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(54) **TUNABLE FERROELECTRIC ACOUSTIC
RESONATOR STRUCTURE**

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(57) **ABSTRACT**

A ferroelectric acoustic resonator structure is provided. The tunable ferroelectric acoustic resonator structure is configured to resonate in a series resonance frequency to pass a signal from a signal input to a signal output and block the signal in a parallel resonance frequency by presenting an equivalent parallel capacitance between the signal input and the signal output. The series resonance frequency can be tuned by applying a voltage to polarize the tunable ferroelectric acoustic resonator structure. However, the voltage can also cause an increase in the equivalent parallel capacitance to therefore shift the parallel resonance frequency toward the series resonance frequency. Herein, the tunable ferroelectric acoustic resonator structure is configured to reduce the equivalent parallel capacitance that is increased when tuning the series resonance frequency. Hence, it is possible to change the series resonance and maintain the parallel resonance frequency of the tunable ferroelectric acoustic resonator structure.

