

### US005151871A

# United States Patent [19]

Matsumura et al.

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Sep. 29, 1992

[54]	METHOD FOR HEAT-PROCESSING SEMICONDUCTOR DEVICE AND APPARATUS FOR THE SAME				
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[30] Foreign Application Priority Data					
Jun. 16, 1989 [JP]     Japan     1-154119       Oct. 24, 1989 [JP]     Japan     1-276564					
[51] Int. Cl. 5					
[58]	Field of Sea	219/464 arch 364/557, 505, 477; 219/405, 411, 388, 390, 457, 464, 465			
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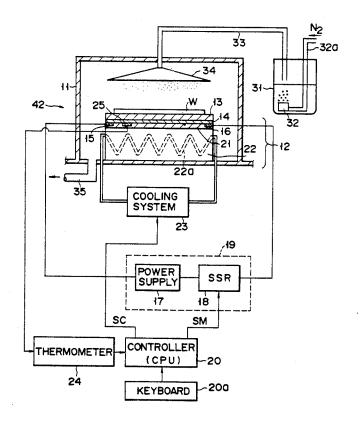
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Primary Examiner—Joseph L. Dixon Attorney, Agent, or Firm—Oblon, Spivak, McClelland, Maier & Neustadt

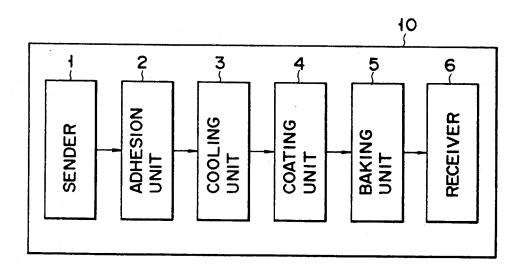
## [57] ABSTRACT

CPU stores information showing a time-temperature relationship and applicable for either heating a semiconductor wafer to a hold temperature for a predetermined period of time or cooling the wafer from the hold temperature over a predetermined period of time, or for both, read the information. A conductive thin film heats the wafer in accordance with the information. A sensor detects the temperature of the wafer. A control system controls either the heating of the wafer or the cooling thereof, or both, in accordance with the detected temperature signal and the information.

#### 12 Claims, 8 Drawing Sheets







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PRIOR ART

FIG.

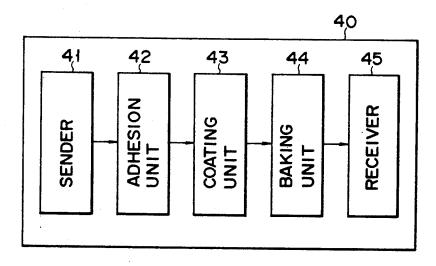
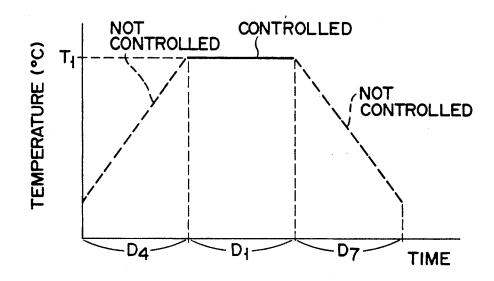
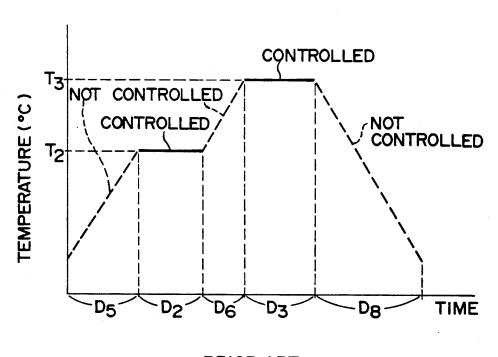


FIG.



F I G. 2



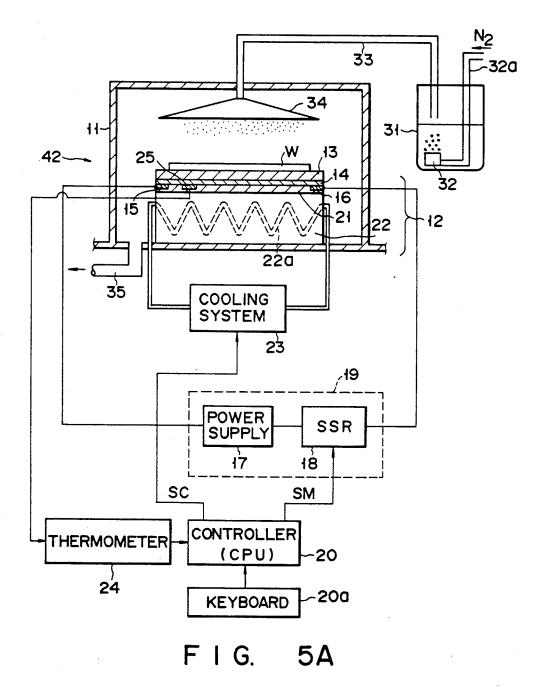
PRIOR ART

FIG. 3

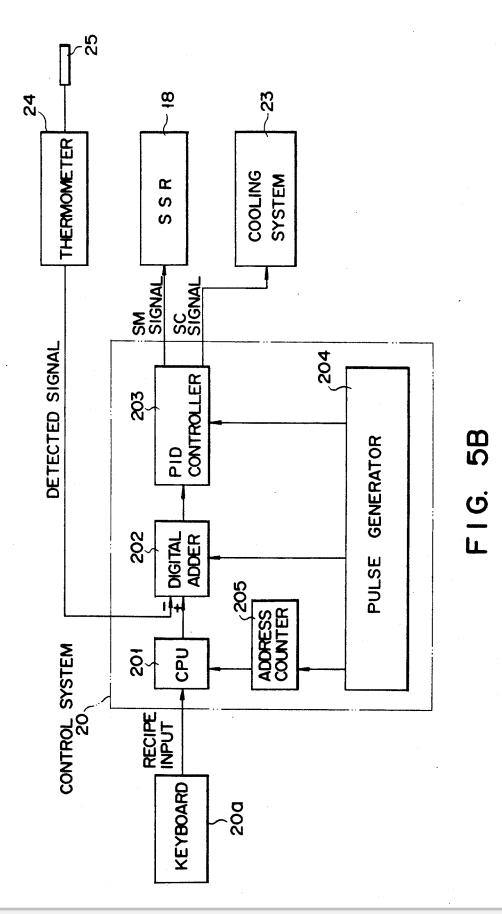


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