1. Cerafil® in AM Tuner

The AM tuner is very popular recently. Before being designed, however, many conditions must be settled and the important points among them are as follows:

(1) A practical sensitivity and S/N (Signal-to-Noise Ratio) should be sufficiently obtained.

(2) Distortion factor should be minimal in both strong and weak electric fields.

(3) Desirable selectivity against radio wave disturbance

With respect to (1), it depends on the performance of bar antenna, N/F (Noise Figure) of the mixer stage and the conversion gain. Concerning (2), it is dependent upon AGC circuit design. As for (3), high selectivity came to be required as the result of 9kHz channel replanning of MW broadcasting in 1978. For the IF amplifier, the ceramic filter with many superior advantages; such as high selectivity, non-alignment for tuning, miniature size, high reliability, etc., began to be used widely instead of IFT.

Murata provides a series of Cerafil® for AM receivers that can be adopted in radios from the most inexpensive type to high quality stereo tuners. **Table 1** shows the standard of Cerafil®. Available center frequencies range from 448kHz through 482kHz to meet the requirements of IF's in various countries.

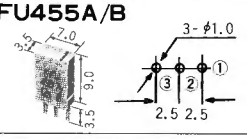
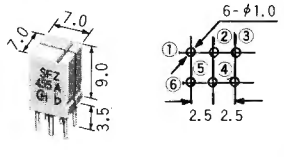
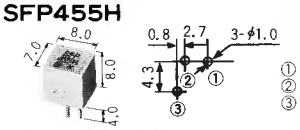
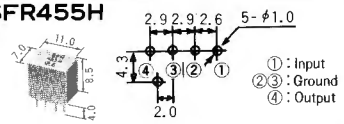
Types	Char. / Model Number	Center Frequency	3dB Bandwidth	6dB Bandwidth	Selectivity −9KHz Off	Selectivity +9KHz Off	Insertion Loss	Input/ Output Impedance
SFU455A/B  ①:Input ②:Ground ③:Output	SFU455A	455KHz ±2KHz	10KHz±3KHz (10KHz)	——	5dB min. (7.5dB)	3dB min. (5.5dB)	5dB max. (3dB)	3KΩ
	SFU455B (For combination with IFT)	462KHz ±2KHz	10KHz±3KHz (10KHz)	——	5dB min. (7.5dB)	3dB min. (5.5dB)	5dB max. (3dB)	
SFZ455A/B/F/G  ①:Input ②⑤:Ground ③④:Condenser Leads for Coupling Capacitor ⑥:Output	SFZ455A	455KHz ±2KHz	4.5KHz±1KHz (4.5KHz)	——	23dB (27dB)	18dB min. (22dB)	6dB max. (3dB)	
	SFZ455B	455KHz ±2KHz	6.5KHz±1KHz (6.5KHz)	——	18dB (20dB)	14dB min. (16dB)	6dB max. (2dB)	
	SFZ455F	455KHz ±2KHz	4.5KHz±1KHz (4.5KHz)	——	23dB (28dB)		6dB max. (4dB)	
	SFZ455G	455KHz ±2KHz	6.5KHz±1KHz (6.5KHz)	——	18dB (20dB)		6dB (3dB)	
SFP455H  ①:Input ②:Ground ③:Output	SFP455H	455KHz ±1KHz	——	8KHz ±2KHz (8KHz)	50dB (60dB)		6dB (1.5dB)	2KΩ
SFR455H  ①:Input ②③:Ground ④:Output	SFR455H	455KHz ±1KHz	——	8KHz ±2KHz (8KHz)	65dB (75dB)		6dB (1.5dB)	

Table 1. Cerafil® for AM Receiver Figures in parentheses show typical values