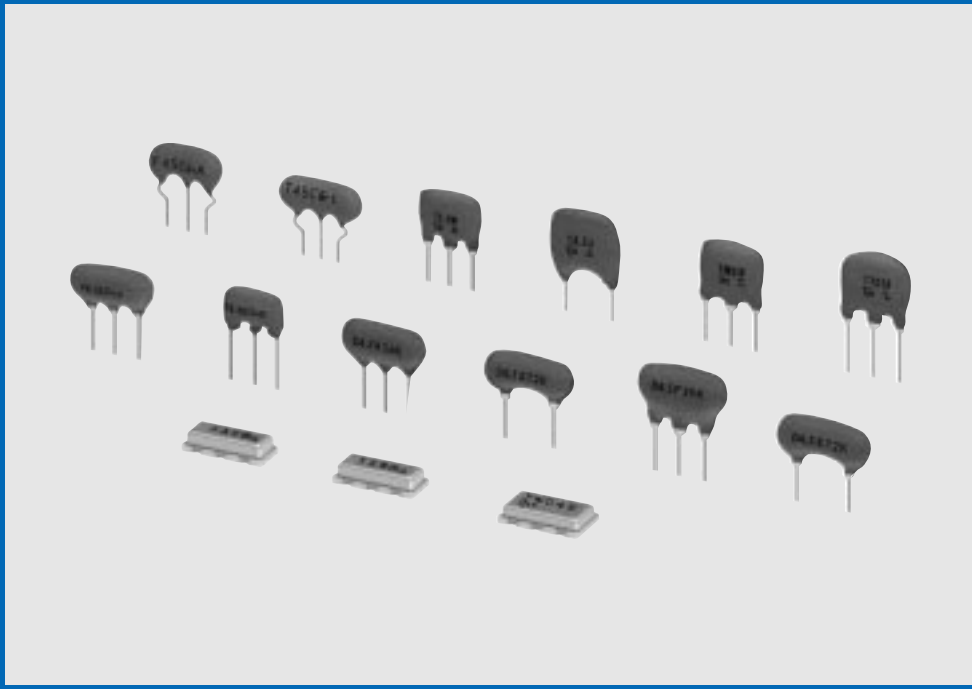
CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

CERAFIL®
(FILTERS / TRAPS / DISCRIMINATORS) FOR TV / VCR



GLOBAL PART NUMBERS
JUNE 2001

muRata Innovator in Electronics
Murata
Manufacturing Co., Ltd.

Cat.No.P25E-3

CONTENTS

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

CERAFIL® for TV/VCR

(Global Part Number) **SF** **S** **RA** **4M50** **CF** **00** **-B0**
❶ ❷ ❸ ❹ ❺ ❻ ❼

❶Product ID

Product ID	
SF	Ceramic Filters

❷Oscillation/Numbers of Element

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

❸Structure/Size

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

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

❹Nominal Center Frequency

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

❺Product 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.

❻Product Specification Code (2)

Code	Product Specification Code (2)
00	Standard Type

❼Packaging

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 "❺Product Specification Code (1)" and "❻Product Specification Code (2)".

Ceramic Traps

(Global Part Number) **TP** **S** **RA** **4M50** **B** **00** **-B0**
❶ ❷ ❸ ❹ ❺ ❻ ❼

❶Product ID

Product ID	
TP	Ceramic Traps

❷Function

Code	Function
S	Single Traps
T	Triple Traps
W	Double Traps

❸Structure/Size

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

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

❹Nominal Center Frequency

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

❺Product Specification Code (1)

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

❻Product Specification Code (2)

Code	Product Specification Code (2)
00	Standard Type

❼Packaging

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 "❻Product Specification Code (2)" and "❼Packaging".

Discriminators for TV/VCR

(Global Part Number)

CD	S	RH	4M50	E	K	048	-A0
❶	❷	❸	❹	❺	❻	❼	❽

❶Product ID

Product ID	
CD	Discriminators

❷Oscillation

Code	Oscillation
S	Thickness Shear mode

❸Structure/Size

Code	Structure/Size
RH	Standard Type
RL	Low-profile

❹Nominal Center Frequency

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

❺Product Specification Code (1)

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

❻Product Specification Code (2)

Code	Product Specification Code (2)
K	Specification

❼IC

Code	IC
048	Applicable IC control code

❽Packaging

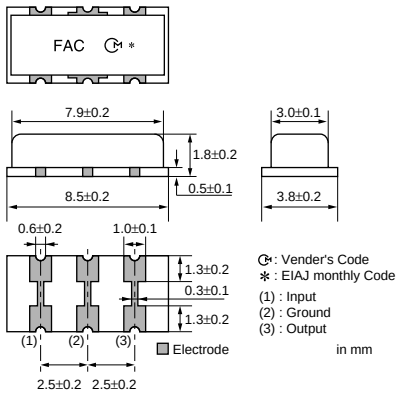
Code	Packaging
-B0	Bulk
-A0	Radial Taping H_0=18mm

With non-standard products, an alphabet Indicating "Individual Specification" is added between "❼IC" and "❽Packaging".

CERAFIL®(Filters/Traps/Discriminators) for TV/VCR

CERAFIL® Chip Type SFSKA Series

SMD ceramic filter SFSKA_CF is a small and thin SMD filter sealed with a metal cap.
Recommended for LCD-TVs, and small and thin tuners.

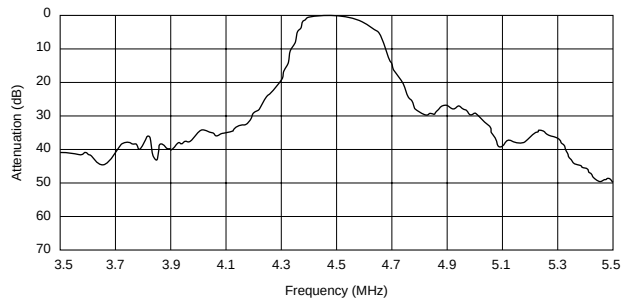


■ Features

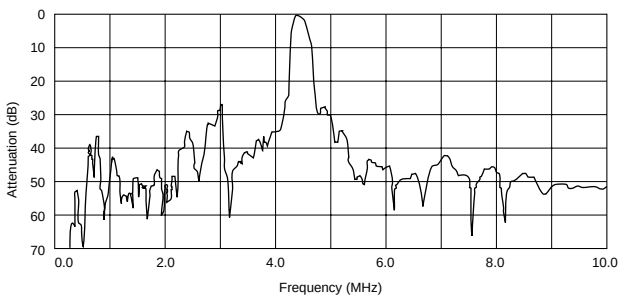
1. High attenuation outside bandwidth.
2. Small and thin pakage.
3. Reflow-solderable.

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)
SFSKA4M50CF00-R1	4.500	fn±60 min.	600 max.	6.0 max.	20 min. [within 0 to fn]	15 min. [within fn to 7.0MHz]	1000

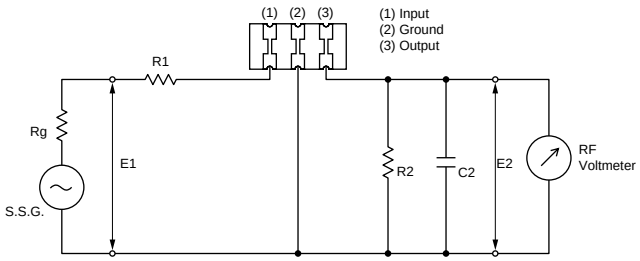
■ Frequency Characteristics



■ Spurious Response

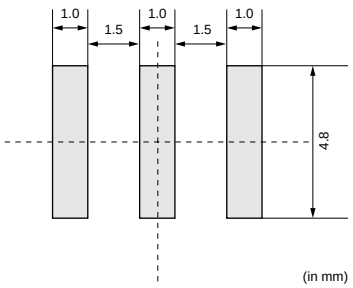


■ Test Circuit



R1+Rg=R2=1000Ω ±5%, Rg=50Ω
C2=10pF (Including stray capacitance and Input capacitance of RF Voltmeter)
E1:S.S.G. Output voltage

■ Standard Land Pattern Dimensions



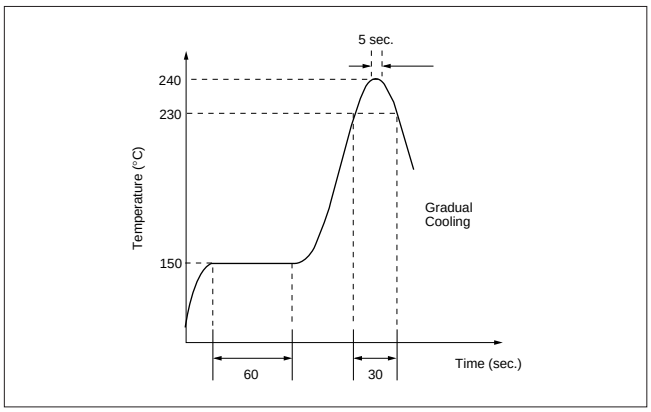
CERAFIL® Chip Type Notice

■ Notice (Soldering and Mounting)

1. Standard Reflow Soldering Condition

(1) Reflow

Filter is soldered one time within the following temperature condition and then being placed in natural condition for 4 hours.



(2) Soldering Iron

Lead terminal is directly contacted with the tip of soldering iron of 280±5°C for 3.0 seconds ±0.5 seconds, and then being placed in natural condition for 4 hours.

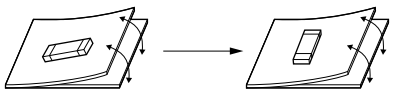
2. Wash

The component cannot be withstand washing.

■ Notice (Handling)

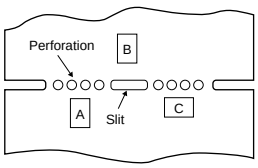
1. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. Design layout of components on the PC board to minimize the stress imposed on the wrap or flexure of the board.
3. After installing chips, if solder is excessively applied to the circuit board, mechanical stress will cause destruction resistance characteristics to lower. To prevent this, be extremly careful in determining shape and dimension before designing the circuit board diagram.
4. When the positioning claws and pick up nozzle are worn, the load is applied to the chip while positioning is concentrated to one positioning accuracy, etc. Careful checking and maintenance are necessary to prevent unexpected trouble.
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 well.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miss-correlation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

[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

CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

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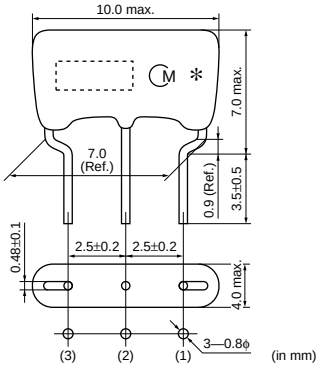
CERAFIL® Picture Band Low-Suprious SFSRA Series

2

As part of the environment protection activity, solder for terminal plating and terminal-element connection inside of ceramic filter SFSRA series contain no lead(Pb).
This series also features thickness shear vibration mode same as SFSRH series(current type), which provides very low spurious response within video signal band.



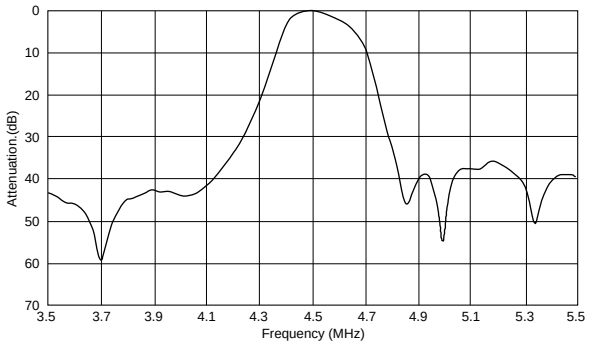
■ Features

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)
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 7.57MHz]	600
SFSRA5M50CF00-B0	5.500	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to7.5MHz]	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 8.0MHz]	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
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
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

■ Frequency Characteristics

SFSRA4M50CF00-B0



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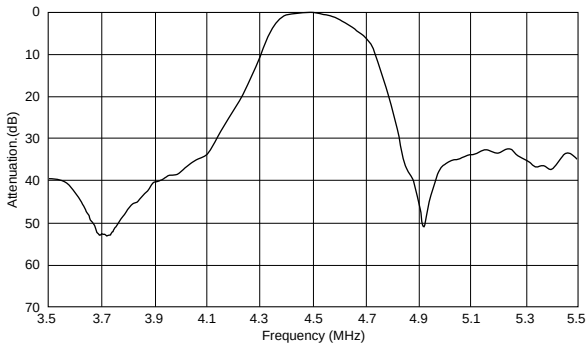

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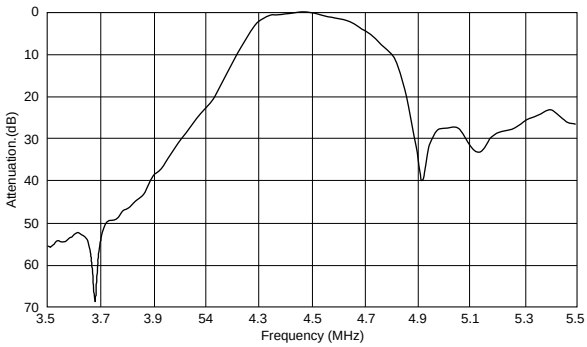

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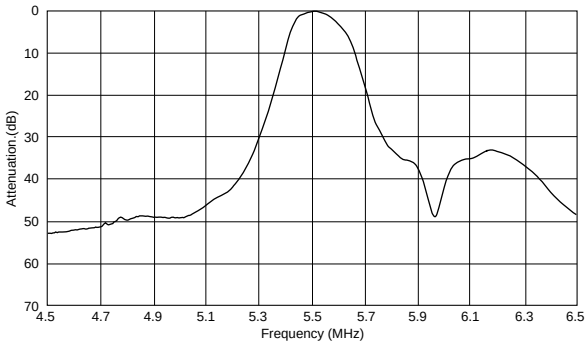

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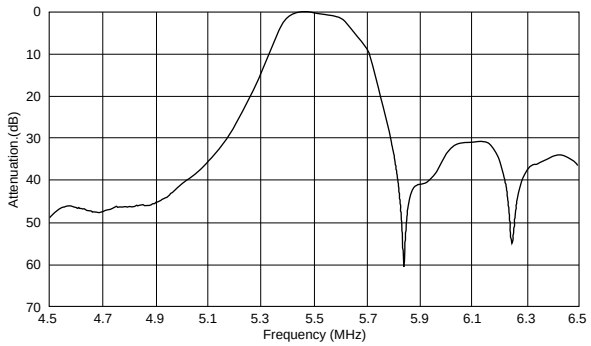

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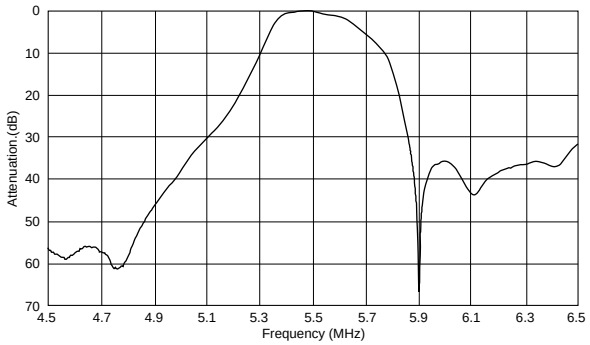

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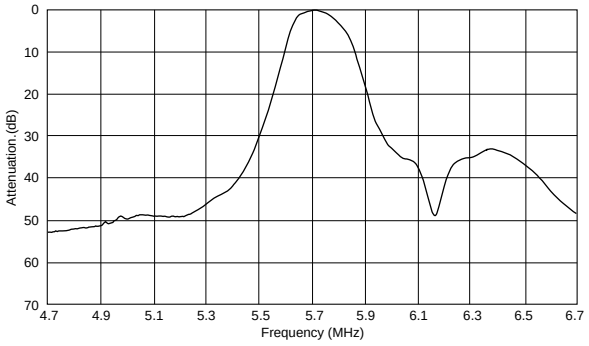

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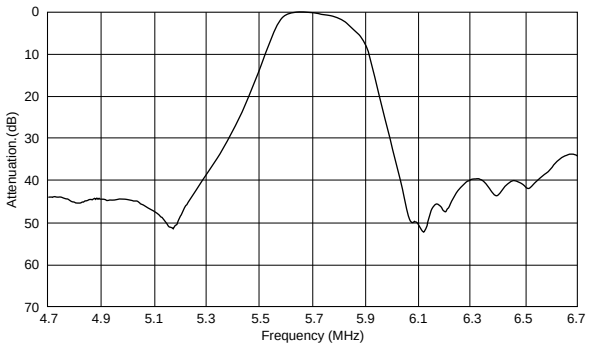

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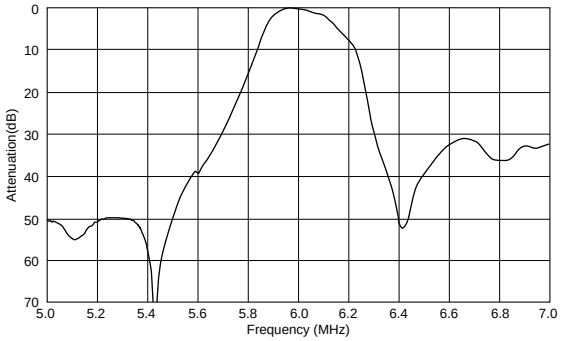
■ Frequency Characteristics

SFSRA6M00CF00-B0



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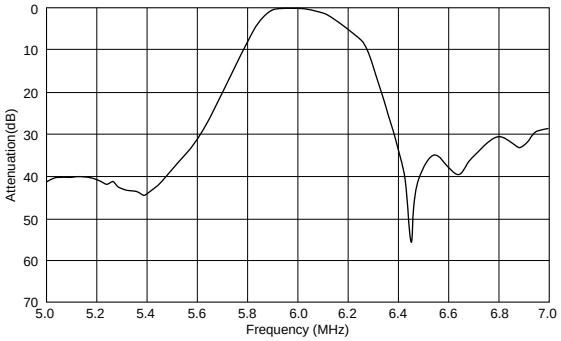

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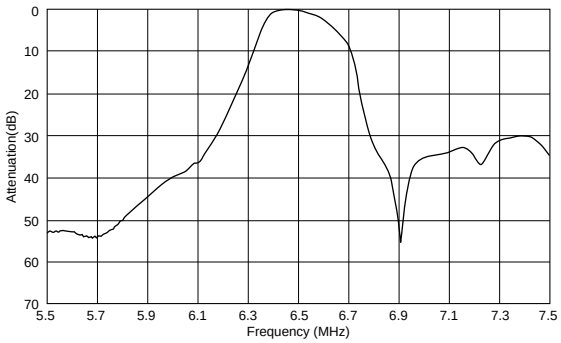

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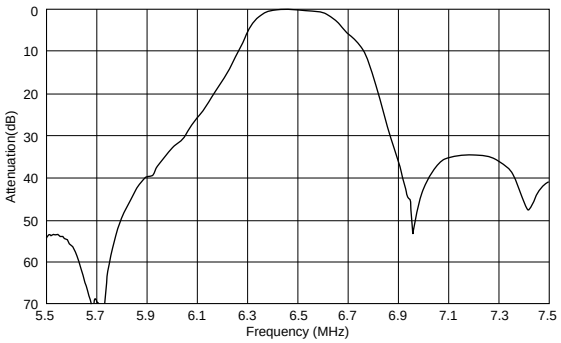

■ Spurious Response

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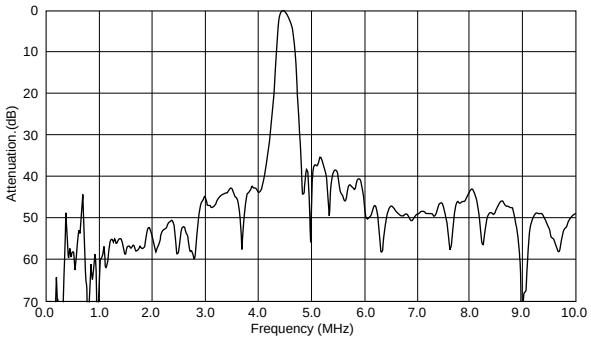

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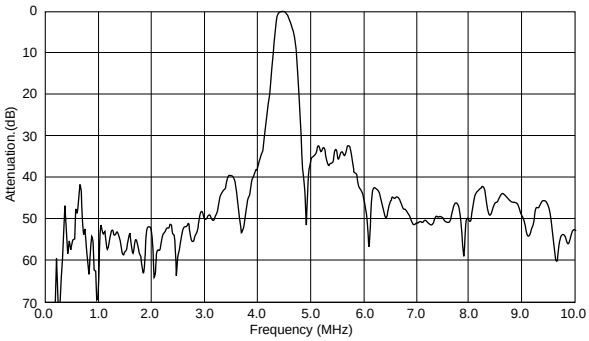

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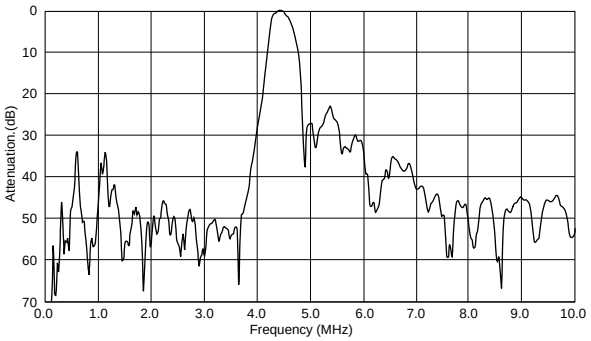

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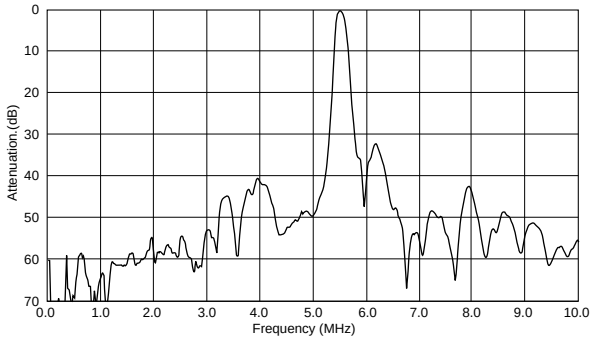

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■ Spurious Response

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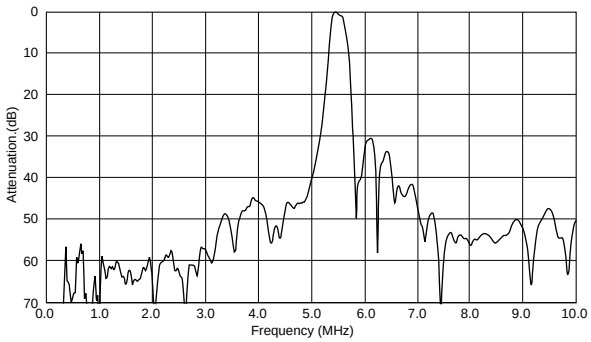

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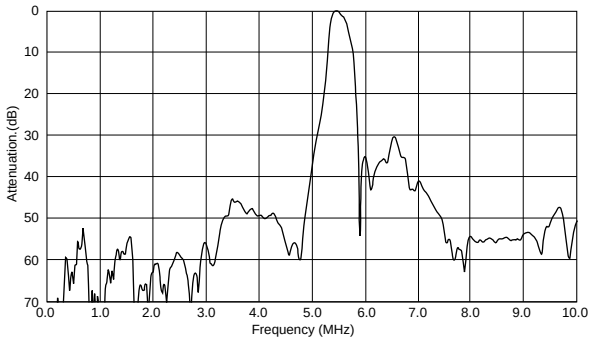

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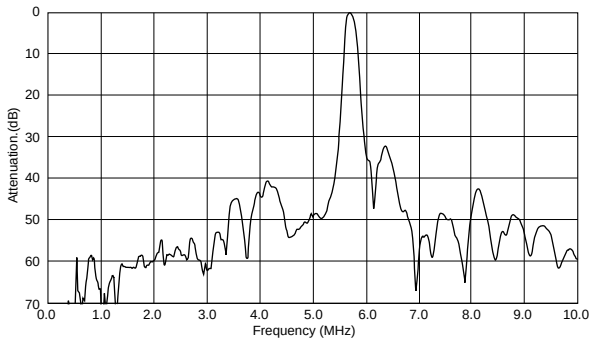

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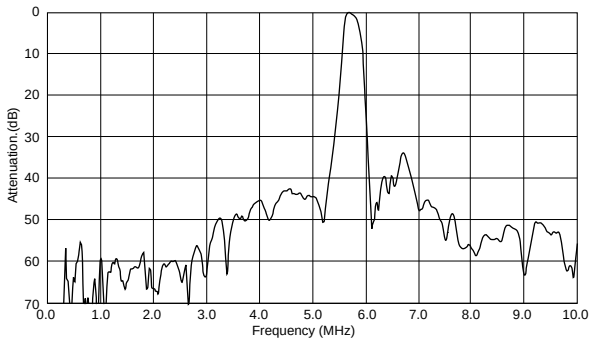

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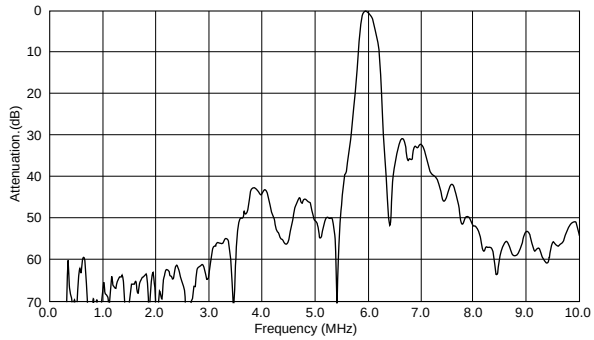

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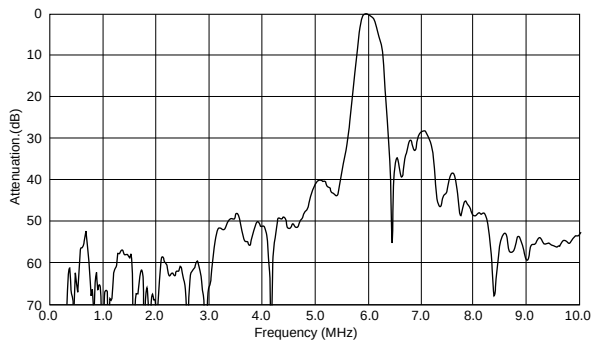

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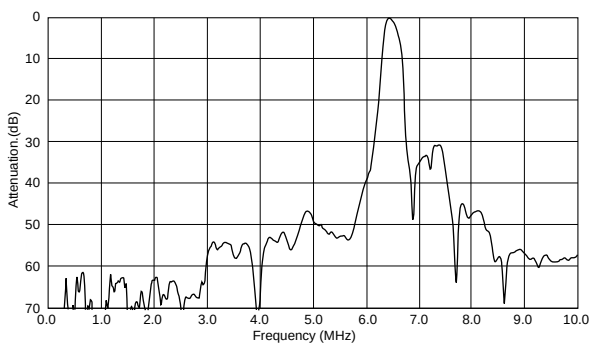

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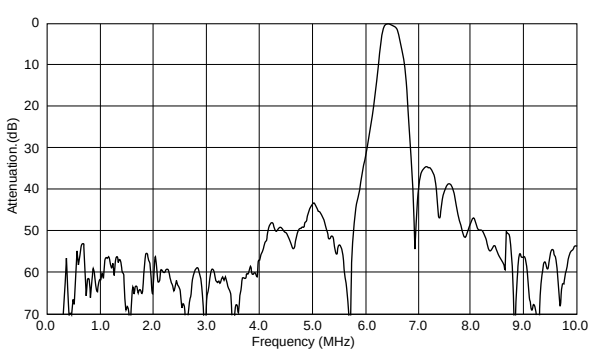

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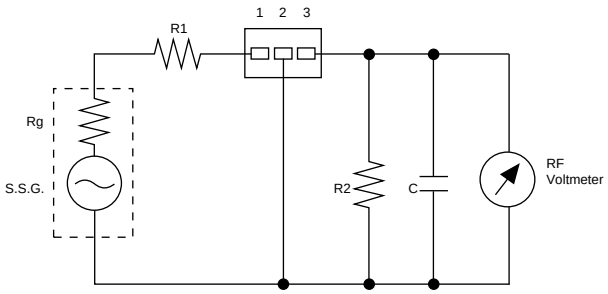
■ Test Circuit



Rg+R1=R2=Input and Output Impedance
C=10pF (Including stray capacitance and input capacitance of RF voltmeter)

CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

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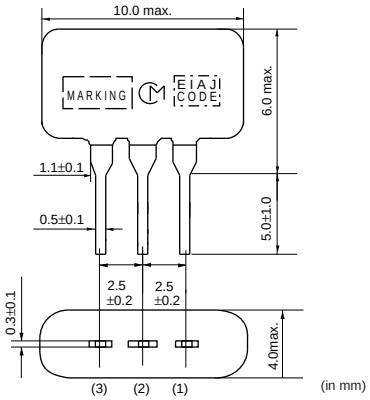
CERAFIL® Low-profile SFSRL Series

SFSRL series are the Low-profile type of standard SFSRA series.



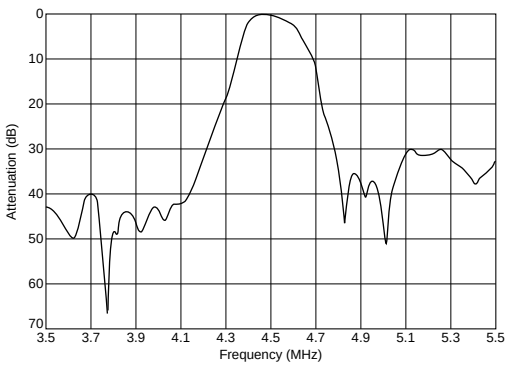
■ Features

1. Installed height is 6.0mm, making it well suited for compact, thin sets.
2. Electrical char. and performance are the same as those of SFSRA series.
3. 2 types, narrow and middle bandwidth, are prepared.

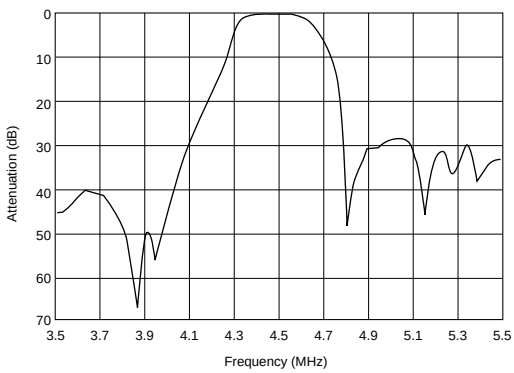
Part Number	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	20dB Bandwidth (kHz)	Insertion Loss (dB)	Spurious Attenuation(1) (dB)	Spurious Attenuation(2) (dB)	Input/Output Impedance (ohm)
SFSRL4M50CF00-B0	4.500	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.0MHz]	1000
SFSRL4M50DF00-B0	4.500	fn±70 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 5.7MHz]	1000
SFSRL5M50CF00-B0	5.500	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.0MHz]	600
SFSRL5M50DF00-B0	5.500	fn±80 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.0MHz]	600
SFSRL6M00CF00-B0	6.000	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.5MHz]	470
SFSRL6M00DF00-B0	6.000	fn±80 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.5MHz]	470
SFSRL6M50CF00-B0	6.500	fn±70 min.	650 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 8.5MHz]	470
SFSRL6M50DF00-B0	6.500	fn±80 min.	800 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 8.0MHz]	470

■ Frequency Characteristics

SFSRL4M50CF00-B0



SFSRL4M50DF00-B0



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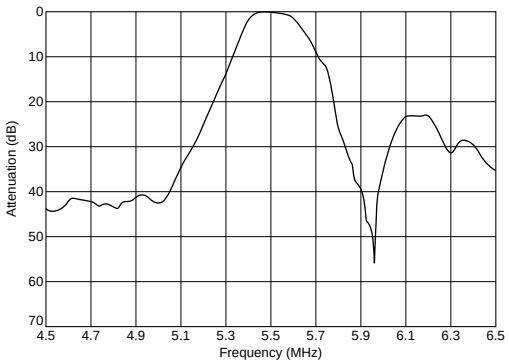
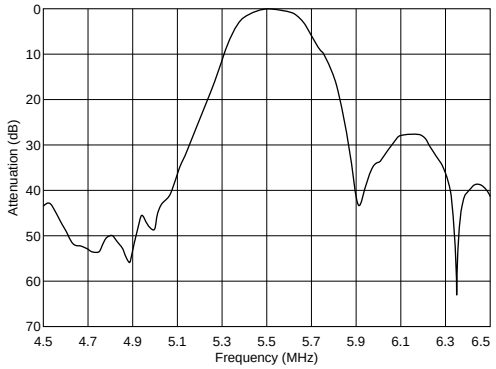
■ Frequency Characteristics

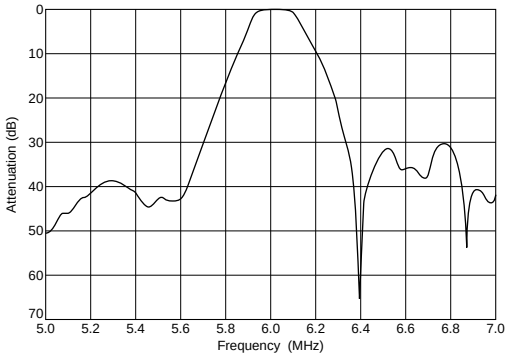
SFSRL5M50CF00-B0



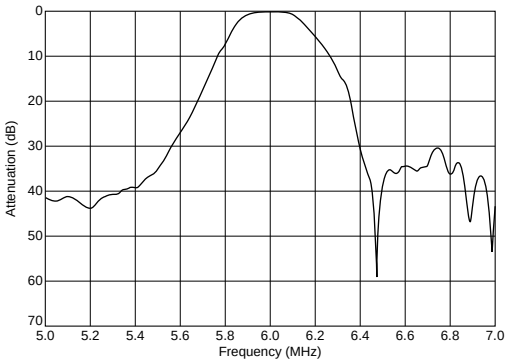
SFSRL5M50DF00-B0



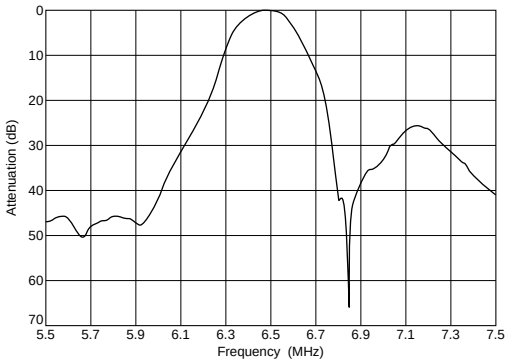
SFSRL6M00CF00-B0



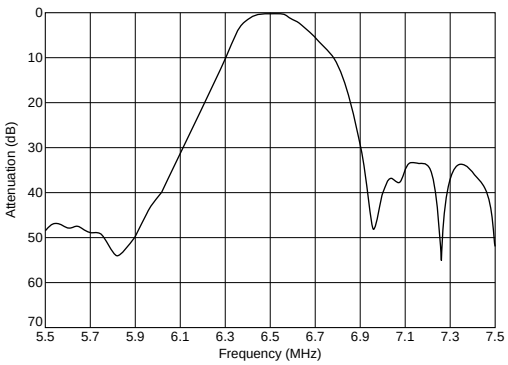
SFSRL6M00DF00-B0



SFSRL6M50CF00-B0

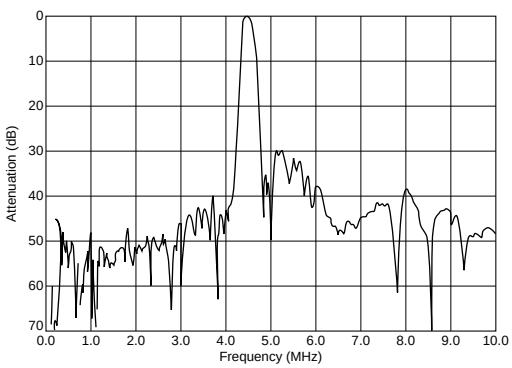


SFSRL6M50DF00-B0

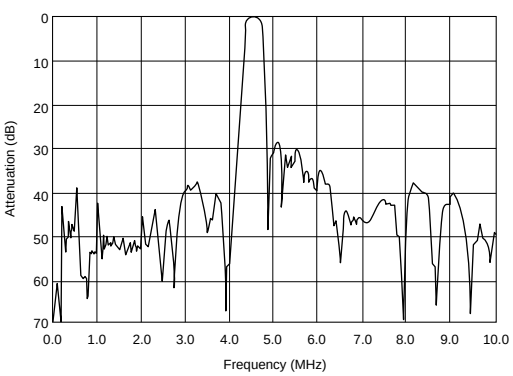


■ Spurious Response

SFSRL4M50CF00-B0



SFSRL4M50DF00-B0



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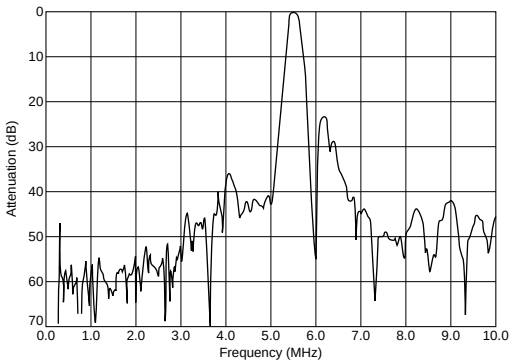
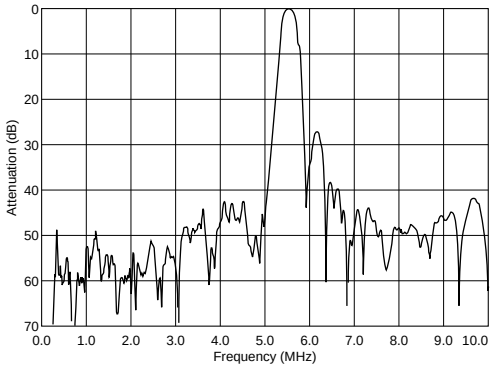
■ Spurious Response

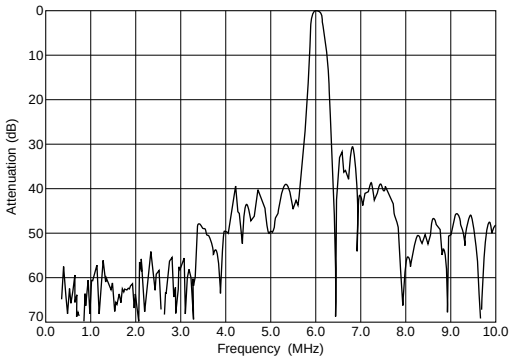
SFSRL5M50CF00-B0



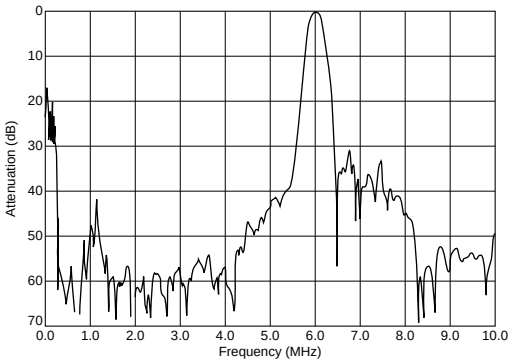
SFSRL5M50DF00-B0



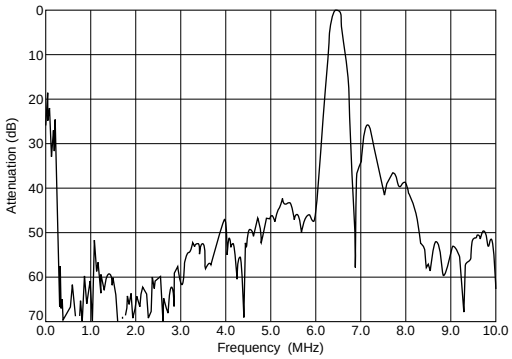
SFSRL6M00CF00-B0



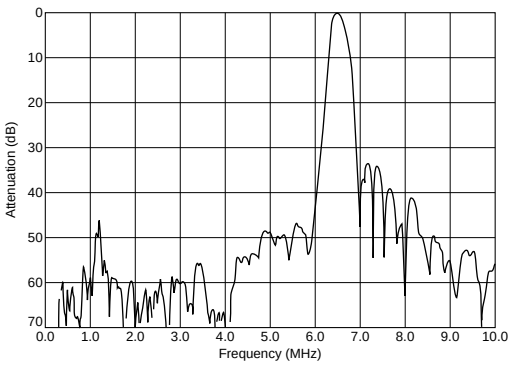
SFSRL6M00DF00-B0



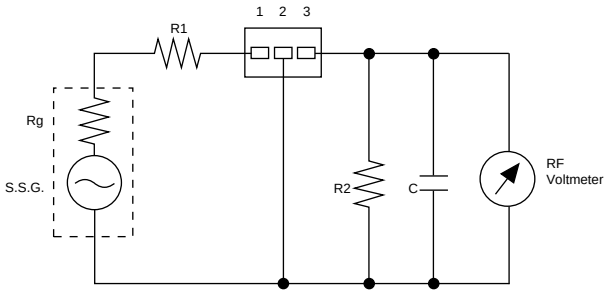
SFSRL6M50CF00-B0



SFSRL6M50DF00-B0



■ Test Circuit

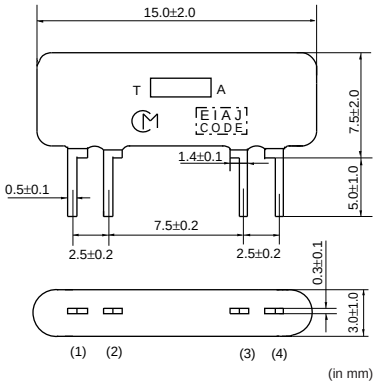


Rg+R1=R2=Input and Output Impedance
C=10pF (Including stray capacitance and input capacitance of RF voltmeter)

CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

CERAFIL® High-selectivity Type SFTRD Series

Ceramic filter SFTRD_AF series are high selectivity filter which involves 3-elements filter unit.



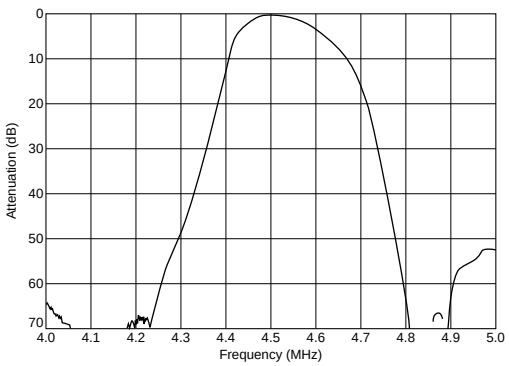
■ Features

1. Excellent shape factor.
2. Good performance for spurious suppression.
3. Four-terminals type.
4. Suitable for 2 channel Multi-sound TV of Germany and Korea.

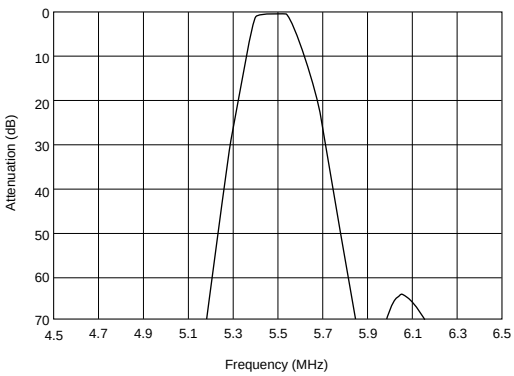
Part Number	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	20dB Bandwidth (kHz)	Insertion Loss (dB)	Spurious Attenuation(1) (dB)	Spurious Attenuation(2) (dB)	Input/Output Impedance (ohm)
SFTRD4M50AF00-B0	4.500	fn±40 min.	370 max.	10.0 max.	50 min. [within fn-1.0MHz to fn]	40 min. [within fn to fn+0.8MHz]	1000
SFTRD5M50AF00-B0	5.500	fn±50 min.	350 max.	9.0 max.	50 min. [within fn-1.0MHz to fn]	50 min. [within fn to fn+1.0MHz]	600
SFTRD5M74AF00-B0	5.742	fn±50 min.	350 max.	9.0 max.	50 min. [within fn-1.0MHz to fn]	50 min. [within fn to fn+1.0MHz]	600
SFTRD6M00AF00-B0	6.000	fn±50 min.	400 max.	9.0 max.	50 min. [within fn-1.0MHz to fn]	50 min. [within fn to fn+1.0MHz]	470
SFTRD6M50AF00-B0	6.500	fn±50 min.	400 max.	9.0 max.	50 min. [within fn-1.0MHz to fn]	50 min. [within fn to fn+1.0MHz]	470

■ Frequency Characteristics

SFTRD4M50AF00-B0



SFTRD5M50AF00-B0



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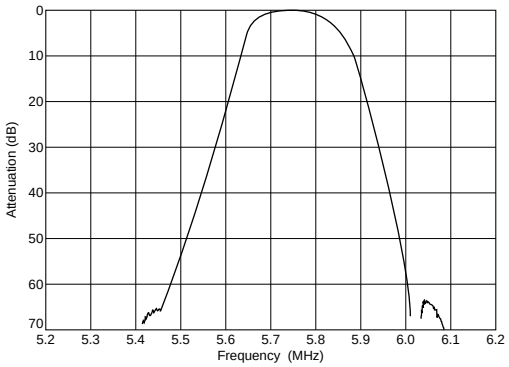
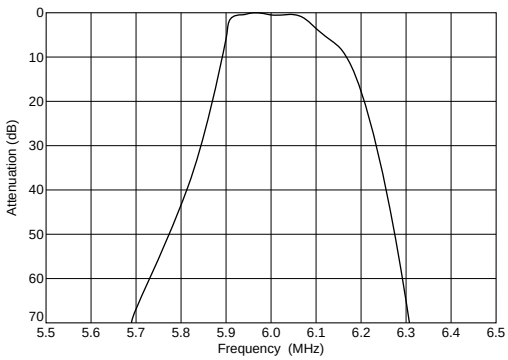
■ Frequency Characteristics

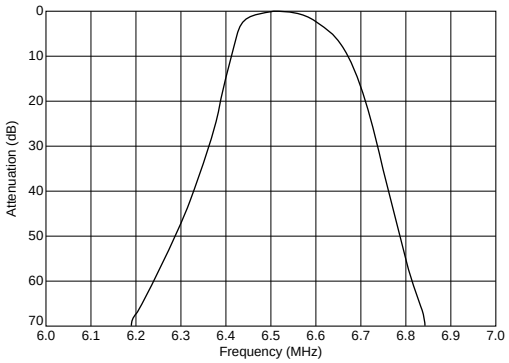
SFTRD5M74AF00-B0



SFTRD6M00AF00-B0

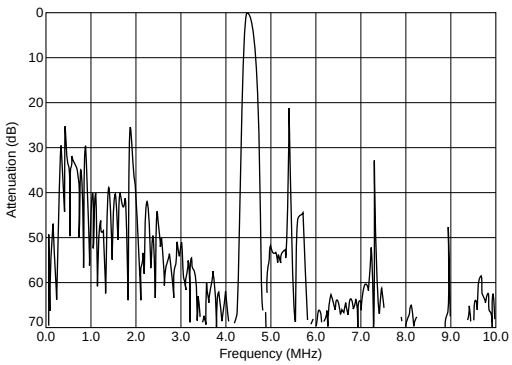


SFTRD6M50AF00-B0

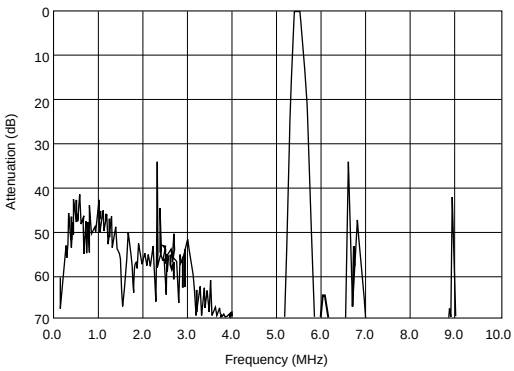


■ Spurious Response

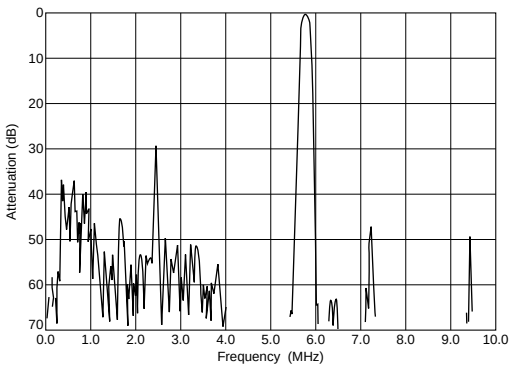
SFTRD4M50AF00-B0



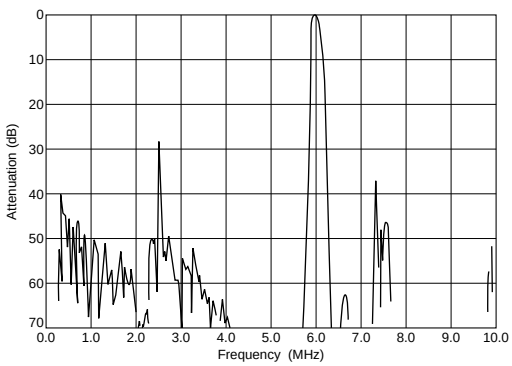
SFTRD5M50AF00-B0



SFTRD5M74AF00-B0



SFTRD6M00AF00-B0



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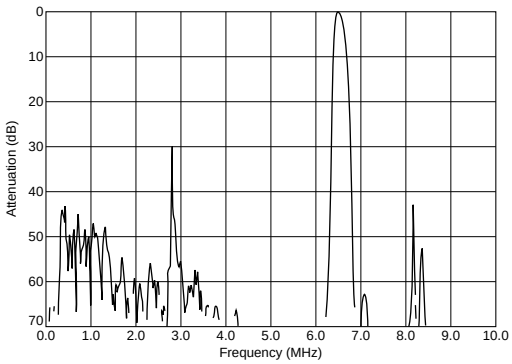
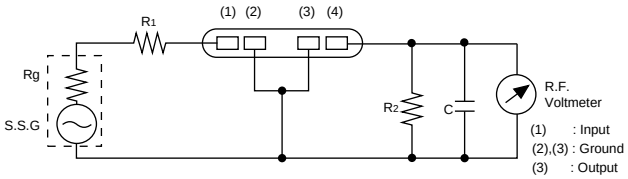
■ Spurious Response

SFTRD6M50AF00-B0



4

■ Test Circuit



$Rg + R_1 = R_2 = 330\Omega$
C = 10pF (Including stray capacitance and input capacitance of RF voltmeter.)

CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

muRata

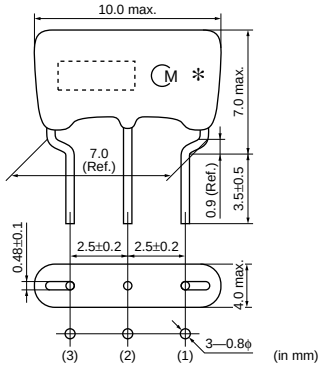
CERAFIL® Chroma Signal SFSRA/H/L Series

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

■ Features

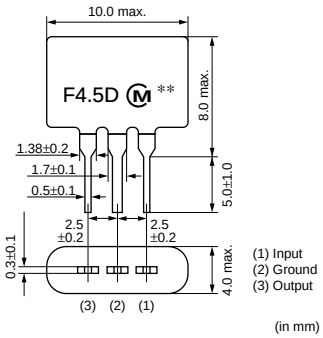
1. Frequency adjustment free.
2. Responsible for VHS. 8mm VCR system.

SFSRA Series

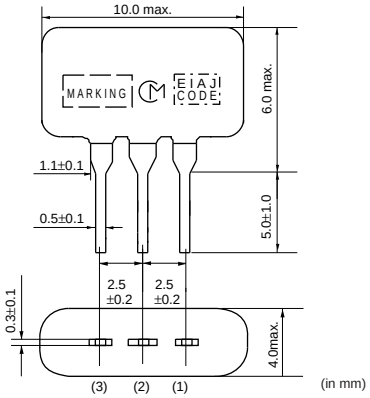


5

SFSRH Series



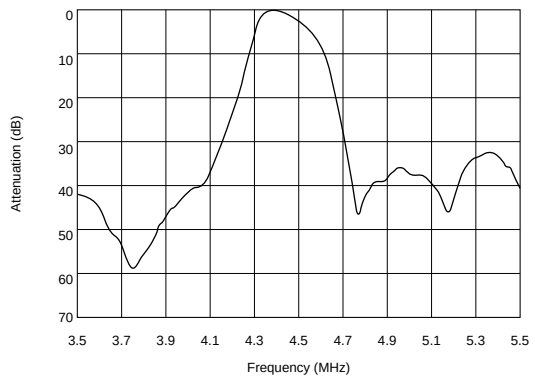
SFSRL Series



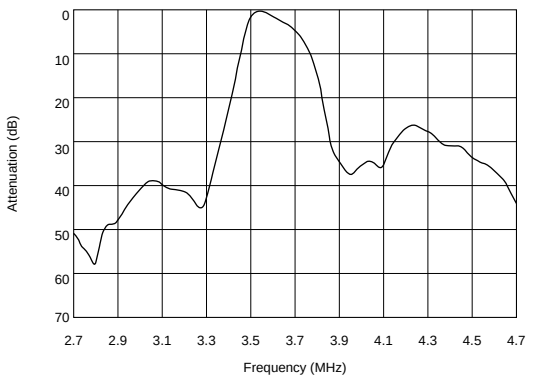
Part Number	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	20dB Bandwidth (kHz)	Insertion Loss (dB)	Spurious Attenuation(1) (dB)	Spurious Attenuation(2) (dB)	Input/Output Impedance (ohm)
SFSRA4M43CF00-B0	4.430	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.0MHz]	1000
SFSRH3M58CF00-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
SFSRL4M32DF00-B0	4.320	fn±70 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 5.5MHz]	1000
SFSRL5M17DF00-B0	5.170	fn±70 min.	750 max.	7.5 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.0MHz]	600

■ Frequency Characteristics

SFSRA4M43CF00-B0



SFSRH3M58CF00-B0



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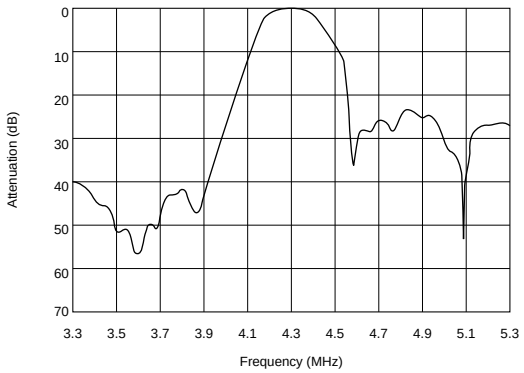
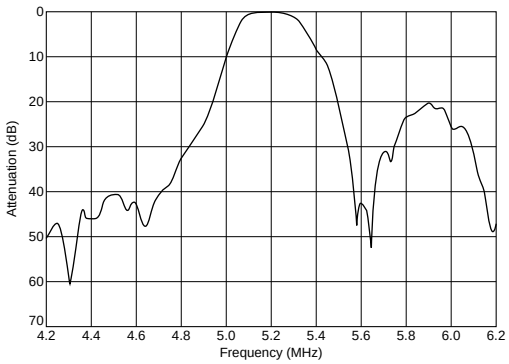
■ Frequency Characteristics

SFSRL4M32DF00-B0



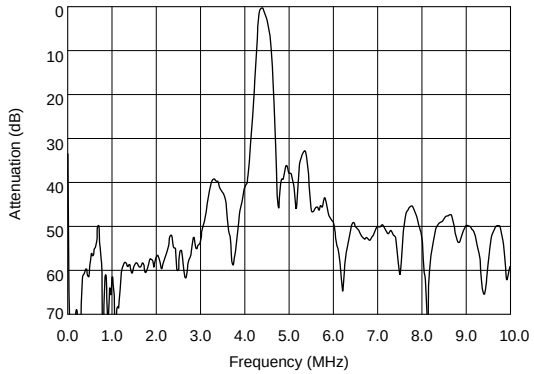
SFSRL5M17DF00-B0



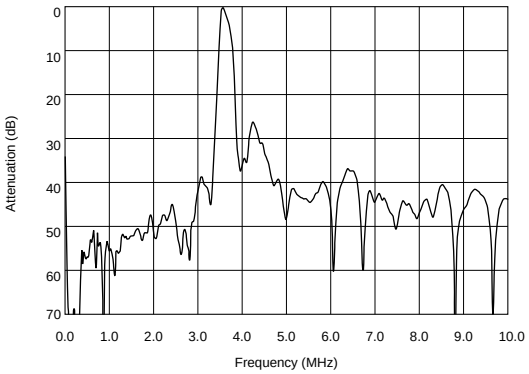
5

■ Spurious Response

SFSRA4M43CF00-B0



SFSRH3M58CF00-B0



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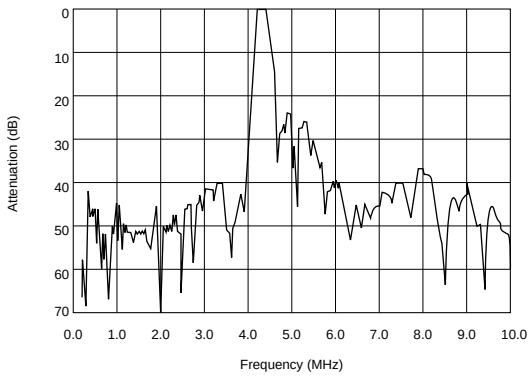

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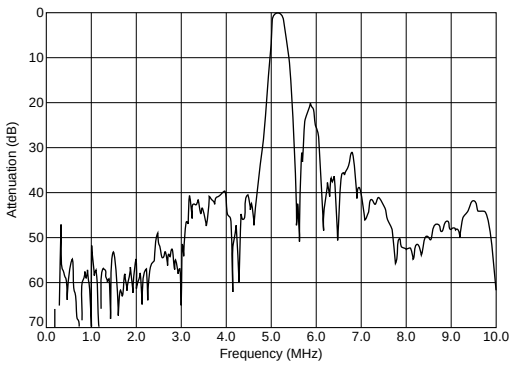
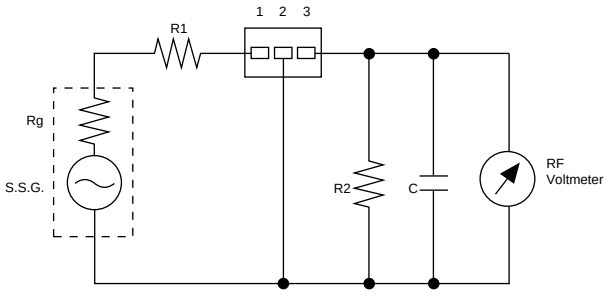


■ Test Circuit



Rg+R1=R2=Input and Output Impedance
C=10pF (Including stray capacitance and input capacitance of RF voltmeter)

CERAFIL® Lead Type Notice

■ Notice (Soldering and Mounting)

The component cannot be withstand washing.

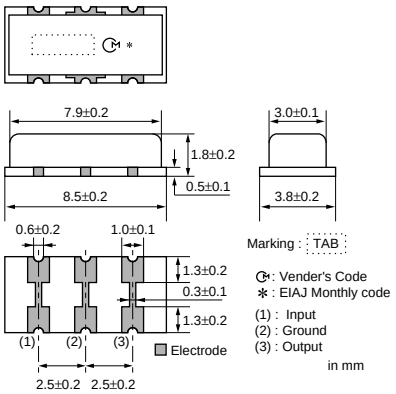
■ Notice (Handling)

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 excess stress will be 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 well.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miss-correlation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

CERAFIL®(Filters/Traps/Discriminators) for TV/VCR

Ceramic Traps Chip Type TPSKA Series

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



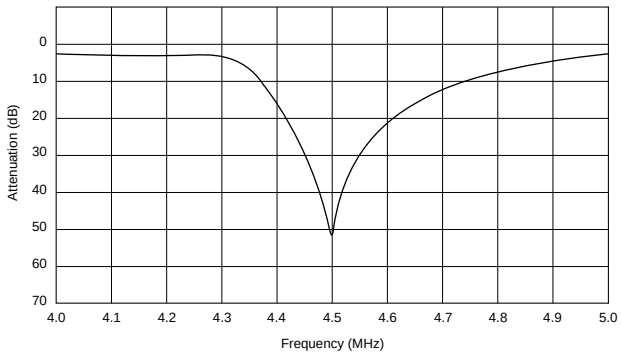
■ Features

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

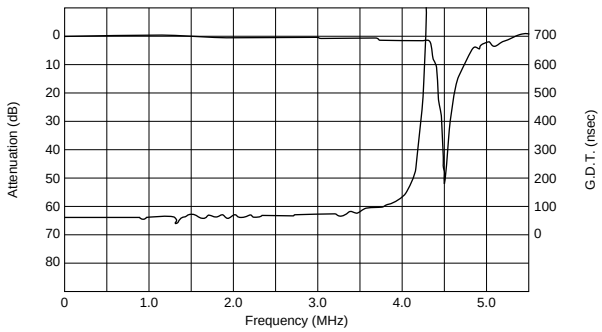
6

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

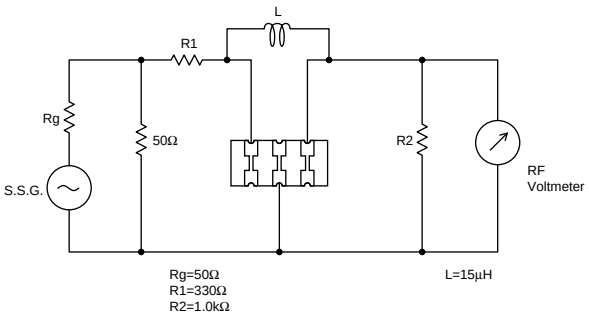
■ Frequency Characteristics



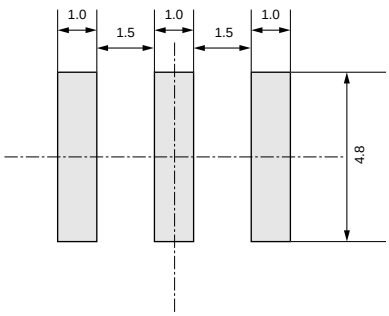
■ Spurious Response



■ Test Circuit



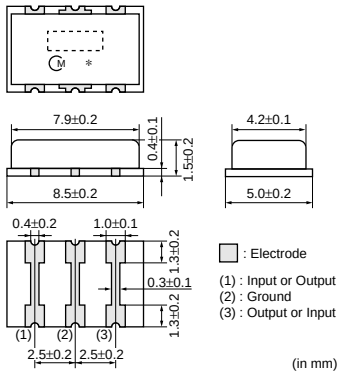
■ Standard Land Pattern Dimensions



CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

Double Trap Chip Type TPWKA Series

SMD ceramic trap TPWKA is small and thin SMD trap sealed with a metal cap. Recommended for LCD-TVs, and small and thin tuners.
This series consist of 2 wafers with 2 trap frequencies. Recommended for Multi standard set.

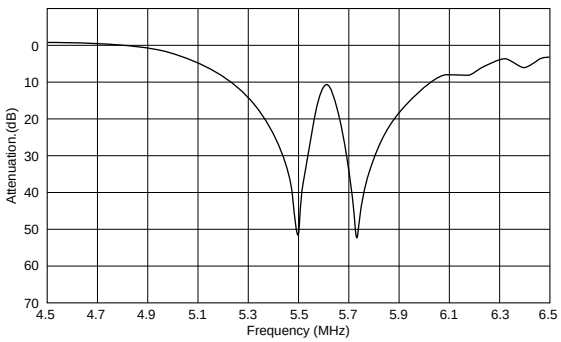


■ Features

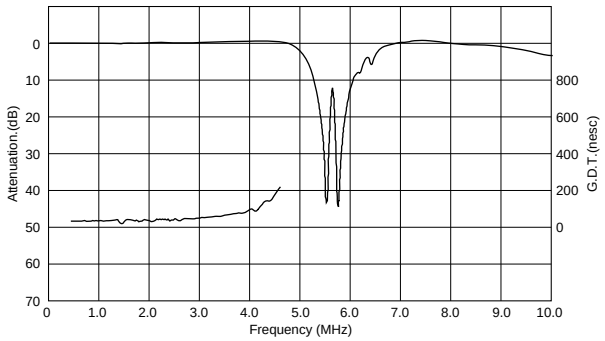
1. Good performance of attenuation.
2. Small and thin package.
3. Reflow-solderable.

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.

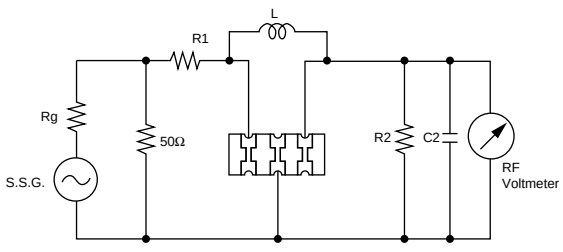
■ Frequency Characteristics



■ Spurious Response



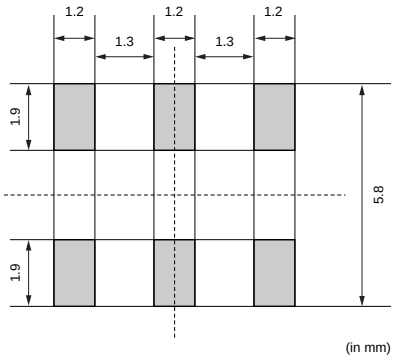
■ Test Circuit



Rg = 50 Ω
R1 = 150 Ω
R2 = 330 Ω
C2 = 10pF (Including stray capacitance and input capacitance of RF voltmeter)

L = 8.2 µH

■ Standard Land Pattern Dimensions



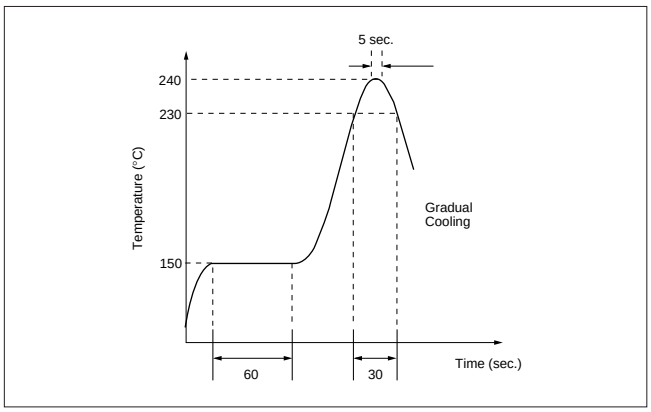
Ceramic Trap Chip Type Notice

■ Notice (Soldering and Mounting)

1. Standard Reflow Soldering Condition

(1) Reflow

Trap is soldered one time within the following temperature condition and then being placed in natural condition for 4 hours.



(2) Soldering Iron

Lead terminal is directly contacted with the tip of soldering iron of 280±5°C for 3.0 seconds ±0.5 seconds, and then being placed in natural condition for 4 hours.

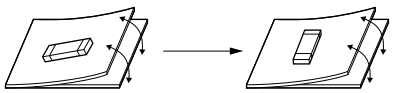
2. Wash

The component cannot be withstand washing.

■ Notice (Handling)

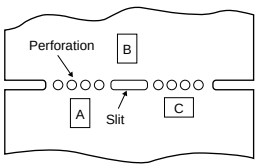
1. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. Design layout of components on the PC board to minimize the stress imposed on the wrap or flexure of the board.
3. After installing chips, if solder is excessively applied to the circuit board, mechanical stress will cause destruction resistance characteristics to lower. To prevent this, be extremly careful in determining shape and dimension before designing the circuit board diagram.
4. When the positioning claws and pick up nozzle are worn, the load is applied to the chip while positioning is concentrated to one positioning accuracy, etc. Careful checking and maintenance are necessary to prevent unexpected trouble.
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 well.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miss-correlation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

[Component direction]



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

[Component layout close to board]

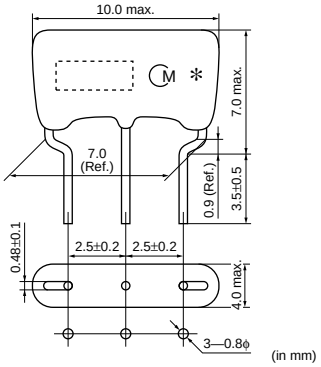


Susceptibility to stress is in the order of;A>C>B

CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

Ceramic Traps Three-terminals 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 2 trap element on one wafer.
Suitable for the sound IF trap of CTV/VCR.



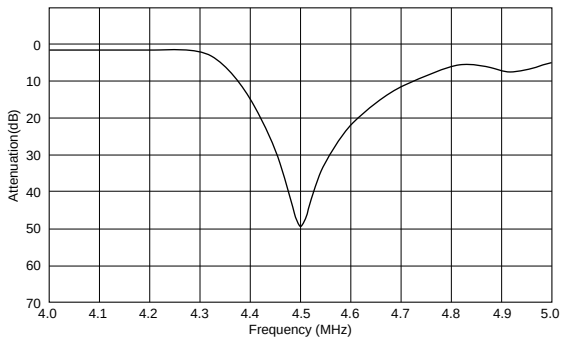
■ Features

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.

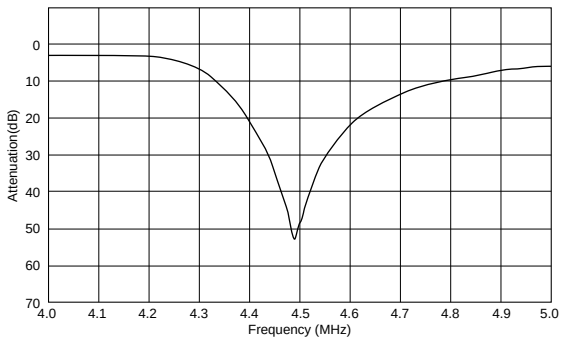
Part Number	Nominal Center Frequency (fn1) (MHz)	Attenuation (at fn1) (dB)	30dB Attenuation BW (fn1) (kHz)
TPSRA4M50B00-B0	4.500	35 min.	50 min.
TPSRA4M50C00-B0	4.500	30 min.	-
TPSRA5M50B00-B0	5.500	35 min.	70 min.
TPSRA5M74B00-B0	5.742	35 min.	70 min.
TPSRA6M00B00-B0	6.000	35 min.	70 min.
TPSRA6M50B00-B0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

■ Frequency Characteristics

TPSRA4M50B00-B0



TPSRA4M50C00-B0



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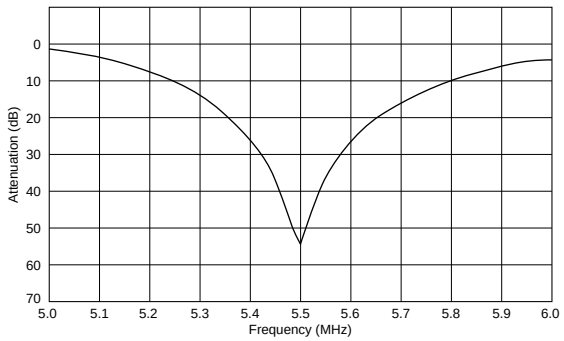
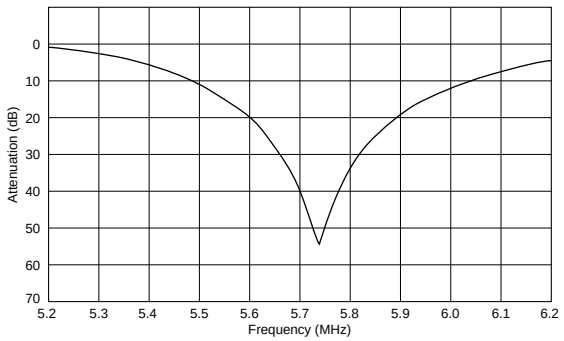
■ Frequency Characteristics

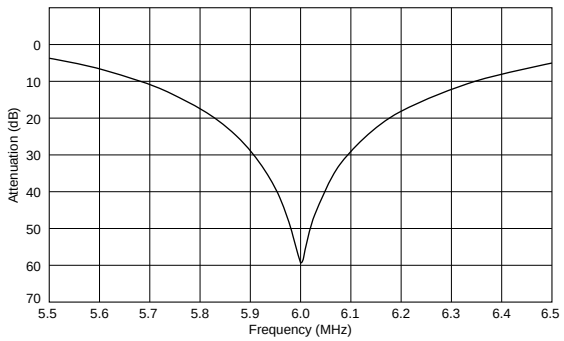
TPSRA5M50B00-B0



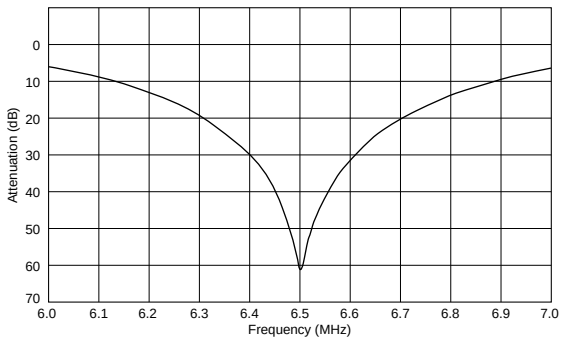
TPSRA5M74B00-B0



TPSRA6M00B00-B0



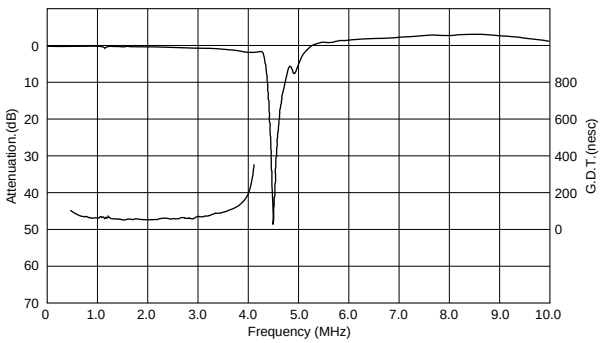
TPSRA6M50B00-B0



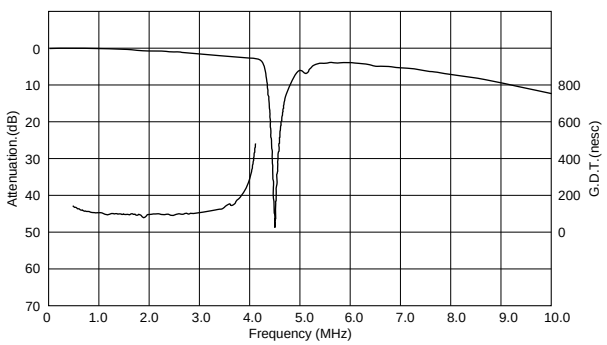
8

■ Spurious Response

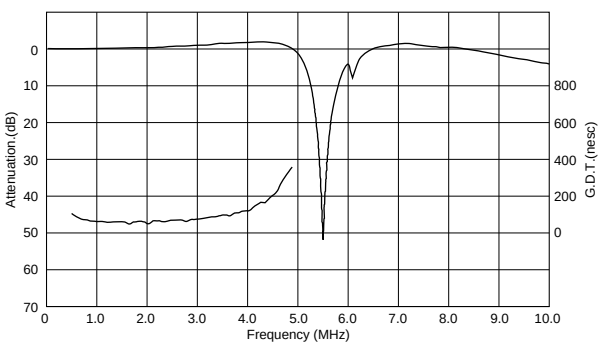
TPSRA4M50B00-B0



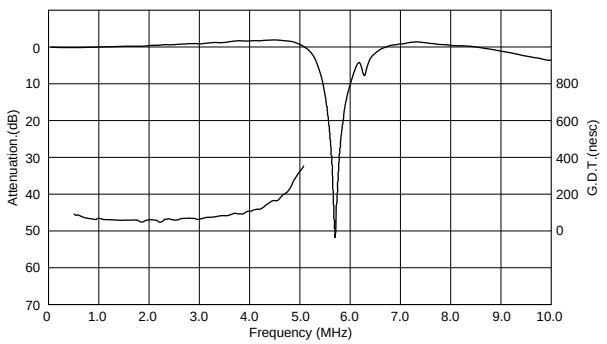
TPSRA4M50C00-B0



TPSRA5M50B00-B0



TPSRA5M74B00-B0



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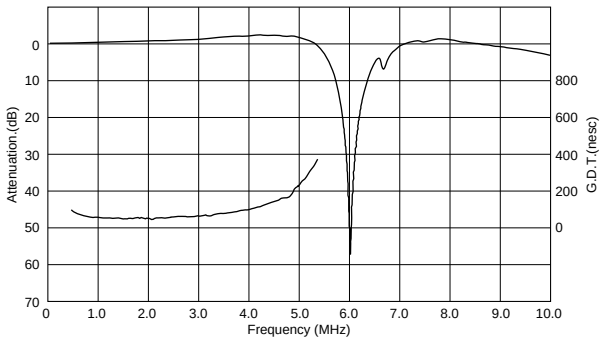
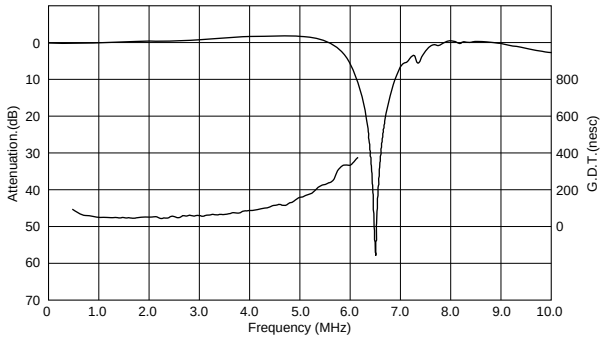
■ Spurious Response

TPSRA6M00B00-B0

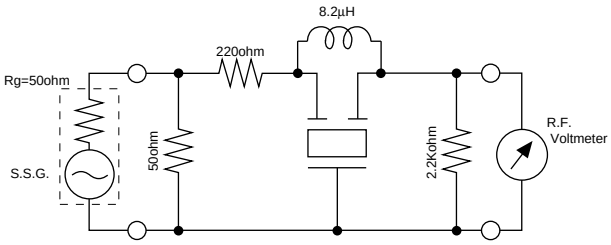


TPSRA6M50B00-B0

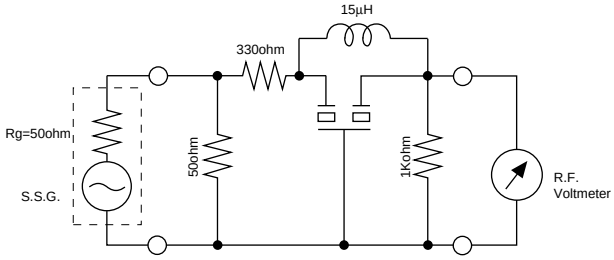


■ Test Circuit

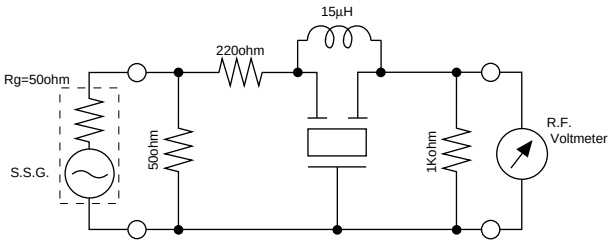
TPSRA4M50B00-B0



TPSRA4M50C00-B0



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

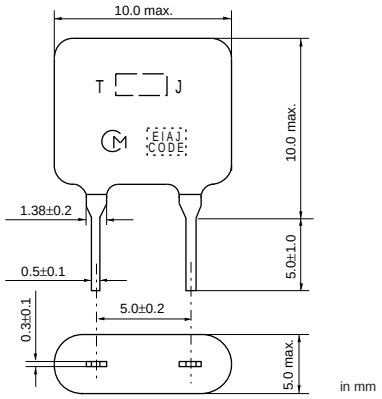


8

CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

Ceramic Traps Two-terminals TPSRD Series

Ceramic Trap TPSRD_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.



in mm

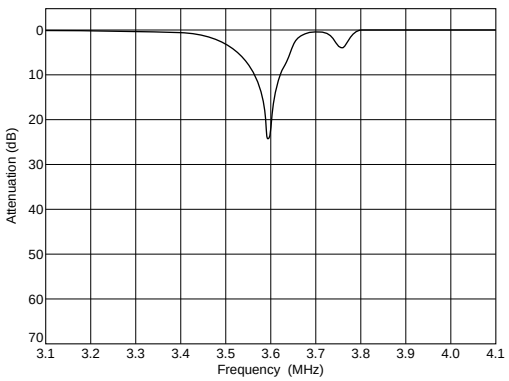
■ Features

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

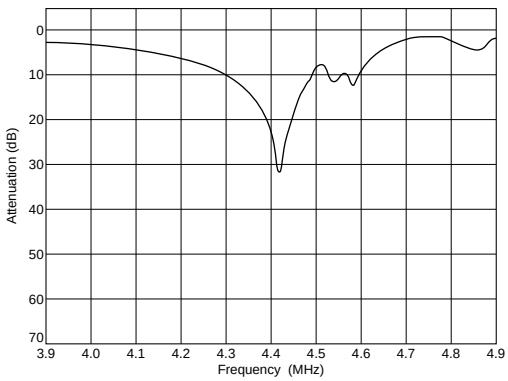
Part Number	Nominal Center Frequency (fn1) (MHz)	Attenuation (at fn1) (dB)	30dB Attenuation BW (fn1) (kHz)
TPSRD3M58J00-B0	3.580	20 min.	20 min.[20dB Att.BW]
TPSRD4M43J00-B0	4.430	20 min.	40 min.[20dB Att.BW]
TPSRD4M50J00-B0	4.500	20 min.	30 min.[20dB Att.BW]
TPSRD5M50J00-B0	5.500	20 min.	30 min.[20dB Att.BW]
TPSRD6M00J00-B0	6.000	20 min.	40 min.[20dB Att.BW]
TPSRD6M50J00-B0	6.500	20 min.	40 min.[20dB Att.BW]

■ Frequency Characteristics

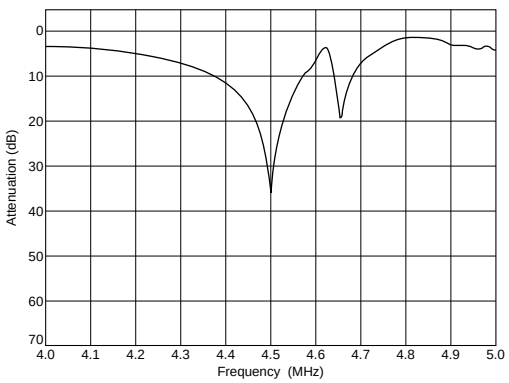
TPSRD3M58J00-B0



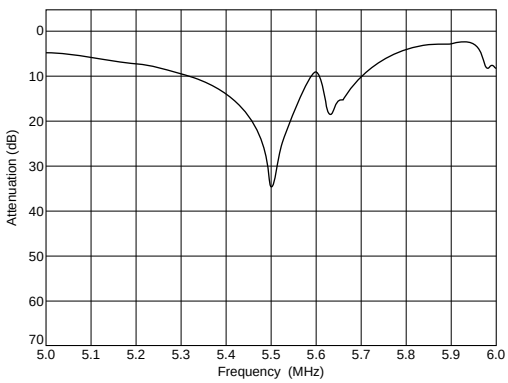
TPSRD4M43J00-B0



TPSRD4M50J00-B0



TPSRD5M50J00-B0



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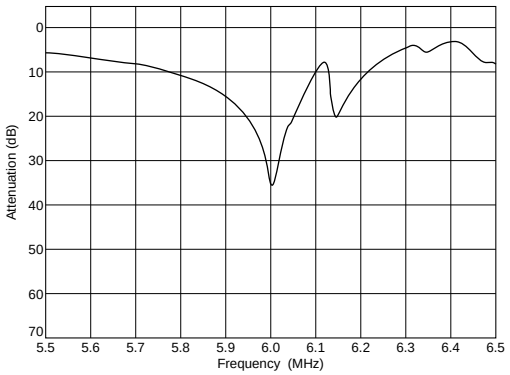
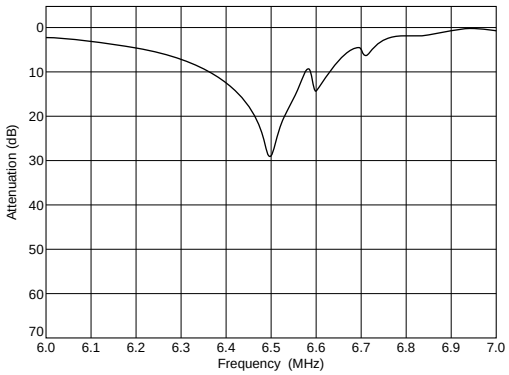
■ Frequency Characteristics

TPSRD6M00J00-B0

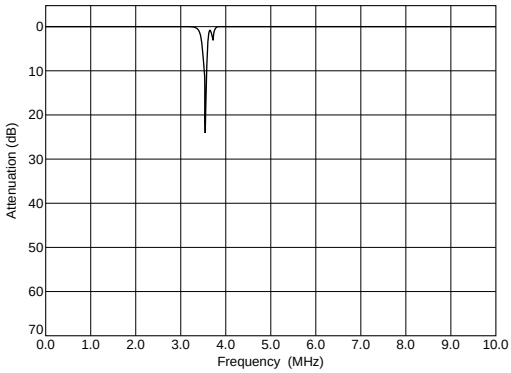


TPSRD6M50J00-B0

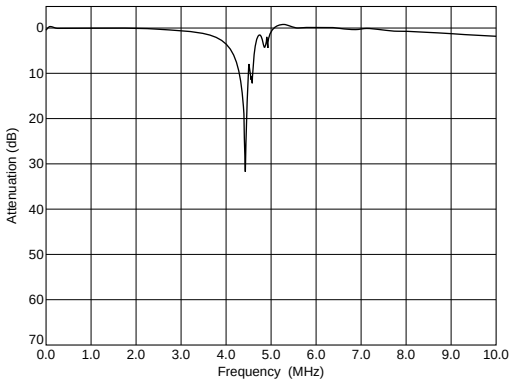


■ Spurious Response

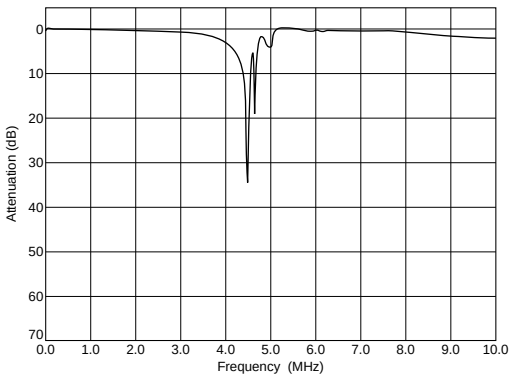
TPSRD3M58J00-B0



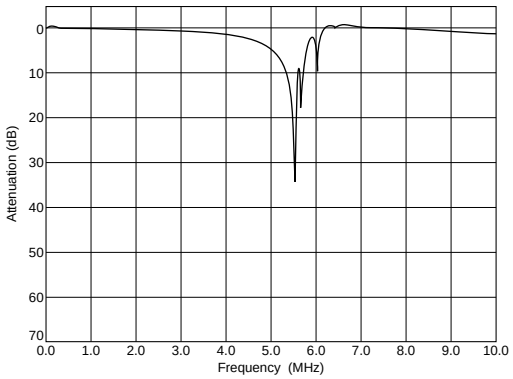
TPSRD4M43J00-B0



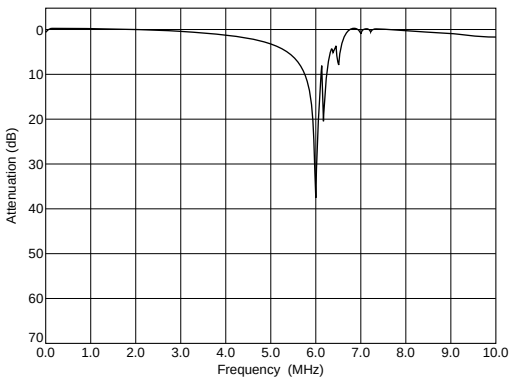
TPSRD4M50J00-B0



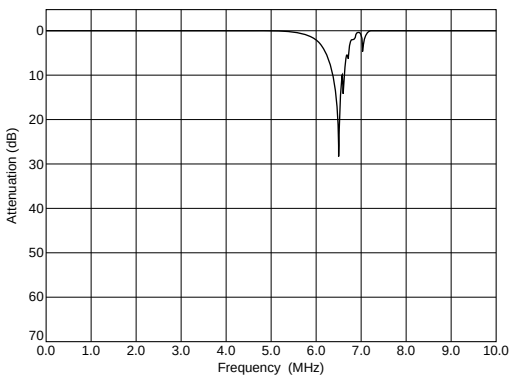
TPSRD5M50J00-B0



TPSRD6M00J00-B0



TPSRD6M50J00-B0



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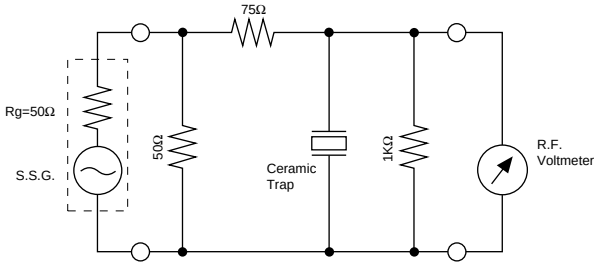
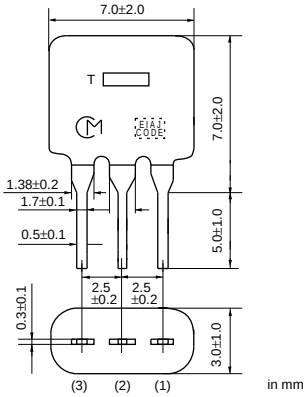
■ Test Circuit



CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

Ceramic Traps TPSRD Series for 2ch Sound TV in Germany

Ceramic trap TPSRD_W series has same structure as TPSRD_B series. But they can trap 2 individual frequencies in one time. Recommended for 2 channels multi-sound TV system.

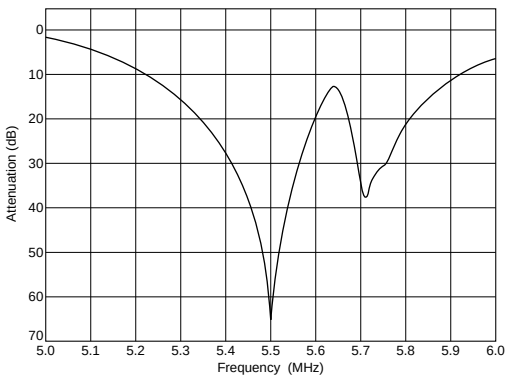


■ Features

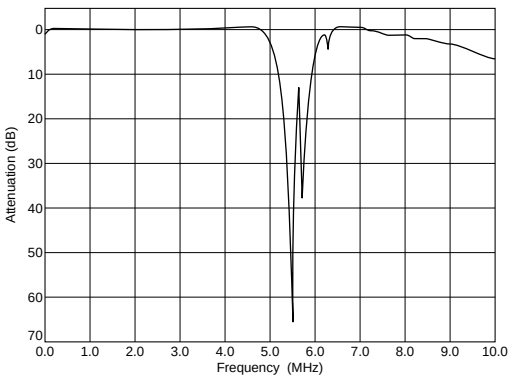
1. Space saving.
2. Three-terminals type.

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)
TPSRD5M50W00-B0	5.500	5.742	32 min.	25 min.	70 min.

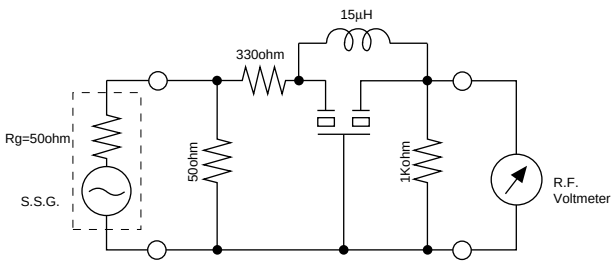
■ Frequency Characteristics



■ Spurious Response



■ Test Circuit

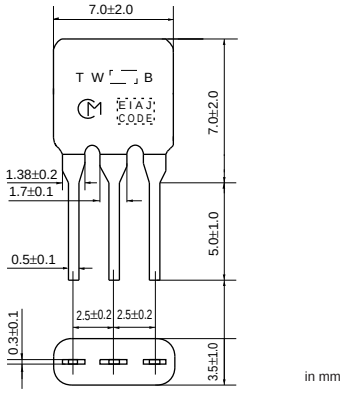


10

CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

Double Traps TPWRD Series

Ceramic trap TPWRD_B series consist of 2 wafers with 2 trap frequencies. Recommended for Dual standard set.



in mm

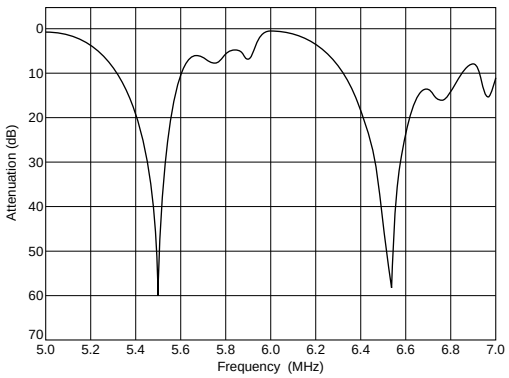
■ Features

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

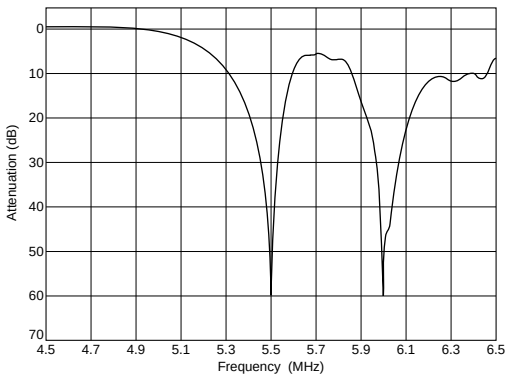
Part Number	Nominal Center Frequency (fn1) (MHz)	Nominal Center Frequency (fn2) (MHz)	Attenuation (at fn1) (dB)	Attenuation (at fn2) (dB)	30dB Attenuation BW (fn1) (kHz)
TPWRD5M50B02-B0	5.500	6.500	30 min.	30 min.	50 min.
TPWRD5M50B03-B0	5.500	6.000	30 min.	30 min.	50 min.
TPWRD5M50B04-B0	5.500	5.742	30 min.	30 min.	50 min.
TPWRD6M00B01-B0	6.000	6.500	30 min.	30 min.	70 min.

■ Frequency Characteristics

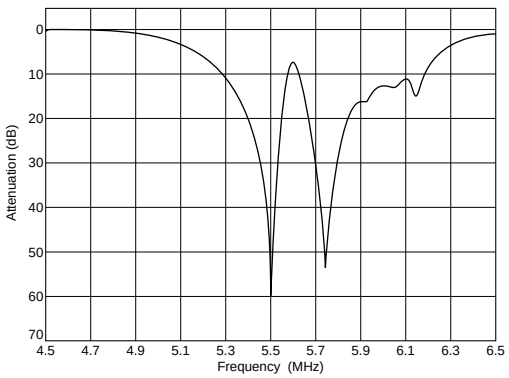
TPWRD5M50B02-B0



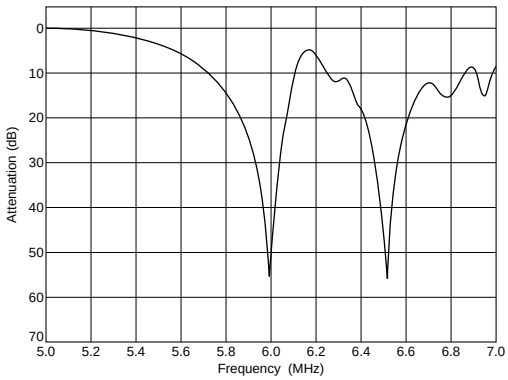
TPWRD5M50B03-B0



TPWRD5M50B04-B0



TPWRD6M00B01-B0



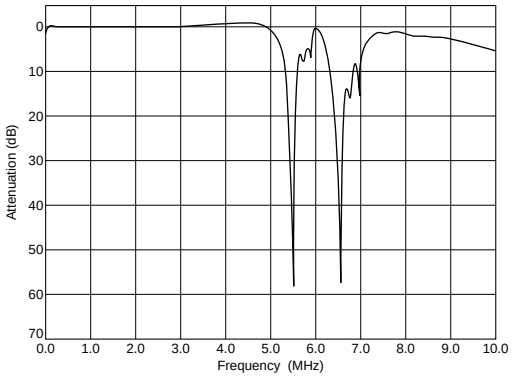
Continued on the following page.

11

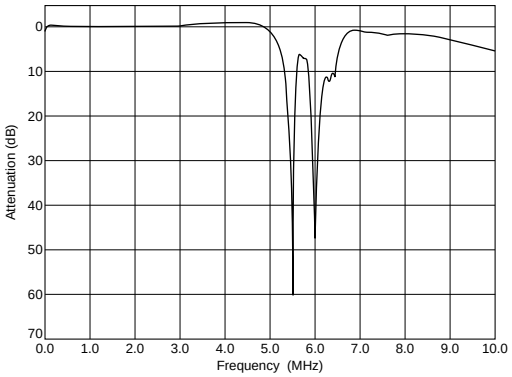
Continued from the preceding page.

■ Spurious Response

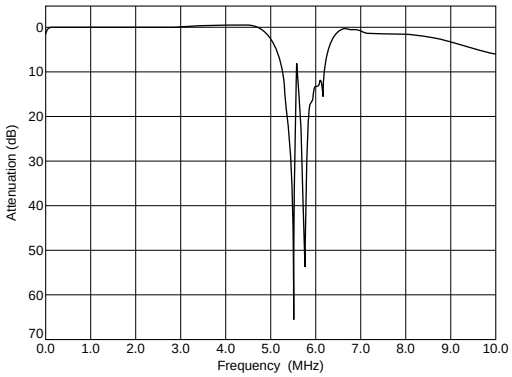
TPWRD5M50B02-B0



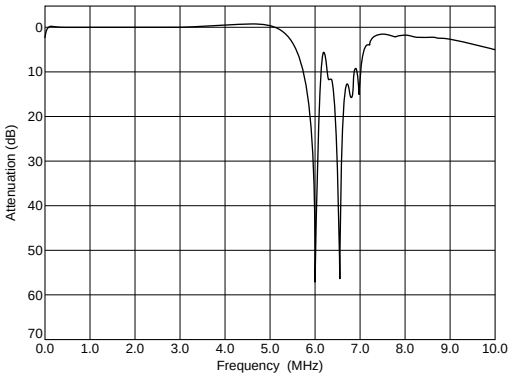
TPWRD5M50B03-B0



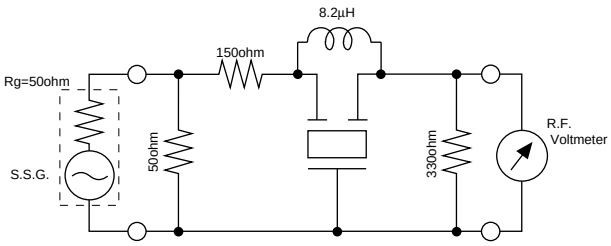
TPWRD5M50B04-B0



TPWRD6M00B01-B0



■ Test Circuit

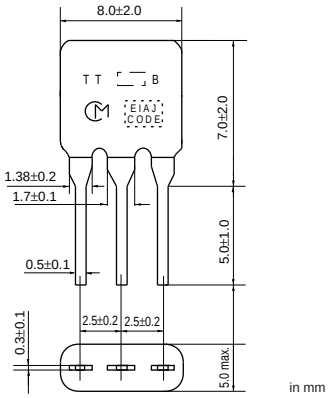


11

CERAFIL®(Filters/Traps/Discriminators) for TV/VCR

Triple Traps TPTRD Series

Ceramic trap TPTRD_B series consist of 3 wafers with 3 trap frequencies. Recommended for Multi standard set.



in mm

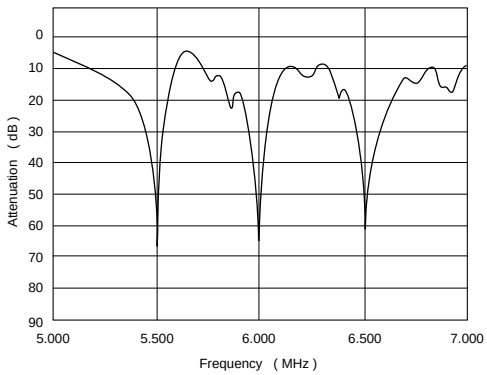
■ Features

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)
TPTRD5M50B01-B0	5.500	6.000	6.500	30 min.	30 min.	30 min.	50 min.

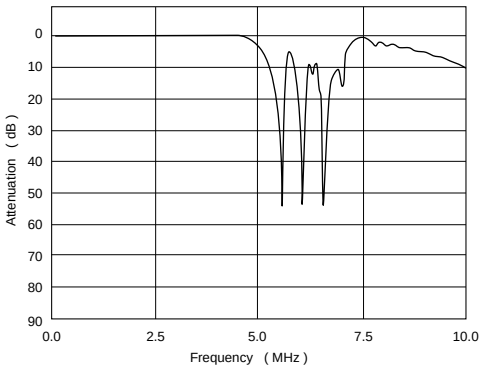
■ Frequency Characteristics

TPTRD5M50B01-B0

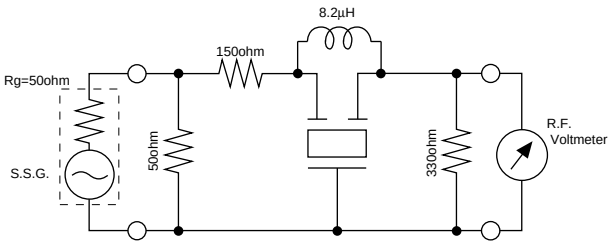


■ Spurious Response

TPTRD5M50B01-B0



■ Test Circuit



12

Ceramic Trap Lead Type Notice

■ Notice (Soldering and Mounting)

The component cannot be withstand washing.

■ Notice (Handling)

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 excess stress will be 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 well.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miss-correlation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

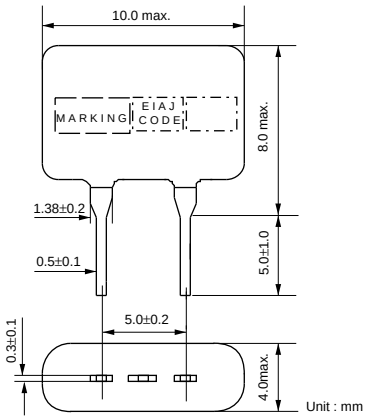
Discriminators Wide-Band Type CDSRH Series

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

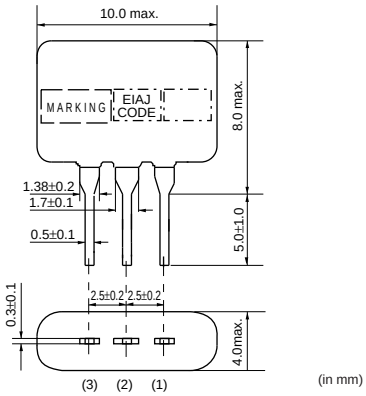
■ Features

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

CDSRH_EK Series



CDSRH_CK Series



Part Number	Nominal Center Frequency (fn) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output Voltage(at fn) (mV)	Distortion (%)	IC	Detection Method
CDSRH4M50EK020-B0	4.500	fn±80 min.	245 min.	1.0 max.	LA7550/7555	Quadrature
CDSRH4M50EK023-B0	4.500	fn±60 min.	230 min.	2.5 max.	M51496P	Quadrature
CDSRH4M50EK035-B0	4.500	fn±55 min.	240 min.	1.0 max.	LA7680/7681	Quadrature
CDSRH4M50EK049-B0	4.500	fn±100 min.	220 min.	1.0 max.	LA7577	Quadrature
CDSRH4M50EK060-B0	4.500	fn±90 min.	90 min.	1.0 max.	M52318SP	Quadrature
CDSRH4M50EK069-B0	4.500	fn±60 min.	320 min.	1.5 max.	TA8701N	Quadrature
CDSRH4M50EK070-B0	4.500	fn±50 min.	65 min.	1.5 max.	M52007FP	Quadrature
CDSRH5M50EK023-B0	5.500	fn±45 min.	220 min.	1.0 max.	M51496P	Quadrature
CDSRH5M50EK035-B0	5.500	fn±80 min.	350 min.	1.0 max.	LA7680/7681	Quadrature
CDSRH5M50EK049-B0	5.500	fn±60 min.	500 min.	1.0 max.	LA7577	Quadrature
CDSRH5M50EK054-B0	5.500	fn±100 min.	300 min.	1.2 max.	TDA3857	Quadrature
CDSRH5M50EK060-B0	5.500	fn±70 min.	190 min.	1.5 max.	M52318SP	Quadrature
CDSRH5M74EK054-B0	5.742	fn±90 min.	340 min.	1.2 max.	TDA3857	Quadrature
CDSRH6M00EK049-B0	6.000	fn±60 min.	500 min.	1.0 max.	LA7577	Quadrature
CDSRH6M00EK054-B0	6.000	fn±90 min.	340 min.	1.5 max.	TDA3857	Quadrature
CDSRH6M00EK060-B0	6.000	fn±60 min.	180 min.	2.5 max.	M52318SP	Quadrature
CDSRH6M50EK020-B0	6.500	fn±110 min.	350 min.	1.2 max.	LA7550/7555	Quadrature
CDSRH6M50EK049-B0	6.500	fn±60 min.	500 min.	1.0 max.	LA7577	Quadrature
CDSRH6M50EK054-B0	6.500	fn±90 min.	340 min.	1.5 max.	TDA3857	Quadrature
CDSRH6M50EK060-B0	6.500	fn±60 min.	160 min.	2.5 max.	M52318SP	Quadrature
CDSRH4M50CK020-B0	4.500	fn±50 min.	280 min.	2.0 max.	µPC1382C	Quadrature
CDSRH4M50CK026-B0	4.500	fn±40 min.	70 min.	1.2 max.	LA7530	Quadrature
CDSRH4M50CK029-B0	4.500	fn±65 min.	250 min.	1.2 max.	M51365SP	Quadrature
CDSRH4M50CK030-B0	4.500	fn±40 min.	within130 +30/-20mV	3.0 max.	M51348FP	Quadrature

Continued on the following page.

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Part Number	Nominal Center Frequency (fn) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output Voltage(at fn) (mV)	Distortion (%)	IC	Detection Method
CDSRH5M50CK026-B0	5.500	fn±50 min.	500 min.	3.0 max.	LA7530	Quadrature
CDSRH5M50CK029-B0	5.500	fn±70 min.	420 min.	1.5 max.	M51365SP	Quadrature
CDSRH5M50CK030-B0	5.500	fn±55 min.	150 min.	3.0 max.	M51348FP	Quadrature
CDSRH6M00CK026-B0	6.000	fn±50 min.	400 min.	3.0 max.	LA7530	Quadrature
CDSRH6M00CK029-B0	6.000	fn±70 min.	450 min.	1.7 max.	M51365SP	Quadrature
CDSRH6M00CK030-B0	6.000	fn±55 min.	150 min.	3.0 max.	M51348FP	Quadrature
CDSRH6M50CK020-B0	6.500	fn±60 min.	480 min.	2.0 max.	µPC1382C	Quadrature
CDSRH6M50CK026-B0	6.500	fn±35 min.	400 min.	3.0 max.	LA7530	Quadrature
CDSRH6M50CK029-B0	6.500	fn±70 min.	430 min.	2.0 max.	M51365SP	Quadrature

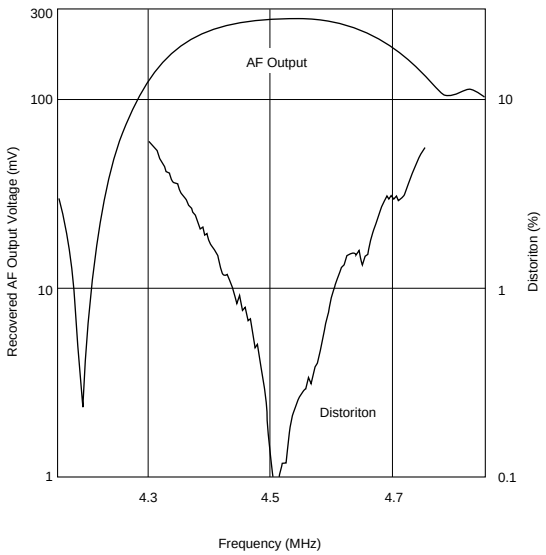
Characteristics shown above is as of 100% Dev.

Part Numbers are varied with applied IC.

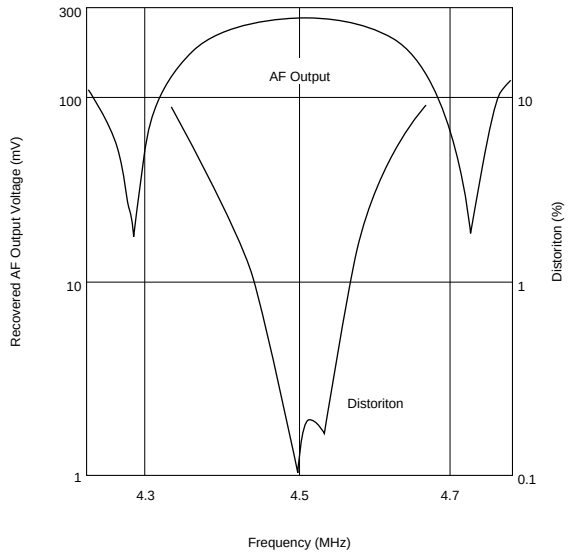
Please note circuits and specifications are also varied with IC. (->Please check TM1561)

■ Frequency Characteristics

CDSRH4M50EK049-B0

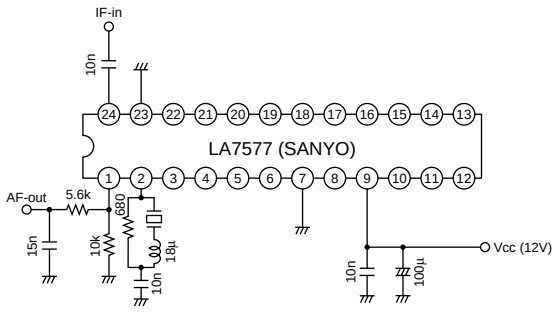


CDSRH4M50CK029-B0

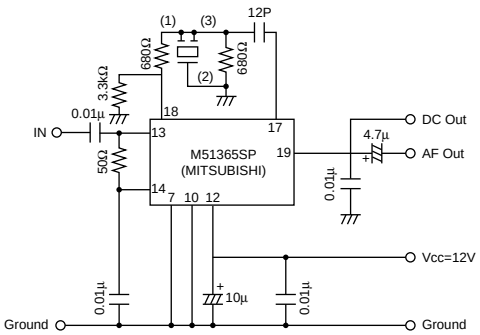


■ Test Circuit

CDSRH4M50EK049-B0



CDSRH4M50CK029-B0



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CERAFIL®(Filters / Traps / Discriminators) for TV / VCR

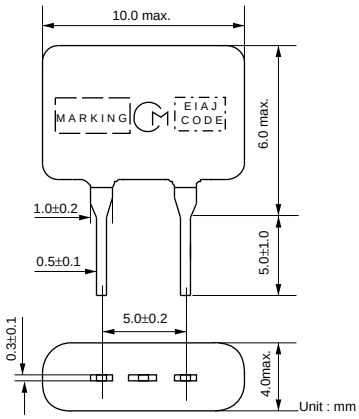
Discriminators Low-Profile Type CDSRL Series

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

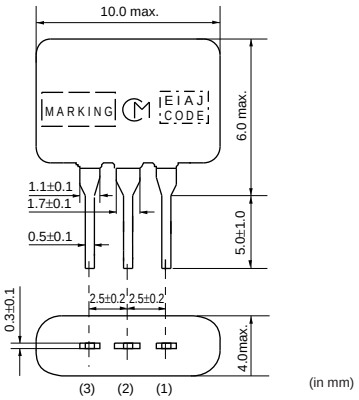
■ Features

1. Low profile 6.0mm type.
2. Suitable for Multi-sound Broadcasting system.
3. Two-terminals type and three-terminals type are available.

CDSRL_EK Series



CDSRL_CK Series



Part Number	Nominal Center Frequency (fn) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output Voltage(at fn) (mV)	Distortion (%)	IC	Detection Method
CDSRL4M50EK020-B0	4.500	fn±80 min.	245 min.	1.0 max.	LA7550/7555	Quadrature
CDSRL5M50EK020-B0	5.500	fn±100 min.	330 min.	1.2 max.	LA7550/7555	Quadrature
CDSRL4M50CK020-B0	4.500	fn±50 min.	280 min.	2.0 max.	µPC1382C	Quadrature
CDSRL4M50CK029-B0	4.500	fn±65 min.	250 min.	1.2 max.	M51365SP	Quadrature
CDSRL4M50CK030-B0	4.500	fn±40 min.	within130 +30/-20mV	3.0 max.	M51348FP	Quadrature
CDSRL5M50CK030-B0	5.500	fn±55 min.	150 min.	3.0 max.	M51348FP	Quadrature
CDSRL6M00CK029-B0	6.000	fn±70 min.	450 min.	1.7 max.	M51365SP	Quadrature
CDSRL6M00CK030-B0	6.000	fn±55 min.	150 min.	3.0 max.	M51348FP	Quadrature
CDSRL6M50CK020-B0	6.500	fn±60 min.	480 min.	2.0 max.	µPC1382C	Quadrature
CDSRL6M50CK026-B0	6.500	fn±35 min.	400 min.	3.0 max.	LA7530	Quadrature

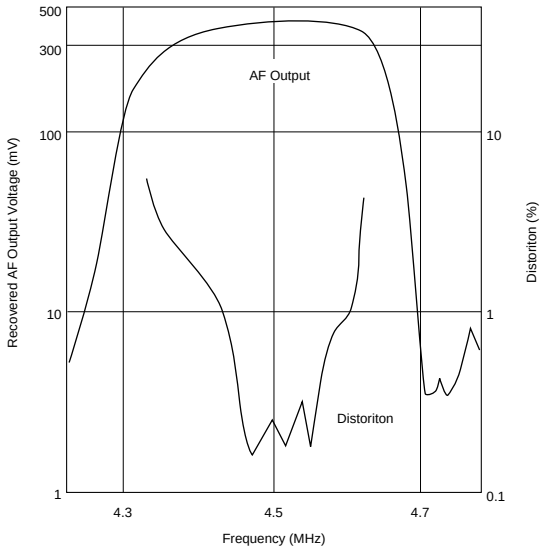
Characteristics shown above is as of 100% Dev.

Part Numbers are varied with applied IC.

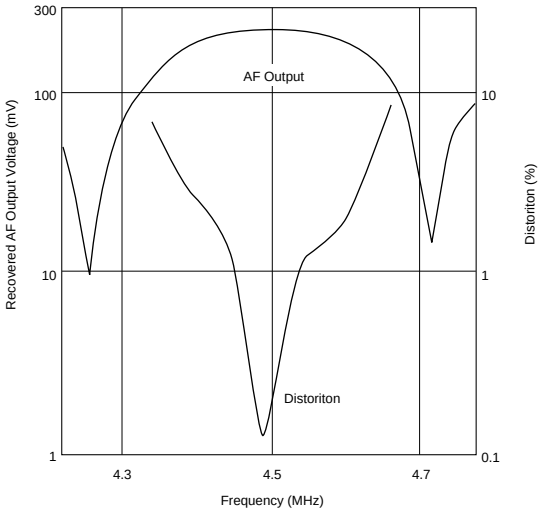
Please note circuits and specifications are also varied with IC. (->Please check TM1561)

■ Frequency Characteristics

CDSRL4M50EK020-B0

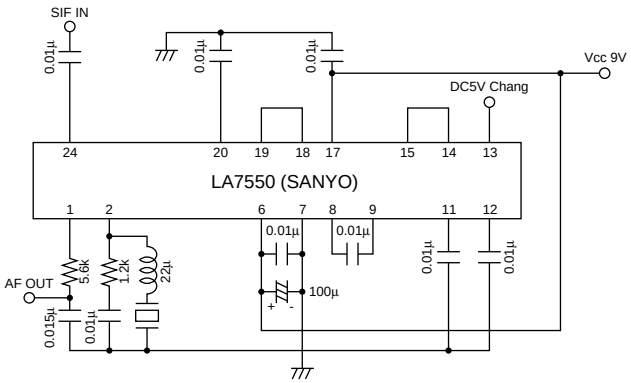


CDSRL4M50CK029-B0

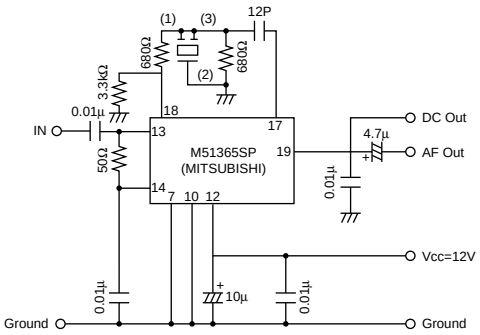


■ Test Circuit

CDSRL4M50EK020-B0



CDSRL4M50CK029-B0



Ceramic Discriminator Notice

■ Notice (Soldering and Mounting)

The component cannot be withstand washing.

■ Notice (Handling)

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 excess stress will be 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 well.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miss-correlation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

Chip Type Packaging

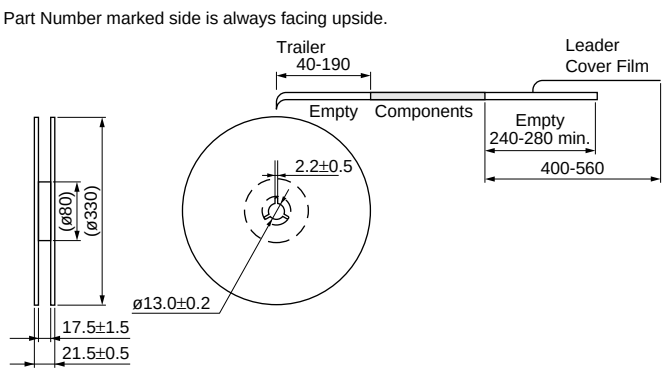
■ Chip Type Minimum Quantity

3000 pcs./dia. 330mm Reel

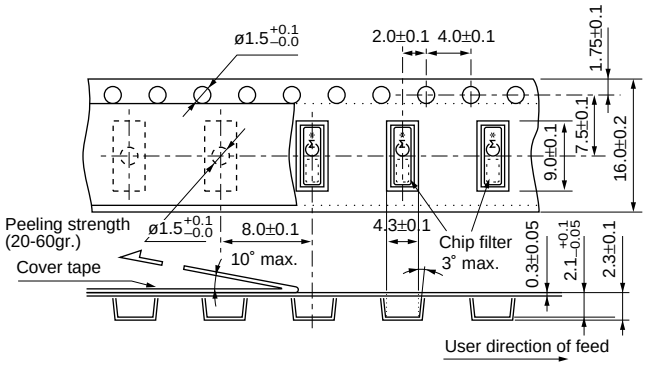
500 pcs./Bag (TPWKA series only)

■ SFSKA/TPSKA Series

Dimensions of Reel



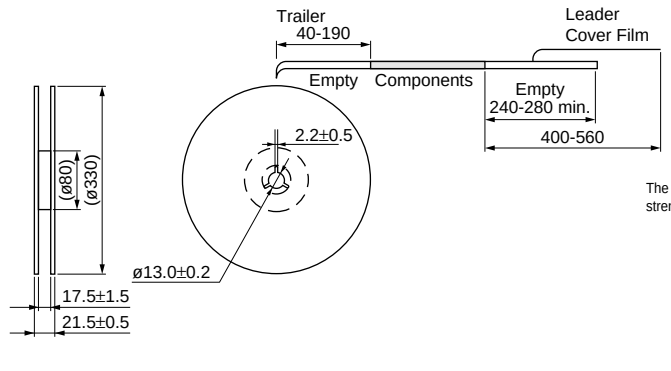
Dimensions of carrier tape



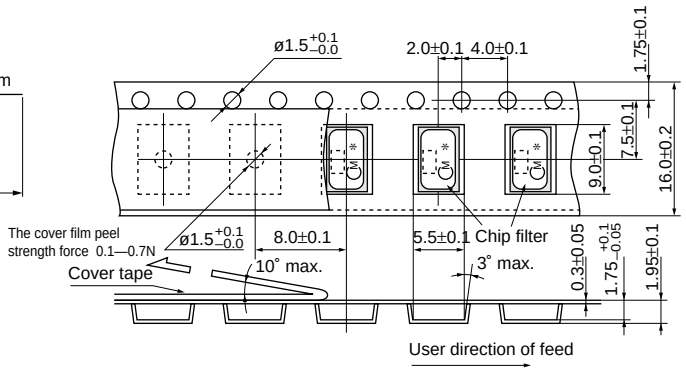
(in mm)

■ TPWKA Series

Dimensions of Reel



Dimensions of carrier tape



(in mm)

Lead Type Packaging

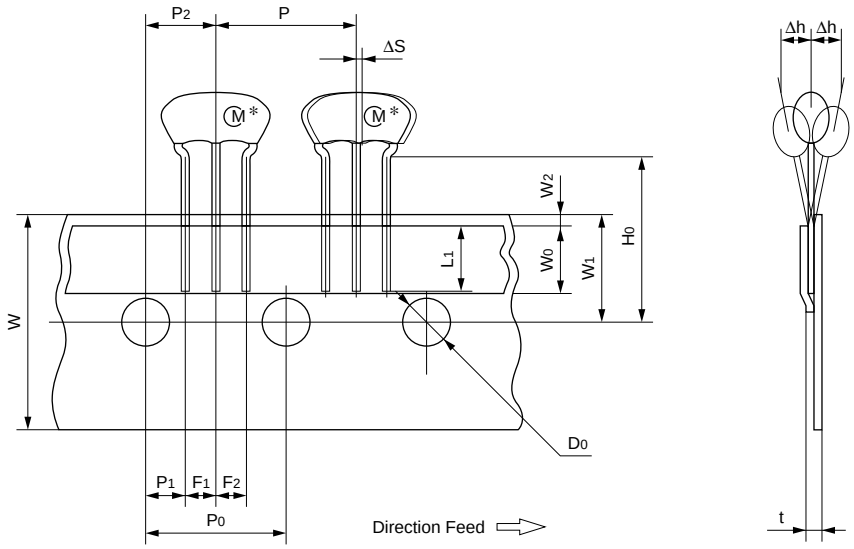
■ Lead Type Minimum Quantity

Bulk : 500 pcs.

Ammo Pack : 2000 pcs. (SFSRA/TPSRA series)

1500 pcs. (CDSRH/TPWRD/TPTRD series)

■ SFSRA/TPSRA Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hole down tape	L_1	5.0 min.		
Pitch of component	P	12.7	±0.5	Tolerance for Pitches 10×P_0=127±1
Pitch of sprocket hole (I)	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 (I)	F_1	2.5	±0.2	
Lead spacing (II)	F_2	2.5	±0.2	
Slant to the forward or backward	Δh	0	±1.0	
Slant to the left or right	ΔS	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	$^{+0.5}_{-0}$	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 (II)	$P_0$20	254.0	±1.5	The pitch of 20 sprocket holes

(in mm)

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Lead Type Packaging

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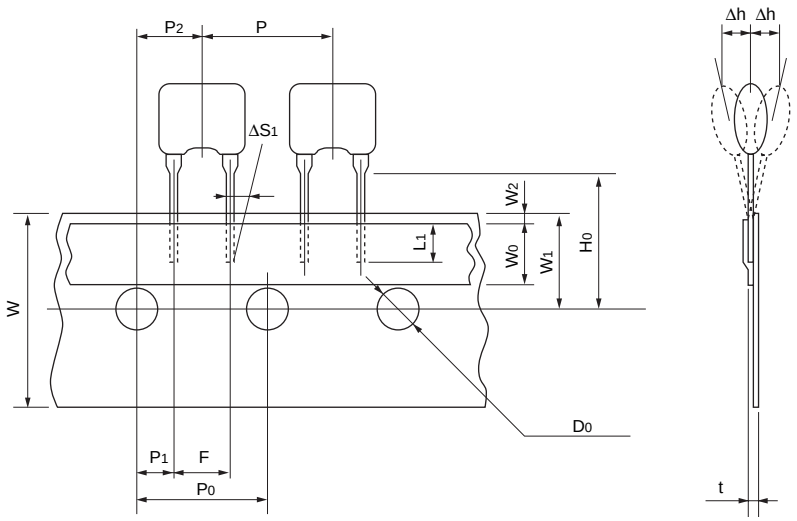
■ TPSRD/CDSRH_EK Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hole 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	Δh	0	±1.0	
Slant to the left or right	ΔS_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

(in mm)

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Lead Type Packaging

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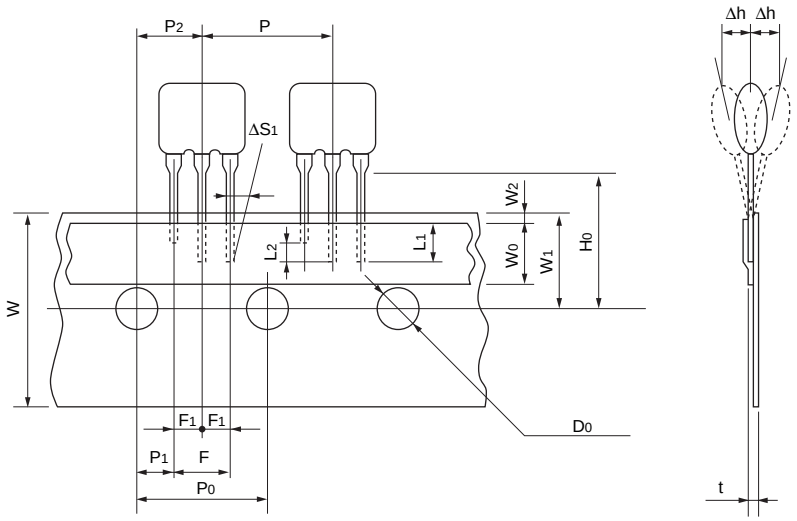
■ TPSRD_W/TPWRD/TPTRD/CDSRH_CK Series



Item	Code	Dimensions	Tolerance	Remarks
Lead Length under the Hold Down Tape	L_1	3.0 min.		
Length of Cat off	L_2	2.0 max.		To distinguish the direction
Pitch of Components	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	
Pitch of the Terminal (1)	F	5.0	$^{+0.5}_{-0.2}$	
Pitch of the Terminal (2)	F_1	2.5	±0.2	
Slant to the Forward or Backward	Δh	0	±1.0	
Slant to the Left or Right	ΔS_1	0	±1.0	
Width of Carrier Tape	W	18.0	±0.5	
Width of Hold Down Tape	W_0	6.0 min.		Must not protrude to the carrier tape
Position of Sprocket Hole	W_1	9.0	±0.5	
Gap of Hold Down Tape and Carrier Tape	W_2	0	$^{+0.5}_{-0}$	
Distance Between the Center of Sprocket Hole and Lead Stpper	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)	P_020	254.0	±1.5	The pitch of 20 sprocket holes

(in mm)

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   ⑦ Traffic signal equipment
   ⑧ Disaster prevention / crime prevention equipment
   ⑨ Data-processing equipment
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