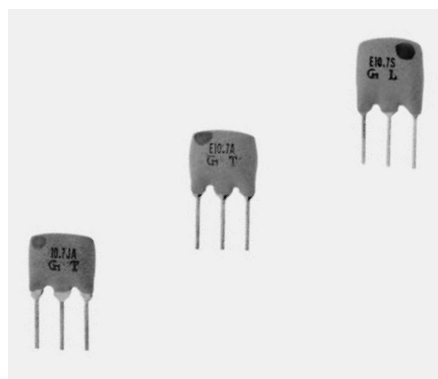


FILTERS

WIDE OR NARROW BAND

SFE MA/MHY/MT/MV/MFP 10.7MHz



The following filters were developed to offer both narrower and wider bandwidth characteristics for use in products such as DBS receivers. These filters also retain the same reliability that is available with our standard filters. The various bandwidths allow these filters to be utilized in a multitude of new communication applications.

FEATURES

- Realizes wider or narrower band characteristics not obtained by conventional ceramic filters.

- Temperature characteristics are the best available, the same as those of Murata's conventional ceramic filters. Thus, even in the case of narrow band filters, the center frequency is stable even if temperature changes.

DIMENSIONS: mm

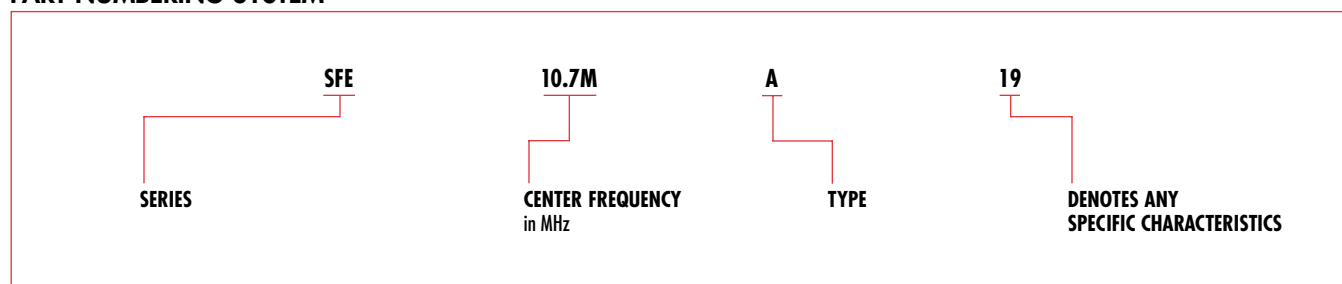
MA19 SERIES	MT SERIES	MV SERIES	MFP SERIES	TEST CIRCUIT
: EIA-J Date Code	: EIA-J Date Code	: EIA-J Date Code	: EIA-J Date Code	$R_g + R_1 = R_2 = \text{Input/Output Impedance}$ $C = 10\text{pF}$ (including stray capacitance and input capacitance of RF Voltmeter) ① INPUT ② GROUND ③ OUTPUT

SPECIFICATIONS

SFE MA/MHY/MT/MV/MFP 10.7MHz

	Part Number	3dB Bandwidth (kHz)	20dB Bandwidth (kHz) max.	Ripple Within 3dB Bandwidth (dB)	Insertion Loss (dB) max.	Spurious (9~12MHz) (dB) min.
Wide Bandwidth Series	SFE10.7MA19	350 min. (450)	950 (750)	3 max.	3 ± 2	20 (30)
	SFE10.7MA20-A	330 ± 50	680 (615)	1 max.	4 ± 2	30 (40)
	SFE10.7MA21	400 (500)	950 (750)	3 max.	3 ± 2	20 (30)
	SFE10.7MHY-A	110 ± 30	350 (260)	1 max.	7 ± 2	30 (38)
• Input/output impedance: 330Ω (MA20-A, MHY-A), 470Ω (MA19) • Center frequency 10.52MHz types of SFE10.7MHY-A is also available. () Typical value						
Narrow Bandwidth Series	SFE10.7MT	±25 (80)	200 (160)	1 max.	6.5 ± 2.5	30 (55)
	SFE10.7MV	±13 (53)	135 (109)	1 max.	6.0 ± 2.0	30 (50)
	SFE10.7MFP	±20 (38)	95 (78)	1 max.	6.0 (3.4)	24 (28)
• Input/output impedance: 330 (MT,MV), 600Ω (MFP) • Spurious range of SFE10.7MFP: 10.7 ± 1MHz. () Typical value						

PART NUMBERING SYSTEM



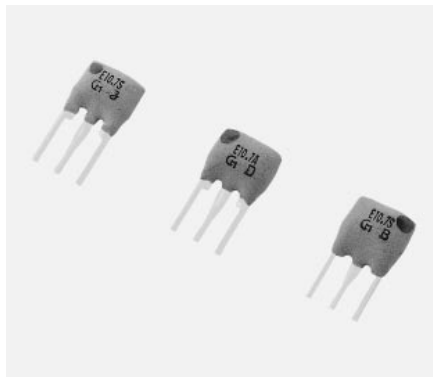
*Applicable in North American market only. ▼Applicable in European market only.
 For more detailed information regarding this product line in North America, see Catalog No. P-05-D. To receive additional information on Murata Products call 1-800-831-9172.
 For more detailed information regarding this product line in Europe, see Catalog No. P61E-4.

FILTERS

FOR FM APPLICATIONS—LOW LOSS, HIGHLY SELECTIVE, MINIATURE—SFE MA/MS/MJ/MH 10.7MHz

Murata

Innovator in Electronics



The standard SFE 10.7 line of ceramic filters are extremely reliable devices that exhibit excellent waveform symmetry. These filters have traditionally found wide application in FM receiver technology.

FEATURES

- These miniature filters have high mechanical strength.
- Low loss, favorable waveform symmetry, and high selectivity
- Various band widths are available for

- applications in wide to narrow bands.
- Small dispersion and stable characteristics.
- Change in center frequency is typically within $\pm 30\text{ppm}/^\circ\text{C}$ at $-20 \sim +80^\circ\text{C}$.
- High reliability

DIMENSIONS: mm

STANDARD SERIES	A10 SERIES Low Loss	C10 SERIES Low Profile	TEST CIRCUIT
			$R_g + R_1 = R_2 = 330\Omega \pm 5\%$ $C = 10\text{pF}$ (including stray capacitance and input capacitance of RF Voltmeter) ① INPUT ② GROUND ③ OUTPUT

SPECIFICATIONS

SFE A10/B10/C10 SERIES

	Part Number	3dB Bandwidth (kHz)	20dB Bandwidth (kHz) max.	Ripple (dB) max.	Insertion Loss (dB) max.	Spurious (9~12MHz) (dB) min.
FM-IF	SFE10.7MA5-A	280 $\pm$ 50	650 (520)	1	6 (4)	30 (43)
	SFE10.7MS2-A	230 $\pm$ 50	600 (420)	1	6 (4)	40 (45)
	SFE10.7MS3-A	180 $\pm$ 40	520 (380)	1	7 (4.5)	40 (45)
• Input/output impedance: 330 Ω						() Typical value
A10 Series	SFE10.7MA5A10-A	280 $\pm$ 50	590 (480)	1	2.5 $\pm$ 2.0	30 (42)
	SFE10.7MS2A10-A	230 $\pm$ 40	520 (410)	1	3.0 $\pm$ 2.0	35 (42)
	SFE10.7MS3A10-A	180 $\pm$ 40	470 (370)	1	3.5 $\pm$ 1.5	35 (42)
	SFE10.7MJA10-A	150 $\pm$ 40	360 (300)	1	4.5 $\pm$ 2.0	35 (42)
• Input/output impedance: 330 Ω • Low loss and high selectivity.						() Typical value
B10 Series	SFE10.7MA5B10-A	280 $\pm$ 50	650	1	3.0 $\pm$ 2.0	45
	SFE10.7MS2B10-A	230 $\pm$ 50	570	1	3.0 $\pm$ 2.0	45
	SFE10.7MS3B10-A	180 $\pm$ 40	520	1	5.0 $\pm$ 2.0	45
• Input/output impedance: 330 Ω • High attenuation type						() Typical value
C10 Series	SFE10.7MA5C10-A	280 $\pm$ 50	650 (540)	1	3.0 $\pm$ 2.0	30 (47)
	SFE10.7MS2C10-A	230 $\pm$ 50	570 (470)	1	3.0 $\pm$ 2.0	40 (49)
	SFE10.7MS3C10-A	180 $\pm$ 40	470 (360)	1	3.5 $\pm$ 2.0	35 (47)
	SFE10.7MJC10-A	150 $\pm$ 40	360 (300)	1	4.5 $\pm$ 2.0	35 (42)
	SFE10.7MHC10-A	110 $\pm$ 30	350 (260)	1	7.0 $\pm$ 2.0	30 (38)
• Input/output impedance: 330 Ω • Most suitable for a thin type and low profile set. • The performance is the same as that of conventional types.						() Typical value

PART NUMBERING SYSTEM

SFE	10.7M	A5A10	H	—	A
SERIES	CENTER FREQUENCY in MHz	RATING, CHARACTERISTICS	TOLERANCE OF CENTER FREQUENCY $\pm 30\text{kHz} = \text{Blank}$ $\pm 25\text{kHz} = \text{H}$ $\pm 20\text{kHz} = \text{K}$		RANK OF CENTER FREQUENCY

*Applicable in North American market only. *Applicable in European market only.

For more detailed information regarding this product line in North America, see Catalog No. P-05-D. To receive additional information on Murata Products call 1-800-831-9172.

For more detailed information regarding this product line in Europe, see Catalog No. P61E-4.

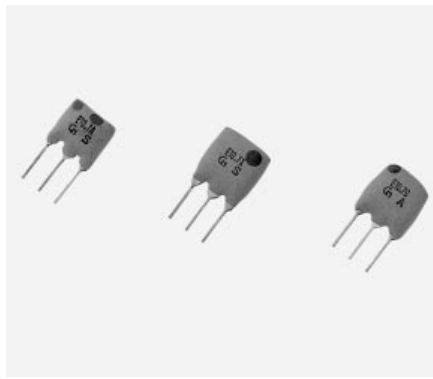
FILTERS

FILTERS

FOR FM APPLICATIONS—HIGHLY SELECTIVE G.D.T. FLAT TYPE SFE MX/MA8/ML 10.7MHz

Murata

Innovator in Electronics



The SFE 10.7MX/MA8/ML lines of ceramic filters were designed to minimize the dispersion of amplitude and phase characteristics within the pass band. Because the excellent G.D.T. characteristics of these filters insure signal integrity, they are recommended for use in applications ranging from high grade stereo receivers to digital transmission systems.

FEATURES

- Little dispersion of amplitude characteristics and phase characteristics (G.D.T. characteristics)
- The SFE 10.7 MX Series has G.D.T. characteristics and is useful for obtaining

low distortion. SFE 10.7 ML Series, in these ceramic filters, being in harmony with flatness of G.D.T., roundness of the amplitude and selectivity characteristics, therefore, these ceramic filters are suitable to high-grade stereo tuners. Even if mismatching condition, they can keep little distortion because of low Qm of ceramic material. The SFE 10.7 MA8 Series is based on SFE 10.7 MA5/MS2/MS3, and it obtains high selectivity with low loss. There is little dispersion of amplitude and G.D.T. characteristics, and low distortion rate can be obtained.

- All products are inspected for symmetry and roundness of amplitude

DIMENSIONS

MX SERIES Low Distortion	MA8 SERIES High Selectivity, Low Loss	ML SERIES Selectivity	TEST CIRCUIT
			$R_1 + R_g = R_2 = 330\Omega$ $C = 10\text{pF}$ (including stray capacitance and input capacitance of RF Voltmeter) ① INPUT ② GROUND ③ OUTPUT

SPECIFICATIONS

SFE MX/MA8/ML SERIES

	Part Number	3dB Bandwidth (kHz)	20dB Bandwidth (kHz) max.	Insertion Loss (dB) max.	Spurious (9~12MHz) (dB) min.	Ripple w/n 3dB Bandwidth (dB)	G.D.T. Bandwidth (kHz) min.
MX Series	SFE10.7MX-A	250 ± 40	670 (620)	12 (10)	25 (33)	0 max.	0.2μ sec. fo ±110kHz
	SFE10.7MX2-A	220 ± 40	610 (560)	12.5 (10.5)	30 (37)	0 max.	0.15μ sec. fo ±80kHz
	SFE10.7MZ1-A	180 ± 30	530 (460)	14 (12.3)	33 (38)	0 max.	0.15μ sec. fo ±60kHz
	SFE10.7MZ2-A	150 ± 30	500 (420)	14 (12.6)	35 (41)	0 max.	0.15μ sec. fo ±50kHz
MA8 Series	SFE10.7MA8-A	280 ± 50	650 (520)	6 (4)	30 (43)	0.5 max.	0.5μ sec. fo ±80 (±100)
	SFE10.7MS2G-A	230 ± 50	600 (420)	7 (4.5)	40 (45)	0 max.	0.5μ sec. fo ±60 (±75)
	SFE10.7MS3G-A	180 ± 40	520 (380)	7 (5)	40 (45)	0 max.	0.5μ sec. fo ±45 (±60)
ML Series	SFE10.7ML-A	280 ± 50	700 (610)	9 (7)	25 (33)	0 max.	0.25μ sec. fo ±70 (±105)
	SFE10.7MP3-A	250 ± 50	650 (550)	10 (8)	30 (35)	1.0 max.	0.25μ sec. fo ±65 (±90)
	SFE10.7MM-A	230 ± 50	600 (510)	11 (9)	30 (38)	0 max.	0.25μ sec. fo ±60 (±85)

• Input/output impedance: 330Ω

• The rank of center frequency is available in two series: 30kHz steps and 25kHz steps.

• The G.D.T. waveforms of all these types are controlled.

() Typical value

PART NUMBERING SYSTEM



*Applicable in North American market only. *Applicable in European market only.

For more detailed information regarding this product line in North America, see Catalog No. P-05-D. To receive additional information on Murata Products call 1-800-831-9172.

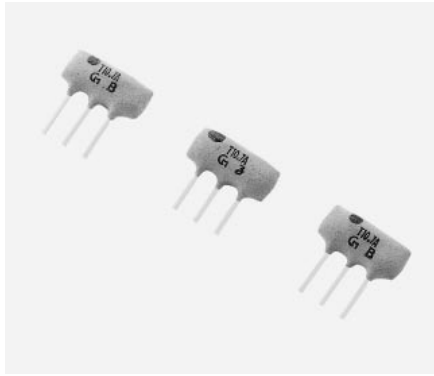
For more detailed information regarding this product line in Europe, see Catalog No. P61E-4.

FILTERS

FOR FM APPLICATIONS—HIGHLY SELECTIVE, 3 ELEMENTS SFT MA/MS 10.7MHz

Murata

Innovator in Electronics



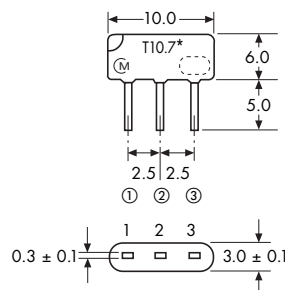
The SFT 10.7 ceramic filters are single substrate, 3 element devices that offer 1.5 times more selectivity than the conventional SFE Series of filters. The improved spurious suppression of these filters eliminates the need for cascading multiple filtering devices; therefore, it is possible to design a more compact circuit board configuration.

FEATURES

- It has an excellent shape factor, and it is possible to obtain 1.5 times more

- excellent selectivity than SFE 10.7 Series (by detuning ± 300 or 400kHz).
- Good performance of spurious suppression.
- Having the same terminal pitch as the SFE 10.7 Series, it easily replaces that series.
- By replacing two SFE 10.7 Series filters with one SFT 10.7 filter, more compact sets can be made.
- Well-suited for 1-chip ICs.

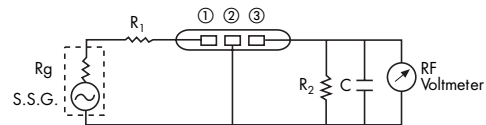
DIMENSIONS: mm



○ : EIA-J Date Code

*Varies by part number

TEST CIRCUIT



$R_g + R_1 = 330\Omega$
 $C = 10\text{pF}$
(including stray capacitance and input capacitance of RF Voltmeter.)

① INPUT
② GROUND
③ OUTPUT

SPECIFICATIONS

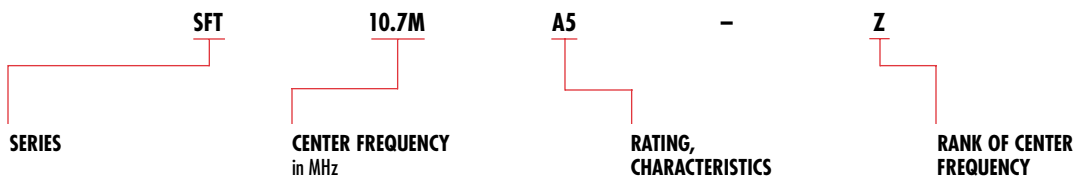
SFT MA/MS 10.7MHz

Part Number	3dB Bandwidth (kHz)	40dB Bandwidth (kHz) max.	Ripple within 3dB Bandwidth (dB)	Insertion Loss (dB) max.	Spurious Attenuation (9 ~ 12MHz) (dB) min.
SFT10.7MA5	280 $\pm$ 50	700 (630)	0.5 max.	6 $\pm$ 2	50 (60)
SFT10.7MS2	230 $\pm$ 40	650 (580)	0.5 max.	6 $\pm$ 2	50 (60)
SFT10.7MS3	180 $\pm$ 40	550 (500)	0.5 max.	8 $\pm$ 2	50 (60)

- Input/output impedance: 330Ω
- High selectivity is achieved by replacing with SFT 10.7 Series

() Typical value

PART NUMBERING SYSTEM



▲Applicable in North American market only. ▼Applicable in European market only.

For more detailed information regarding this product line in North America, see Catalog No. E-06-E. To receive additional information on Murata Products call 1-800-831-9172. For more detailed information regarding this product line in Europe, see Catalog No. P61E-4.

FILTERS

DISCRIMINATORS FOR FM APPLICATIONS CDA 10.7MHz



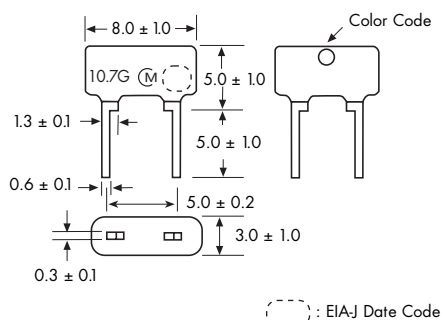
The CDA MC/MG lines of ceramic discriminators are IC dependent devices used in the recovery of audio signals. The CDA MC discriminators have three terminals while the MG discriminators are 2 terminal devices.

FEATURES

- Compact and excellent mechanical strength
- Can be combined with various ICs. The IC is determined by the last number in the part number.

- Stable demodulation characteristics can be obtained without adjustment.
- The MG type for wide bandwidths and the MC type for narrow bandwidths are available.
- Stable temperature characteristics
- We recommend kits: ceramic discriminator CDA10.7 Series and Cerafil® SFE10.7 of the same frequency rank.

DIMENSIONS: mm



DISCRIMINATORS

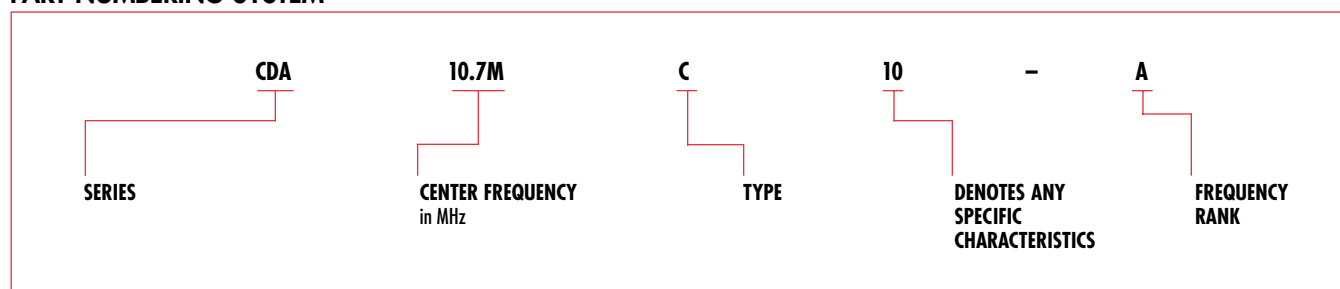
CDA10.7

Part Number	Demodulation Output (mV) at f_0	Distortion Factor (%) max. at f_0	Demodulation 3db Bandwidth (kHz) min.	Detection System	IC
CDA10.7MG1-A	25 min.	1.0 (0.1)	345 (500)	Quadrature	CX20029
					CX20111
CDA10.7MG16-A	60–90 min.	0.9 (0.5)	300 (370)	Quadrature	TA8122AN/AF
CDA10.7MG48-A	700 min.	1.0 (0.2)	400 (560)	Quadrature	LA1835
CDA10.7MC1-A	35 min.	1.0 (0.2)	242 (370)	Quadrature	CXA1019M
					CX20091

□ Indicates frequency 4.5, 5.5, 5.74, 6.0, 6.5 MHz are available. Note that part numbers, circuits and ratings vary according to the IC used at detector process.

() Typical value

PART NUMBERING SYSTEM



*Applicable in North American market only. ▼Applicable in European market only.

For more detailed information regarding this product line in North America, see Catalog No. P-05-D. To receive additional information on Murata Products call 1-800-831-9172.

For more detailed information regarding this product line in Europe, see Catalog No. P61E-4.

FILTERS

FM DISCRIMINATORS—CHIP TYPE

CDACV SERIES



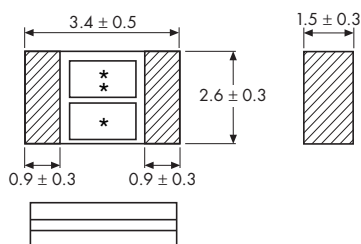
When using chip components in the design of FM radios, their arrangement and space allocation can create design difficulties. To help reduce these problems, Murata has developed this series of chip ceramic discriminators. They have heat resistant structures and allow the design of FM detecting circuits requiring no adjustment. Also, these discriminators yield stable demodulation characteristics. The CDACV10.7 Series can be used as kits with the Cerafil® SFECV10.7 Series to facilitate design.

FEATURES

- The discriminator is only 1.5mm thick so it is well suited for thin circuit boards.
- This discriminator can be used with a variety of ICs.
- It exhibits demodulation characteristics over a wide frequency range without the need for adjustment.
- The series has excellent temperature characteristics and good aging stability.

DIMENSIONS: mm

NEW CDACV10.7 SERIES



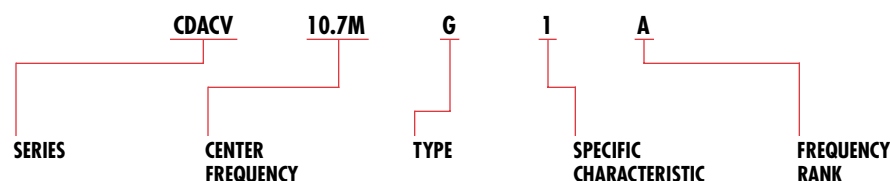
* : EIA-J Date Code
** : Center Frequency Rank Code

SPECIFICATIONS

Part Number	Demodulation Output (mV) min.	Demodulation Factor (%) max.	Demodulation 3dB Bandwidth (kHz) min.
CDACV10.7MG1-A	55	1.0	$f_0 \pm 150$
CDACV10.7MG16-A	60	0.9	$f_0 \pm 300$
CDACV10.7MG46-A	280	1.5	$f_0 \pm 330$

• 30% Dev.

PART NUMBERING SYSTEM



*Applicable in North American market only. ▼Applicable in European market only.

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For more detailed information regarding this product line in Europe, see Catalog No. P61E-4.

FILTERS FOR FM APPLICATIONS SFECV 10.7MHz



FEATURES

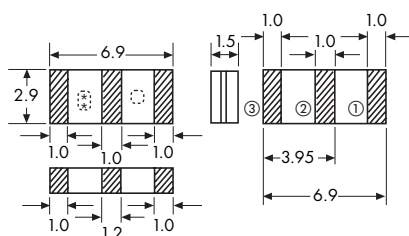
- Super-thin. Only 1.5mm. The most suitable ceramic filter available for thinning substrates.
- Heat resistant. Reflow soldering can be performed because of its excellent heat resistance.
- The piezoelectric element is connected in the sandwich shape by heat resistant substrates, thus it has excellent mechanical strength, and it is suitable for automatic mounting.

- Various bandwidths are available. Select a suitable type in accordance with the desired selectivity.
- Electrical characteristics are the same as conventional ceramic filters.

DIMENSIONS: mm

NEW

SFECV10.7MA5/MS2/MS3



- ① INPUT
- ② GROUND
- ③ OUTPUT

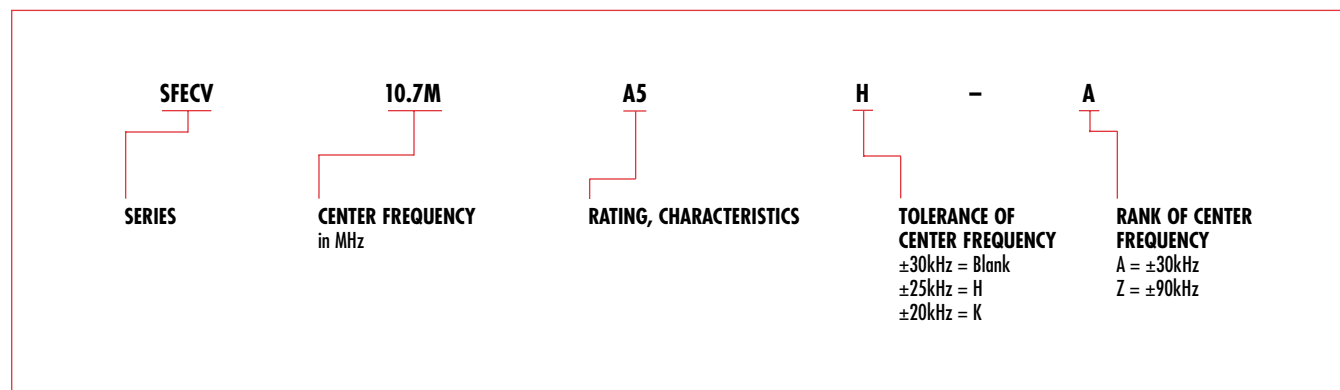
Packaging Units: 2000pcs/reel (180 mmD)

() : EIA-J Date Code

SPECIFICATIONS

Part Number	3dB Pass Bandwidth (kHz)	20dB Attenuation Bandwidth (kHz) max.	Insertion Loss (dB) max.	Spurious Attenuation (9 ~ 12MHz) (dB) min.
SFECV10.7MA5-Z	280 ± 50	590	3.0 ± 2.0	35
SFECV10.7MS2-Z	230 ± 50	510	3.5 ± 2.0	35
SFECV10.7MS3-Z	180 ± 40	470	4.0 ± 2.0	35

PART NUMBERING SYSTEM



*Applicable in North American market only ▼Applicable in European market only

For more detailed information regarding this product line in North America, see Catalog No. P-05-D. To receive additional information on Murata Products call 1-800-831-9172.
For more detailed information regarding this product line in Europe, see Catalog No. P61E-4.