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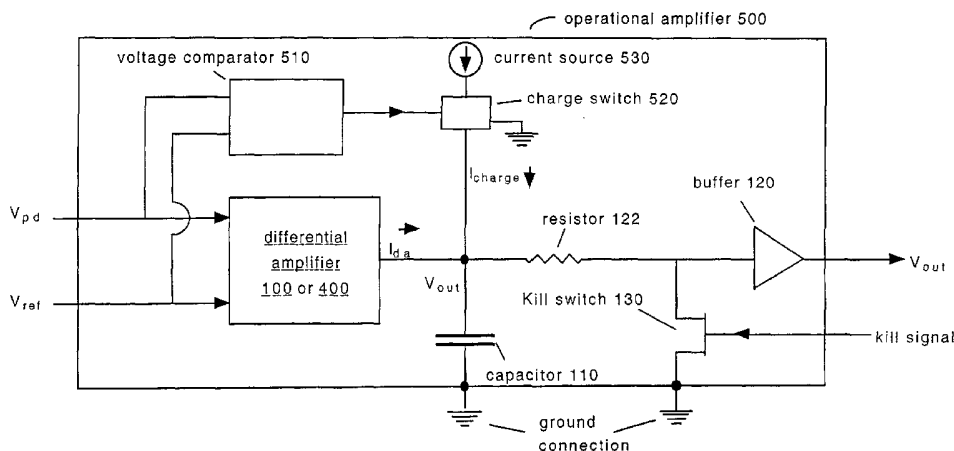
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(54) Title: SYSTEM FOR CONTROLLING BIAS CURRENT IN LASER DIODES WITH IMPROVED SWITCHING RATES



(57) Abstract: The present invention relates generally to laser diodes, and particularly to an operational amplifier able to switch laser diodes on and off quickly without adversely affecting data transmission by the laser diodes. A differential amplifier (100 or 400) includes operational amplifier has a high transconductance when a laser diode is first turned on and a low, near constant transconductance when the laser diode is transmitting data. The operational amplifier (100 or 400) is preferably incorporated in optoelectronic transceivers (800) used in passive optical networks. Switching laser diodes on and off quickly enables more efficient use of network bandwidth in such passive optical networks.

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INTERNATIONAL SEARCH REPORT

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<p><b>A. CLASSIFICATION OF SUBJECT MATTER</b>                  IPC(7) : H01S 3/00                  US CL : 372/038.020, 38.01; 369/53.33                  According to International Patent Classification (IPC) or to both national classification and IPC</p>												
<p><b>B. FIELDS SEARCHED</b>                  Minimum documentation searched (classification system followed by classification symbols)                  U.S. : 372/038.020, 38.01; 369/53.33</p>												
<p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched                  NONE</p>												
<p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)                  NONE</p>												
<p><b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b></p> <table border="1"> <thead> <tr> <th>Category *</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>US 5,726,965 (HAJJAR et al) 10 March 1998 (10.03.1998), see figure 7.</td> <td>1-15</td> </tr> </tbody> </table>			Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 5,726,965 (HAJJAR et al) 10 March 1998 (10.03.1998), see figure 7.	1-15				
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<p><input type="checkbox"/> Further documents are listed in the continuation of Box C.      <input type="checkbox"/> See patent family annex.</p>												
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"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</td> </tr> <tr> <td>"E" earlier application or patent published on or after the international filing date</td> <td>"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</td> </tr> <tr> <td>"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)</td> <td>"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</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&amp;" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"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	"E" earlier application or patent published on or after the international filing date	"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	"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)	"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	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed	
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230		Authorized officer PAUL IP <i>Paul IP</i> Telephone No. (571) 272-1941										