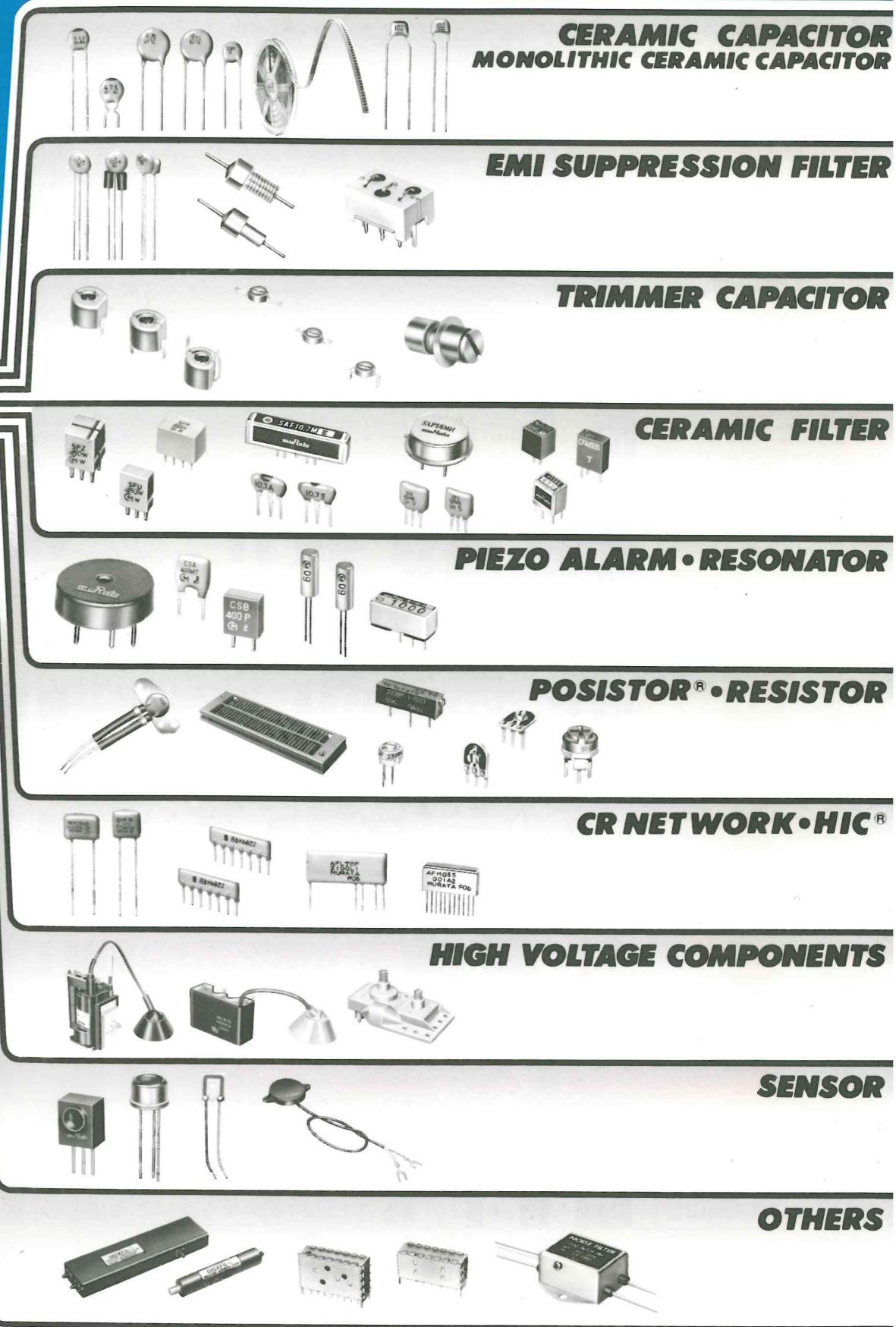


ELECTRONIC COMPONENTS



EUROPEAN DIVISION

MURATA ERIE ELEKTRONIK GMBH
GERMANY

8500 Nürnberg
Kreuzsteinstraße 1
Tel. (0911) 66065
Tx. 6-26365 u. 6-23763

MURATA ERIE ELETTRONICA s.r.l.
ITALY

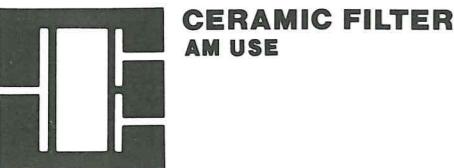
20125 Milano
Via Melchiorre Gioia, 66
Tel. (02) 6073786
Tx. 330385

MURATA ERIE ELECTRONIQUE S.A.
FRANCE

75015 Paris
45, Rue des Bergers
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8802 Bechhofen
Pestalozzistraße 11
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Tx. 6-1716

00157 Roma
Via Maffio Maffii, 11
Tel. 435.341
Tx. 614461

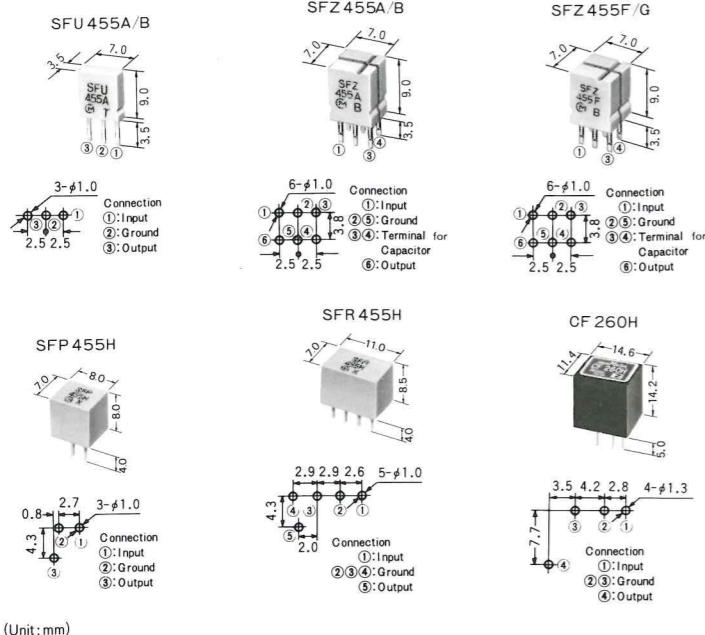


Most suitable for IC circuits because of ultra-small size and high selectivity.

CERAMIC FILTER FOR AM

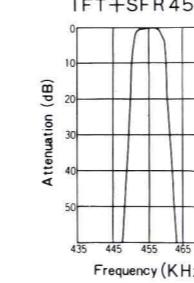
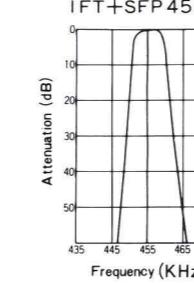
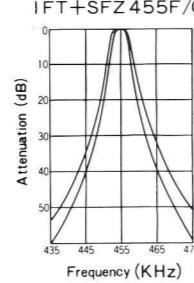
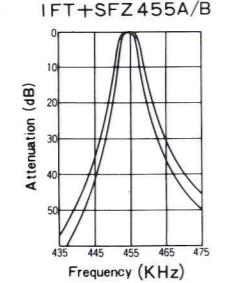
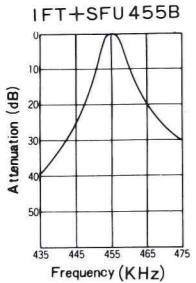
AM·IF

260KHz·450~482KHz



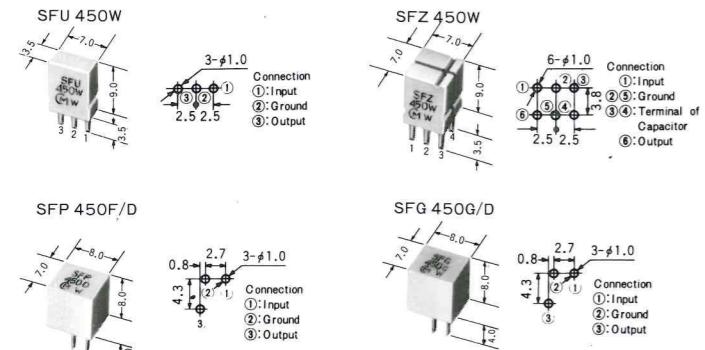
(Unit:mm)

Frequency characteristics



For AM Stereo

450/455KHz NEW

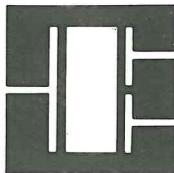


(Unit:mm)

CERAMIC FILTER

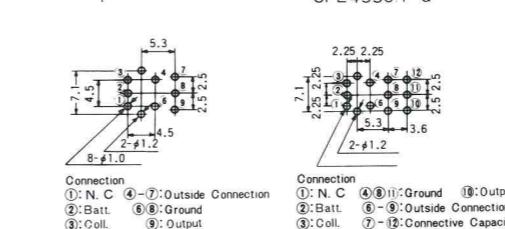
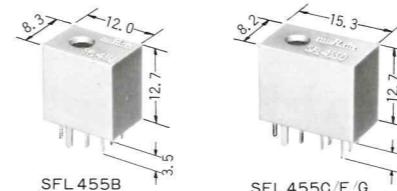
AM USE

ELECTRONIC TUNED RADIO



CERAMIC FILTER FOR AM

Ceramic Filter with IFT 450~482KHz



(Unit:mm)

Two-Terminal Resonator Type Ceramic Filter 450~482KHz



(Unit:mm)

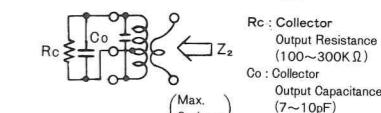
NOTE
for AM

- Center frequency (f_0) is available in a range of 450 ~ 482 KHz. The tolerance of f_0 is $\pm 2\text{ KHz}$, and $\pm 1\text{ KHz}$ tolerance is available for synthesizers and digital indicators.
- Using SFP/ SFR series, can be obtained high selectivity at $\pm 9\text{ KHz}$ off, and also high-fidelity in MW-broadcasting.
- SFZ type should be used a coupling capacitance C_c (SL) of 47~56 pF. The band width is variable with C_c values.
- Matching IFT for SFU series should be designed based on following table. Z_2 indicates the impedance including the secondary side of IFT.

Char. Part Number	3dB Band Width (KHz)	Selectivity	Resonant Impedance (Ω) max.
		-9KHz off (dB) min.	+9KHz off (dB) min.
BFU455K	8±2	(8)	(12)
BFU455C	2.5±1	(16)	(21)

• Type BFU455C is most suitable for station signal detector.
(): Typ. Value

• Typical value of temperature coefficient for f_0 is 10 p ppm / °C.

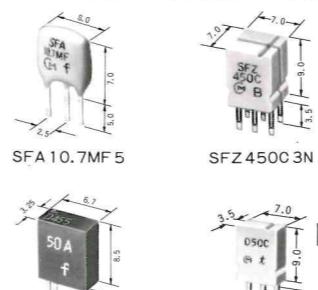


Rc : Collector
Output Resistance (100~300Ω)
Co : Collector
Output Capacitance (7~10pF)

CERAMIC FILTER FOR ELECTRONIC TUNED RADIO

For Search-Stop Signal Detection

Ceramic Filter 10.7MHz~450KHz

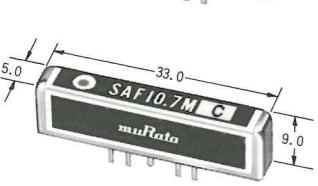


(Unit:mm)



SURFACE ACOUSTIC WAVE FILTER FOR FM

FM Tuner SAF Filter 10.7MHz



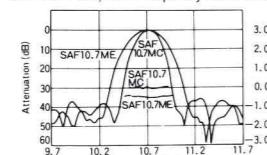
(Unit:mm)

Char. Part Number	Center Frequency	3dB Band Width (KHz)	20dB Band Width (KHz) max.	Insertion Loss (dB) max.	Spurious Response (dB) min.	G.D.T. 0.5μs Band Width (KHz) min.	Temp. Coeff. (ppm/°C)
SAF10.7ME-Z	A:10.70MHz±30kHz (Red) B:10.67MHz±30kHz (Blue) C:10.73MHz±30kHz (Orange) D:10.64MHz±30kHz (Black) E:10.76MHz±30kHz (White)	270±50	700	22	33	400	-40±30
SAF10.7MC-Z	190±30	500	22	33	300	-40±30	
SAF10.7MC1-Z	170±30	420	22	24	200	-40±30	

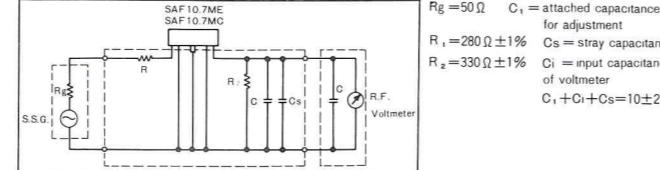
• Features

- Amplitude characteristic and phase characteristic can be designed individually.
- Excellent group delay time characteristic.
- Less susceptible to external impedance change by virtue of being non-resonant type.

SAF10.7MC/ME Frequency Characteristics



• Test Circuit

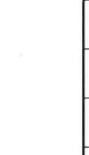
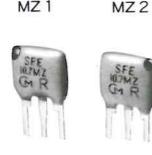
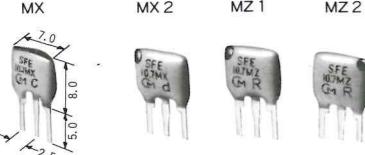


• Temp. Range -20~+80°C

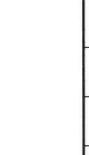
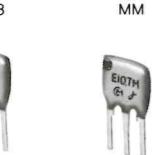
CERAMIC FILTER FOR FM

FM-IF Tuner 10.7MHz

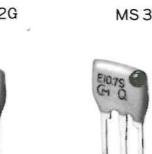
MX Series



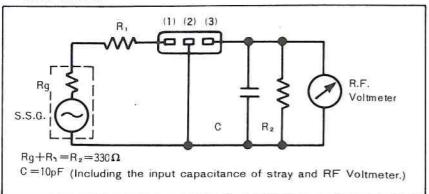
ML Series



MA Series



• Test Circuit

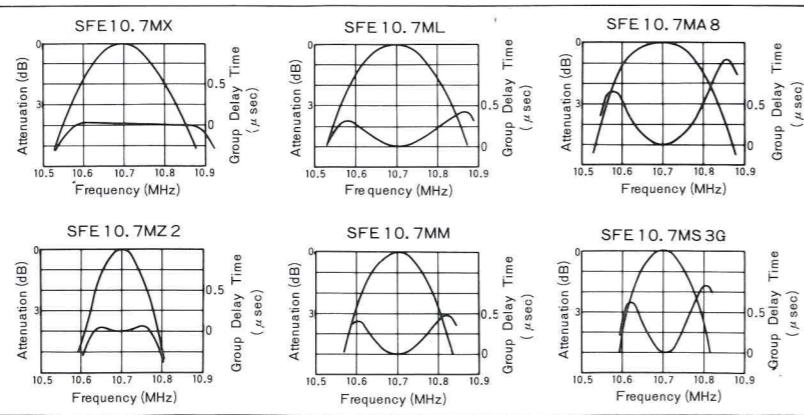


Char. Part Number	3dB Band Width (KHz)	20dB Band Width (KHz) max.	Insertion Loss (dB) max.	Spurious (8~12MHz) (dB) min.	G. D. T. Band Width (KHz) min.
SFE10.7MX	250±40	670 (620)	12 (10)	25 (33)	0.2μsec $f_0 \pm 110$
SFE10.7MX2	220±40	610 (560)	12.5 (10.5)	30 (37)	0.15μsec $f_0 \pm 80$
SFE10.7MZ1	180±30	530 (460)	14 (12.3)	33 (38)	0.15μsec $f_0 \pm 60$
SFE10.7MZ2	150±30	500 (420)	14 (12.6)	35 (41)	0.15μsec $f_0 \pm 50$
SFE10.7ML	280±50	650 (610)	9 (7)	25 (33)	0.25μsec $f_0 \pm 70 (\pm 105)$
SFE10.7MP3	250±50	650 (550)	10 (8)	30 (35)	0.25μsec $f_0 \pm 65 (\pm 90)$
SFE10.7MM	230±50	600 (510)	11 (9)	30 (38)	0.25μsec $f_0 \pm 60 (\pm 85)$
SFE10.7MA8	280±50	650 (520)	6 (4)	30 (43)	0.5μsec $f_0 \pm 80 (\pm 100)$
SFE10.7MS2G	230±50	600 (420)	7 (4.5)	40 (45)	0.5μsec $f_0 \pm 60 (\pm 75)$
SFE10.7MS3G	180±40	520 (380)	9 (5)	40 (45)	0.5μsec $f_0 \pm 45 (\pm 60)$

• Input Impedance : 330Ω

• The rank of center frequencies is available in two series ; 30KHz steps and 25KHz steps.

Frequency characteristics



CERAMIC FILTER FOR FM

Radio Ceramic Filter 10.7MHz



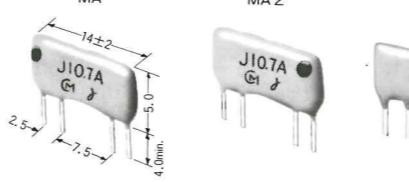
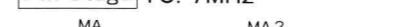
NEW

MJ

μ Series Ceramic Filter 10.7MHz

NEW

MS2U



MA5

MA2

MB5

NOTE for FM

- The rank of center frequency is available in two series ; 30KHz steps and 25KHz steps. The series of 25KHz steps are most suitable to synthesizer tuners. This type are distinguished by adding H to the end of part number.
- The group delay time characteristics is checked in all items for stereo tuners.
- The best matching with Cerafil® is obtained with input/output matching impedance of 330Ω.
- The temperature coefficient of center frequency is ±50.p.p.m/°C or less at -20°C to +80°C for all types.

Char. Part Number	3dB Band Width (KHz)	20dB Band Width (KHz) max.	Insertion Loss (dB) max.	Spurious (8~12MHz) (dB) min.
SFE10.7MA5	280±50	650 (520)	6 (4)	30 (43)
SFE10.7MS2	230±50	600 (420)	6 (4)	40 (45)
SFE10.7MS3	180±40	520 (380)	7 (4.5)	40 (45)
SFE10.7MJ	150±40	400 (300)	10 (5)	40 (45)

• Input, Output Impedance : 330Ω

• Most suitable for a thin type set.

Char. Part Number	3dB Band Width (KHz)	20dB Band Width (KHz) max.	Insertion Loss (dB)	Spurious (8~12MHz) (dB) min.
SFE10.7MA5U	280±50	650	6	30
SFE10.7MS2U	230±50	600	6	40

• Input Output Impedance : 330Ω

• Most suitable for a thin type set.

Char. Part Number	3dB Band Width (KHz)	50dB Band Width (KHz) max.	Insertion Loss (dB)	Spurious (8~12MHz) (dB) min.
SFJ10.7MA	280±50	750 (620)	7±2	55 (80)
SFJ10.7MA2	230±50	700 (580)	7±2	60 (90)
SFJ10.7MB5	180±40	590 (490)	9.5±2	60 (90)

• Input, Output Impedance : 330Ω

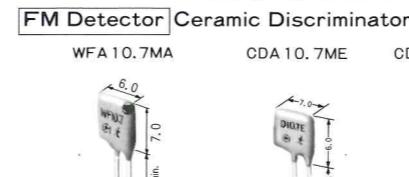
• Most suitable for a thin type set.

Char. Part Number	3dB Band Width (KHz)	50dB Band Width (KHz) max.	Insertion Loss (dB)	Spurious (8~12MHz) (dB) min.
SFJ10.7MA	280±50	750 (620)	7±2	55 (80)
SFJ10.7MA2	230±50	700 (580)	7±2	60 (90)
SFJ10.7MB5	180±40	590 (490)	9.5±2	60 (90)

• Input, Output Impedance : 330Ω

• Most suitable for a thin type set.

FM Detector Ceramic Discriminator 10.7MHz



(Unit:mm)



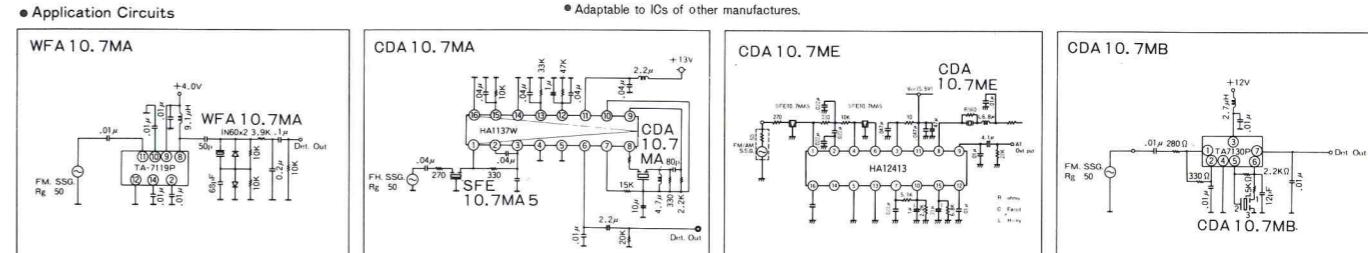
(Unit:mm)



(Unit:mm)

• 30% Dev. Typ. Value.

• Adaptable to ICs of other manufacturers.





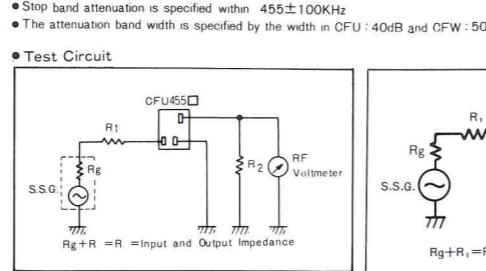
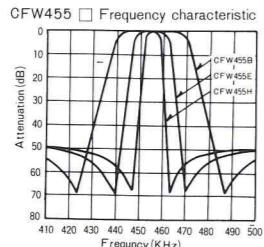
CERAMIC FILTER FOR COMMUNICATION

Ceramic Filter For Transceiver 455KHz



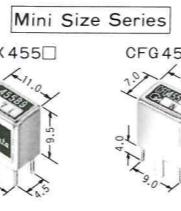
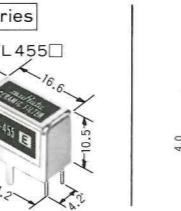
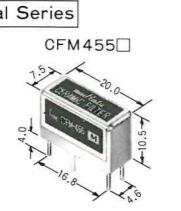
Connection
 ①: Input
 ②: Ground
 ③: Output

Connection
 ①: Input
 ②③④: Ground
 ⑤: Output



(Unit:mm)

Communication Use Ceramic Filter 455KHz

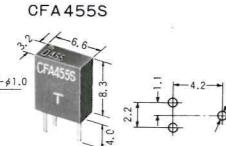
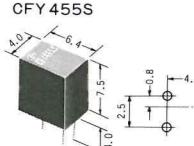


Band Width Rank	Pass Band Width		Attenuation Band Width (KHz) min.	Insertion Loss (dB) max.		In. / Output Impedance (KΩ)				
	Band Width (KHz) min.	Band Width (KHz) max.		CFS	CFM	CFK · CFL · CFX · CFG	CFS	CFM	CFK	CFL · CFG · CFG
A	±13	±17.5	±30	4	3	—	1.5	1	—	—
B	±10	±15	±25	4	3	4	1.5	1	1	1
C	±9	±13	±23	4	3	4	1.5	1	1	1
D	±7	±10	±20	4	3	4	1.5	1.5	1.5	1.5
E	±5.5	±8	±16 (OFS: ±15)	6	5	6	1.5	1.5	1.5	1.5
E10	±5.0	±7.5	±12.5	—	—	6	—	—	1.5	1.5
F	±4.2	±6	±12	6	6	6	2	2	2	1.5
G	—	±4	±10	6	6	6	2	2	2	1.5
H	—	±3	±7.5	7	6	7 (CFG: 6)	2	2	2	1.5
I	—	±2	±5	8	7	8	2	2	2	2
J	—	±1.5	±4.5	8	—	8	2	—	2	2

* Attenuation Band is specified the following band width. CFS : 80dB B. W. CFK : 70dB B. W. CFX : 70dB B. W. CFM : 60dB B. W. CFL : 70dB B. W. CFG : 60dB B. W.

* Ripple is 3dB max. (Within pass band width)

Communication Use Ceramic Discriminator 455KHz

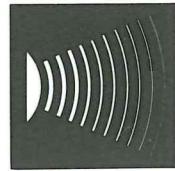


Part Number	Char.	Center Frequency (KHz)	Peak Separation (KHz) min.	Voltage [※] Sensitivity (mV/KHz)
				() : Typ. Value
CFY455S		455±1	15 (17)	20±5
CFA455S		455±1	20 (22)	13 min.
SFD455S4		455±2	28 (32)	13±5

* Center Frequency : Specified at DC 0 V point.
 * Voltage sensitivity : 450~460KHz

(Unit:mm)

PIEZO ALARM

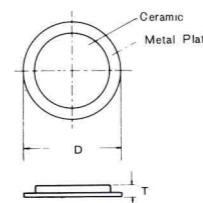


PIEZO ALARM

Sound Element



Sound Element with Feedback Electrode

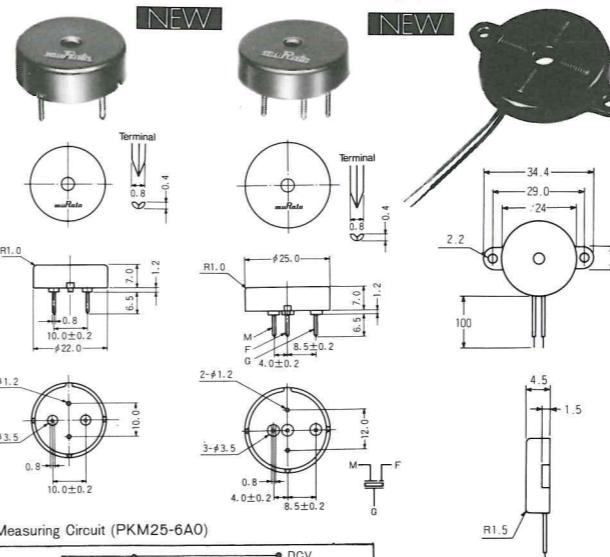


* Also available in lead type and stainless plate type.

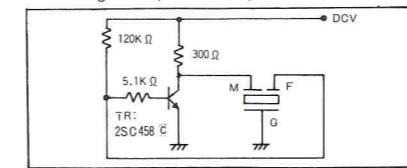
Part Number	7BB-20-6	7BB-27-4	7BB-35-3
Resonant Frequency	6.3±0.6KHz	4.6±0.5KHz	2.8±0.5KHz
Resonant Impedance	350Ω max.	200Ω max.	200Ω max.
Capacitance	10000pF±30%	20000pF±30%	30000pF±30%
Input Voltage	30Vp-p max.	30Vp-p max.	30Vp-p max.
Diameter (D)	20.0mm	27.0mm	35.0mm
Thickness (T)	0.42mm	0.54mm	0.54mm

Housing Type

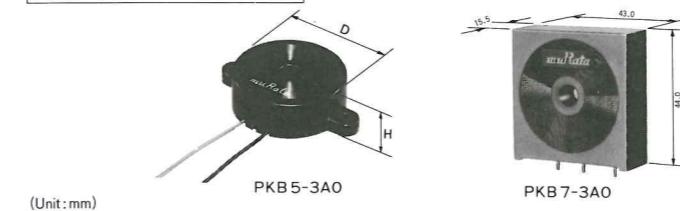
PKM24-4AO (External-drive Type) PKM25-6AO (Self-drive Type)



Measuring Circuit (PKM25-6AO)



Piezo Alarm with Circuit



Part Number	PKB5-3AO	PKB5-3BO	PKB6-5AO	PKB7-3AO
Rated Voltage	3~20VDC	1.5~9VDC	3~20VDC	3~20VDC
Resonant Freq.	2.8±0.5KHz	2.8±0.5KHz	4.7±0.7KHz	2.8±0.5KHz
Temp. Range	-20~+60°C	-20~+60°C	-20~+60°C	-20~+60°C
Diameter (D)	φ 42mm	φ 42mm	φ 34mm	—
Height (H)	14.5mm	14.5mm	13.5mm	—