



US 20220399900A1

(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2022/0399900 A1**  
KO et al. (43) **Pub. Date: Dec. 15, 2022**(54) **DIGITAL-TO-ANALOG CONVERTER  
INCLUDING CURRENT CELL ARRAY**(71) Applicant: **SAMSUNG ELECTRONICS CO.,  
LTD.**, Suwon-si (KR)(72) Inventors: **Kyeongjoon KO**, Yongin-si (KR);  
**Jaehyun PARK**, Seoul (KR); **Junhan  
BAE**, Hwaseong-si (KR); **Gyeongseok  
SONG**, Hwaseong-si (KR); **Jongjae  
RYU**, Changwon-si (KR)(73) Assignee: **SAMSUNG ELECTRONICS CO.,  
LTD.**, Suwon-si (KR)(21) Appl. No.: **17/837,752**(22) Filed: **Jun. 10, 2022**(30) **Foreign Application Priority Data**Jun. 10, 2021 (KR) ..... 10-2021-0075742  
Sep. 15, 2021 (KR) ..... 10-2021-0123417**Publication Classification**(51) **Int. Cl.**  
**H03M 1/68** (2006.01)  
**H03M 1/74** (2006.01)  
(52) **U.S. Cl.**  
CPC ..... **H03M 1/682** (2013.01); **H03M 1/687**  
(2013.01); **H03M 1/747** (2013.01)(57) **ABSTRACT**

A digital-to-analog converter includes a current cell array including a plurality of current cells, each current cell of the plurality of current cells being configured to generate a current of a same magnitude; a first pattern connecting first current cells, among the plurality of current cells, arranged along a diagonal line of the current cell array; a second pattern connecting second current cells, among the plurality of current cells, arranged along a first oblique line parallel to the diagonal line; and a third pattern connecting third current cells, among the plurality of current cells, arranged along a second oblique line parallel to the diagonal line, the third pattern being electrically connected to the second pattern, wherein the diagonal line is between the first oblique line and the second oblique line.

