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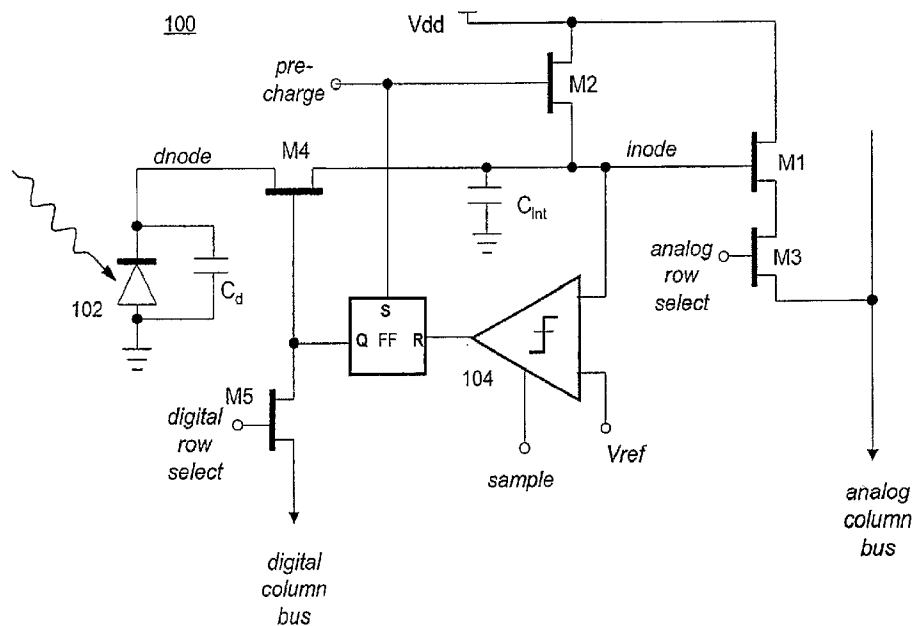
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(57) Abstract: An improved CMOS pixel with a combination of analog and digital readouts to provide a large pixel dynamic range without compromising low-light performance using a comparator to test the value of an accumulated charge at a series of exponentially increasing exposure times. The test is used to stop the integration of photocurrent once the accumulated analog voltage has reached a predetermined threshold. A one-bit output value of the test is read out of the pixel (digitally) at each of the exponentially increasing exposure periods. At the end of the integration period, the analog value stored on the integration capacitor is read out using conventional CMOS active pixel readout circuits.

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A. CLASSIFICATION OF SUBJECT MATTER INV. H04N3/15		
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B. FIELDS SEARCHED		
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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y	column 5, line 38 - column 7, line 56; figure 7	2-14, 16-23
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	page 14, line 4 - page 16, line 16; figure 1	
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
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A document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family		
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