of each small area section. The small area sections are independent to each other and can be connected so as to change the orientation of the small area section. However, in a preferred embodiment, a plurality of small area sections can be formed by forming one or more cuts in one flexible substrate. The shape of the small area section is not limited but in a preferred mode is exemplified by a rectangular shape or a strip shape.

[0055] The stimulation electrode substrate is preferably comprised of a flexible substrate having a plurality of electrodes. In a further mode, at least one cut is formed in the flexible substrate. It is possible for the cuts to intersect but it is also possible for a number of cuts to be provided without intersection (for example, a plurality of cuts can be provided in parallel in one direction only).

[0056] In a specific mode, a plurality of cuts are formed in transverse and vertical directions in a transverse rectangular flexible substrate with leaving edges thereof so that a plurality of rectangular regions are defined on a single flexible substrate. A predetermined number of electrodes are provided at each defined region. The cuts can be made not to influence the wiring from the switching circuit to each of the electrodes by providing one set of a switching circuit and a communication circuit for each region. Further, by forming cuts so that the edges remain, it is possible to carry out communication wiring (Inter-unit communication channel wiring) **6**C by utilizing the edges (FIG. **5**).

[0057] In a specific mode, at a stimulation electrode substrate comprised of a transverse rectangular flexible substrate **4** defining a longitudinal direction and a short side direction, a plurality of strip regions **41** are formed by forming a plurality of cuts of a predetermined length in a longitudinal direction (preferably in parallel) from one short side, with a predetermined number of electrodes **5** then being provided at each strip region (FIG. **7**A). In a further example mode, a plurality of strip-shaped regions **41** are formed by making a plurality of cuts of predetermined lengths from the short sides at both sides (preferably in parallel) and providing a predetermined number of electrodes **5** at each strip region (FIG. **7**B). In a still further example mode, a plurality of strip-shaped regions **41** are formed by making a plurality of cuts of predetermined lengths in a longitudinal direction at a central portion in the longitudinal direction (preferably in parallel) and providing a predetermined number of electrodes **5** at each strip region (FIG. **7**C). The flexible substrate **4** formed with cuts in the longitudinal direction then has the portion where the cuts are formed (the portion having the electrodes) on the surface side and is mounted on the elastic body **9** so as to provide the electrical stimulation presentation board. In one mode, a (not flexible) substrate is provided at the rear surface side of the elastic body. The circuit element is then arranged at the rear surface side of the substrate. The portion where the cuts of the flexible substrate constituting the stimulation electrode substrate are formed is then electrically connected to the circuit elements via a connector provided at the substrate. In a further mode, the portion where the cuts of the flexible substrate constituting the stimulation electrode substrate are not formed is connected integrally to the circuit element or the circuit substrate.

[B-3] Configuration Employing an Anisotropically Conductive Layer

[0058] The conductive gel layer described above absorbs indentations of the skin to a certain extent as a result of being elastic. However, the optimum thickness is determined depending on other requirements and the extent to which a role appropriate for the shape of a forehead can be achieved is therefore restricted to 0.5 millimeters to 1.0 millimeters. In the case of an elastic layer where current only passes in a thickness direction, it is possible to increase the thickness of the elastic body as a whole by providing this layer between the electrodes and gel.

[0059] Anisotropic conductivity means that electrical resistance possesses anisotropy. A typical example product is anisotropically conductive rubber where metal wire is densely embedded in the thickness direction of a rubber plate. The current passes in a thickness direction of the rubber plate but does not travel in a direction orthogonal to the thickness. An elastic layer **12** that is anisotropically conductive is interposed between the electrode substrate **4** and the gel layer **7** or between the gel layer and the skin. The anisotropically conductive layer **12** deforms as a result of pressure when the electrodes are pressed onto the forehead and adapts to the shape of the forehead. As a result, it is possible to keep deformation of the electrode substrate to a minimum. Damage due to fatigue of the electrode substrate and restrictions on the design can therefore be diminished.

[0060] To summarize, it is possible to adopt an anisotropically conductive layer (for example, anisotropically conductive rubber) as an element for the electrical stimulation presentation board. The stimulation electrode substrate is preferably a flexible substrate but is not limited to being the flexible substrate. In one mode, the electrical stimulation presentation board includes a stimulation electrode substrate, an anisotropically conductive elastic layer (for example, anisotropically conductive rubber) provided so as to cover the stimulation electrode substrate, and a conductive gel layer provided on the anisotropically conductive elastic layer. The stimulation electrodes then supply electrical stimulation to the skin (forehead) via the anisotropically conductive elastic layer and the conductive gel layer. In a further aspect, the electrical stimulation presentation board includes a stimulation electrode substrate, a conductive gel layer provided so as to cover the stimulation electrode substrate, and an anisotropically conductive elastic layer (for example, anisotropically conductive rubber) provided on the conductive gel layer. The stimulation electrodes then supply electrical stimulation to the skin (forehead) via the conductive gel layer and the anisotropically conductive elastic layer.

[C] Techniques for Reducing Power Consumption

[C-1] Problems with Electrical Stimulation Circuits of the Related Art

[0061] As described for the optimum design for the thickness of the gel and the impedance, reduction of the power consumption is also a very important object for a portable electrical stimulation device. Power consumption of the arithmetic/logic sections is not a major problem. However, a high voltage in the order of one hundred to four hundred volts is required for electrical stimulation and the power consumption of the analog circuitry for generating this voltage and controlling the current is therefore the most substantial.

[C-2] Control of the Voltage of the Power Supply by Using Voltage Information Measured at the Stimulation Electrodes

[0062] Regarding the electrical stimulation, an important parameter for causing tactile sensation is current rather than