



United States Patent [19]

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Lanni

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[54] **SMALL FORM FACTOR POWER SUPPLY**

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[73] Assignee: **Comarco Wireless Technologies, Inc.**, Irvine, Calif.

[*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,636,110.

[21] Appl. No.: **994,905**

[22] Filed: **Dec. 19, 1997**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 767,307, Dec. 16, 1996, abandoned, which is a continuation-in-part of Ser. No. 567,369, Dec. 4, 1995, Pat. No. 3,636,110, which is a continuation-in-part of Ser. No. 233,121, Apr. 26, 1994, Pat. No. 5,479,331.

[51] **Int. Cl.⁶** **H02M 3/335**

[52] **U.S. Cl.** **363/21; 363/97; 363/144; 363/147**

[58] **Field of Search** 363/17, 20, 21, 363/24, 25, 78, 79, 80, 97, 98, 132, 141, 144; 323/212

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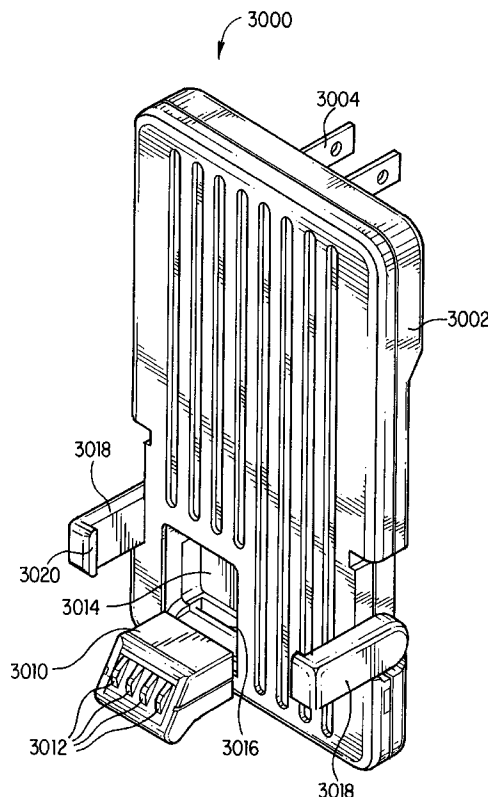
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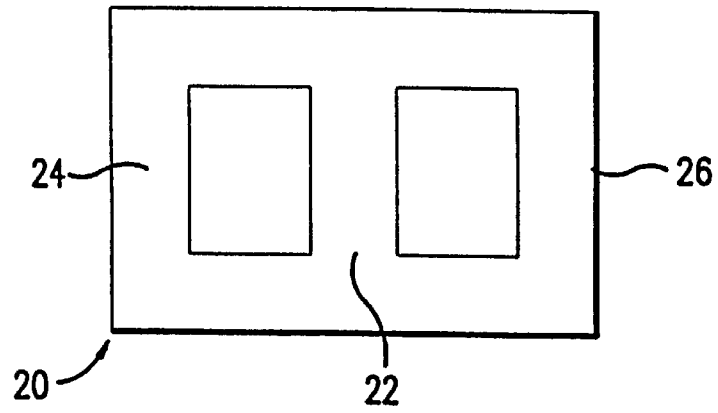
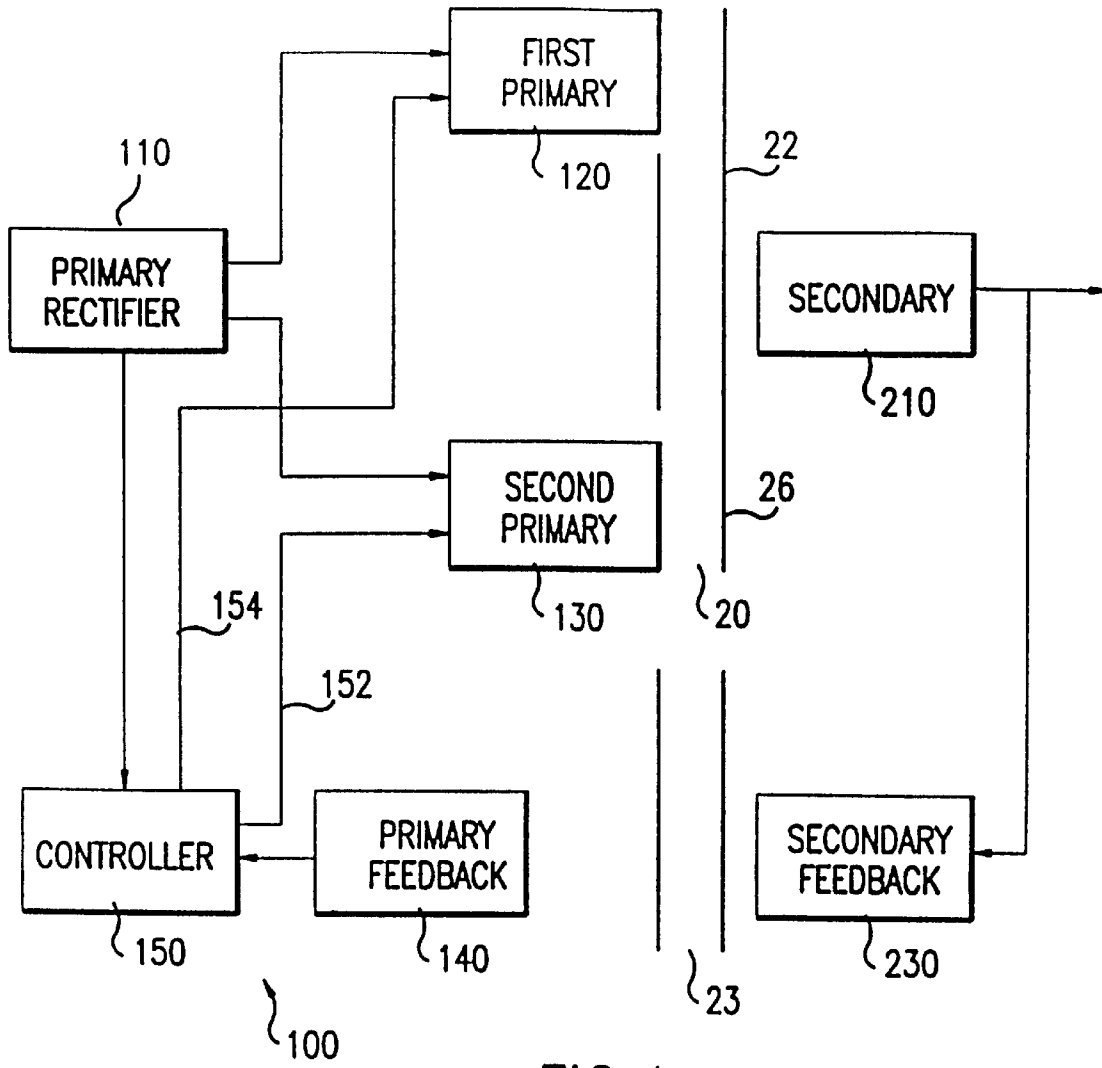
Primary Examiner—Adolf Berhane
Attorney, Agent, or Firm—Pillsbury Madison & Sutro LLP

[57] ABSTRACT

A new, small form factor power supply is disclosed that provides a regulated DC power supply in a package that radiates relatively little heat and that occupies 2.85×5.0×0.436 inches. The secondary coil of the transformer is positioned at the summing node of the flux of the primary coils and the phase of the drive signals provided to the secondary coils is regulated to control the current and voltage provided by the secondary circuit. Preferably, all circuit components are surface mount devices and the transformer cores are E block planar cores mounted on the printed circuit board.

36 Claims, 39 Drawing Sheets





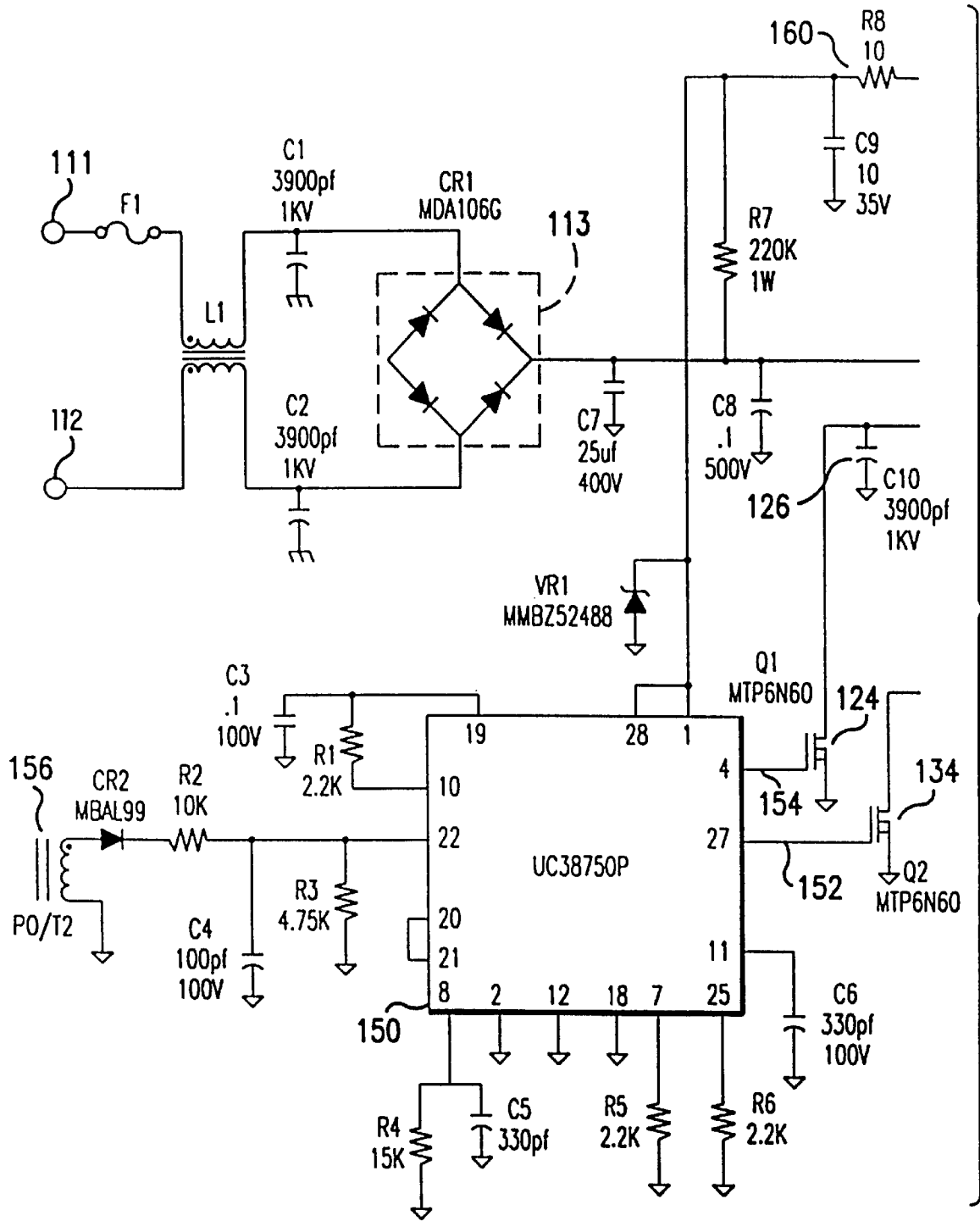


FIG.3A

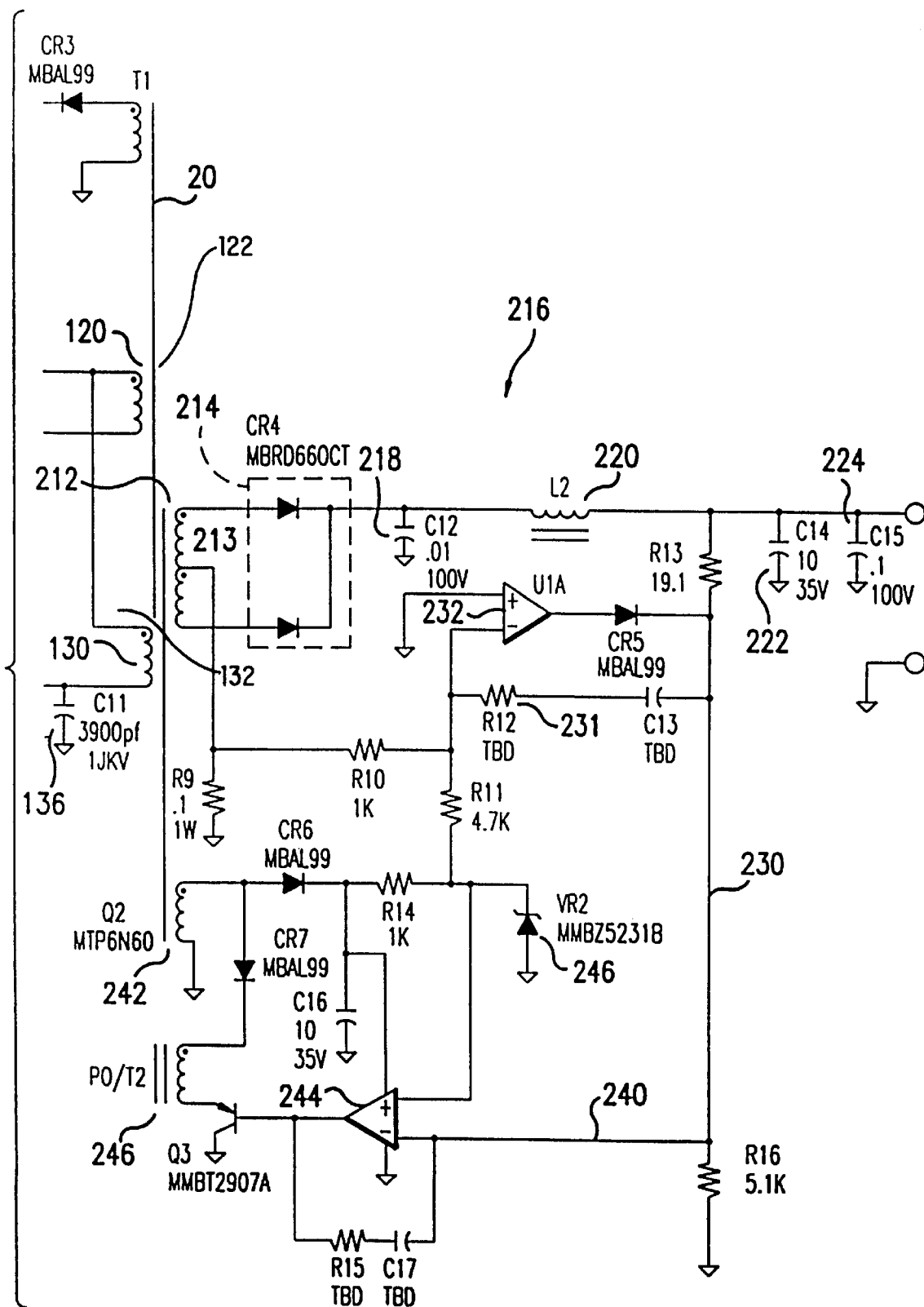


FIG.3B

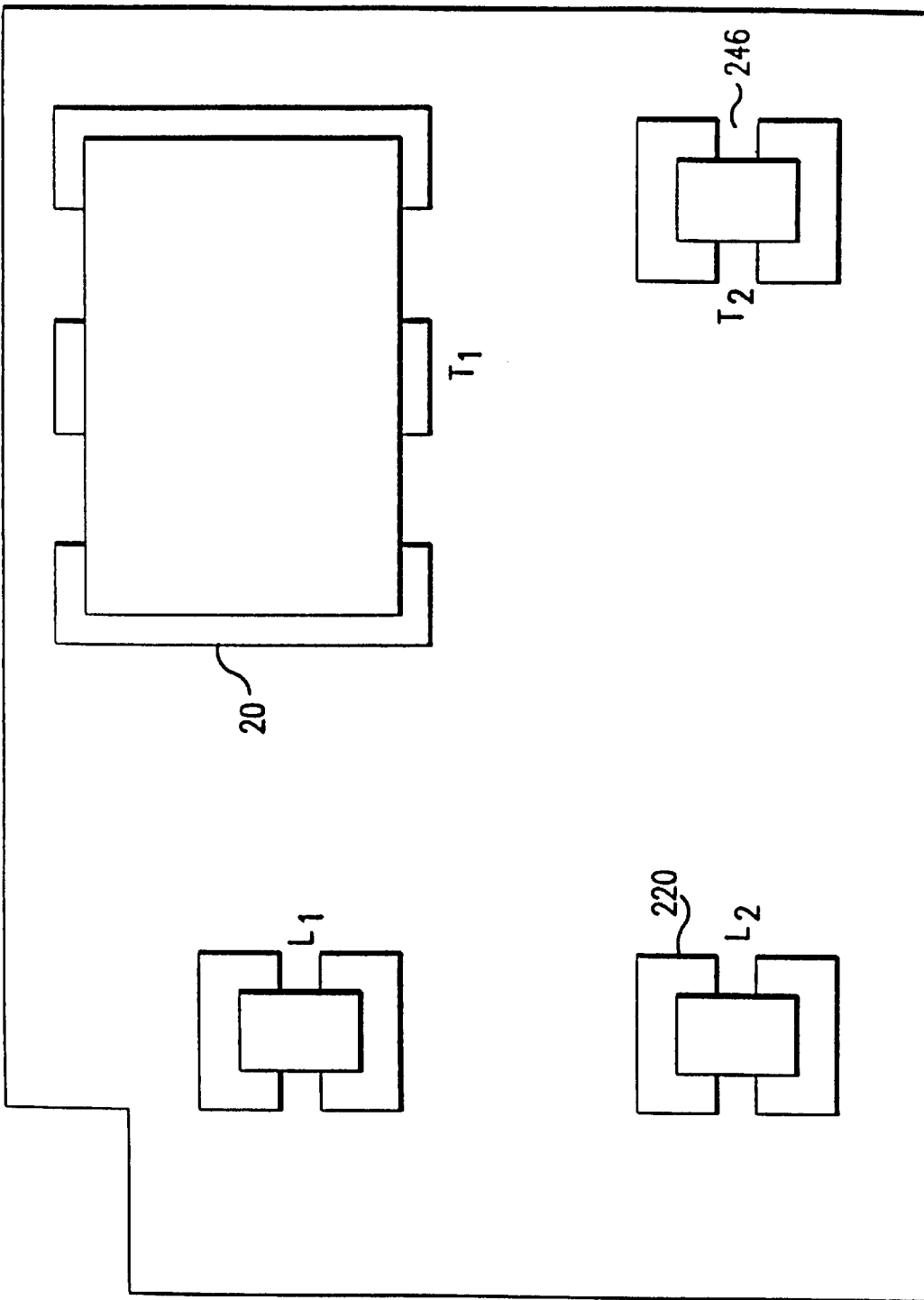


FIG. 4

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