



US 20240213284A1

(19) **United States**(12) **Patent Application Publication**
Yoshida(10) **Pub. No.: US 2024/0213284 A1**(43) **Pub. Date: Jun. 27, 2024**(54) **IMAGING DEVICE****H04N 25/77** (2006.01)**H04N 25/79** (2006.01)(71) Applicant: **SONY SEMICONDUCTOR
SOLUTIONS CORPORATION,**
Kanagawa (JP)(52) **U.S. Cl.****CPC .. H01L 27/14634** (2013.01); **H01L 27/14689**
(2013.01); **H01L 27/1469** (2013.01); **H04N**
25/75 (2023.01); **H04N 25/77** (2023.01);
H04N 25/79 (2023.01); **H01L 24/08**
(2013.01); **H01L 24/29** (2013.01); **H01L 24/32**
(2013.01); **H01L 24/33** (2013.01); **H01L 24/80**
(2013.01); **H01L 24/83** (2013.01); **H01L**
27/14636 (2013.01); **H01L 27/14645**
(2013.01); **H01L 2224/08145** (2013.01); **H01L**
2224/29186 (2013.01); **H01L 2224/32145**
(2013.01); **H01L 2224/33181** (2013.01); **H01L**
2224/80379 (2013.01); **H01L 2224/8089**
(2013.01); **H01L 2224/8389** (2013.01)(21) Appl. No.: **18/596,343**(22) Filed: **Mar. 5, 2024****Related U.S. Application Data**(63) Continuation of application No. 17/601,563, filed on
Oct. 5, 2021, now Pat. No. 11,961,864, filed as
application No. PCT/JP2020/017677 on Apr. 24,
2020.**Foreign Application Priority Data**

Apr. 25, 2019 (JP) 2019-084191

Publication Classification(51) **Int. Cl.****H01L 27/146** (2006.01)**H01L 23/00** (2006.01)**H04N 25/75** (2006.01)**ABSTRACT**

Provided is an imaging device in which the degree of freedom in the layout can be improved. The imaging device includes a first substrate part that includes a sensor pixel to perform photoelectric conversion, and a second substrate part that is disposed on one surface side of the first substrate part and that includes a reading circuit to output a pixel signal based on an electric charge outputted from the sensor pixel. The second substrate part includes a first semiconductor substrate on which a first transistor included in the reading circuit is disposed, and a second semiconductor substrate which is disposed on one surface side of the first semiconductor substrate and on which a second transistor included in the reading circuit is disposed.

