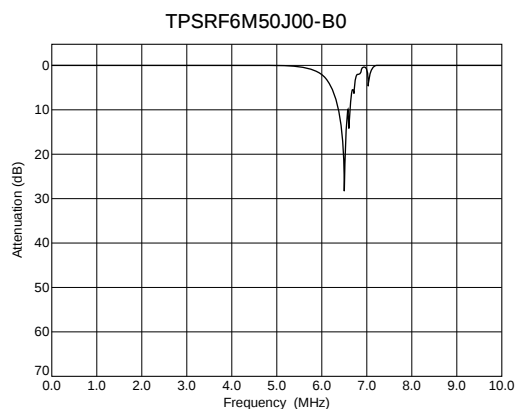
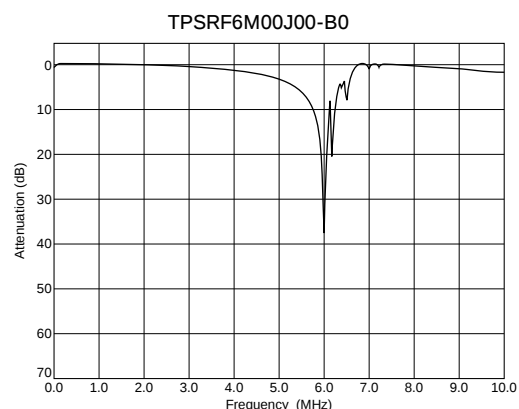
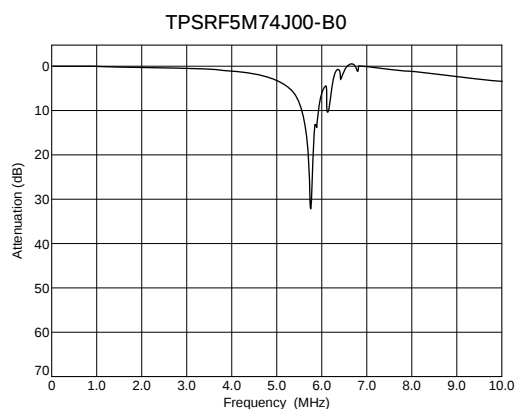
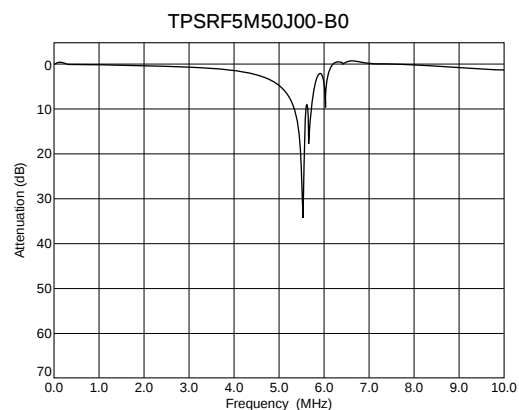
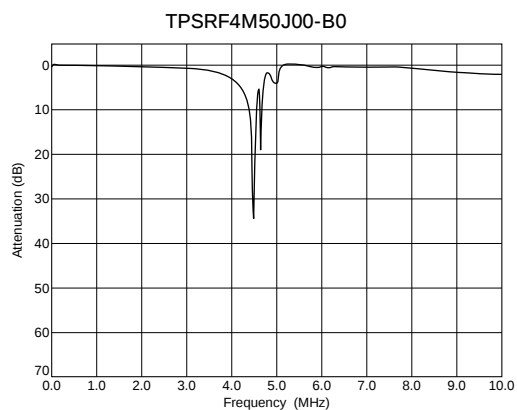
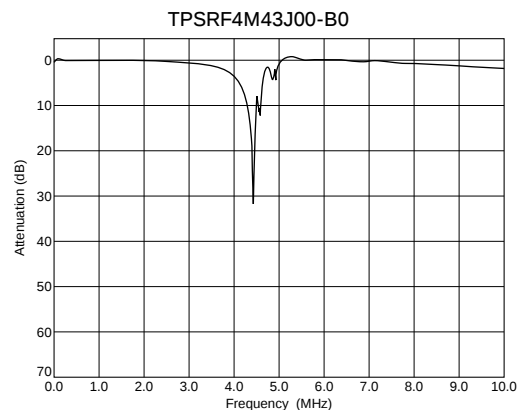
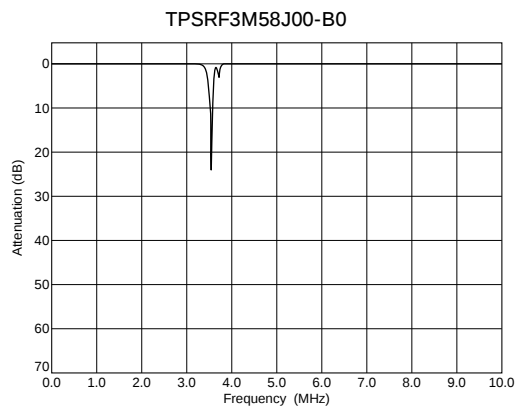
■ Test Circuit



■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

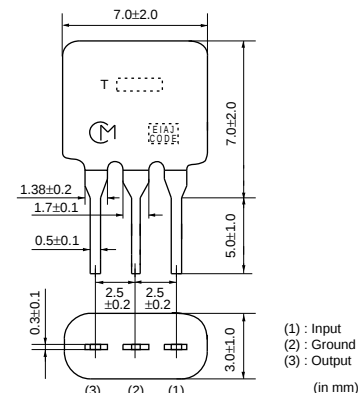
muRata

Ceramic Trap 3.5-6.5MHz for 2ch Sound TV in Germany TPSRF_W Series

Ceramic trap TPSRF_W series has same structure as TPSRF_B series. But they can trap two individual frequencies at one time. Recommended for two channel multi-sound TV systems.

■ Features

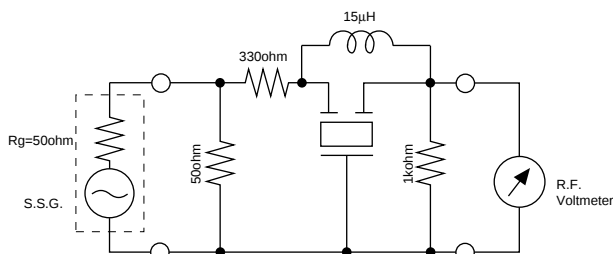
1. Space saving
2. Three-terminals type



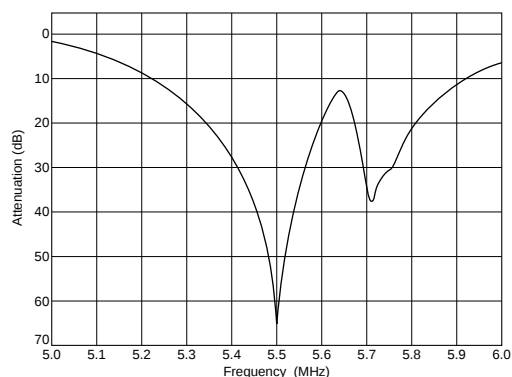
Part Number	Nominal Center Frequency (fn1) (MHz)	Nominal Center Frequency (fn2) (MHz)	Attenuation (at fn1) (dB)	Attenuation (at fn2) (dB)	30dB Attenuation BW (fn1) (kHz)
TPSRF5M50W00-B0	5.500	5.742	32 min.	25 min.	70 min.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters. The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

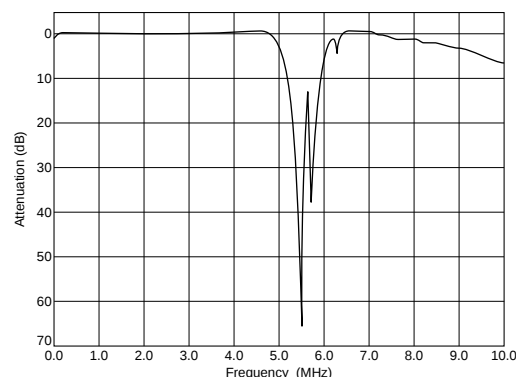
■ Test Circuit



■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



CERAFIL[®] (Filters/Traps/Discriminators) for Audio/Visual Equipment

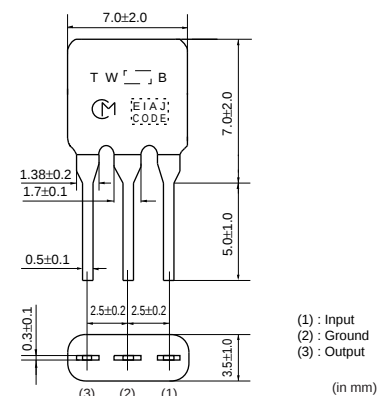
muRata

Ceramic Trap 3.5-6.5MHz Double Traps TPWRF Series

Ceramic trap TPWRF_B series consist of two wafers with two trap frequencies. Recommended for Dual standard sets.

■ Features

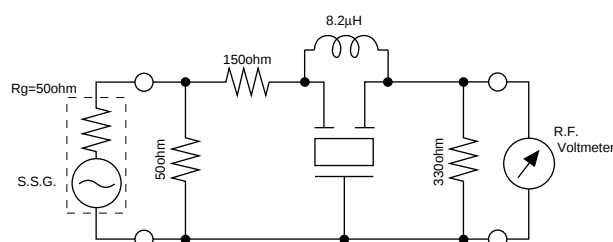
1. Good performance of attenuation
2. Small and thin package
3. Three-terminals type



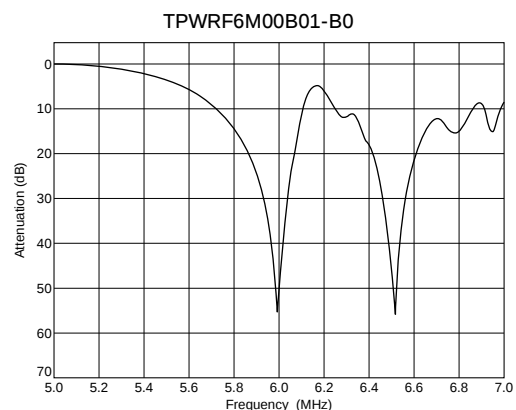
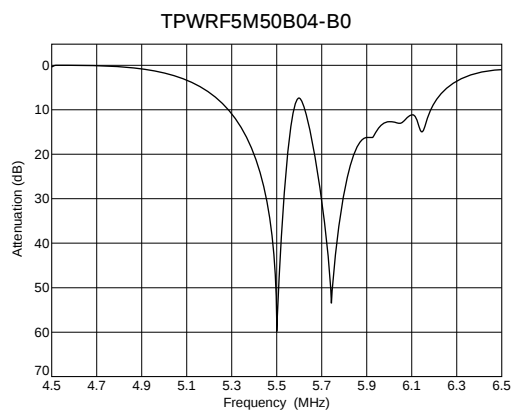
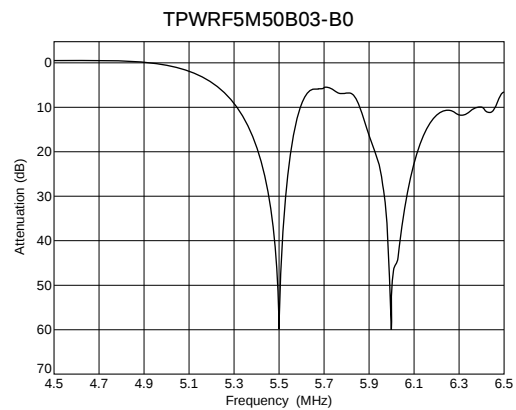
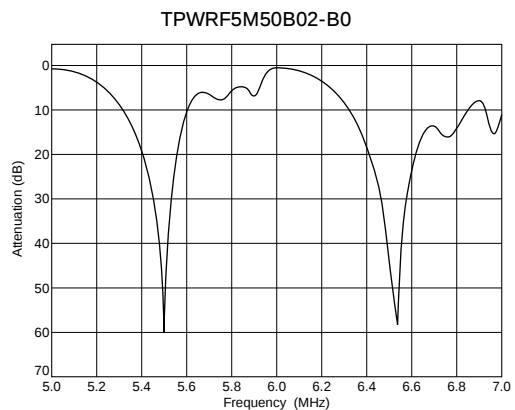
Part Number	Nominal Center Frequency (fn1) (MHz)	Nominal Center Frequency (fn2) (MHz)	Attenuation (at fn1) (dB)	Attenuation (at fn2) (dB)	30dB Attenuation BW (fn1) (kHz)
TPWRF4M50B05-B0	4.500	6.000	30 min.	30 min.	50 min.
TPWRF4M50B06-B0	4.500	4.850	30 min.	30 min.	50 min.
TPWRF4M50B10-B0	4.500	4.724	30 min.	30 min.	50 min.
TPWRF4M50B11-B0	4.500	5.500	30 min.	30 min.	50 min.
TPWRF5M50B02-B0	5.500	6.500	30 min.	30 min.	50 min.
TPWRF5M50B03-B0	5.500	6.000	30 min.	30 min.	50 min.
TPWRF5M50B04-B0	5.500	5.742	30 min.	30 min.	50 min.
TPWRF5M50B07-B0	5.500	5.850	30 min.	30 min.	50 min.
TPWRF6M00B01-B0	6.000	6.500	30 min.	30 min.	70 min.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters. The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

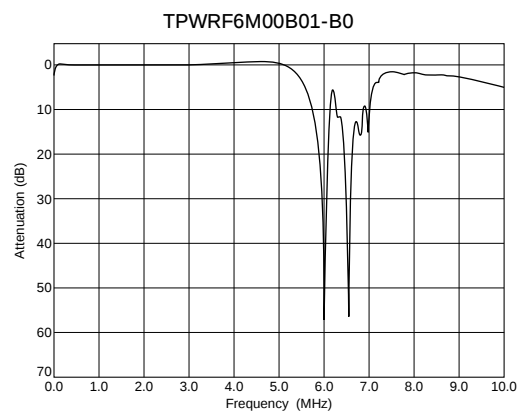
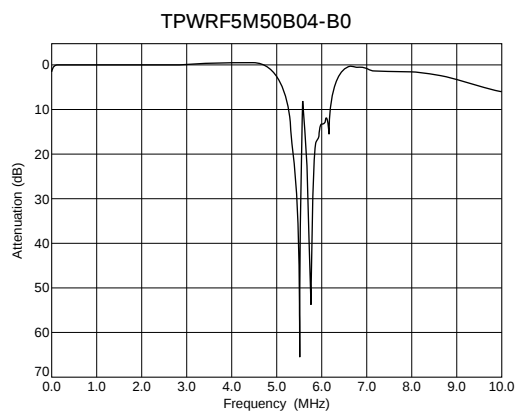
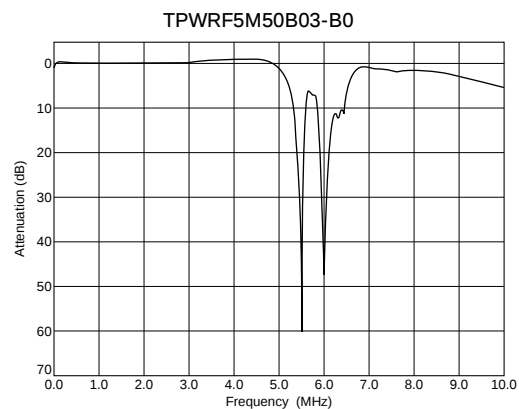
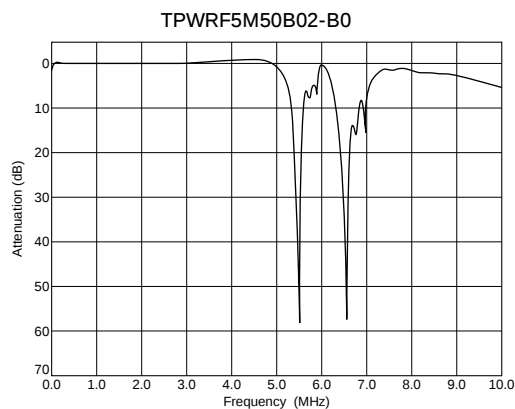
■ Test Circuit



■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

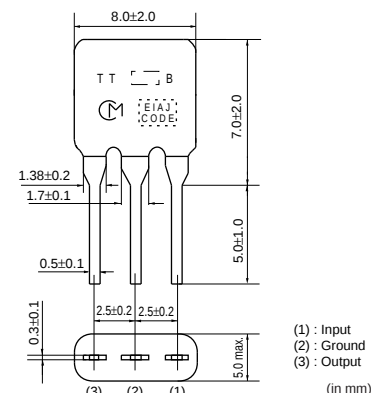


Ceramic Trap 3.5-6.5MHz Triple Traps TPTRF Series

Ceramic trap TPTRF_B series consist of 3 wafers with 3 trap frequencies. Recommended for Multi standard sets.

■ Features

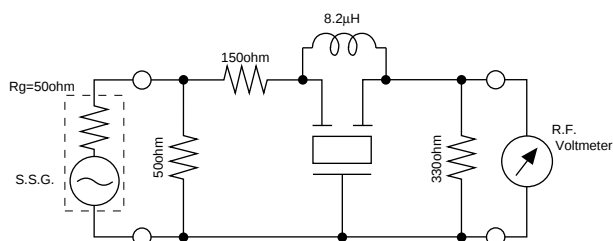
1. Good performance of attenuation
2. Space saving for Multi set
3. Three-terminals type



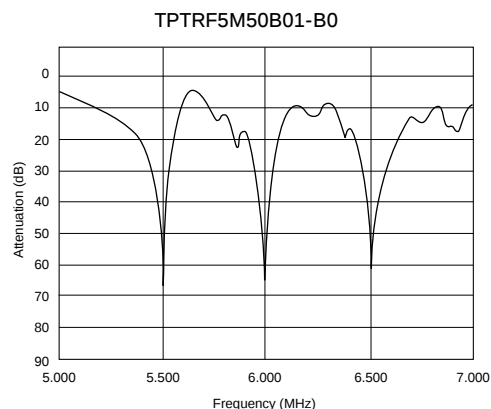
Part Number	Nominal Center Frequency (fn1) (MHz)	Nominal Center Frequency (fn2) (MHz)	Nominal Center Frequency (fn3) (MHz)	Attenuation (at fn1) (dB)	Attenuation (at fn2) (dB)	Attenuation (at fn3) (dB)	30dB Attenuation BW (fn1) (kHz)
TPTRF5M50B01-B0	5.500	6.000	6.500	30 min.	30 min.	30 min.	50 min.
TPTRF5M50B02-B0	5.500	5.742	6.500	30 min.	30 min.	30 min.	50 min.
TPTRF5M50B04-B0	5.500	5.742	6.000	30 min.	30 min.	30 min.	50 min.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

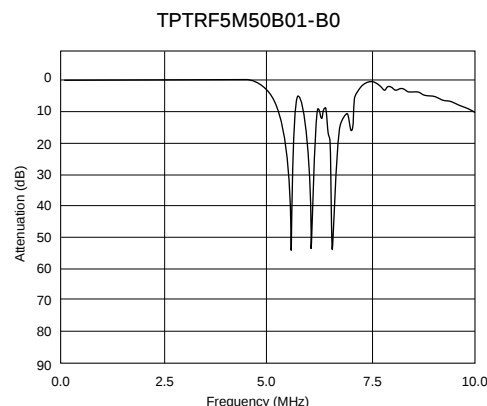
■ Test Circuit



■ Frequency Characteristics



■ Frequency Characteristics (Spurious)



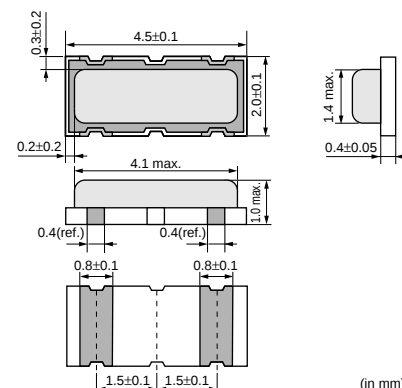
CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

muRata

Ceramic Discriminator 10.7MHz Ultra Thin Chip Type CDSCB Series

CDSCB10M7 series forms a resonator on a piezoelectric ceramic substrate. In combination with ICs, this type obtains stable demodulation characteristics in a wide bandwidth.

They have 1.0mm max. thickness and small mounting area (4.5x2.0mm).



■ Features

1. Compact and high reliability and recommended for automotive applications.
2. Can be combined with various ICs. The IC is determined by the last number in the part number.
3. Stable demodulation characteristics can be obtained without adjustment.
4. Stable temperature characteristics
5. Recommended for Pb free soldering

Part Number	Center Frequency (fo) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output (mV)	Distortion (%)	IC
CDSCB10M7GA105A-R0	10.700 ±30kHz	220 min.	110 min.	1.5 max.	TEA5757HL
CDSCB10M7GA113-R0	10.700 ±30kHz	300 min.	110 min.	1.0 max.	TA2154FN
CDSCB10M7GA119-R0	10.700 ±30kHz	500 min.	75 min.	1.0 max.	TRF6901
CDSCB10M7GA121-R0	10.700 ±30kHz	390 min.	80 min.	1.0 max.	LV23100V
CDSCB10M7GF072-R0	10.700 (fn)	fn±150 min.	130 min.	2.0 max.	TA31161
CDSCB10M7GF109-R0	10.700 (fn)	fn±100 min.	170 min.	3.0 max.	TK14588V

(fn) means nominal center frequency (10.700MHz).

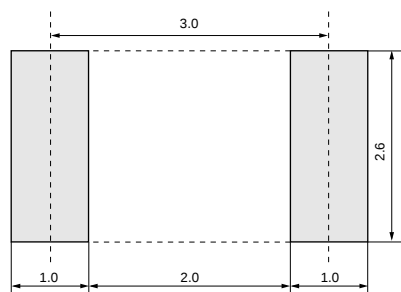
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

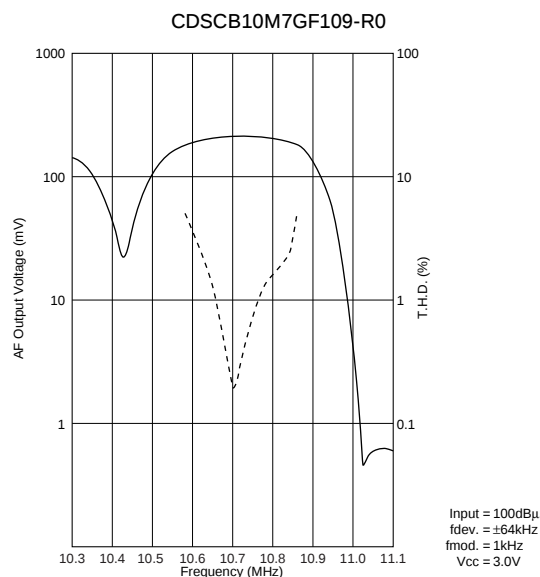
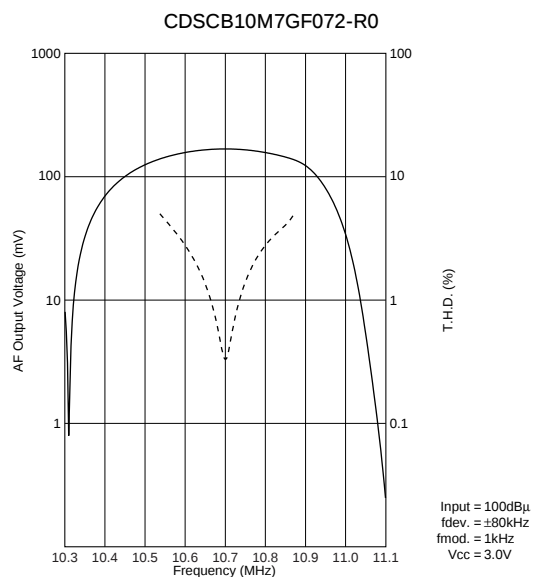
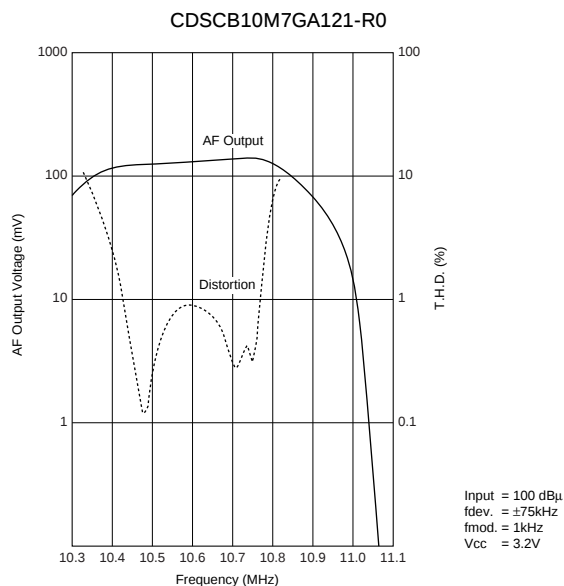
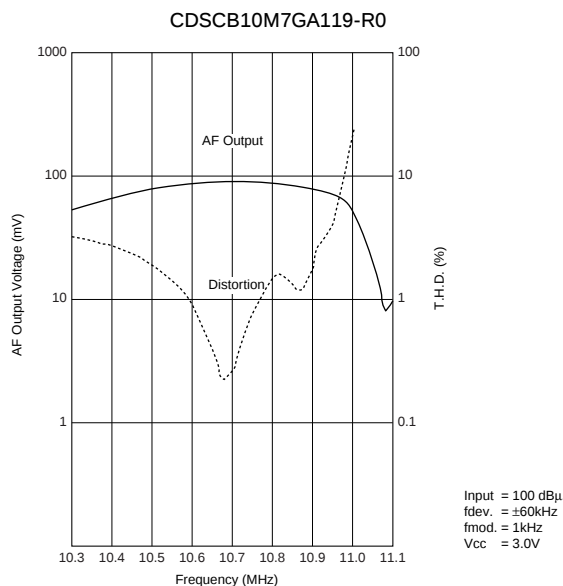
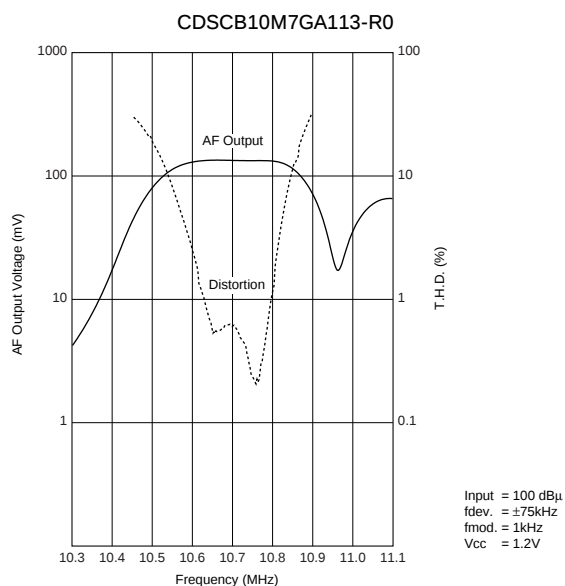
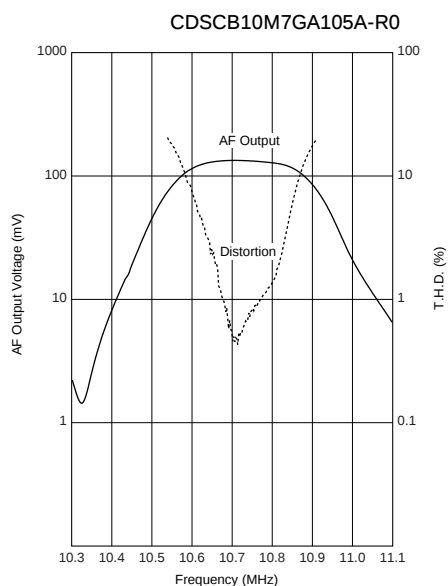
CODE	30kHz Step	25kHz Step
D	10.64MHz±30kHz	10.650MHz±25kHz
B	10.67MHz±30kHz	10.675MHz±25kHz
A	10.70MHz±30kHz	10.700MHz±25kHz
C	10.73MHz±30kHz	10.725MHz±25kHz
E	10.76MHz±30kHz	10.750MHz±25kHz
Z	Combination A, B, C, D, E	
M	Combination A, B, C	

■ Standard Land Pattern Dimensions



(in mm)

■ Frequency Characteristics



CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

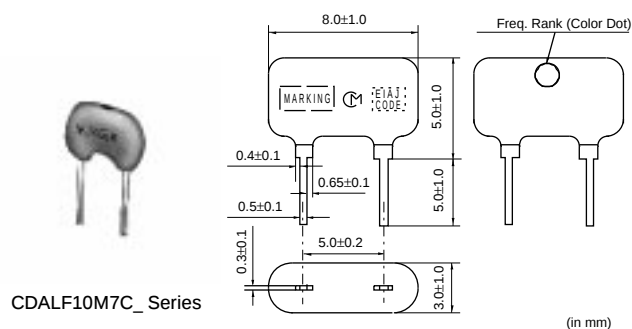
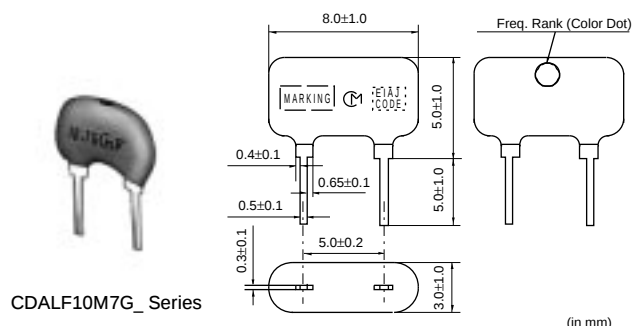
muRata

Ceramic Discriminator 10.7MHz Standard Lead Type CDALF Series

CDALF10M7 series forms a resonator on a piezoelectric ceramic substrate. In combination with ICs, this type obtains stable demodulation characteristics in wide bandwidths.

■ Features

1. Compact and excellent mechanical strength
2. Can be combined with various ICs. The IC is determined by the last number in the part number.
3. Stable demodulation characteristics can be obtained without adjustment.
4. Stable temperature characteristics
5. We recommend combination: ceramic discriminator CDALF10M7 series and "CERAFIL" SFELF10M7 Series of the same frequency rank.



Part Number	Center Frequency (fo) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output (mV)	Distortion (%)	IC
CDALF10M7GA016-B0	10.700 ±30kHz	300 min.	within 60 to 90mV	0.9 max.	TA8122F
CDALF10M7GA018-B0	10.700 ±30kHz	300 min.	within 60 to 90mV	0.9 max.	TA8132N
CDALF10M7GA046-B0	10.700 ±30kHz	330 min.	280 min.	1.0 max.	LA1832
CDALF10M7GA048-B0	10.700 ±30kHz	400 min.	700 min.	1.0 max.	LA1835
CDALF10M7GA092-B0	10.700 ±30kHz	300 min.	60 min.	1.0 max.	TA2132P
CDALF10M7CA005A-B0	10.700 ±30kHz	100 min.	600 min.	6.0 max.	LA7770
CDALF10M7CA040-B0	10.700 ±30kHz	130 min.	40 min.	0.7 max.	TEA5710

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

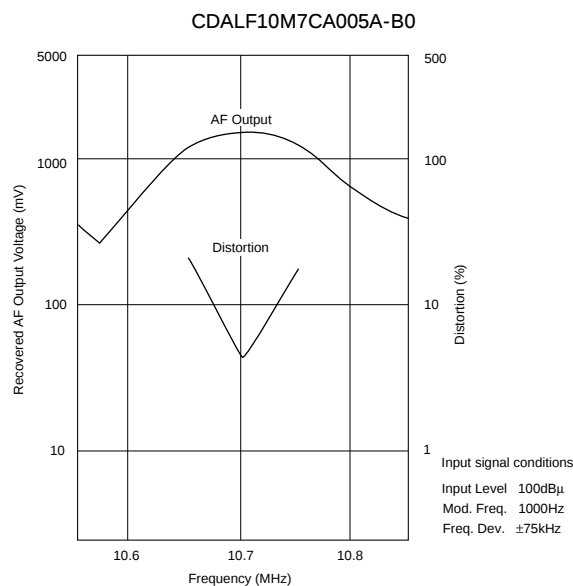
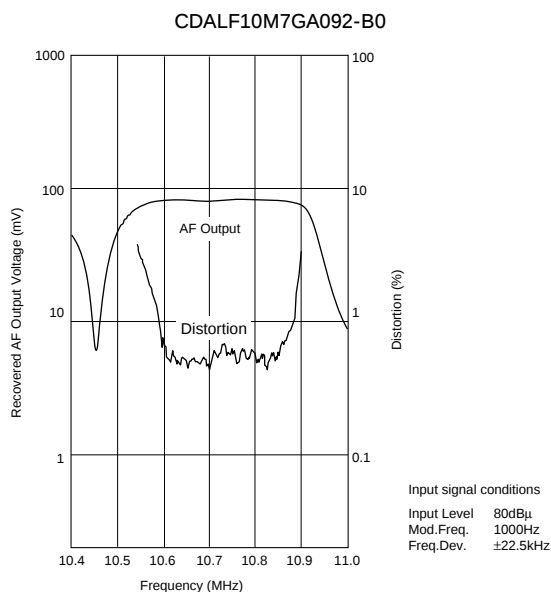
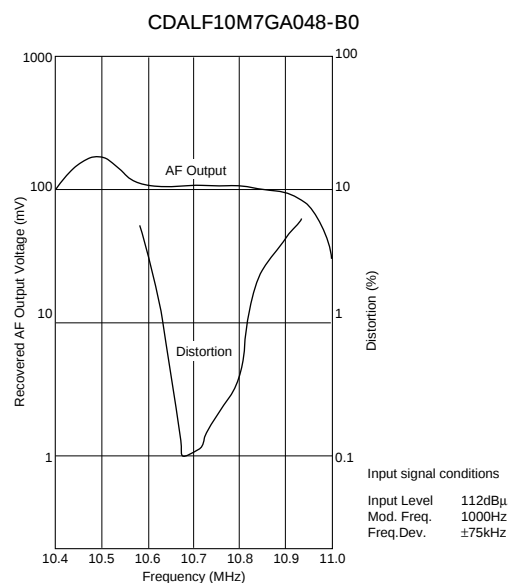
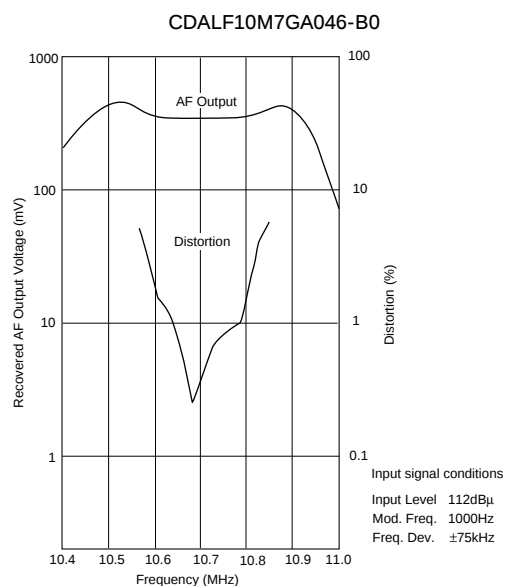
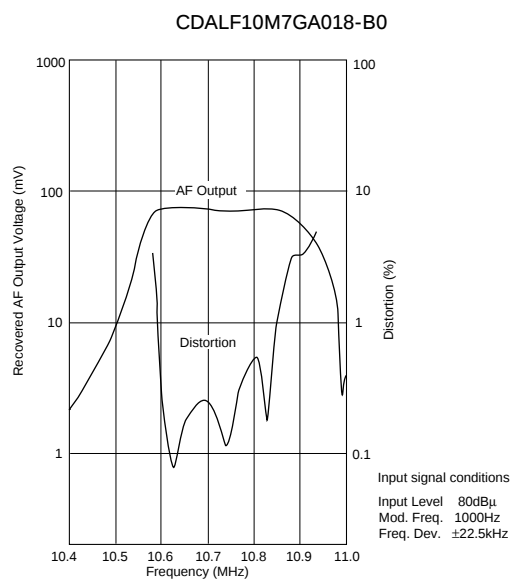
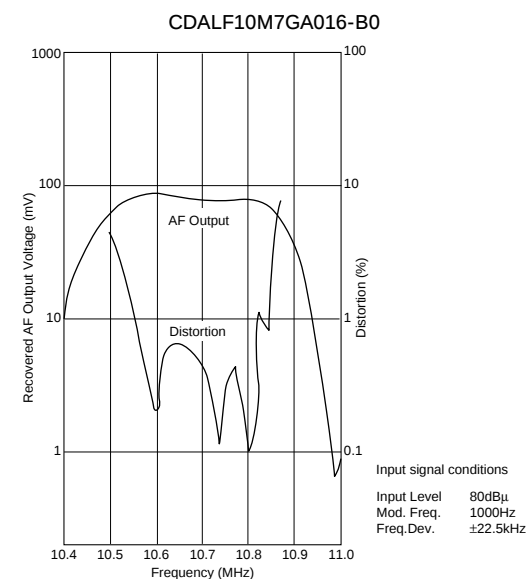
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

CDALF10M7GA018-B0: Color dot is different from standard series.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A, B, C, D, E		
M	Combination A, B, C		

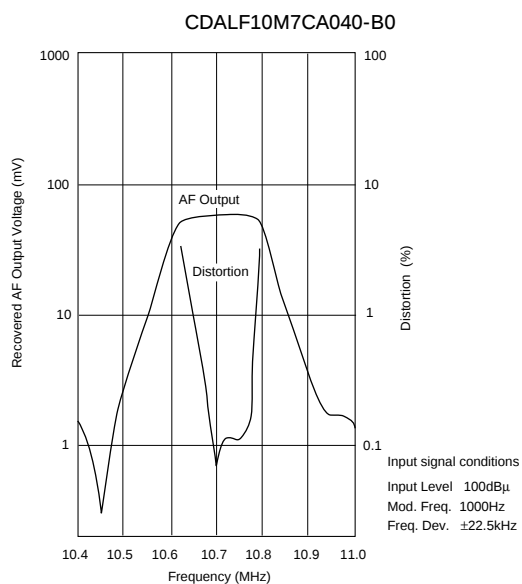
■ Frequency Characteristics



Continued on the following page.

Continued from the preceding page.

Frequency Characteristics



Ceramic Discriminator 10.7MHz Applied IC Reference Table

Please see following table for reference applied IC.

If you can not find IC part number seeking, please contact our sales representative.

ex. : CDALF10M7GA016-B0

Suffix Number

CDSCB10M7GA105A-R0

Suffix Number

IC Manufacturer	IC Part Number	Suffix Number
ATMEL	U2501B	028
	U2765B	095
	U4313B	081
	U4490B	034V
	U829B	025
INFINEON	TDA1576T	051
	TDA6160X	038
	TDA6160-2X	044
MATSUSHITA	AN6138SH	097
	AN7004	011
	AN7006S	014A
	AN7007SU	013
	AN7232	053
MOTOROLA	MC13156	049
	MC13158	073
	MC13173	052
	MC3363	087
NEC	μPC1391M	056
PHILIPS	NE604	020
	SA605	042
	SA626	047
	SA636DK	096
	SA639	085
	TBA120U	029
	TBA229-2	021A
	TDA1596T	120
	TDA2557	024
	TEA5591	017
	TEA5592	030
	TEA5594	035
	TEA5710	040
	TEA5712T	055
	TEA5757HL	105A
	TEA5762 / 5757	061
	UAA3220TS	098
RFMD	RF2905	111
	RF2925	104
ROHM	BA1440	019
	BA1448	060
	BA4110	066
	BA4220	041
	BA4230AF	005
	BA4234L	004
	BA4240L	067

IC Manufacturer	IC Part Number	Suffix Number
SAMSUNG	KA22425	089
	KA2244	059
	KA22901	090
	KA2292	063
	KA2295	064
	KA2297	091
	KA2298B	065
	KB22902	103
	S1A0903	118A
SANYO	LA1150	070
	LA1225M	108A
	LA1260	007
	LA1805	026
	LA1810	022
	LA1814M	115
	LA1816	015
	LA1822	094
	LA1823	101
	LA1827M	083
	LA1830	037
	LA1831	043
	LA1832 / M	046
	LA1833	086
	LA1835 / M	048
	LA1838 / M	079
	LA7770	023
SONY	LV23000M	114
	LV23100V	121
	CX1691M	078
	CX-20029	001
	CX-20076	002
	CXA1030P	012
	CXA1111	093
	CXA1238	027
	CXA1238N	027N
	CX1343M	032
	CXA1376AM	054
	CXA1538M / N / S	069
	CXA1611	075
	CXA1619B	117
	CXA1991N	068
	CX3067M	076
T. I.	TRF6901	119

Continued on the following page. 

Ceramic Discriminator 10.7MHz Applied IC Reference Table

Continued from the preceding page.

IC Manufacturer	IC Part Number	Suffix Number
TOKO	TK14570L	122
	TK14581	062
	TK14583V	112
	TK14588V	109
TOSHIBA	TA2003	031
	TA2007	033
	TA2008A / AN	045
	TA2022	050
	TA2029	036
	TA2046	058
	TA2057	057
	TA2099N	082
	TA2104AFN	080
	TA2104F	080A
	TA2111N / F / FN	077
	TA2132	092
	TA2132BP	092D
	TA2142FN	102
	TA2149AN	100A
	TA2149N	100
	TA2154FN	113
	TA2159F	116
	TA31161	072
	TA31275FN	123
	TA7130P	009
	TA7303P	008
	TA7640AP	006
	TA7765AF	071
	TA8122AN / AF	016
	TA8132AN / AF	018
	TA8186	039
	TA8721ASN	088
	TB2132FN	128

CERAFIL® (Filters/Traps/Discriminators) for Audio/Visual Equipment

muRata

Ceramic Discriminator 3.5-6.5MHz Wide Bandwidth Type CDSRF Series

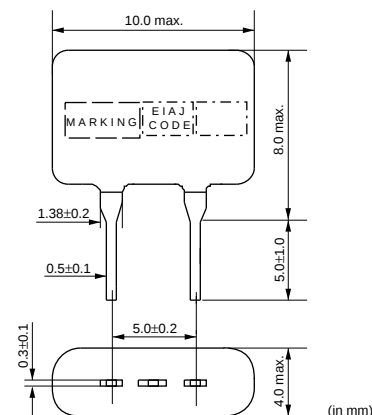
Ceramic discriminator CDSRF series is a wide band, low profile type using thickness shear mode vibration.

■ Features

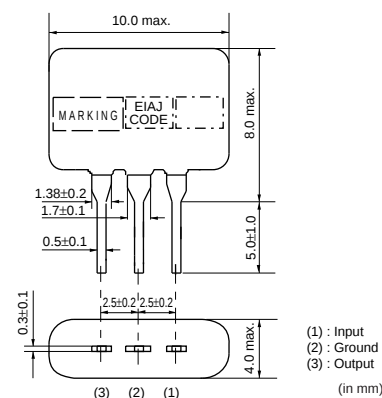
1. Low profile 8.0mm type
2. Suitable for Multi-sound Broadcasting system
3. Two-terminals type and three-terminals type are available.



CDSRF_EK Series



CDSRF_CK Series



Part Number	Nominal Center Frequency (fn) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output Voltage (at fn) (mV)	Distortion (%)	IC
CDSRF4M50EK020-B0	4.500	fn±80 min.	245 min.	1.0 max.	LA7550/7555
CDSRF4M50EK023-B0	4.500	fn±60 min.	230 min.	2.5 max.	M51496P
CDSRF4M50EK035-B0	4.500	fn±55 min.	240 min.	1.0 max.	LA7680/7681
CDSRF4M50EK049-B0	4.500	fn±100 min.	220 min.	1.0 max.	LA7577
CDSRF4M50EK060-B0	4.500	fn±90 min.	90 min.	1.0 max.	M52318SP
CDSRF4M50EK069-B0	4.500	fn±60 min.	320 min.	1.5 max.	TA8701N
CDSRF4M50EK070-B0	4.500	fn±50 min.	65 min.	1.5 max.	M52007FP
CDSRF5M50EK023-B0	5.500	fn±45 min.	220 min.	1.0 max.	M51496P
CDSRF5M50EK035-B0	5.500	fn±80 min.	350 min.	1.0 max.	LA7680/7681
CDSRF5M50EK049-B0	5.500	fn±60 min.	500 min.	1.0 max.	LA7577
CDSRF5M50EK054-B0	5.500	fn±100 min.	300 min.	1.2 max.	TDA3857
CDSRF5M50EK060-B0	5.500	fn±70 min.	190 min.	1.5 max.	M52318SP
CDSRF5M74EK054-B0	5.742	fn±90 min.	340 min.	1.2 max.	TDA3857
CDSRF6M00EK049-B0	6.000	fn±60 min.	500 min.	1.0 max.	LA7577
CDSRF6M00EK054-B0	6.000	fn±90 min.	340 min.	1.5 max.	TDA3857
CDSRF6M00EK060-B0	6.000	fn±60 min.	180 min.	2.5 max.	M52318SP
CDSRF6M50EK020-B0	6.500	fn±110 min.	350 min.	1.2 max.	LA7550/7555
CDSRF6M50EK049-B0	6.500	fn±60 min.	500 min.	1.0 max.	LA7577
CDSRF6M50EK054-B0	6.500	fn±90 min.	340 min.	1.5 max.	TDA3857
CDSRF6M50EK060-B0	6.500	fn±60 min.	160 min.	2.5 max.	M52318SP
CDSRF4M50CK020-B0	4.500	fn±50 min.	280 min.	2.0 max.	μPC1382C
CDSRF4M50CK026-B0	4.500	fn±40 min.	70 min.	1.2 max.	LA7530
CDSRF4M50CK029-B0	4.500	fn±65 min.	250 min.	1.2 max.	M51365SP
CDSRF4M50CK030-B0	4.500	fn±40 min.	within130 +30/-20mV	3.0 max.	M51348FP

Continued on the following page.

muRata

Continued from the preceding page.

Part Number	Nominal Center Frequency (fn) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output Voltage (at fn) (mV)	Distortion (%)	IC
CDSRF5M50CK026-B0	5.500	fn±50 min.	500 min.	3.0 max.	LA7530
CDSRF5M50CK029-B0	5.500	fn±70 min.	420 min.	1.5 max.	M51365SP
CDSRF5M50CK030-B0	5.500	fn±55 min.	150 min.	3.0 max.	M51348FP
CDSRF6M00CK026-B0	6.000	fn±50 min.	400 min.	3.0 max.	LA7530
CDSRF6M00CK029-B0	6.000	fn±70 min.	450 min.	1.7 max.	M51365SP
CDSRF6M00CK030-B0	6.000	fn±55 min.	150 min.	3.0 max.	M51348FP
CDSRF6M50CK020-B0	6.500	fn±60 min.	480 min.	2.0 max.	μPC1382C
CDSRF6M50CK026-B0	6.500	fn±35 min.	400 min.	3.0 max.	LA7530
CDSRF6M50CK029-B0	6.500	fn±70 min.	430 min.	2.0 max.	M51365SP

Characteristics shown above is as of 100% Dev.

Part Numbers are varied with applied IC.

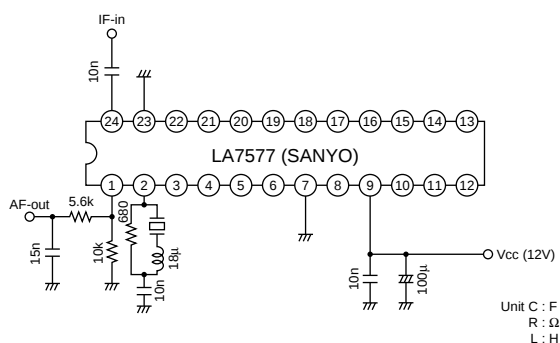
Please note circuits and specifications are also varied with IC.

For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

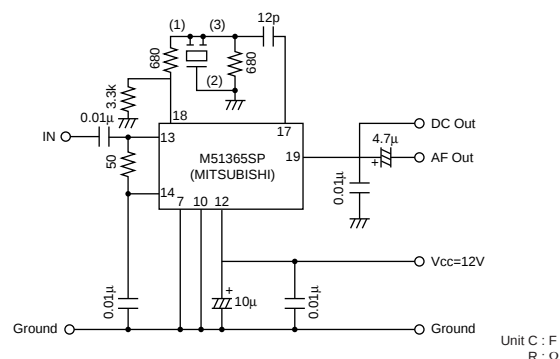
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

Test Circuit

CDSRF4M50EK049-B0

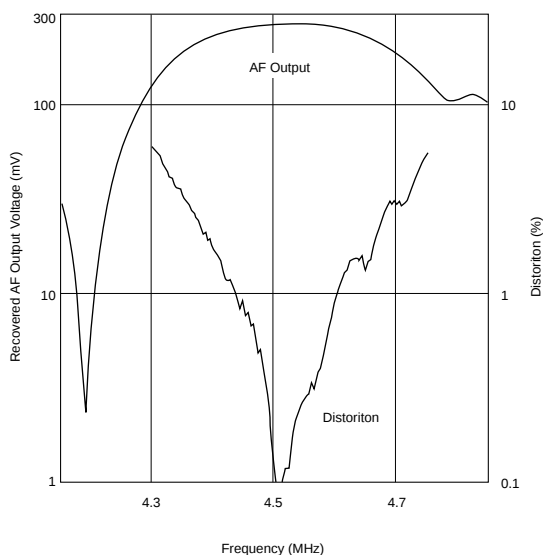


CDSRF4M50CK029-B0

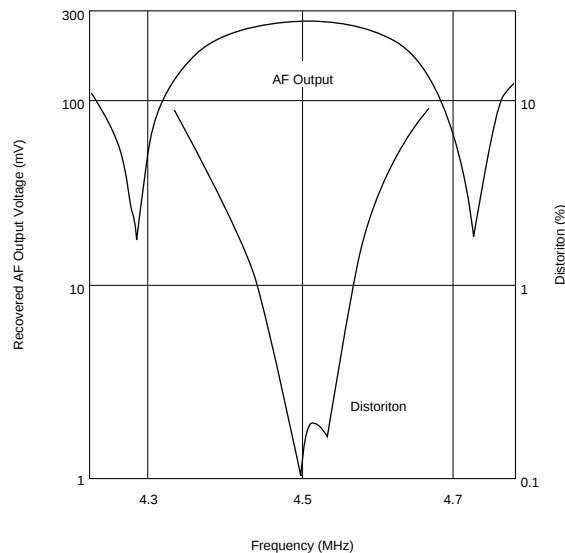


Frequency Characteristics

CDSRF4M50EK049-B0



CDSRF4M50CK029-B0



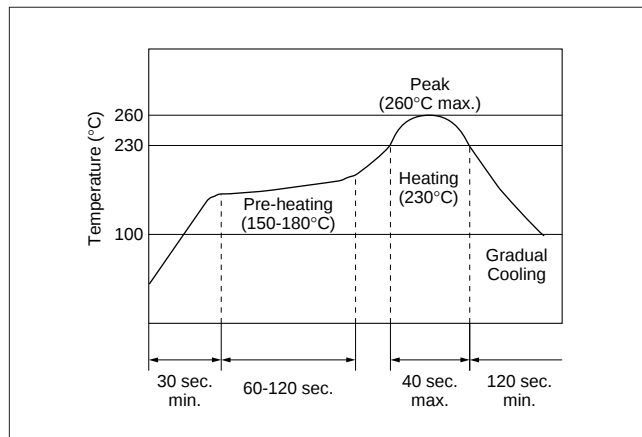
Notice (Soldering and Mounting)

■ CERAFIL® 10.7MHz Chip Type SFECF Series

1. Standard Reflow Soldering Conditions

(1) Reflow

Filter is soldered twice within the following temperature conditions.



(2) Soldering Iron

Filter is soldered at $+350 \pm 5^\circ\text{C}$ for 3.0 ± 0.5 seconds. The soldering iron should not touch the filter while soldering.

2. Wash

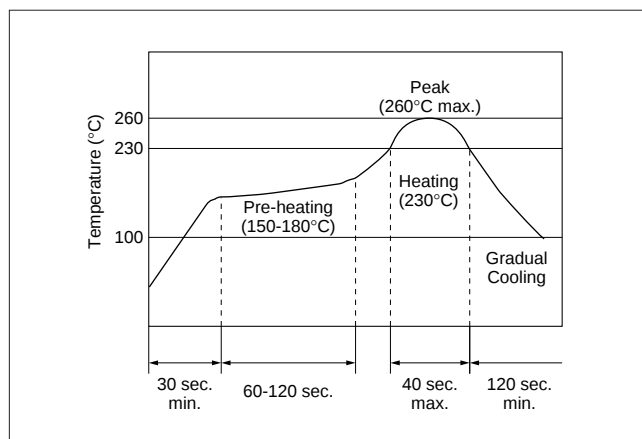
The component cannot withstand washing.

■ CERAFIL® 10.7MHz Chip Type SFECD Series

1. Standard Reflow Soldering Conditions

(1) Reflow

Filter is soldered twice within the following temperature conditions.



(2) Soldering Iron

Filter is soldered at $+350 \pm 5^\circ\text{C}$ for 3.0 ± 0.5 seconds. The soldering iron should not touch the filter while soldering.

2. Wash

The component cannot withstand washing.

Continued on the following page.

Notice (Soldering and Mounting)

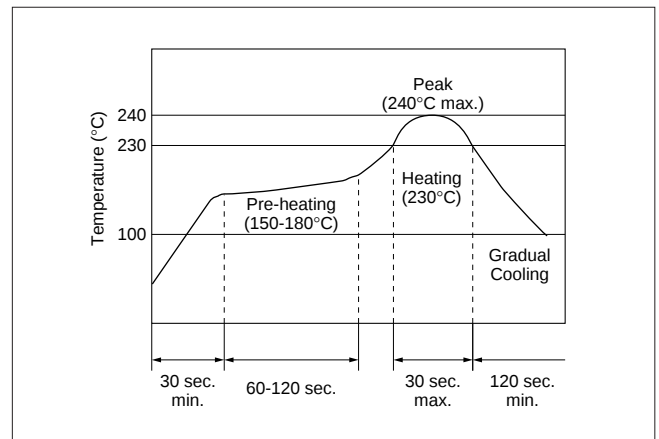
Continued from the preceding page.

■ CERAFIL® 10.7MHz Chip Type SFECV Series

1. Standard Reflow Soldering Conditions

(1) Reflow

Filter is soldered twice within the following temperature conditions.



(2) Soldering Iron

Filter is soldered at $+350 \pm 5^\circ\text{C}$ for 3.0 ± 0.5 seconds. The soldering iron should not touch the filter while soldering.

2. Wash

The component cannot withstand washing.

■ CERAFIL® 10.7MHz Lead Type

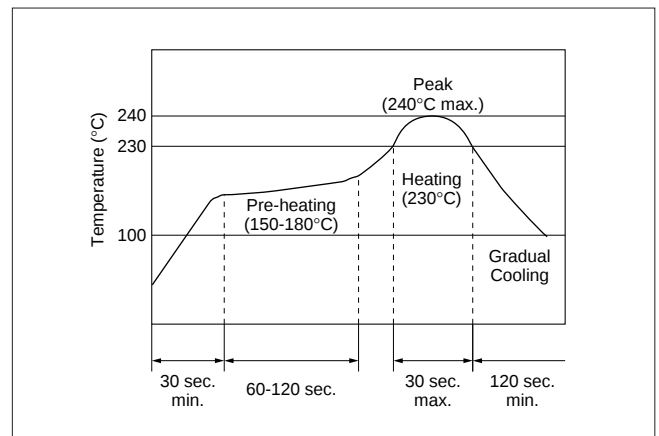
The component cannot withstand washing.

■ CERAFIL® 4.5-6.5MHz Chip Type

1. Standard Reflow Soldering Conditions

(1) Reflow

Filter is soldered twice within the following temperature conditions.



(2) Soldering Iron

Filter is soldered at $+350 \pm 5^\circ\text{C}$ for 3.0 ± 0.5 seconds. The soldering iron should not touch the filter while soldering.

2. Wash

The component cannot withstand washing.

■ CERAFIL® 3.5-6.5MHz Lead Type

The component cannot withstand washing.

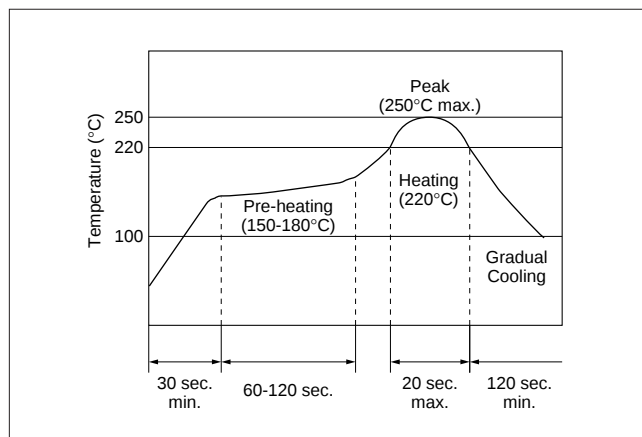
Notice (Soldering and Mounting)

■ CERAFIL® 455kHz Chip Type PFWCC Series

1. Standard Reflow Soldering Conditions

(1) Reflow

Filter is soldered twice within the following temperature conditions.



(2) Soldering Iron

Filter is soldered at $+350 \pm 5^{\circ}\text{C}$ for 3.0 ± 0.5 seconds. The soldering iron should not touch the filter while soldering.

2. Wash

The component cannot withstand washing.

Continued on the following page.

Notice (Soldering and Mounting)

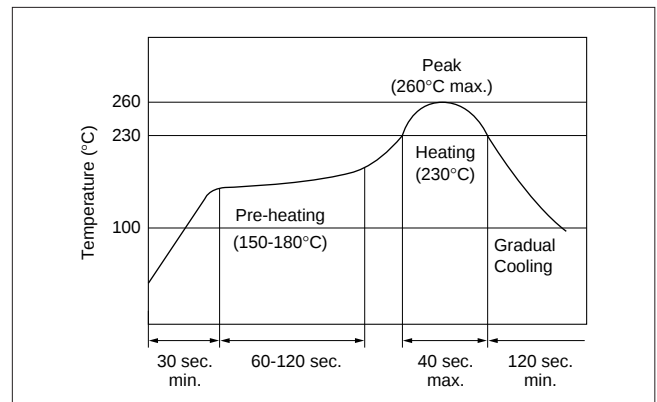
Continued from the preceding page.

■ CERAFIL® 455kHz Chip Type SFPKA Series

1. Standard Reflow Soldering Conditions

(1) Reflow

Filter is soldered twice within the following temperature conditions.



(2) Soldering Iron

Electrode is soldered directly with the tip of soldering iron at $+350 \pm 5^\circ\text{C}$ for 3.0 ± 0.5 seconds.

2. Wash

(1) Cleaning Solvent

CFC alternatives (HCFC Series), Isopropyl Alcohol (IPA), Water (Demineralized Water), Cleaning Water Solution (Cleanthrough-750H, Pine Alpha 100S), Silicon (Technocare FRW)

(2) Cleaning Conditions

- Immersion Wash
2 minutes max. in above solvent at $+60^\circ\text{C}$ max.
- Shower or Rinse Wash
2 minutes max. in above solvent at $+60^\circ\text{C}$ max.

(3) Notice

- When components are immersed in solvent, be sure to maintain the temperature of components below the temperature of solvent.
- Please do not use ultrasonic cleaning.
- Total washing time should be within 4 minutes.
- Please ensure the component is thoroughly evaluated in your application circuit.
- Please do not use chlorine, petroleum and alkaline cleaning solvents.
- If you plan to use any other type of solvents, please consult with Murata or Murata representative prior to using.

■ CERAFIL® 455kHz Lead Type

The component cannot withstand washing.

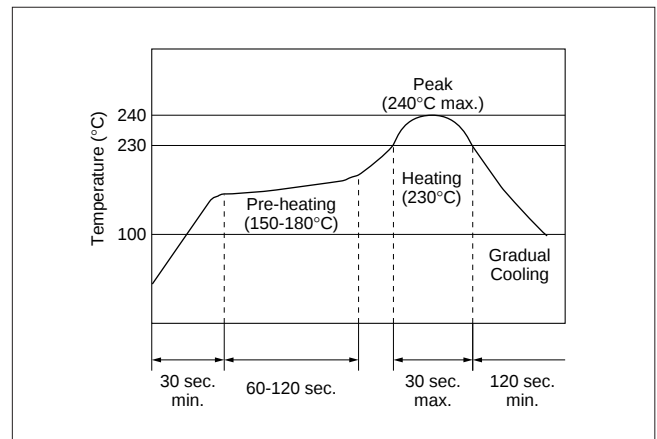
Notice (Soldering and Mounting)

■ Ceramic Trap 4.5-6.5MHz Chip Type

1. Standard Reflow Soldering Conditions

(1) Reflow

Filter is soldered twice within the following temperature conditions.



(2) Soldering Iron

Filter is soldered at $+350 \pm 5^\circ\text{C}$ for 3.0 ± 0.5 seconds. The soldering iron should not touch the filter while soldering.

2. Wash

The component cannot withstand washing.

■ Ceramic Trap 3.5-6.5MHz Lead Type

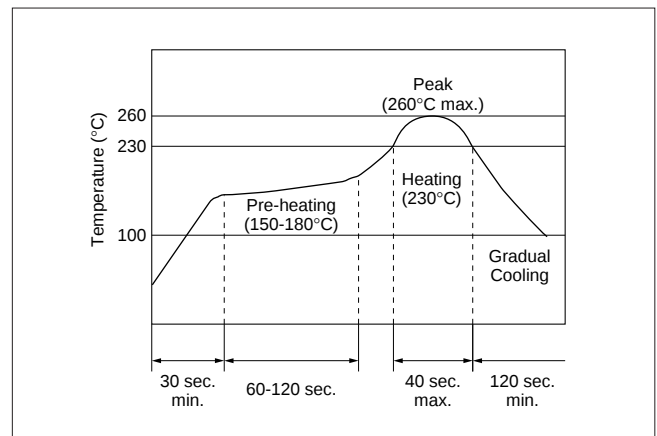
The component cannot withstand washing.

■ Ceramic Discriminator 10.7MHz Chip Type

1. Standard Reflow Soldering Conditions

(1) Reflow

Filter is soldered twice within the following temperature conditions.



(2) Soldering Iron

Filter is soldered at $+300 \pm 5^\circ\text{C}$ for 3.0 ± 0.5 seconds. The soldering iron should not touch the filter while soldering.

2. Wash

The component cannot withstand washing.

■ Ceramic Discriminator 10.7MHz Lead Type

The component cannot withstand washing.

■ Ceramic Discriminator 3.5-6.5MHz

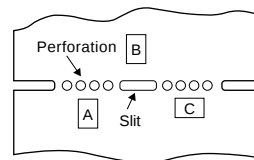
The component cannot withstand washing.

Notice (Handling)

■ CERAFIL® 10.7MHz Chip Type SFECF Series

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. The component may be damaged during mounting process if some part of mounter such as positioning claws, nozzle are worn down. The regular maintenance recommended for mounters should be done to prevent the troubles.
6. The component is recommended with placement machines which employ optical placement capabilities. The component might be damaged by excessive mechanical force. Please make sure that you have evaluated by using placement machines before going into mass production. Do not use placement machines which utilize mechanical positioning. Please contact Murata for details beforehand.
7. 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.
8. Do not clean or wash the component as it is not hermetically sealed.
9. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
10. Do not use strong acidity flux, more than 0.2wt% chlorine content, in re-flow soldering.
11. Accurate test circuit values are required to measure electrical characteristics.
It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
12. The components, packed in the moisture proof bag (dry pack), are sensitive to moisture. The following treatment is required before applying re-flow soldering. To avoid reliability degradation caused by thermal stress. When unpacked, store the component in an atmosphere at 30°C and below 60%R.H., and solder within 1 week.
13. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

[Component layout close to board]



Susceptibility to stress is in the order of : A>C>B

Continued on the following page.

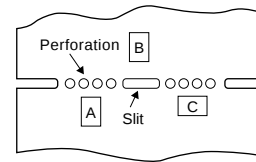
Notice (Handling)

☐ Continued from the preceding page.

■ CERAFIL® 10.7MHz Chip Type SFECD Series

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. The component may be damaged during mounting process if some part of mounter such as positioning claws, nozzle are worn down. The regular maintenance recommended for mounters should be done to prevent the troubles.
6. The component is recommended with placement machines which employ optical placement capabilities. The component might be damaged by excessive mechanical force. Please make sure that you have evaluated by using placement machines before going into mass production. Do not use placement machines which utilize mechanical positioning. Please contact Murata for details beforehand.
7. 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.
8. Do not clean or wash the component as it is not hermetically sealed.
9. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
10. Do not use strong acidity flux, more than 0.2wt% chlorine content, in re-flow soldering.
11. Accurate test circuit values are required to measure electrical characteristics.
It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
12. The components, packed in the moisture proof bag (dry pack), are sensitive to moisture. The following treatment is required before applying re-flow soldering. To avoid reliability degradation caused by thermal stress. When unpacked, store the component in an atmosphere at 30°C and below 60%R.H., and solder within 1 week.
13. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

[Component layout close to board]



Susceptibility to stress is in the order of : A>C>B

Continued on the following page. ☐

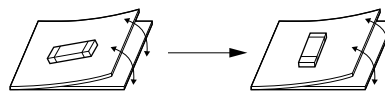
Notice (Handling)

☐ Continued from the preceding page.

■ CERAFIL® 10.7MHz Chip Type SFECV Series

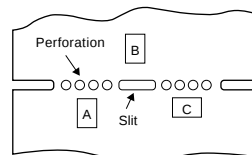
1. The component will be damaged when an excessive stress is applied.
2. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
3. Design layout of components on the PC board to minimize the stress imposed on the warp or flexure of the board.
4. 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. The component may be damaged during mounting process if some part of mounter such as positioning claws, nozzle are worn down. The regular maintenance recommended for mounters should be done to prevent the troubles.
6. The component is recommended with placement machines which employ optical placement capabilities. The component might be damaged by excessive mechanical force. Please make sure that you have evaluated by using placement machines before going into mass production. Do not use placement machines which utilize mechanical positioning. Please contact Murata for details beforehand.
7. 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.
8. Do not clean or wash the component as it is not hermetically sealed.
9. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
10. Do not use strong acidity flux, more than 0.2wt% chlorine content, in re-flow soldering.
11. 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.
12. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

[Component direction]



Put the component lateral to the direction in which stress acts.

[Component layout close to board]



Susceptibility to stress is in the order of : A>C>B

Notice (Handling)

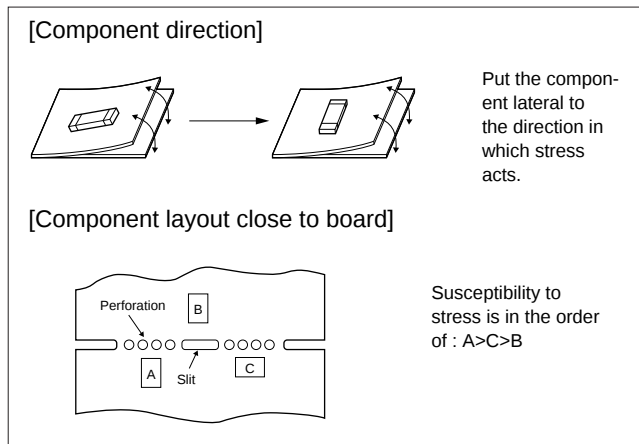
■ CERAFIL® 10.7MHz Lead Type

1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component may be damaged when an excessive stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
6. In case of covering discriminator with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.

■ CERAFIL® 4.5-6.5MHz Chip Type

1. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. Design layout of components on the PC board to minimize the stress imposed on the wrap or flexure of the board.
3. 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.
4. The component may be damaged during mounting process if some part of mounter such as positioning claws, nozzle are worn down. The regular maintenance recommended for mounters should be done to prevent the troubles.
5. When correcting chips with a soldering iron, the tip of the soldering iron should not directly touch the chip component.
6. Cleaning or washing of the component is not acceptable due to non sealed construction.
7. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
9. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

7. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
8. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.



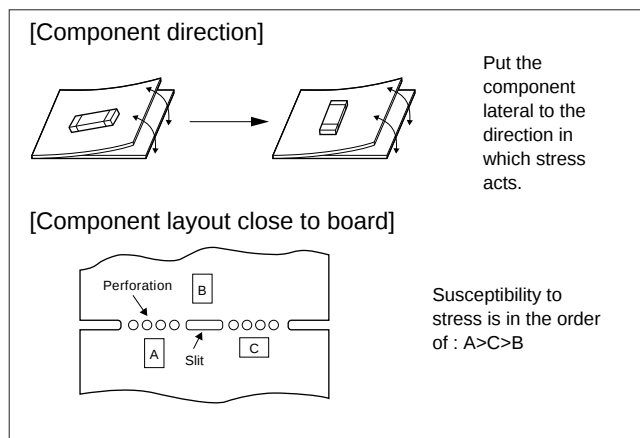
Notice (Handling)

■ CERAFIL® 3.5-6.5MHz Lead Type

1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component may be damaged when an excessive stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Please contact Murata or Murata representative for soldering condition, in case of using lead free solder.
6. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
7. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
9. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

■ CERAFIL® 455kHz Chip Type PFWCC Series

1. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. Design layout of components on the PC board to minimize the stress imposed on the warp or flexure of the board.
3. 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.
4. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.



■ CERAFIL® 455kHz Chip Type SFPKA Series

1. The component will be damaged when an excessive stress is applied.
2. Use coupling capacitors to prevent applying D.C. voltage between input-ground, output-ground of "CERAFIL" as D.C. current may harm the component.
3. In the case that the component is cleaned, confirm that no reliability degradation is created.
4. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
5. Do not use strong acidity flux, more than 0.2wt% chlorine content, in re-flow soldering.
6. The product, packed in the moisture-proof bag (dry pack), is sensitive to moisture. The following treatment is required before applying re-flow soldering, to avoid package cracks or reliability degradation caused by thermal stress. When unpacked, store the component in an atmosphere of below 25 degree C and below 65%R.H., and solder within 48 hours.
7. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

Notice (Handling)

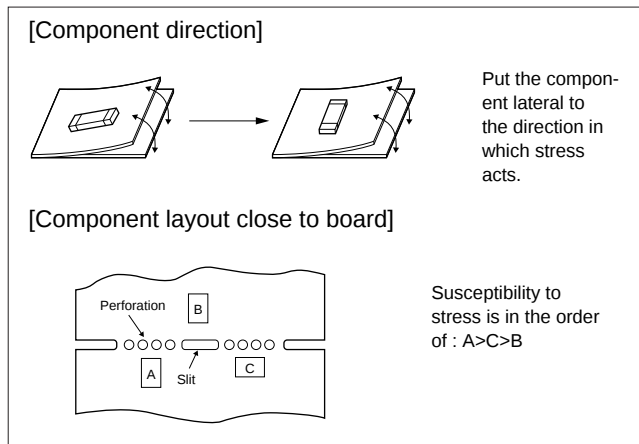
■ CERAFIL® 455kHz Lead Type

1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component will be damaged when an excessive stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
6. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.

■ Ceramic Trap 4.5-6.5MHz Chip Type

1. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. Design layout of components on the PC board to minimize the stress imposed on the wrap or flexure of the board.
3. 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.
4. The component may be damaged during mounting process if some part of mounter such as positioning claws, nozzle are worn down. The regular maintenance recommended for mounters should be done to prevent the troubles.
5. When correcting chips with a soldering iron, the tip of the soldering iron should not directly touch the chip component.
6. Cleaning or washing of the component is not acceptable due to non sealed construction.
7. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
9. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

7. Accurate test circuit values are required to measure electrical characteristics.
It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
8. Use coupling capacitors to prevent applying D.C. voltage between input-ground, output-ground of "CERAFIL" as D.C. current may harm the component.
9. For safety purpose, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.



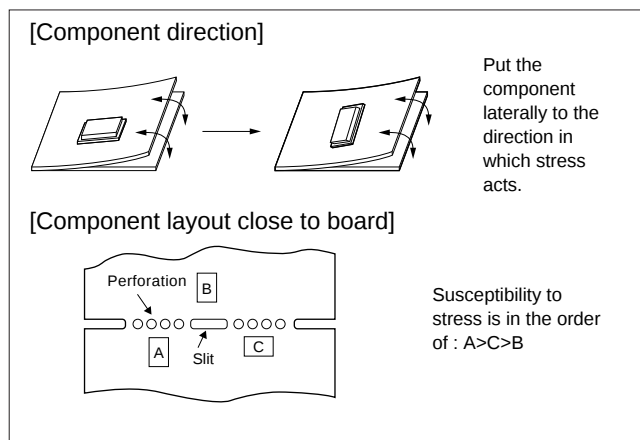
Notice (Handling)

■ Ceramic Trap 3.5-6.5MHz Lead Type

1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component may be damaged when an excessive stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Please contact Murata or Murata representative for soldering condition, in case of using lead free solder.
6. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
7. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
9. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

■ Ceramic Discriminator 10.7MHz Chip Type

1. The component mounted on the PCB may be damaged if excess mechanical stress is applied.
2. Layout the components on the PCB to minimize the stress imposed on the warp or flexure of the board.
3. After installing components, if solder is excessively applied to the circuit board, mechanical stress will cause destruction resistance characteristics to be lower. To prevent this, be extremely careful in determining shape and dimension before designing the circuit board diagram.
4. The component may be damaged during mounting process if some part of mounter such as positioning claws, nozzle are worn down. The regular maintenance recommended for mounters should be done to prevent the troubles.
5. When correcting component's position 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 considered to prevent the electrode erosion.
6. Do not clean or wash the component as it is not hermetically sealed.
7. In case of overcoating the part, coating conditions such as material of resin, curing temperature, and so on should be evaluated carefully.
8. Accurate test circuit values are required to measure electrical characteristics.
It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
9. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.



Notice (Handling)

■ Ceramic Discriminator 10.7MHz Lead Type

1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component may be damaged when an excessive stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
6. In case of covering discriminator with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
7. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
8. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

■ Ceramic Discriminator 3.5-6.5MHz

1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component may be damaged when an excessive stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Please contact Murata or Murata representative for soldering condition, in case of using lead free solder.
6. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
7. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
9. For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.

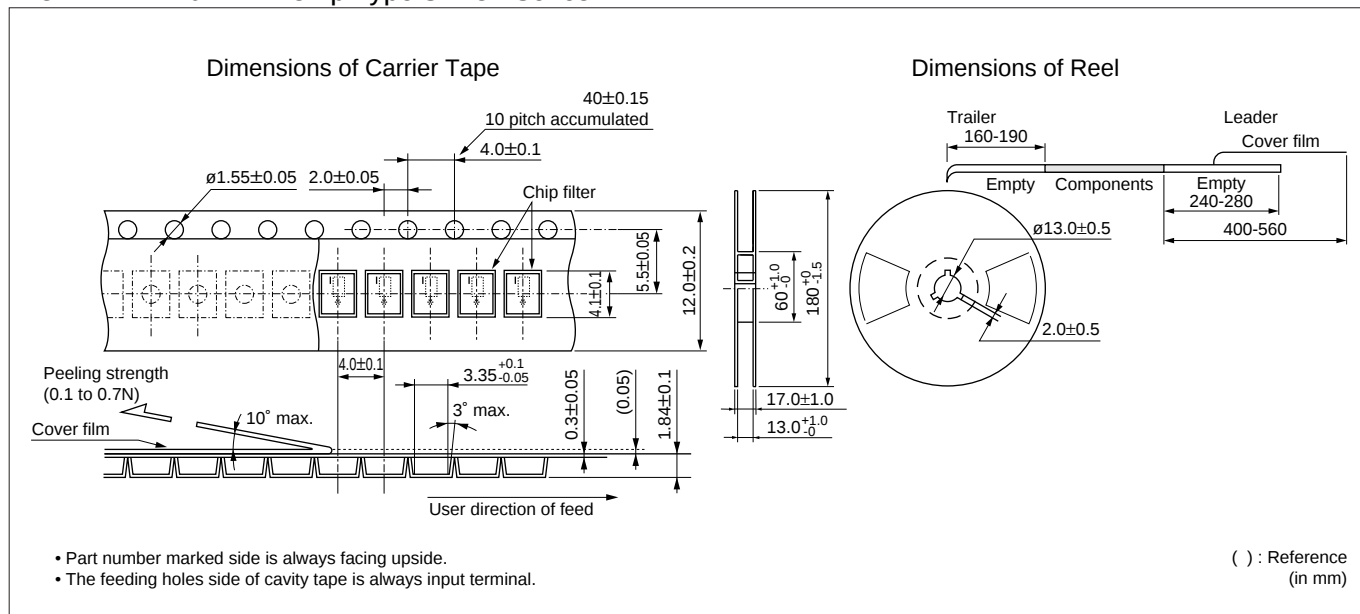
Packaging

■ Minimum Quantity

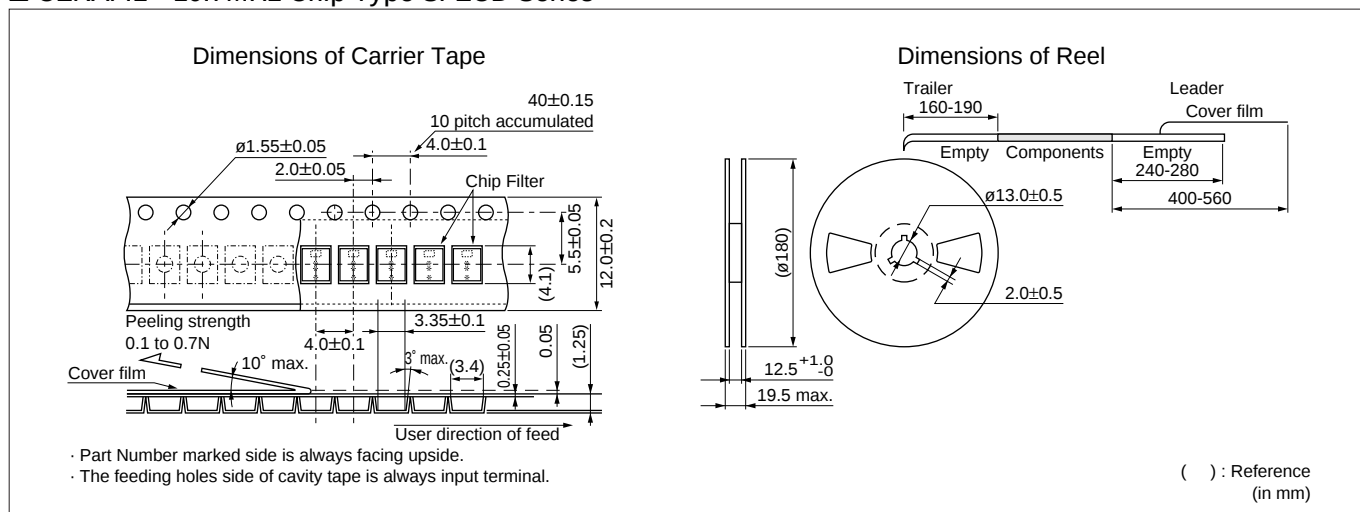
		Taping		Ammo Pack	Bulk	Magazine	Box
		ø330mm	ø180mm				
CERAFIL®<10.7MHz>							
	SFECD		2,000				
	SFECF		2,000				
	SFECV		2,000				
	SFELF			1,500	500		
	SFELG			1,500	500		
	SFKLF			1,500	500		
	SFTLF				500		
	SFVLF			1,000	500		
CERAFIL®<3.5-6.5MHz>							
	SFSKA	3,000					
	SFSRA			2,000	500		
	SFSRF			1,500	500		
CERAFIL®<455kHz>							
	BFULA				500		
	CFULA						200
	CFWLA					50	150
	PFSLF			1,500	500		
	PFWCC		1,000				
	PFWLF			1,500	500		
	SFPKA	1,000					
	SFPLA					50	200
	SFULA				500	50	
	SFZLA				200	50	
Ceramic Traps<3.5-6.5MHz>							
	TPSKA	3,000					
	TPSRA			2,000	500		
	TPSRF			1,500	500		
	TPTRF			1,500	500		
	TPWKA	3,000					
	TPWRF			1,500	500		
Ceramic Discriminators<10.7MHz>							
	CDALF			1,500	500		
	CDSCB		2,000				
Ceramic Discriminators<3.5-6.5MHz>							
	CDSRF			1,500	500		

Packaging

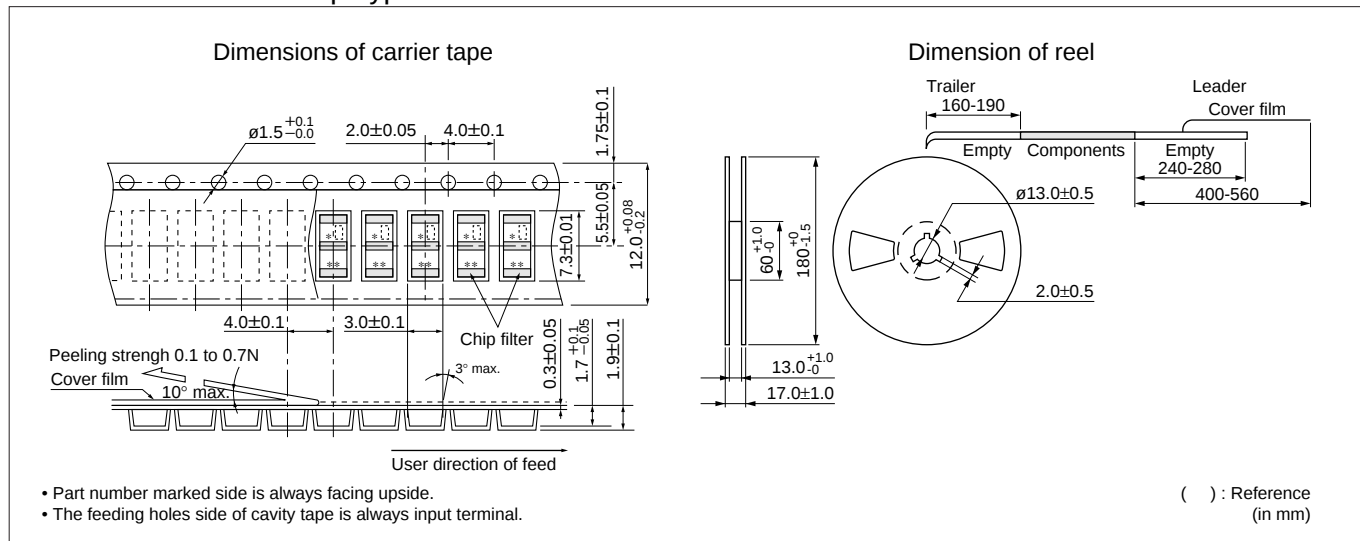
■ CERAFIL® 10.7MHz Chip Type SFECF Series



■ CERAFIL® 10.7MHz Chip Type SFECD Series



■ CERAFIL® 10.7MHz Chip Type SFECV Series

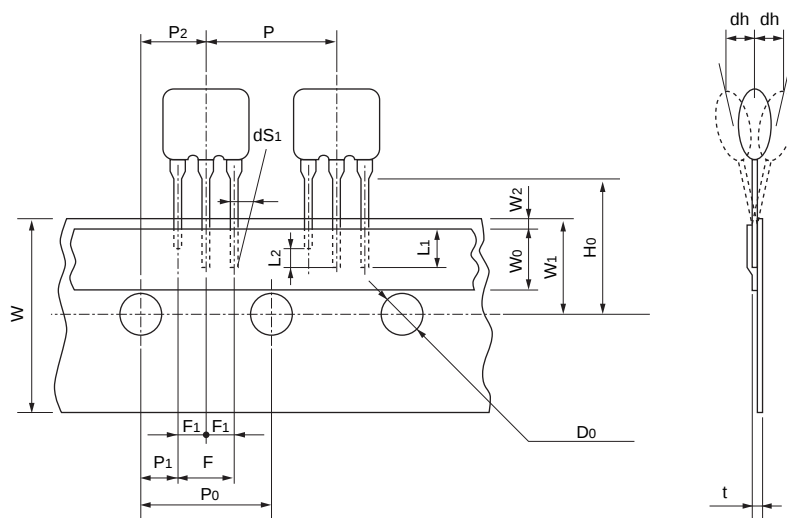


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Packaging

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■ CERAFIL® 10.7MHz Lead Type SF_LF Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L1	3.0 min.	-	
Length of cut off	L2	2.0 max.	-	To distinguish the direction
Pitch of components	P	12.7	±0.5	
Pitch of sprocket hole (1)	P0	12.7	±0.2	
Length from hole center to lead	P1	3.85	±0.5	
Length from hole center to component center	P2	6.35	±0.5	
Lead spacing (1)	F	5.0	+0.5 -0.2	
Lead spacing (2)	F1	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W0	6.0 min.	-	
Position of sprocket hole	W1	9.0	±0.5	
Gap of hold down tape and carrier tape	W2	0	+0.5 -0	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H0	18.0	±0.5	
Diameter of sprocket hole	D0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (2)	P020	254.0	±1.5	The pitch of 20 sprocket holes

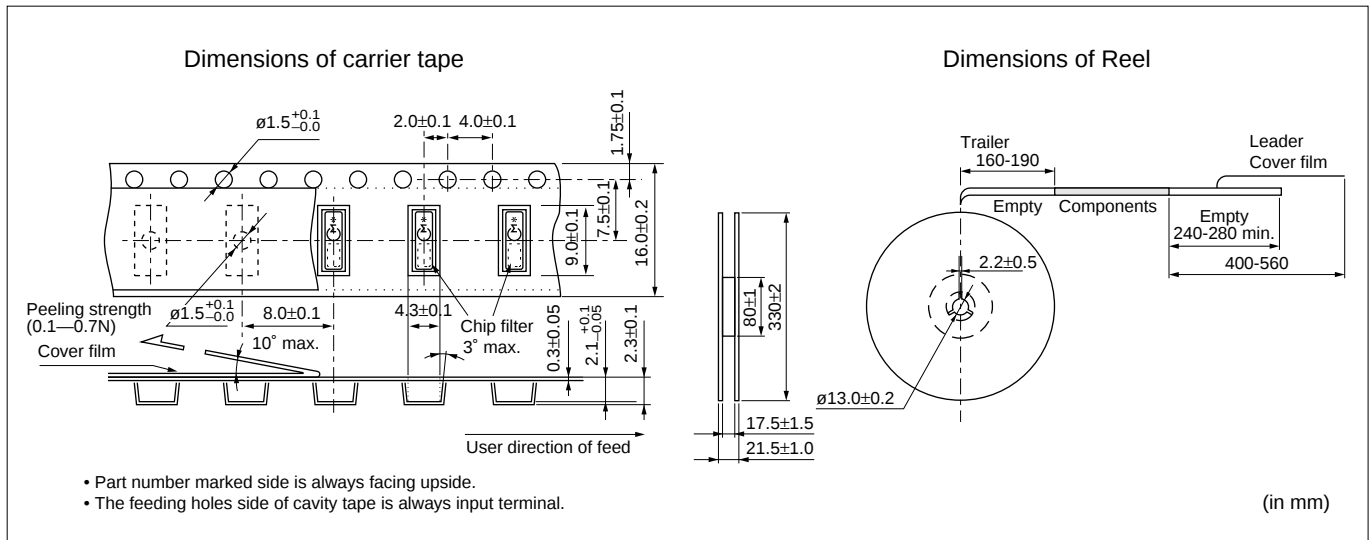
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Packaging

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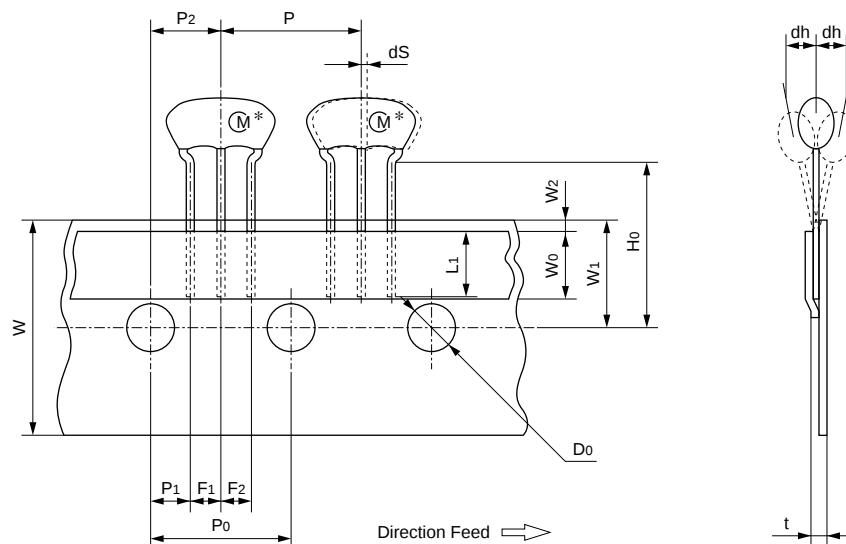
■ CERAFIL® 4.5-6.5MHz Chip Type SFSKA Series



Packaging

Continued from the preceding page.

■ CERAFIL® 4.5-6.5MHz Lead Type SFSRA Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L1	5.0 min.	-	
Pitch of component	P	12.7	±0.5	Tolerance for Pitches 10×P0=127±1
Pitch of sprocket hole (1)	P0	12.7	±0.2	
Length from hole center to lead	P1	3.85	±0.5	
Length from hole center to component center	P2	6.35	±0.5	
Lead spacing (1)	F1	2.5	±0.2	
Lead spacing (2)	F2	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W0	6.0 min.	-	
Position of Sprocket hole	W1	9.0	±0.5	
Gap of hold down tape and carrier Tape	W2	0	+0.5 -0	Hold down tape doesn't exceed the carrier tape.
Distance between the center of sprocket hole and lead stopper	H0	18.0	±0.5	
Diameter of sprocket hole	D0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (2)	P020	254.0	±1.5	The pitch of 20 sprocket holes
Body tilt	dS	0	±1.0	

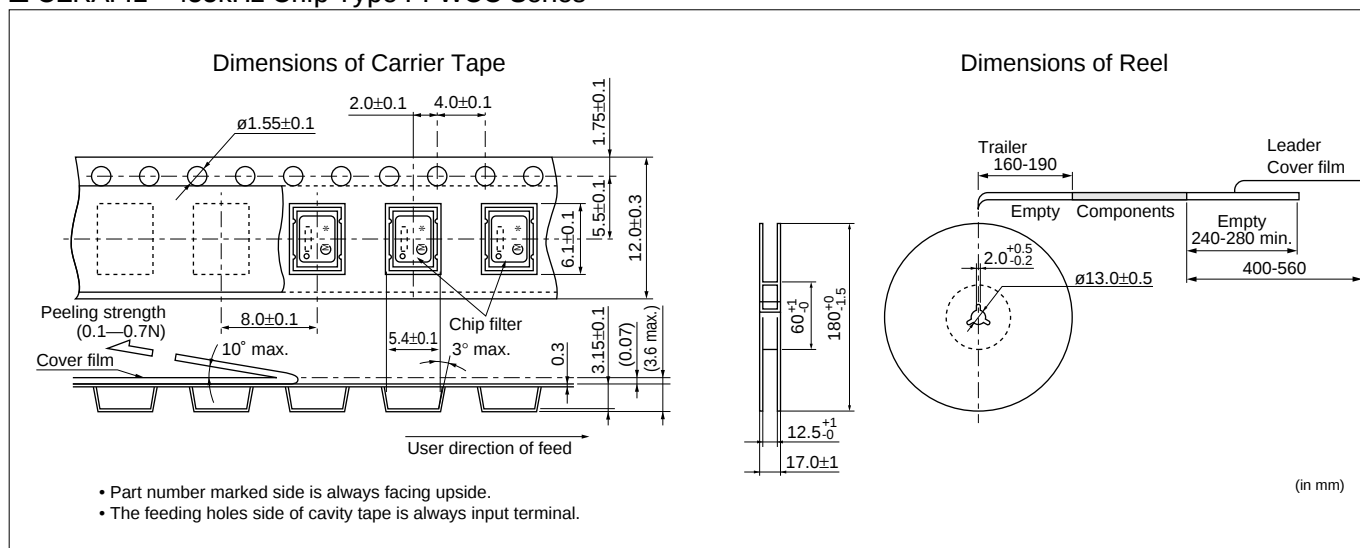
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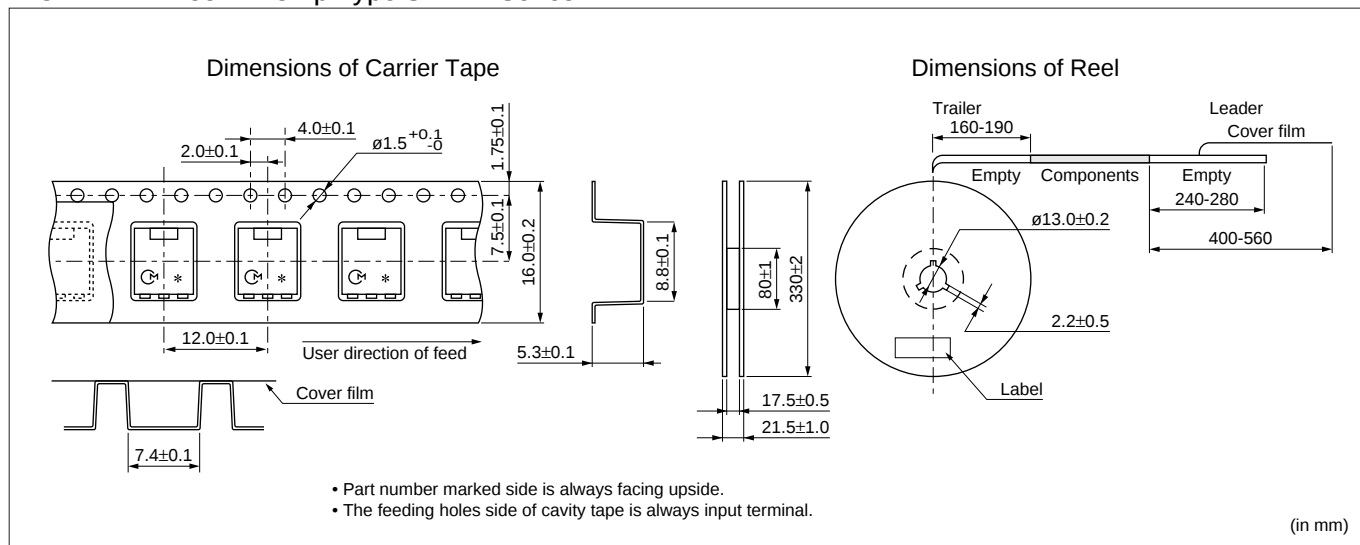
Packaging

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■ CERAFIL® 455kHz Chip Type PFWCC Series



■ CERAFIL® 455kHz Chip Type SFPKA Series

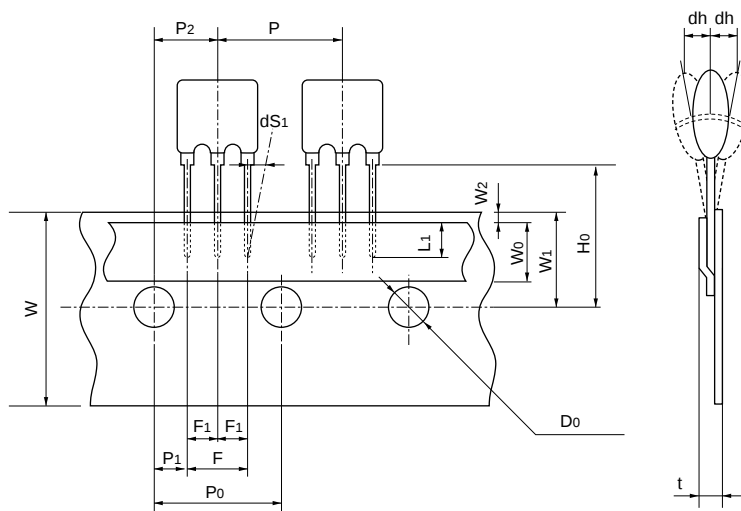


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Packaging

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■ CERAFIL® 455kHz Lead Type PFSLF/PFWLF Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L1	3.0 min.	-	
Pitch of component	P	12.7	±0.5	
Pitch of sprocket hole (1)	P0	12.7	±0.2	
Length from hole center to lead	P1	3.85	±0.5	
Length from hole center to component center	P2	6.35	±0.5	
Lead spacing (1)	F	5.0	+0.5 -0.2	
Lead spacing (2)	F1	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W0	6.0 min.	-	
Position of sprocket hole	W1	9.0	±0.5	
Gap of hold down tape and carrier tape	W2	0	+0.5 -0	Hold-down tape doesn't exceed the carrier tape.
Distance between the center of sprocket hole and lead stopper	H0	18.0	±0.5	
Diameter of sprocket hole	D0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (2)	Po20	254.0	±1.5	The pitch of 20 sprocket holes

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Packaging

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■ CERAFIL® 455kHz Lead Type SFULA Series

Standard of Magazine Cassette

1. Putting CERAFIL® into Magazine

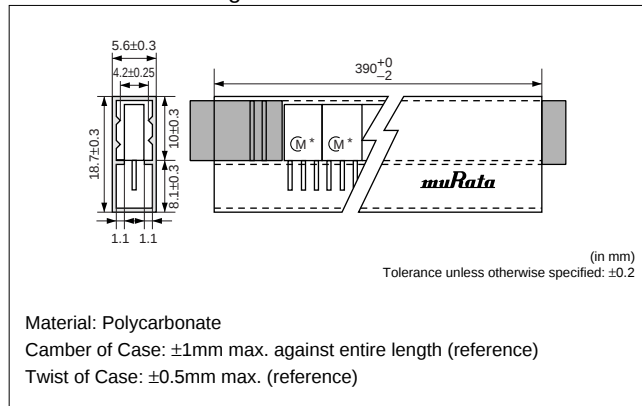
A magazine should contain 50pcs of CERAFIL®, with the marking of products all facing toward the "murata" mark on a magazine, and be closed with exclusive stoppers at both ends. Above should be the minimum packaging unit.

2. Quality of Magazine

- (1) Transparent so that input / output direction is visually recognizable.
- (2) With an angle of 35° CERAFIL® should slip down smoothly.
- (3) Antistatic finish
- (4) Recycling

Note: Magazines should be sent back for recycling.
(Therefore, empty magazines should not be damaged.)

3. Dimensions of Magazine Cassette



■ CERAFIL® 455kHz Lead Type SFZLA Series

Standard of Magazine Cassette

1. Putting CERAFIL® into Magazine

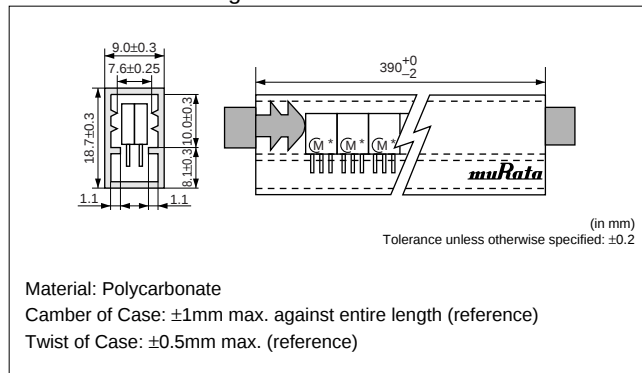
A magazine should contain 50pcs of CERAFIL®, with the marking of products all facing toward the "murata" mark on a magazine, and be closed with exclusive stoppers at both ends. Above should be the minimum packaging unit.

2. Quality of Magazine

- (1) Transparent so that input / output direction is visually recognizable.
- (2) With an angle of 35° CERAFIL® should slip down smoothly.
- (3) Antistatic finish
- (4) Recycling

Note: Magazines should be sent back for recycling.
(Therefore, empty magazines should not be damaged.)

3. Dimensions of Magazine Cassette



■ CERAFIL® 455kHz Lead Type SFPLA Series

Standard of Magazine Cassette

1. Putting CERAFIL® into Magazine

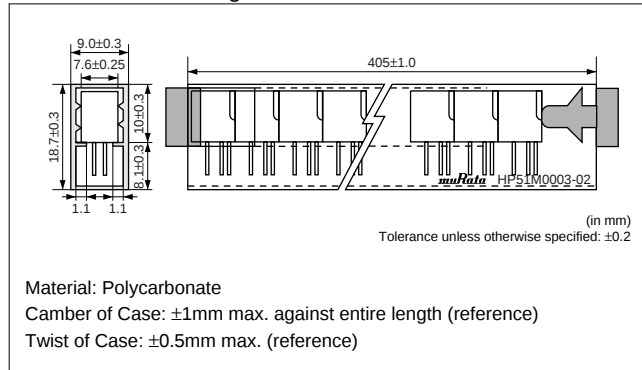
A magazine should contain 50pcs of CERAFIL®, which ground terminals are all facing toward the "murata" mark on a magazine, and be closed with exclusive stoppers at the both ends. Above should be the minimum packaging unit.

2. Quality of Magazine

- (1) Transparent so that input / output direction is visually recognizable.
- (2) With an angle of 35° CERAFIL® should slip down smoothly.
- (3) Antistatic finish
- (4) Recycling

Note: Magazines should be sent back for recycling.
(Therefore, empty magazines should not be damaged.)

3. Dimensions of Magazine Cassette

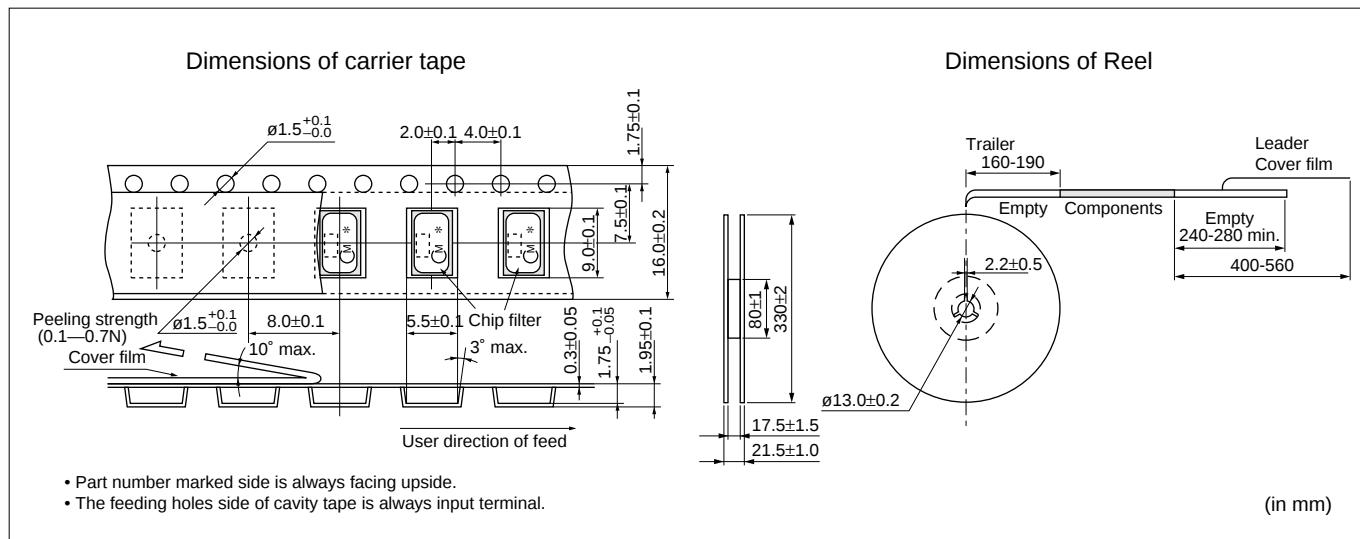


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Packaging

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■ Ceramic Trap 4.5-6.5MHz Chip Type TPWKA Series

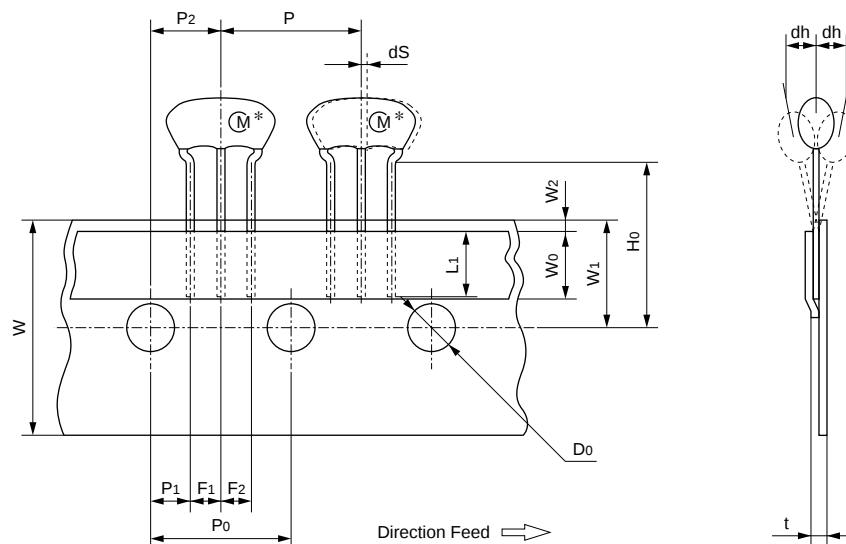


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Packaging

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■ Ceramic Trap 4.5-6.5MHz Lead Type TPSRA Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L1	5.0 min.	-	
Pitch of component	P	12.7	±0.5	Tolerance for Pitches 10×P0=127±1
Pitch of sprocket hole (1)	P0	12.7	±0.2	
Length from hole center to lead	P1	3.85	±0.5	
Length from hole center to component center	P2	6.35	±0.5	
Lead spacing (1)	F1	2.5	±0.2	
Lead spacing (2)	F2	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W0	6.0 min.	-	
Position of Sprocket hole	W1	9.0	±0.5	
Gap of hold down tape and carrier Tape	W2	0	+0.5 -0	Hold down tape doesn't exceed the carrier tape.
Distance between the center of sprocket hole and lead stopper	H0	18.0	±0.5	
Diameter of sprocket hole	D0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (2)	P020	254.0	±1.5	The pitch of 20 sprocket holes
Body tilt	dS	0	±1.0	

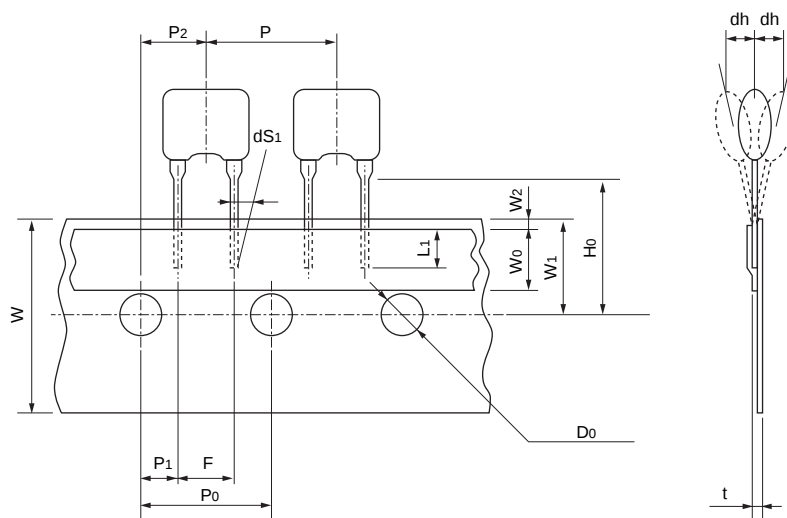
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Packaging

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■ Ceramic Trap 3.5-6.5MHz Lead Type TPSRF_J Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L1	3.0 min.	-	
Pitch of component	P	12.7	±0.5	
Pitch of sprocket hole (1)	P0	12.7	±0.2	
Length from hole center to lead	P1	3.85	±0.5	
Length from hole center to component center	P2	6.35	±0.5	
Lead spacing	F	5.0	+0.5 -0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W0	6.0 min.	-	
Position of sprocket hole	W1	9.0	±0.5	
Gap of hold down tape and carrier tape	W2	0	+0.5 -0.0	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H0	18.0	±0.5	
Diameter of sprocket hole	D0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (2)	Po20	254.0	±1.5	The pitch of 20 sprocket holes

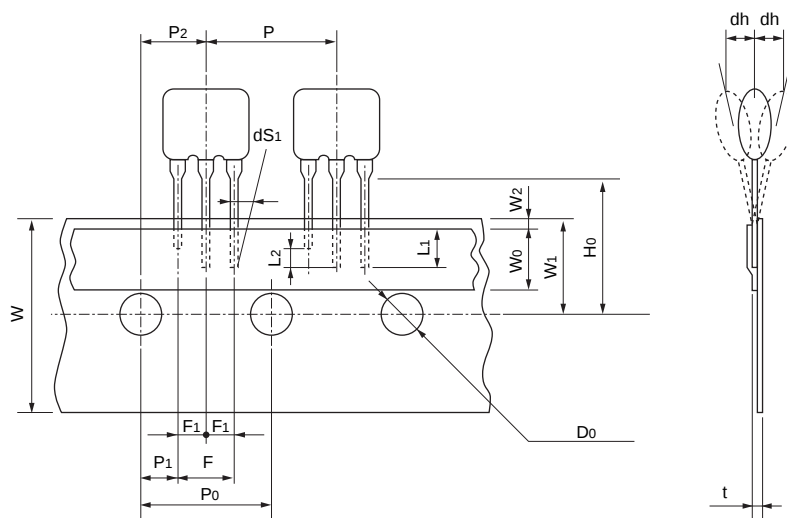
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Packaging

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■ Ceramic Trap 3.5-6.5MHz Lead Type TPSRF_W/TPWRF/TPTRF Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L1	3.0 min.	-	
Length of cut off	L2	2.0 max.	-	To distinguish the direction
Pitch of components	P	12.7	±0.5	
Pitch of sprocket hole (1)	P0	12.7	±0.2	
Length from hole center to lead	P1	3.85	±0.5	
Length from hole center to component center	P2	6.35	±0.5	
Lead spacing (1)	F	5.0	+0.5 -0.2	
Lead spacing (2)	F1	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W0	6.0 min.	-	
Position of sprocket hole	W1	9.0	±0.5	
Gap of hold down tape and carrier tape	W2	0	+0.5 -0	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H0	18.0	±0.5	
Diameter of sprocket hole	D0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (2)	P020	254.0	±1.5	The pitch of 20 sprocket holes

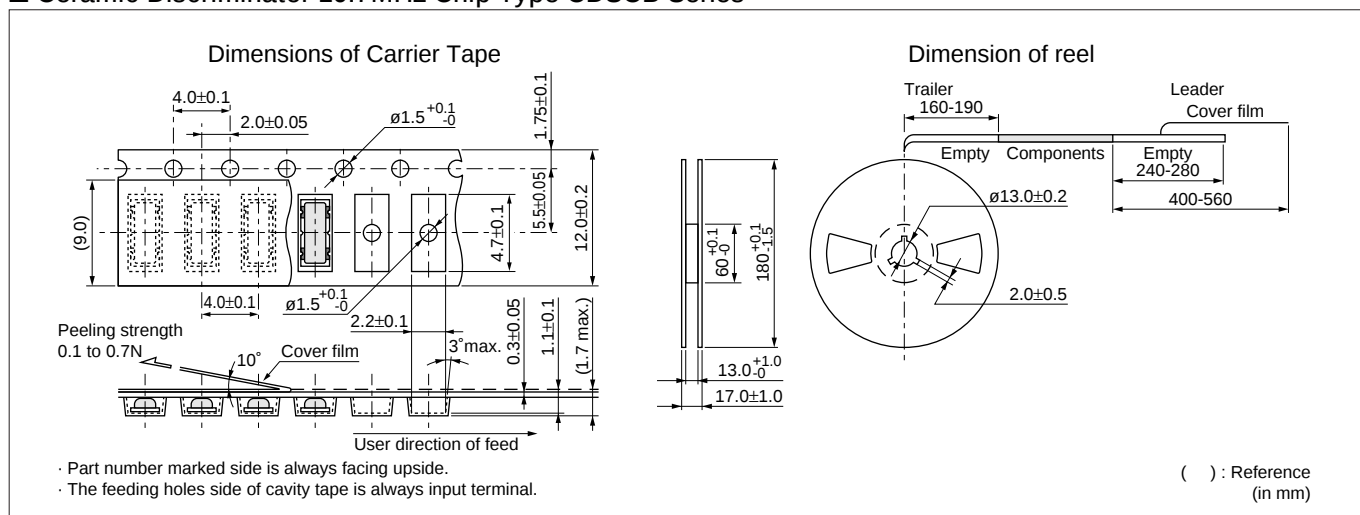
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Packaging

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■ Ceramic Discriminator 10.7MHz Chip Type CDSCB Series

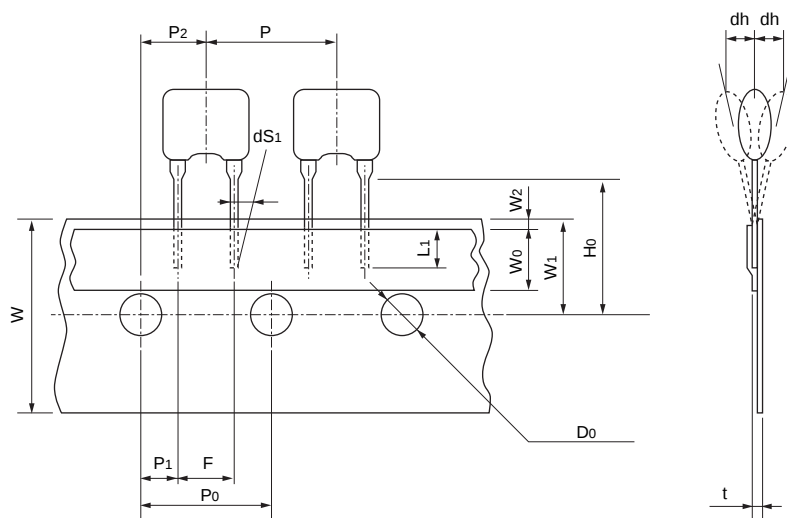


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Packaging

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■ Ceramic Discriminator 10.7MHz Lead Type CDALF Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L1	3.0 min.	-	
Pitch of component	P	12.7	±0.5	
Pitch of sprocket hole (1)	P0	12.7	±0.2	
Length from hole center to lead	P1	3.85	±0.5	
Length from hole center to component center	P2	6.35	±0.5	
Lead spacing	F	5.0	+0.5 -0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W0	6.0 min.	-	
Position of sprocket hole	W1	9.0	±0.5	
Gap of hold down tape and carrier tape	W2	0	+0.5 -0.0	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H0	18.0	±0.5	
Diameter of sprocket hole	D0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (2)	Po20	254.0	±1.5	The pitch of 20 sprocket holes

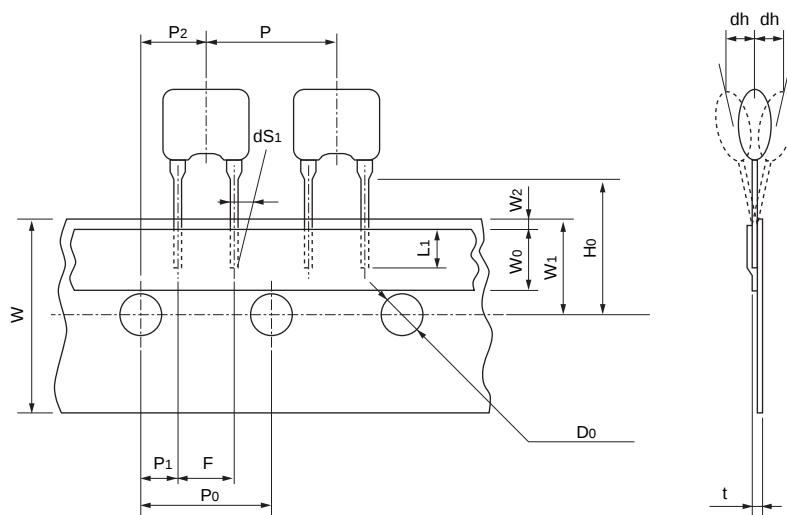
(in mm)

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Packaging

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■ Ceramic Discriminator 3.5-6.5MHz CDSRF_EK Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L ₁	3.0 min.	-	
Pitch of component	P	12.7	±0.5	
Pitch of sprocket hole (1)	P ₀	12.7	±0.2	
Length from hole center to lead	P ₁	3.85	±0.5	
Length from hole center to component center	P ₂	6.35	±0.5	
Lead spacing	F	5.0	+0.5 -0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS ₁	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W ₀	6.0 min.	-	
Position of sprocket hole	W ₁	9.0	±0.5	
Gap of hold down tape and carrier tape	W ₂	0	+0.5 -0.0	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H ₀	18.0	±0.5	
Diameter of sprocket hole	D ₀	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (2)	Po20	254.0	±1.5	The pitch of 20 sprocket holes

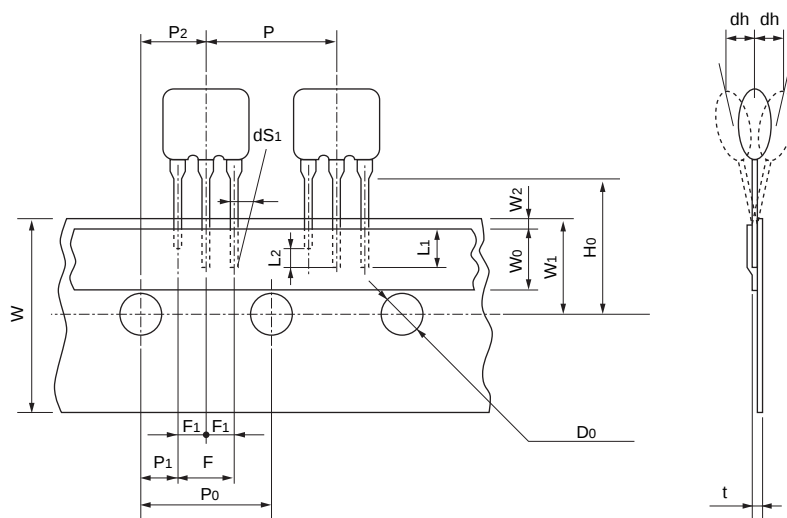
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Packaging

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■ Ceramic Discriminator 3.5-6.5MHz CDSRF_CK Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L1	3.0 min.	-	
Length of cut off	L2	2.0 max.	-	To distinguish the direction
Pitch of components	P	12.7	±0.5	
Pitch of sprocket hole (1)	P0	12.7	±0.2	
Length from hole center to lead	P1	3.85	±0.5	
Length from hole center to component center	P2	6.35	±0.5	
Lead spacing (1)	F	5.0	+0.5 -0.2	
Lead spacing (2)	F1	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W0	6.0 min.	-	
Position of sprocket hole	W1	9.0	±0.5	
Gap of hold down tape and carrier tape	W2	0	+0.5 -0	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H0	18.0	±0.5	
Diameter of sprocket hole	D0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (2)	P020	254.0	±1.5	The pitch of 20 sprocket holes

(in mm)

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 - ④ Power plant equipment
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 - ⑦ Traffic signal equipment
 - ⑧ Disaster prevention / crime prevention equipment
 - ⑨ Data-processing equipment
 - ⑩ Application of similar complexity and/or reliability requirements to the applications listed in the above
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