trated, first conductive layer **2** comprises the first electrodes **8**. First electrodes **8** are connected to drivers **18** for sensing currents and applying potentials to the electrodes **8** through four wires. Further, the second electrode **10** on the first conductive layer **2** is connected to a driver **20***e* for sensing currents and applying potentials through electrode **10**.

[0069] As second electrode **10** is used for resistive touch detection, it needs to be operated in close cooperation with third electrodes **12**, which are connected to drivers **20***a-d* for sensing currents and applying potentials through electrodes **20***a-d.*

[0070] Drivers **18** as well as drivers **20** are operated by a signal processor such as a microprocessor **22** for feeding currents to the electrodes **8**, **10**, **12** as well as for reading out the drivers of the drivers **18**, **20**. Drivers **18**, **20** may be understood as electronic or electric circuits for applying a voltage onto electrodes and for sensing voltages and currents within the electrodes. Drivers **18**, **20** may comprise voltage sources, current sources, current sensors and/or voltage sensors. Drivers **18**, **20** may electrically determine voltages and currents within connected electrodes.

[0071] For capacitive touch detection, the drivers **18** apply an equal potential onto the electrodes **8**. By applying an equal potential to the electrodes **8**, first conductive layer **2** is electrostatically charged at a certain potential.

[0072] When approaching first conductive layer with a conductive piece, such as a finger or a conductive stylus pen, charges are drawn up by the conductive piece and thus inducing a current on first conductive layer **2**. This current may be sensed by drivers **18**. When touching the first conductive layer, a current flows from the electrodes **8** through the conductive piece to mass-potential. Depending on the position, where the first conductive layer is touched or a conductive piece is in the proximity of the first conductive layer **2**, the current through the electrodes **8** differs. The closer the point of contact between the conductive piece and an electrode **8** is, the higher the current through this particular electrode **8**. By sensing the currents through electrodes **8***a-d*, and differentiating between the currents within drivers **18**, it is possible to evaluate by microprocessor **22**, where the position of contact between the conductive piece, and the first conductive layer **2** is.

[0073] For example, when the first conductive layer **2** is touched at a position **24***a*, the current through electrode **8***a* is highest. The next lower current is the current through electrode **8***c* followed by the current through electrode **8***b* and, as electrode **8***c* is farthest away from the position **24***a*, the current through electrode **8***d* is lowest. By evaluating the currents through the electrodes **8** sensed by the drivers **18** in microprocessor **22**, it may be deduced, where position **24***a* is. The first conductive layer **2** is, as illustrated above, capable of capacitive touch detection. It is possible, to detect a conductive piece in the proximity of the first conductive layer **2**, as well as a position **24***a* of point of contact.

[0074] For resistive touch detection, it is necessary, that first conductive layer **2** and second conductive layer **6** come into contact with each other. This contact may be established by pressing the first conductive layer **2** onto the second conductive layer **6**, for example using a stylus pen or a finger. By bringing the first conductive layer **2** into physical contact with second conductive layer **6**, it is possible to measure a current in second electrode **10**, applied by third electrodes **12** onto the second conductive layer **6**, as will be explained hereinafter.

[0075] For resistive touch detection, it is necessary, to detect the coordinates of position **24***b* of a point of a contact between the conductive layers **2**, **6**, with respect to the y-direction and x-direction. For this reason, as illustrated in FIG. **4**, voltages are applied to the electrodes **12**, such that field lines are subsequently substantially orthogonal to each other.

[0076] As can bee seen in FIG. **4***a*, electrodes **12***a*, **12***b* are supplied by drivers **20***a*, **20***b* with +5V potential and electrodes **12***c, d* are supplied with mass potential by drivers **20***c*, **20***d*. Field lines **26** are illustrated which are established between the third electrodes **12***a*, **12***b* and the third electrodes **12***c*, **12***d*. Along the field lines, a voltage gradient is established, moving from +5V to mass potential. Equipotential lines (not illustrated) are orthogonal to the field lines **26** defining positions of equal potential.

[0077] When measuring a position **24***b*, third electrodes **12** are supplied with a voltage as illustrated in FIG. **4***a*. At the position **24***b*, a voltage has a certain value defining an equipotential line along the y-direction. When sensing with the second electrode **10** and a high input resistance A/D converter, only low currents flow from the second to the first conductive layers **2**, **6** through the point of contact. The voltage measured on the first conductive layer **2** using second electrode **10** may be the voltage at the point of contact. This voltage in the point of contact between the first conductive layer **2** and the second conductive layer **6** at position **24***b* allows determining the y-position of position **26**. The voltage is higher or lower, i.e. whether the position **26** is closer or further away from third electrodes **12***a*, **12***b* in the y-direction.

[0078] Subsequent to supplying a voltage according to FIG. **4***a*, microprocessor **22** instructs drivers **20** to apply a voltage onto the third electrodes **12** as illustrated in FIG. **4***b*. The +5V potential is switched from third electrodes **12***a*, **12***b* to third electrodes **12***a*, **12***c*. The mass-potential is switched from third electrodes **12***c*, **12***d* to third electrodes **12***b*, **12***d*. Again illustrated are field lines **26**, which path is from electrodes **12***a*, **12***c* to electrodes **12***b*, **12***d*. Orthogonal to the field lines **26** are equipotential lines (not illustrated), defining planes of equal potential. At the point of contact at position **24***b*, a well defined potential in the x-direction is established. At the point of contact at position **24***b*, a voltage may be sensed in second electrode **10** through driver **20***e*. It is possible to measure a position **24***b* of the point of contact in x-direction.

[0079] By subsequently switching between applying the voltage according to FIG. **4***a* and FIG. **4***b* in short intervals, for example within milliseconds, it is possible, to quickly determine the position **24***b* of a point of contact in both x- and y-direction. Thus, it is possible, to provide resistive touch detection.

[0080] When measuring an absolute value of a current within electrode **10**, it may also be possible to determine a strength of a force pushing conductive layers **2**, **6** together. It has been found, that the value of the current may be substantially proportional to the size of the area of contact. The higher the pressure, the bigger the area of contact is. A bigger area of contact results in a higher current. The driver **20***e* may measure the value of the current. From this value, the microprocessor may determine the force by which the layers **2**, **6** are pressed together. This allows force sensing with resistive touch detection.

[0081] FIG. **5** illustrates a mobile phone **30** having a memory **32**, a CPU **34**, a display driver **36**, as well as a communication unit **38**. Further, the mobile phone **30** comprises a display **40**, which may comprise a protection layer,