



CERAFIL®

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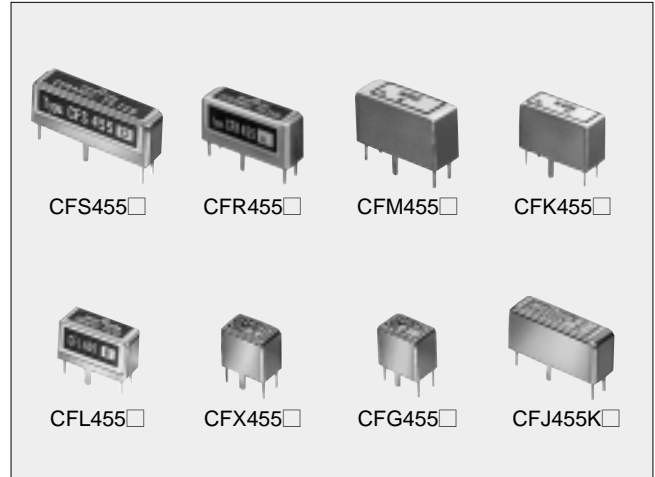
Ceramic Filter for Communications Equipment **CF□455 Series**

High Performance Ceramic Filters for Various Types of Radio Equipment

CF□ series ceramic filters are high-performance filters, which consist of piezoelectric elements connected in a ladder form. They can be widely used as intermediate-frequency filters in various high-class receivers, SSB communications equipment, mobile radio set.

■FEATURES

1. High selectivity.
2. Stable operation in a wide temperature range.
3. Variety of bandwidths available to suit your needs.
4. Operating temperature range : -20 to +80°C
Storage temperature range : -40 to +85°C



CFS455□	High selectivity type filter using 15 ceramic elements.
CFR455□	11 ceramic elements used. The characteristic standard of this filter located between CFS455□ and CFM455□.
CFM455□	Economic ceramic filter using 9 ceramic elements.
CFK455□	Miniature but having characteristics equivalent to CFS455□. Most suitable for portable radios which are required to be miniaturized.
CFL455□	Another miniature type. Characteristics are equivalent to CFR455□ and the size is the same as CFK455□. Enables immediate improvement of characteristics.
CFX455□	One of the smallest of our ceramic filters. It is provided with characteristics equivalent to CFL455□. Perfect for portable radios and particularly, pagers.
CFG455□	The other of our smallest filters. Characteristics equivalent to CFM455□. Perfect for receivers and radio equipment which require particular miniaturization.
CFJ455K□	Most suitable type for SSB communications for which narrow bands are particularly needed.

■ SPECIFICATIONS

● CFS455□

Characteristics Part Number	Nominal Center Frequency (kHz)	3dB Bandwidth (kHz) min.	6dB Bandwidth (kHz) min.	Ripple (dB) max.	80dB Bandwidth (kHz) max.	Attenuation 455±100kHz (dB) min.	Spurious 0.1—1MHz (dB) min.	Insertion Loss (dB) max.	Input/Output Impedance (Ω)
CFS455A	455	±13	±17.5	3	±30	70	50	4	1500
CFS455B	455	±10	±15	3	±25	70	50	4	1500
CFS455C	455	± 9	±13	3	±23	70	50	4	1500
CFS455D	455	± 7	±10	3	±20	70	50	4	1500
CFS455E	455	± 5.5	± 8	3	±15	70	50	6	1500
CFS455E10	455	± 5	± 7.5	3	±12.5	70	50	6	1500
CFS455F	455	± 4.2	± 6	3	±12	70	50	6	2000
CFS455G	455	—	± 4	3	± 9	70	50	6	2000
CFS455H	455	—	± 3	3	± 7.5	70	50	7	2000
CFS455I	455	—	± 2	3	± 5	70	50	8	2000
CFS455J	455	—	± 1.5	3	± 4.5	60	50	8	2000

● CFR455□

Characteristics Part Number	Nominal Center Frequency (kHz)	3dB Bandwidth (kHz) min.	6dB Bandwidth (kHz) min.	Ripple (dB) max.	70dB Bandwidth (kHz) max.	Attenuation 455±100kHz (dB) min.	Spurious 0.1—1MHz (dB) min.	Insertion Loss (dB) max.	Input/Output Impedance (Ω)
CFR455A	455	±13	±17.5	3	±30	60	40	4	1000
CFR455B	455	±10	±15	3	±25	60	40	4	1000
CFR455C	455	± 9	±13	3	±23	60	40	4	1000
CFR455D	455	± 7	±10	3	±20	60	40	4	1500
CFR455E	455	± 5.5	± 8	3	±16	55	40	6	1500
CFR455F	455	± 4.2	± 6	3	±12	55	40	6	2000
CFR455G	455	—	± 4	3	±10	55	40	6	2000
CFR455H	455	—	± 3	3	±7.5	55	40	7	2000
CFR455I	455	—	± 2	3	± 5	55	40	8	2000
CFR455J	455	—	± 1.5	3	± 4.5	55	40	8	2000

● CFM455□

Characteristics Part Number	Nominal Center Frequency (kHz)	3dB Bandwidth (kHz) min.	6dB Bandwidth (kHz) min.	Ripple (dB) max.	60dB Bandwidth (kHz) max.	Attenuation 455±100kHz (dB) min.	Spurious 0.1—1MHz (dB) min.	Insertion Loss (dB) max.	Input/Output Impedance (Ω)
CFM455A	455	±13	±17.5	3	±30	50	30	3	1000
CFM455B	455	±10	±15	3	±25	50	30	3	1000
CFM455C	455	± 9	±13	3	±23	50	30	3	1000
CFM455D	455	± 7	±10	3	±20	50	30	3	1500
CFM455E	455	± 5.5	±8	3	±16	45	30	5	1500
CFM455F	455	± 4.2	±6	3	±12	45	30	6	2000
CFM455G	455	—	±4	3	±10	45	30	6	2000
CFM455H	455	—	±3	3	± 7.5	45	30	6	2000
CFM455I	455	—	±2	3	± 5	45	30	7	2000

● CFK455□

Characteristics Part Number	Nominal Center Frequency (kHz)	3dB Bandwidth (kHz) min.	6dB Bandwidth (kHz) min.	Ripple (dB) max.	70dB Bandwidth (kHz) max.	Attenuation 455±100kHz (dB) min.	Spurious 0.1—1MHz (dB) min.	Insertion Loss (dB) max.	Input/Output Impedance (Ω)
CFK455B	455	±10	±15	3	±25	80	50	4	1000
CFK455C	455	± 9	±13	3	±23	80	50	4	1000
CFK455D	455	± 7	±10	3	±20	80	50	4	1500
CFK455E	455	± 5.5	± 8	3	±16	80	50	6	1500
CFK455E10	455	± 5.0	± 7.5	3	±12.5	80	50	6	1500
CFK455F	455	± 4.2	± 6	3	±12	80	50	6	2000
CFK455G	455	—	± 4	3	±10	80	50	6	2000
CFK455H	455	—	± 3	3	± 7.5	80	50	7	2000
CFK455I	455	—	± 2	3	± 5	70	50	8	2000
CFK455J	455	—	± 1.5	3	± 4.5	70	50	8	2000

● CFL455□

Characteristics Part Number	Nominal Center Frequency (kHz)	3dB Bandwidth (kHz) min.	6dB Bandwidth (kHz) min.	Ripple (dB) max.	70dB Bandwidth (kHz) max.	Attenuation 455±100kHz (dB) min.	Spurious 0.1—1MHz (dB) min.	Insertion Loss (dB) max.	Input/Output Impedance (Ω)
CFL455B	455	±10	±15	3	±25	60	40	4	1000
CFL455C	455	± 9	±13	3	±23	60	40	4	1000
CFL455D	455	± 7	±10	3	±20	60	40	4	1500
CFL455E	455	± 5.5	± 8	3	±16	60	40	6	1500
CFL455E10	455	± 5.0	± 7	3	±12.5	60	40	6	1500
CFL455F	455	± 4.2	± 6	3	±12	60	40	6	1500
CFL455G	455	—	± 4	3	±10	60	40	6	1500
CFL455H	455	—	± 3	3	± 7.5	60	40	7	1500
CFL455I	455	—	± 2	3	± 5	60	40	8	2000

● CFX455□

Characteristics Part Number	Nominal Center Frequency (kHz)	3dB Bandwidth (kHz) min.	6dB Bandwidth (kHz) min.	Ripple (dB) max.	70dB Bandwidth (kHz) max.	Attenuation 455±100kHz (dB) min.	Spurious 0.1—1MHz (dB) min.	Insertion Loss (dB) max.	Input/Output Impedance (Ω)
CFX455B	455	±10	±15	3	±25	70	40	4	1000
CFX455C	455	± 9	±13	3	±23	70	40	4	1000
CFX455D	455	± 7	±10	3	±20	70	40	4	1500
CFX455E	455	± 5.5	± 8	3	±16	70	40	6	1500
CFX455E10	455	± 5.0	± 7.5	3	±12.5	70	40	6	1500
CFX455F	455	± 4.2	± 6	3	±12	70	50	6	1500
CFX455G	455	—	± 4	3	±10	70	50	6	1500
CFX455H	455	—	± 3	3	± 7.5	70	50	7	1500
CFX455I	455	—	± 2	3	± 5	70	50	8	2000
CFX455J	455	—	± 1.5	3	± 4.5	70	50	8	2000

● CFG455□

Characteristics Part Number	Nominal Center Frequency (kHz)	3dB Bandwidth (kHz) min.	6dB Bandwidth (kHz) min.	Ripple (dB) max.	60dB Bandwidth (kHz) max.	Attenuation 455±100kHz (dB) min.	Spurious 0.1—1MHz (dB) min.	Insertion Loss (dB) max.	Input/Output Impedance (Ω)
CFG455B	455	±10	±15	3	±25	50	25	4	1000
CFG455C	455	± 9	±13	3	±23	50	25	4	1000
CFG455D	455	± 7	±10	3	±20	50	25	4	1500
CFG455E	455	± 5.5	± 8	3	±16	50	25	6	1500
CFG455E10	455	± 5.0	± 7.0	3	±12.5	50	25	6	1500
CFG455F	455	± 4.2	± 6	3	±12	50	25	6	1500
CFG455G	455	—	± 4	3	±10	50	25	6	1500
CFG455H	455	—	± 3	3	± 7.5	50	25	6	1500
CFG455I	455	—	± 2	3	± 5	50	25	6	2000
CFG455J	455	—	± 1.5	3	± 4.5	50	25	8	2000

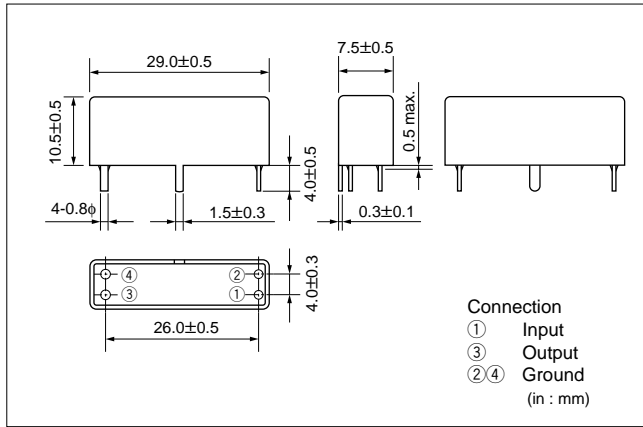
● CFJ455K□

Characteristics Part Number	Nominal Center Frequency (kHz)	3dB Bandwidth (kHz) min.	6dB Bandwidth (kHz) min.	Ripple (dB) max.	60dB Bandwidth (kHz) max.	Attenuation 455±100kHz (dB) min.	Spurious 0.1—1MHz (dB) min.	Insertion Loss (dB) max.	Input/Output Impedance (Ω)
CFJ455K5	455	—	2.4 (Total)	2	4.5 (Total)	—	60 (40 at 600 —700kHz)	6	2000
CFJ455K14	455	—	±1.1— ±1.3	2	4.5 (Total)	—	60 (40 at 600 —750kHz)	7	2000
CFJ455K8	455	—	1.0 (Total)	1.5	3.0 (Total)	60	—	8	2000

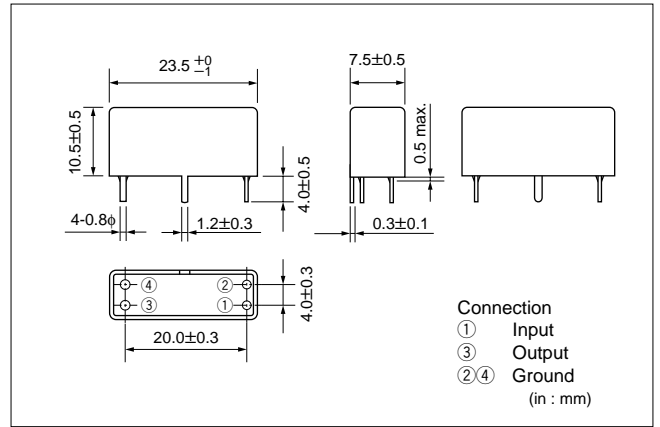
1. Operating temperature range is -20°C to +80°C.
2. Aging variation of frequency is within 0.4% over 10 years.
3. Ripple definition range is within the 3 dB bandwidth mentioned in the standards list whenever the 3 dB bandwidth standard is provided.
It is within a 6 dB bandwidth mentioned in the standards list whenever 3 dB bandwidth is not provided.

■ DIMENSIONS

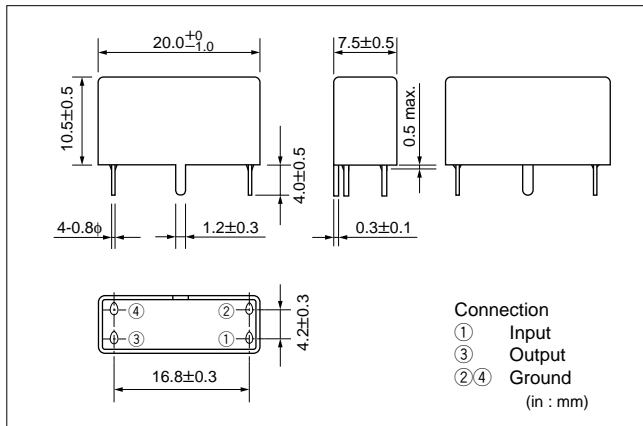
● CFS455□



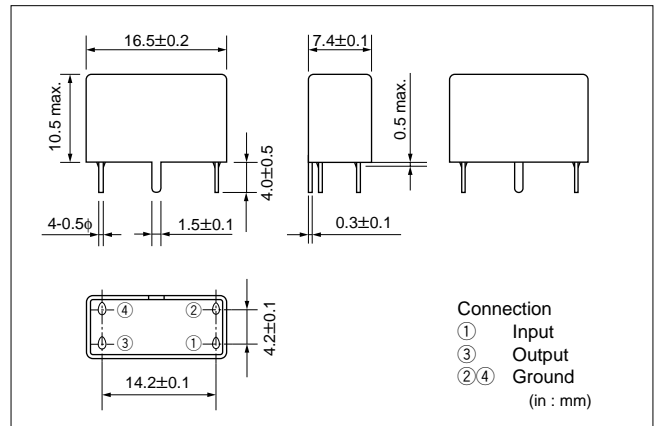
● CFR455□



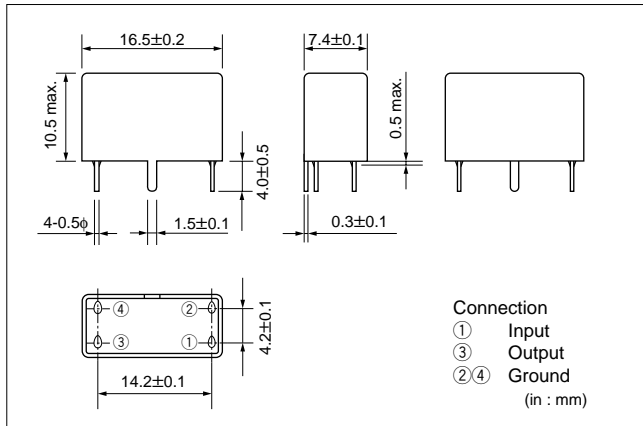
● CFM455□



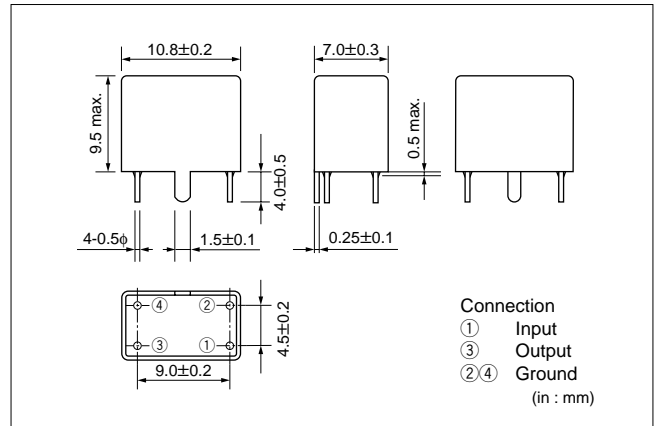
● CFK455□



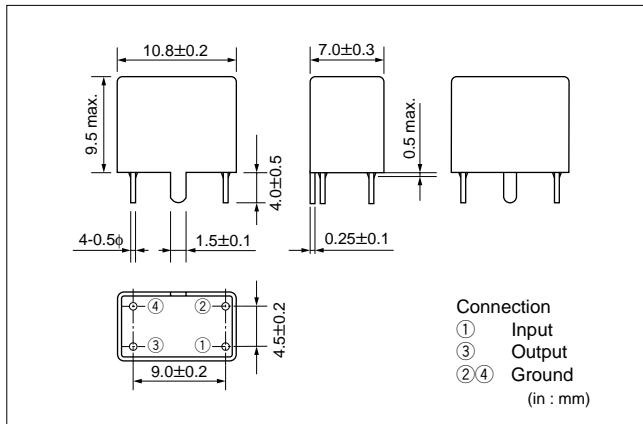
● CFL455□



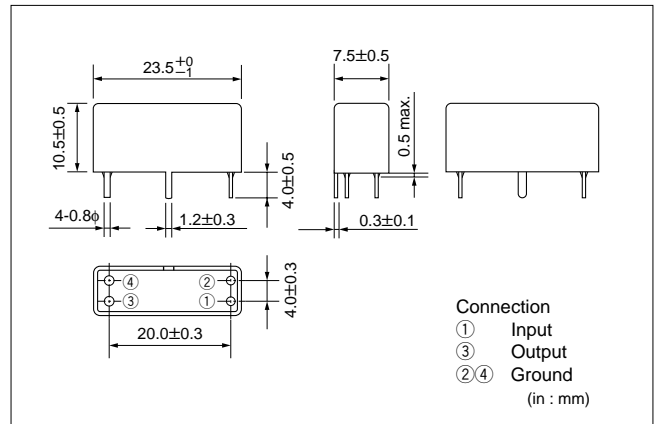
● CFX455□



● CFG455□

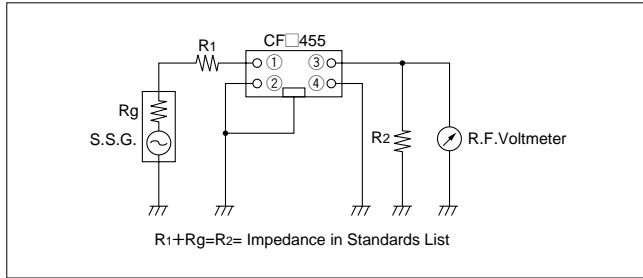


● CFJ455K□



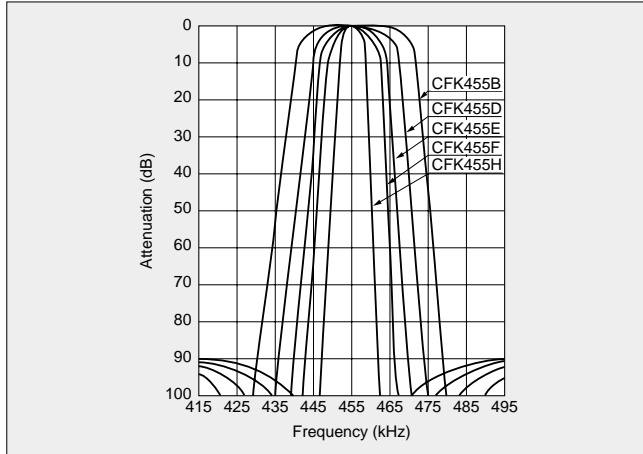
TEST CIRCUIT

- Measuring Circuit Diagram of the CF□455□ Series

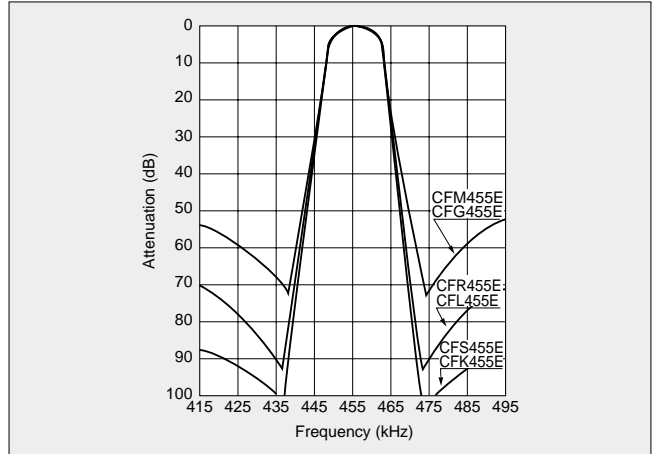


EXAMPLES OF CHARACTERISTICS

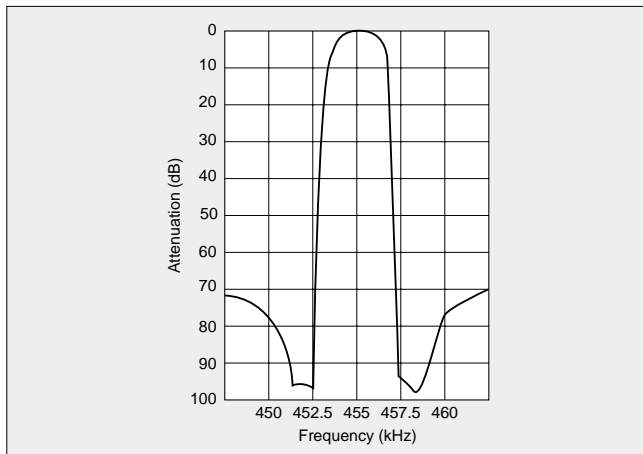
- Frequency Characteristics of the CFK455□ Series



- Frequency Characteristics Comparison of the CF□455E Series



- Frequency Characteristics of CFJ455K5



- Spurious Response of CFS455E

