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[Continued on nextpage]

(54) Title: TWO TERMINAL DRIVE OF BIPOLAR JUNCTION TRANSISTOR (BJT) FOR SWITCH-MODE OPERATION OF A LIGHT EMITTING DIODE (LED)-BASED BULB

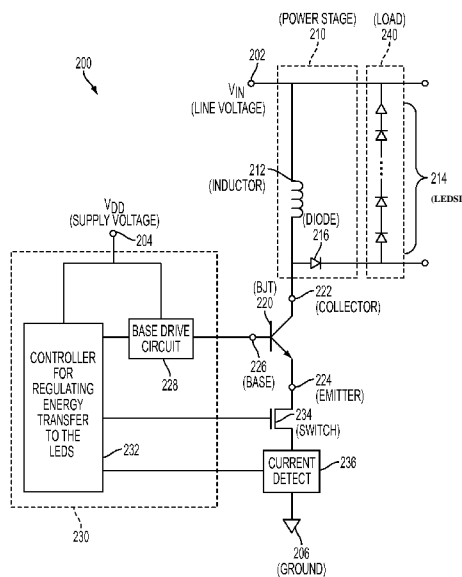


FIG. 2

(57) Abstract: A bipolar junction transistor (BJT) may be used in a power stage DC-to-DC converter, such as for LED-based light bulbs. The BJT may be switched on and off from a controller coupled to two terminals of the BJT. Through the two terminals, the control IC may dynamically adjust a reverse recovery time period of the BJT. The reverse recovery time period may be adjusted by changing an amount of base charge that accumulates on the BJT. Additionally, the reverse recovery may be controlled through the use of a reverse base current source applied to the BJT after beginning switching off the BJT.

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<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) IPC(8) - H05B 33/08, 37/02 (2014.01) USPC - 315/219, 224, 294, 307, 308; 327/108</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched CPC - H05B 33/0815; Y02B 20/346, 347 (2014.09)</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Orbit, Google Patents, Google Scholar</p>																	
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</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>X — Y</td> <td>US 2010/0202165 A1 (ZHENG et al) 12 August 2010 (12.08.2010) entire document</td> <td>1-3, 8-11 4-7, 12-28</td> </tr> <tr> <td>Y</td> <td>US 2010/0157636 A1 (LI et al) 24 June 2010 (24.06.2010) entire document</td> <td>4-7, 12-24, 27</td> </tr> <tr> <td>Y</td> <td>US 2011/0234123 A1 (MYERS et al) 29 September 2011 (29.09.2011) entire document</td> <td>25-28</td> </tr> <tr> <td>A</td> <td>US 2012/0293214 A1 (BLOM) 22 November 2012 (22.11.2012) entire document</td> <td>1-28</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X — Y	US 2010/0202165 A1 (ZHENG et al) 12 August 2010 (12.08.2010) entire document	1-3, 8-11 4-7, 12-28	Y	US 2010/0157636 A1 (LI et al) 24 June 2010 (24.06.2010) entire document	4-7, 12-24, 27	Y	US 2011/0234123 A1 (MYERS et al) 29 September 2011 (29.09.2011) entire document	25-28	A	US 2012/0293214 A1 (BLOM) 22 November 2012 (22.11.2012) entire document	1-28
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