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**TAMAOKI**(10) **Pub. No.: US 2024/0235527 A1**(43) **Pub. Date: Jul. 11, 2024**(54) **ACOUSTIC WAVE FILTER**(52) **U.S. Cl.**CPC ..... **H03H 9/6489** (2013.01); **H03H 9/02992**  
(2013.01); **H03H 9/6483** (2013.01)(71) Applicant: **Murata Manufacturing Co., Ltd.**,  
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**H03H 9/02** (2006.01)(57) **ABSTRACT**

An acoustic wave filter includes a filter circuit and an additional circuit including IDTs and a reflector. A first excitation portion of one of the IDTs is adjacent to the reflector. An outermost IDT includes  $((N/2)+1)$  electrode fingers when a total number  $N$  of the electrode fingers included in the outermost IDT is an even number, or the outermost IDT includes  $((N+1)/2)$  electrode fingers when the total number  $N$  is an odd number. A second excitation portion of the one of the IDTs includes two or more electrode fingers, except the electrode fingers of the first excitation portion. Assuming an average arrangement pitch of the electrode fingers included in the first excitation portion is  $p_x$  and an average arrangement pitch of reflection electrode fingers is  $p_r$ ,  $p_r/p_x$  has a value in a range from about 0.5 to about 0.97 or a range from about 1.15 to about 2.0.

