



# CERAMIC TRAP FILTERS

Ceramic Trap For TV/VCR Stage

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# Product Index

## Information

●	General Information -----	01
●	Design Notes -----	02

## For TV/VCR Stage

●	Ceramic Trap Filters - XT MB Series -----	03
●	Ceramic Filters Double Trap - XT MW Series -----	06
●	Ceramic Filters Triple Trap - XT MT Series -----	09
●	Ceramic Trap Filters - XT MJ Series -----	11

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# **Information of Ceramic Trap**

## **Advantage of Token Piezoelectric Trap**

Token Electronics had been able to develop specialized piezo materials which when combined with an advance design have resulted in a complete line of practical, inexpensive piezo devices for entertainment and communications applications.

Token reliably deliver high-quality components according to the each customer special needs with respect to performance, costs, and technology modifications.

For marketing discontinuations or sourcing activities concerning Piezoelectric Trap products, you are encouraged to contact our Sales Department so the request can be properly directed within Token.



# Design Notes Ceramic Trap

## What is Trap

- Band Eliminate Filter (B. E. F.) which blocks or attenuates particular frequency is called trap.
- Contrariwise, ceramic filter passes only particular frequency. Sound trap for TV set is one of the famous example of B. E. F. of the FM-IF circuit.
- In TV set, video signal is used in picture amplitude circuit after video signal detection block, ceramic resonator is insert here and trap circuit is formed in order to eliminate sound signal involved in video signal.

## Type of Ceramic Trap

Token's Ceramic trap is divided into 2 types:

### 1. Two-Terminal Ceramic Trap:

Two-terminal ceramic Trap is used in Black and White TV sets since the number of peripheral components can be reduced, though its attenuation isn't so much.

### 2. Three-Terminal Ceramic Trap:

Three-terminal ceramic trap has a monolith structure formed from 2 ceramic resonators. The characteristic of a three-terminal ceramic trap equals two two-terminal ceramic trap. The three-terminal ceramic trap needs additional coil, it is used in Color TV set and VCR because to its high attenuation.

# Ceramic Trap Filters for TV/VCR Stage 3.58 MHz ~ 6.5 MHz

**XTMB Ceramic Trap Filters for TV/VCR Stage  
(Murata TPS MB Series Compatible)**



## ► Preview

Token Ceramic Trap Filter is employing piezoelectric technology's mechanical resonance, it is almost unaffected by the surrounding circuits, and its characteristics do not deviate when it is implanted in the printed circuit and no adjustment is required.

Utilize Token special piezoelectric materials, Token trap filters has a high Q compared with IFT and a high selectivity is obtained. It also has a remarkable frequency temperature coefficient, high selectivity and high stability.

In TV set, video signal is used in picture amplitude circuit after video signal detection block, ceramic resonator is insert here and trap circuit is formed in order to eliminate sound signal involved in video signal.

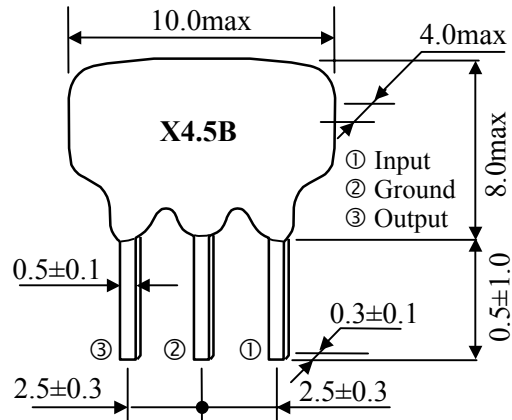
Token Ceramic Trap Filters - XT MB Series are band reject type used for video and sound IF attenuation. The 3 terminal XT MB Series contains 2 elements on one substrate for additional attenuation. XT MB Series can be used in the sound IF of CATV/VCR receivers.

The XTMB series is lead-free and RoHS compliant. Token will also produce devices outside these specifications to meet specific customer requirements, please contact our sales for more information.

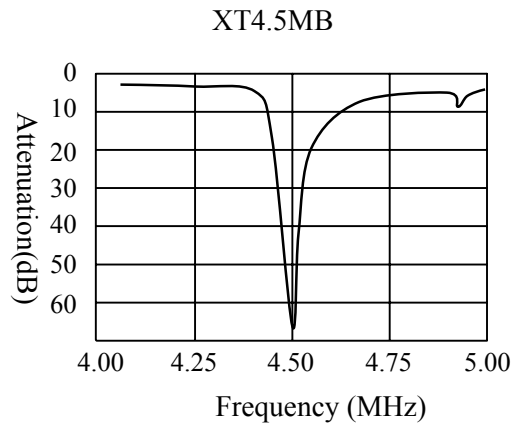
### XTMB Trap Filter Quick Selection :

1. Dimensions (Unit: mm): 10.0 max x 8.0 max x 4.0 max.
2. XT3.58MB Cener Frequency  $f_0$ :3.580MHz; 25db min @ $f_0$ ; 40(kHz)min@25dB Att BW
3. XT4.43MB Cener Frequency  $f_0$ :4.430MHz; 30db min @ $f_0$ ; 50(kHz)min@30dB Att BW
4. XT4.5MB Cener Frequency  $f_0$ :4.500MHz; 35db min @ $f_0$ ; 70(kHz)min@30dB Att BW
5. XT5.5MB Cener Frequency  $f_0$ :5.500MHz; 35db min @ $f_0$ ; 90(kHz)min@30dB Att BW
6. XT5.74MB Cener Frequency  $f_0$ :5.742MHz; 35db min @ $f_0$ ; 90(kHz)min@30dB Att BW
7. XT6.5MB Cener Frequency  $f_0$ :6.500MHz; 35db min @ $f_0$ ; 90(kHz)min@30dB Att BW

## Dimensions



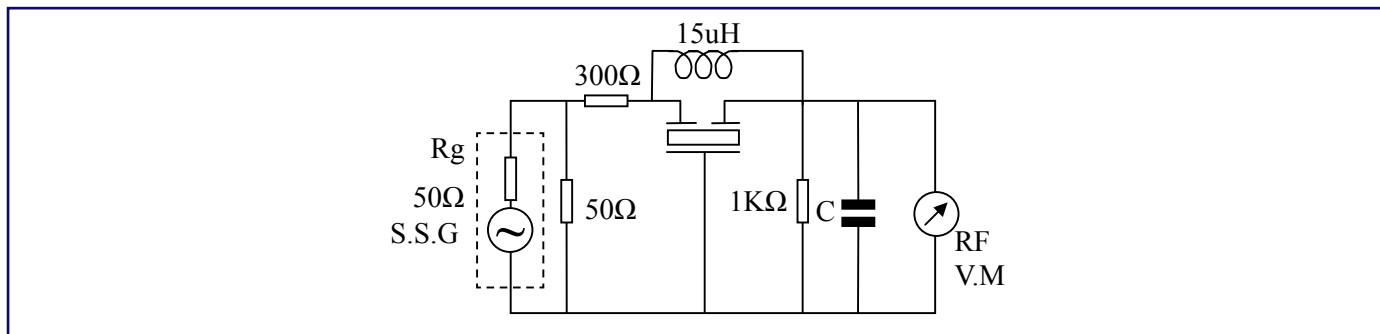
## Characteristics



Part Number	Center Frequency (fo1)(MHz)	Attenuation (at fo1)(dB)min	30dB Attenuation BW (fo1)(kHz)min
XT3.58MB	3.580	25	40(25dB Att.BW)
XT4.43MB	4.430	30	50
XT4.5MB	4.500	35	70
XT5.5MB	5.500	35	90
XT5.74MB	5.742	35	90
XT6.0MB	6.000	35	90
XT6.5MB	6.500	35	90

Note: The level at 1MHz shall be made for a reference (0dB).

## ▶ Test Circuit



## ▶ How to Order

XT3.58MB

❶

❶ Part Number

P

❷

❷ Package

*Back to 1st Page - Ceramic Trap Filters for TV/VCR Stage (XT MB)*

## Ceramic Double Trap Filters 4.5 MHz ~ 6.5 MHz

**XT MW Ceramic Double Trap Filters  
(Murata TPWA Series Compatible)**

### ▶ Preview

Trap filter is a ceramic filter passes only particular frequency. To the contrary, Band Eliminate Filter (B. E. F.) which blocks or attenuates particular frequency is called trap.

Sound trap for TV set is one of the famous example of B. E. F. In TV set, video signal is used in picture amplitude circuit after video signal detection block, ceramic resonator is insert here and trap circuit is formed in order to eliminate sound signal involved in video signal.

Token Double Trap Filter XT MW Series consist of 2 wafers with 2 trap frequencies. Recommended for Multi standard set.

Features with good performance of attenuation and space saving with 3-terminal type. The characteristic of a three-terminal ceramic trap equals two two-terminal ceramic trap. Three-terminal ceramic trap has a monolith structure formed from 2 ceramic resonators.

Full line products meet RoHS compliant. Token will also produce devices outside these specifications to meet specific customer requirements, please contact our sales for more information.

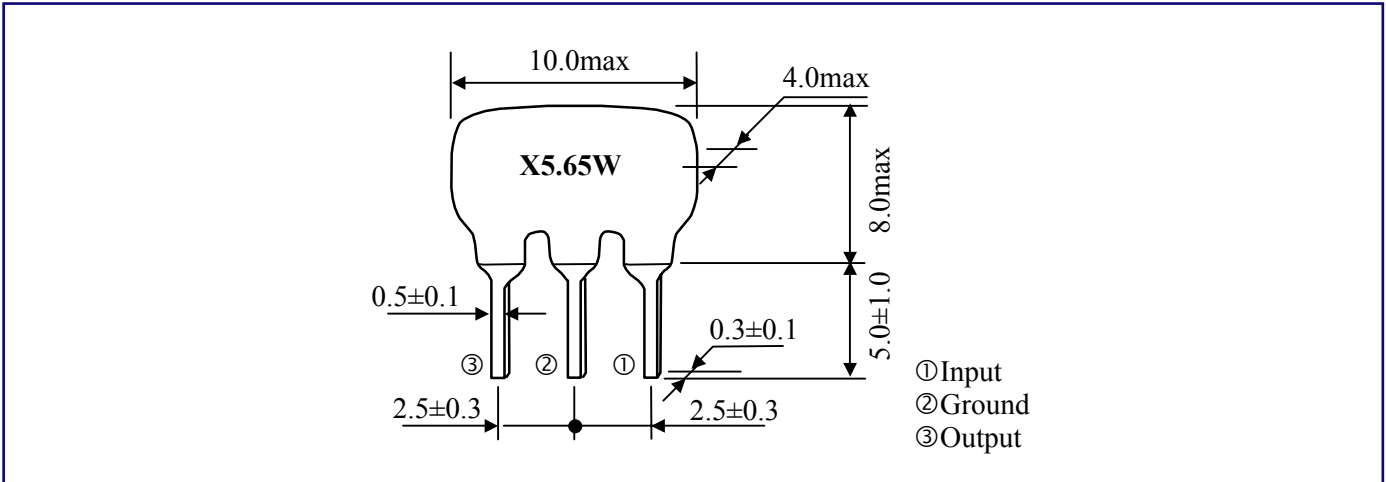


### XTMW Double Trap Filter Quick Selection :

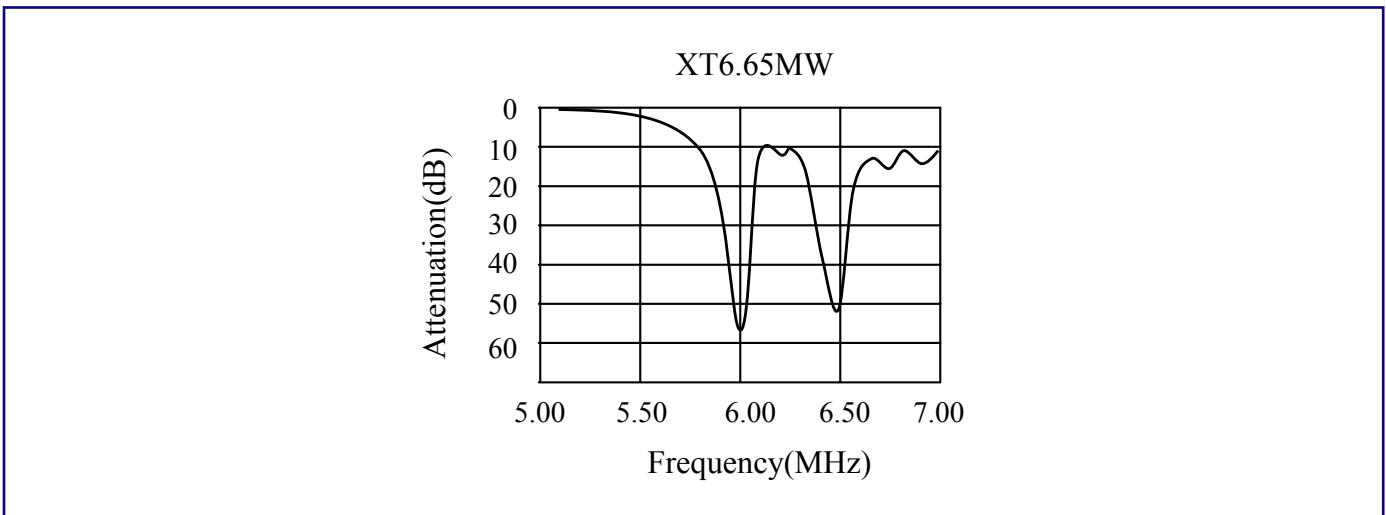
- Dimensions (Unit: mm): 10.0 max x 8.0 max x 4.0 max.
- XT4.47MW Cener Frequency f01:4.500MHz; Cener Frequency f02:4.724MHz;  
30db min @f01& f02; 50(kHz)min@f01 30dB Att BW
- XT4.60MW Cener Frequency f01:4.500MHz; Cener Frequency f02:6.000MHz;  
30db min @f01& f02; 50(kHz)min@f01 30dB Att BW
- XT5.57MW Cener Frequency f01:5.500MHz; Cener Frequency f02:5.742MHz;  
30db min @f01& f02; 50(kHz)min@f01 30dB Att BW
- XT5.60MW Cener Frequency f01:5.500MHz; Cener Frequency f02:6.000MHz;  
30db min @f01& f02; 50(kHz)min@f01 30dB Att BW
- XT5.65MW Cener Frequency f01:5.500MHz; Cener Frequency f02:6.500MHz;  
30db min @f01& f02; 50(kHz)min@f01 30dB Att BW
- XT6.65MW Cener Frequency f01:6.000MHz; Cener Frequency f02:6.500MHz;  
30db min @f01& f02; 70(kHz)min@f01 30dB Att BW



## ► Dimensions



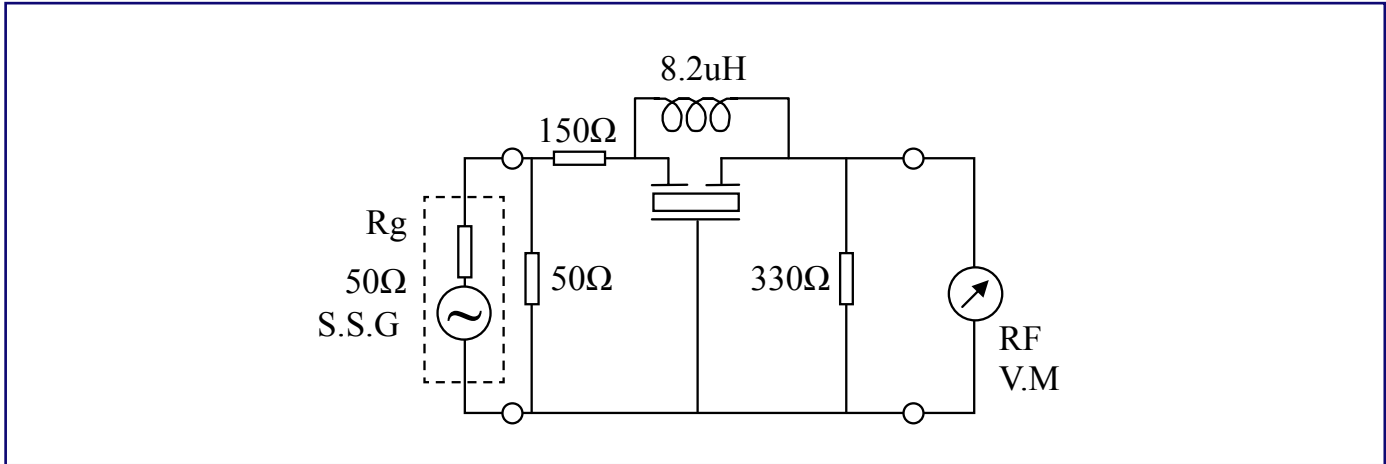
## ► Characteristics



Part Number	CenterFrequency (fo1)(MHz)	CenterFrequency (fo2)(MHz)	Attenuation(at fo1)(dB)min	Attenuation(at fo2)(dB)min	30dBAttenuation BW(fo1)(kHz)min
XT4.47MW	4.500	4.724	30	30	50
XT4.60MW	4.500	6.000	30	30	50
XT5.57MW	5.500	5.742	30	30	50
XT5.60MW	5.500	6.000	30	30	50
XT5.65MW	5.500	6.500	30	30	50
XT6.65MW	6.000	6.500	30	30	70

Note : The level at 1MHz shall be made for a reference(0dB).

▶ Test Circuit



▶ How to Order

XT4.47MW

❶

P

❷

❶ Part Number

❷ Package

*Back to 1st Page - Ceramic Trap Filters Double Type(XT MW)*

# Ceramic Triple Trap Filters

## 4.5 MHz ~ 6.5 MHz

**XTMT Ceramic Triple Trap Filters  
(Murata TPT Compatible)**

▶ **Preview**

The characteristic of a three-terminal ceramic trap equals two two-terminal ceramic trap. Three-terminal ceramic trap has a monolith structure formed from 2 ceramic resonators.

Trap filter is a ceramic filter passes only particular frequency. To the contrary, Band Eliminate Filter (B. E. F.) which blocks or attenuates particular frequency is called trap.

Sound trap for TV set is one of the famous example of B. E. F. In TV set, video signal is used in picture amplitude circuit after video signal detection block, ceramic resonator is insert here and trap circuit is formed in order to eliminate sound signal involved in video signal.



Token XT MT Ceramic Trap Filters (compatible to Murata TPT) series consist of 3 wafers with 3 trap frequencies. Recommended for Multi standard sets.

Full line products meet RoHS compliant. Token will also produce devices outside these specifications to meet specific customer requirements, please contact our sales for more information.

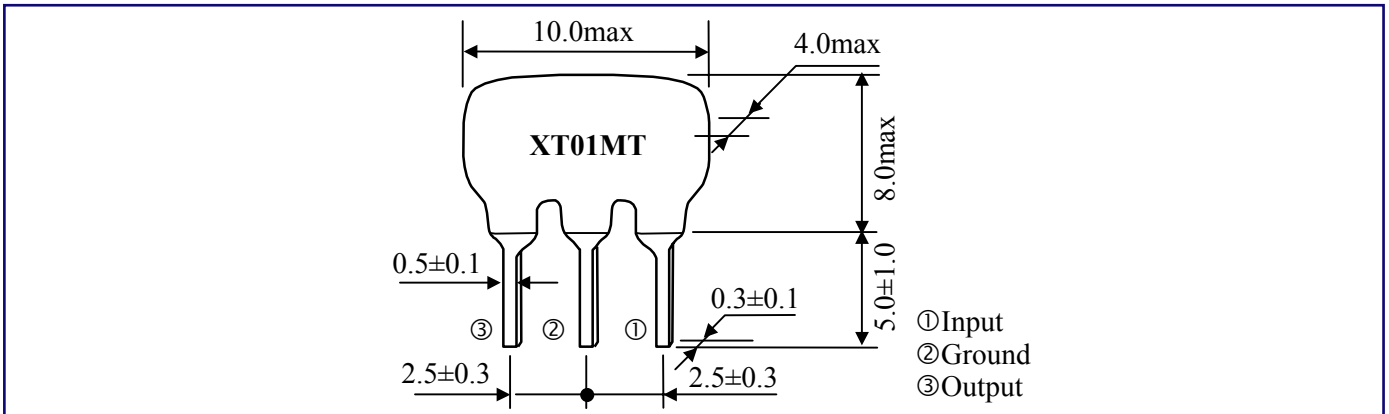
**XTMT Triple Trap Filter Quick Selection :**

1. Dimensions (Unit: mm): 10.0 max x 8.0 max x 4.0 max.
2. XT01MT Cener Frequency f01:5.500MHz; f02:6.000MHz; f03:6.500MHz;  
30db min @f01& f02; & f03; 50(kHz)min@f01 30dB Att BW
3. XT02MT Cener Frequency f01:5.500MHz; f02:5.742MHz; f03:6.500MHz;  
30db min @f01& f02; & f03; 50(kHz)min@f01 30dB Att BW
4. XT03MT Cener Frequency f01:5.500MHz; f02:5.742MHz; f03:6.000MHz;  
30db min @f01& f02; & f03; 50(kHz)min@f01 30dB Att BW

**Features :**

1. Good performance of attenuation, three-terminals trap filter, and space saving for Multi set.

## Dimensions

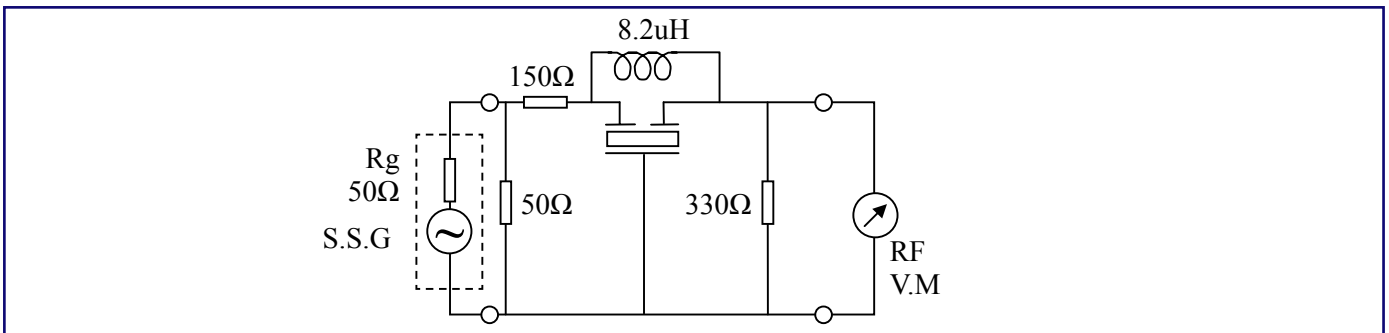


## Characteristics

Part Number	Center Frequency (fo1)(MHz)	Center Frequency (fo2)(MHz)	Center Frequency (fo3)(MHz)	Attenuation (at fo1) (dB)min	Attenuation (at fo2) (dB)min	Attenuation (at fo3) (dB)min	30dB Attenuation BW (fo1)(kHz)min
XT01MT	5.500	6.000	6.500	30	30	30	50
XT02MT	5.500	5.742	6.500	30	30	30	50
XT03MT	5.500	5.742	6.000	30	30	30	50

Note: The level at 1MHz shall be made for a reference (0dB).

## Test Circuit



## How to Order

XT02MT

①

① Part Number

P

②

② Package

*Back to 1st Page -Ceramic Trap Filters Triple Type (XT MT)*

# Ceramic Trap Filters for 3.58 MHz ~ 6.5 MHz Chrominance Carrier

**XT MJ for Chrominance Carrier ( Murata TPS MJ Series Compatible ) - 3.58 MHz ~ 6.5 MHz (XT MJ)**

## ► Preview

XT MJ Series are band reject device used for video and sound IF attenuation. The 2 terminal XT MJ Series can be used to attenuate either the sound signal in B/W receivers or the chroma signal in video.

### Filter Features :

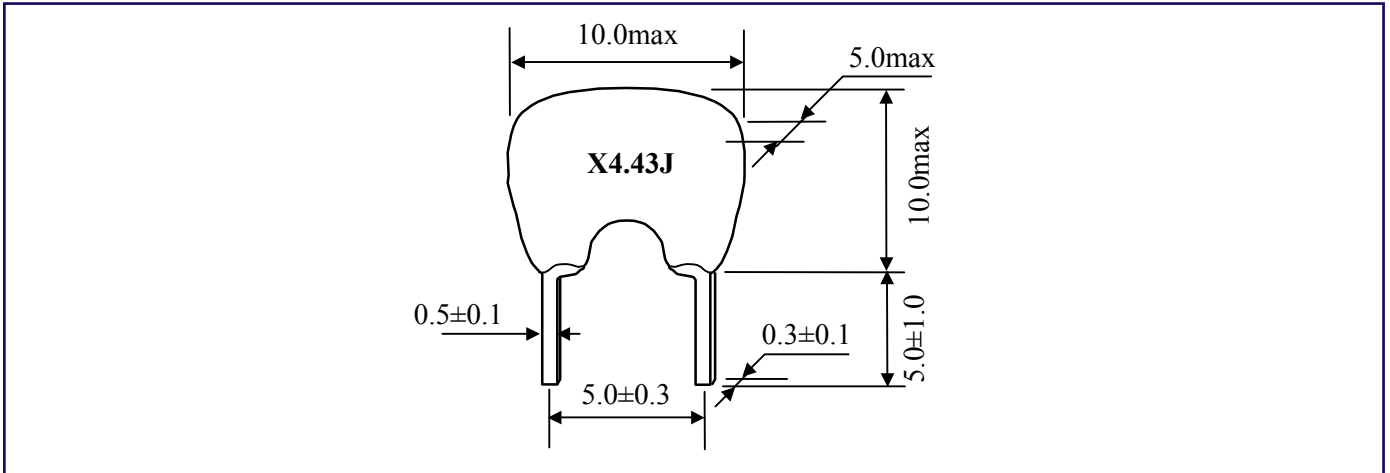
1. RoHS Compliant.
2. TV SIF stage use.
3. Low insertion loss.
4. Wide bandwidth Ceramic Trap.
5. Excellent spurious suppression characteristics.



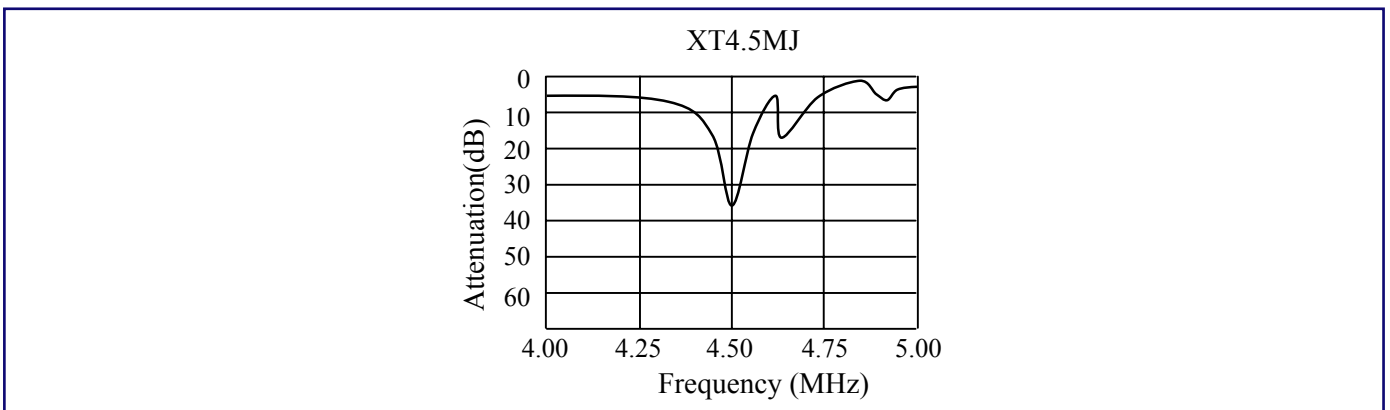
### XTMJ Trap Filter Quick Selection :

1. Dimensions (Unit: mm): 10.0 max x 10.0 max x 5.0 max.
2. XT3.58MJ Cener Frequency  $f_0$ :3.58MHz; 20db min @ $f_0$ ; 20(kHz)min@20dB Att BW
3. XT4.43MJ Cener Frequency  $f_0$ :4.43MHz; 20db min @ $f_0$ ; 40(kHz)min@20dB Att BW
4. XT4.5MJ Cener Frequency  $f_0$ :4.5MHz; 20db min @ $f_0$ ; 40(kHz)min@20dB Att BW
5. XT5.74MJ Cener Frequency  $f_0$ :5.74MHz; 20db min @ $f_0$ ; 40(kHz)min@20dB Att BW
6. XT5.5MJ Cener Frequency  $f_0$ :5.5MHz; 20db min @ $f_0$ ; 40(kHz)min@20dB Att BW
7. XT6.0MJ Cener Frequency  $f_0$ :6.0MHz; 20db min @ $f_0$ ; 40(kHz)min@20dB Att BW
8. XT6.5MJ Cener Frequency  $f_0$ :6.5MHz. 20db min @ $f_0$ ; 40(kHz)min@20dB Att BW

## ► Dimensions



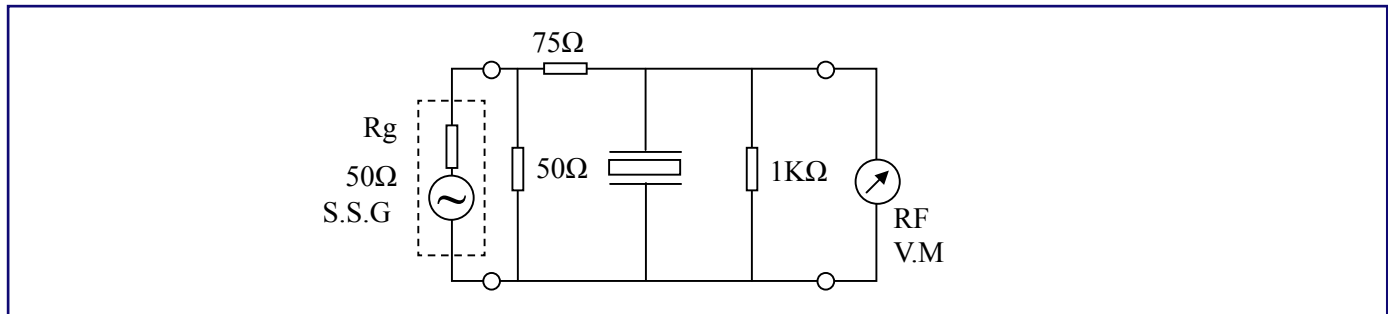
## ► Characteristics



Part Number	Center Frequency (fo1)(MHz)	Attenuation (at fo1)(dB)min	20dB Attenuation BW (fo1)(kHz)min
XT3.58MJ	3.580	20	20
XT4.43MJ	4.430	20	40
XT4.5MJ	4.500	20	40
XT5.5MJ	5.500	20	40
XT5.74MJ	5.742	20	40
XT6.0MJ	6.000	20	40
XT6.5MJ	6.500	20	40

Note : The level at 1MHz shall be made for a reference (0dB).

► **Characteristics**



► **How to Order**

XT3.58MJ

❶

❶ Part Number

P

❷

❷ Package

*Back to 1st Page - Ceramic Trap Filters for Chrominance Carrier (XT MJ)*