

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2023/0232100 A1 NAKATA

Jul. 20, 2023 (43) Pub. Date:

(54) IMAGE SENSOR AND ELECTRONIC **APPARATUS**

(71) Applicant: SONY GROUP CORPORATION, Tokyo (JP)

Inventor: Masashi NAKATA, Kanagawa (JP)

Assignee: **SONY GROUP CORPORATION**,

Tokyo (JP)

Appl. No.: 18/185,942 (21)

(22) Filed: Mar. 17, 2023

Related U.S. Application Data

Continuation of application No. 17/307,548, filed on May 4, 2021, now Pat. No. 11,641,521, which is a continuation of application No. 16/718,591, filed on Dec. 18, 2019, now Pat. No. 11,050,921, which is a continuation of application No. 15/855,785, filed on Dec. 27, 2017, now Pat. No. 10,554,876, which is a continuation of application No. 15/815,324, filed on Nov. 16, 2017, now Pat. No. 10,367,992, which is a continuation of application No. 14/775,826, filed on Sep. 14, 2015, now Pat. No. 9,860,438, filed as application No. PCT/JP2014/056524 on Mar. 12, 2014.

(30)Foreign Application Priority Data

Mar. 25, 2013 (JP) 2013-061952

Publication Classification

(51) Int. Cl.

H01L 27/146 (2006.01)H04N 25/704 (2006.01)

U.S. Cl. (52)

> CPC .. H01L 27/14627 (2013.01); H01L 27/14621 (2013.01); H01L 27/14623 (2013.01); H04N 25/704 (2023.01)

(57)ABSTRACT

The present technology relates to an image sensor and an electronic apparatus which enable higher-quality images to be obtained. Provided is an image sensor including a plurality of pixels, each pixel including one on-chip lens, and a plurality of photoelectric conversion layers formed below the on-chip lens. Each of at least two of the plurality of photoelectric conversion layers is split, partially formed, or partially shielded from light with respect to a light-receiving surface. The pixels are phase difference detection pixels for performing AF by phase difference detection or imaging pixels for generating an image. The present technology can be applied to a CMOS image sensor, for example.

