

SECTION H — ELECTRICITY

H01 ELECTRIC ELEMENTS

H01L SEMICONDUCTOR DEVICES NOT COVERED BY CLASS H10 (use of semiconductor devices for measuring G01; resistors in general H01C; magnets, inductors or transformers H01F; capacitors in general H01G; electrolytic devices H01G 9/00; batteries or accumulators H01M; waveguides, resonators or lines of the waveguide type H01P; line connectors or current collectors H01R; stimulated-emission devices H01S; electromechanical resonators H03H; loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers H04R; electric light sources in general H05B; printed circuits, hybrid circuits, casings or constructional details of electrical apparatus, manufacture of assemblages of electrical components H05K; use of semiconductor devices in circuits having a particular application, see the subclass for the application) [2]

Note(s) [2, 6, 2006.01, 2010.01]

1. This subclass is residual to class H10.
2. This subclass covers :
 - a. semiconductor devices for rectifying, amplifying, oscillating or switching; their constructional details or arrangements; their assemblies or integrated devices; their manufacture or treatment;
 - b. semiconductor devices sensitive to radiation; their constructional details or arrangements; their assemblies or integrated devices; their manufacture or treatment;
 - c. semiconductor devices for light emission; their constructional details or arrangements; their assemblies or integrated devices; their manufacture or treatment;
 - d. processes or apparatus for the manufacture or treatment of semiconductor or solid-state devices where the type of device is not listed under bullets a to c, above, or not essential;
 - e. constructional details or arrangements of semiconductor or solid-state devices not covered by class H10 and not specific to types of devices listed under bullets a to c, above;
 - f. packaging or assembling of semiconductor or solid-state devices covered by this subclass or by class H10.
3. In this subclass, the following terms or expressions are used with the meaning indicated:
 - "wafer" means a slice of semiconductor or crystalline substrate material, which can be modified by impurity diffusion (doping), ion implantation or epitaxy, and whose active surface can be processed into arrays of discrete components or integrated circuits;
 - "solid state body" means the body of material within which, or at the surface of which, the physical effects characteristic of the device occur;
 - "electrode" is a region in or on the body of the device (other than the solid state body itself), which exerts an electrical influence on the solid state body, irrespective of whether or not an external electrical connection is made thereto. An electrode may include several portions and the term includes metallic regions which exert influence on the solid state body through an insulating region (e.g. capacitive coupling) and inductive coupling arrangements to the body. The dielectric region in a capacitive arrangement is regarded as part of the electrode. In arrangements including several portions, only those portions which exert an influence on the solid state body by virtue of their shape, size, or disposition or the material of which they are formed are considered to be part of the electrode. The other portions are considered to be "arrangements for conducting electric current to or from the solid state body" or "interconnections between solid state components formed in or on a common substrate", i.e. leads;
 - "device" means an electric circuit element; where an electric circuit element is one of a plurality of elements formed in or on a common substrate it is referred to as a "component";
 - "complete device" is a device in its fully assembled state which may or may not require further treatment, e.g. electroforming, before it is ready for use but which does not require the addition of further structural units;
 - "parts" includes all structural units which are included in a complete device;
 - "container" is an enclosure forming part of the complete device and is essentially a solid construction in which the body of the device is placed, or which is formed around the body without forming an intimate layer thereon. An enclosure which consists of one or more layers formed on the body and in intimate contact therewith is referred to as an "encapsulation";
 - "integrated circuit" is a device where all components, e.g. diodes or resistors, are built up on a common substrate and form the device including interconnections between the components;
 - "assembly" of a device is the building up of the device from its constructional units; the term covers the provision of fillings in containers.
4. In this subclass, both the process or apparatus for the manufacture or treatment of a device and the device itself are classified, whenever both of these are described sufficiently to be of interest.
5. Attention is drawn to Note (3) after the title of section C, which Note indicates to which version of the Periodic Table of chemical elements the IPC refers. In this subclass, the system used is the 8 group system indicated by Roman numerals in the Periodic Table thereunder.

Subclass index

CONSTRUCTIONAL DETAILS OR ARRANGEMENTS.....	23/00
ASSEMBLIES; INTEGRATED DEVICES	
Assemblies of devices.....	25/00

21/00 Processes or apparatus specially adapted for the manufacture or treatment of semiconductor or solid-state devices, or of parts thereof [2, 2006.01]

Note(s) [2]

Group H01L 21/70 takes precedence over groups H01L 21/02-H01L 21/67.

- 21/02 • Manufacture or treatment of semiconductor devices or of parts thereof [2, 2006.01]
- 21/027 • • Making masks on semiconductor bodies for further photolithographic processing, not provided for in group H01L 21/18 or H01L 21/34 [5, 2006.01]
- 21/033 • • • comprising inorganic layers [5, 2006.01]
- 21/04 • • the devices having potential barriers, e.g. a PN junction, depletion layer or carrier concentration layer [2, 2006.01]
- 21/18 • • • the devices having semiconductor bodies comprising elements of Group IV of the Periodic Table or $A_{III}B_V$ compounds with or without impurities, e.g. doping materials [2, 6, 7, 2006.01]

Note(s) [7]

This group covers also processes and apparatus which, by using the appropriate technology, are clearly suitable for manufacture or treatment of devices whose bodies comprise elements of Group IV of the Periodic Table or $A_{III}B_V$ compounds, even if the material used is not explicitly specified.

- 21/20 • • • • Deposition of semiconductor materials on a substrate, e.g. epitaxial growth [2, 2006.01]
- 21/203 • • • • • using physical deposition, e.g. vacuum deposition, sputtering [2, 2006.01]
- 21/205 • • • • • using reduction or decomposition of a gaseous compound yielding a solid condensate, i.e. chemical deposition [2, 2006.01]
- 21/208 • • • • • using liquid deposition [2, 2006.01]
- 21/22 • • • • Diffusion of impurity materials, e.g. doping materials, electrode materials, into, or out of, a semiconductor body, or between semiconductor regions; Redistribution of impurity materials, e.g. without introduction or removal of further dopant [2, 2006.01]
- 21/223 • • • • • using diffusion into, or out of, a solid from or into a gaseous phase [2, 2006.01]
- 21/225 • • • • • using diffusion into, or out of, a solid from or into a solid phase, e.g. a doped oxide layer [2, 2006.01]
- 21/228 • • • • • using diffusion into, or out of, a solid from or into a liquid phase, e.g. alloy diffusion processes [2, 2006.01]
- 21/24 • • • • Alloying of impurity materials, e.g. doping materials, electrode materials, with a semiconductor body [2, 2006.01]
- 21/26 • • • • Bombardment with wave or particle radiation [2, 2006.01]
- 21/261 • • • • • to produce a nuclear reaction transmuting chemical elements [6, 2006.01]
- 21/263 • • • • • with high-energy radiation (H01L 21/261 takes precedence) [2, 6, 2006.01]
- 21/265 • • • • • producing ion implantation [2, 2006.01]

- 21/266 • • • • • • using masks [5, 2006.01]
- 21/268 • • • • • • using electromagnetic radiation, e.g. laser radiation [2, 2006.01]
- 21/28 • • • • • *Manufacture of electrodes on semiconductor bodies using processes or apparatus not provided for in groups H01L 21/20-H01L 21/268 [2, 2006.01, 2025.01]*
- 21/283 • • • • • Deposition of conductive or insulating materials for electrodes [2, 2006.01]
- 21/285 • • • • • • from a gas or vapour, e.g. condensation [2, 2006.01]
- 21/288 • • • • • • from a liquid, e.g. electrolytic deposition [2, 2006.01]
- 21/30 • • • • • Treatment of semiconductor bodies using processes or apparatus not provided for in groups H01L 21/20-H01L 21/26 (manufacture of electrodes thereon H01L 21/28, H10D 64/01) [2, 2006.01]
- 21/301 • • • • • • to subdivide a semiconductor body into separate parts, e.g. making partitions (cutting H01L 21/304) [6, 2006.01]
- 21/302 • • • • • • to change the physical characteristics of their surfaces, or to change their shape, e.g. etching, polishing, cutting [2, 2006.01]
- 21/304 • • • • • • Mechanical treatment, e.g. grinding, polishing, cutting [2, 2006.01]
- 21/306 • • • • • • Chemical or electrical treatment, e.g. electrolytic etching (to form insulating layers H01L 21/31; after-treatment of insulating layers H01L 21/3105) [2, 2006.01]
- 21/3063 • • • • • • Electrolytic etching [6, 2006.01]
- 21/3065 • • • • • • Plasma etching; Reactive-ion etching [6, 2006.01]
- 21/308 • • • • • • using masks (H01L 21/3063, H01L 21/3065, take precedence) [2, 6, 2006.01]
- 21/31 • • • • • • to form insulating layers thereon, e.g. for masking or by using photolithographic techniques (encapsulating layers H01L 21/56); After-treatment of these layers; Selection of materials for these layers [2, 5, 2006.01]
- 21/3105 • • • • • • After-treatment [5, 2006.01]
- 21/311 • • • • • • Etching the insulating layers [5, 2006.01]
- 21/3115 • • • • • • Doping the insulating layers [5, 2006.01]
- 21/312 • • • • • • Organic layers, e.g. photoresist (H01L 21/3105, H01L 21/32 take precedence) [2, 5, 2006.01]
- 21/314 • • • • • • Inorganic layers (H01L 21/3105, H01L 21/32 take precedence) [2, 5, 2006.01]
- 21/316 • • • • • • composed of oxides or glassy oxides or oxide-based glass [2, 2006.01]
- 21/318 • • • • • • composed of nitrides [2, 2006.01]
- 21/32 • • • • • • using masks [2, 5, 2006.01]

- 21/3205 • • • • • Deposition of non-insulating-, e.g. conductive- or resistive-, layers, on insulating layers; After-treatment of these layers (manufacture of electrodes H01L 21/28, H10D 64/01) [5, 2006.01]
- 21/321 • • • • • After-treatment [5, 2006.01]
- 21/3213 • • • • • Physical or chemical etching of the layers, e.g. to produce a patterned layer from a pre-deposited extensive layer [6, 2006.01]
- 21/3215 • • • • • Doping the layers [5, 2006.01]
- 21/322 • • • • • to modify their internal properties, e.g. to produce internal imperfections [2, 2006.01]
- 21/324 • • • • • Thermal treatment for modifying the properties of semiconductor bodies, e.g. annealing, sintering (H01L 21/20-H01L 21/288, H01L 21/302-H01L 21/322 take precedence) [2, 2006.01]
- 21/326 • • • • • Application of electric currents or fields, e.g. for electroforming (H01L 21/20-H01L 21/288, H01L 21/302-H01L 21/324 take precedence) [2, 2006.01]
- 21/34 • • • *the devices having semiconductor bodies not provided for in groups H01L 21/18, H10D 48/04 and H10D 48/07, with or without impurities, e.g. doping materials* [2, 2006.01, 2025.01]
- 21/36 • • • • Deposition of semiconductor materials on a substrate, e.g. epitaxial growth [2, 2006.01]
- 21/363 • • • • • using physical deposition, e.g. vacuum deposition, sputtering [2, 2006.01]
- 21/365 • • • • • using reduction or decomposition of a gaseous compound yielding a solid condensate, i.e. chemical deposition [2, 2006.01]
- 21/368 • • • • • using liquid deposition [2, 2006.01]
- 21/38 • • • • Diffusion of impurity materials, e.g. doping materials, electrode materials, into, or out of, a semiconductor body, or between semiconductor regions [2, 2006.01]
- 21/383 • • • • • using diffusion into, or out of, a solid from or into a gaseous phase [2, 2006.01]
- 21/385 • • • • • using diffusion into, or out of, a solid from or into a solid phase, e.g. a doped oxide layer [2, 2006.01]
- 21/388 • • • • • using diffusion into, or out of, a solid from or into a liquid phase, e.g. alloy diffusion processes [2, 2006.01]
- 21/40 • • • • Alloying of impurity materials, e.g. doping materials, electrode materials, with a semiconductor body [2, 2006.01]
- 21/42 • • • • Bombardment with radiation [2, 2006.01]
- 21/423 • • • • • with high-energy radiation [2, 2006.01]
- 21/425 • • • • • producing ion implantation [2, 2006.01]
- 21/426 • • • • • using masks [5, 2006.01]
- 21/428 • • • • • using electromagnetic radiation, e.g. laser radiation [2, 2006.01]
- 21/44 • • • • *Manufacture of electrodes on semiconductor bodies using processes or apparatus not provided for in groups H01L 21/36-H01L 21/428* [2, 2006.01, 2025.01]
- 21/441 • • • • • Deposition of conductive or insulating materials for electrodes [2, 2006.01]
- 21/443 • • • • • from a gas or vapour, e.g. condensation [2, 2006.01]
- 21/445 • • • • • from a liquid, e.g. electrolytic deposition [2, 2006.01]
- 21/447 • • • • • involving the application of pressure, e.g. thermo-compression bonding (H01L 21/607 takes precedence) [2, 2006.01]
- 21/449 • • • • • involving the application of mechanical vibrations, e.g. ultrasonic vibrations [2, 2006.01]
- 21/46 • • • • Treatment of semiconductor bodies using processes or apparatus not provided for in groups H01L 21/36-H01L 21/428 (manufacture of electrodes thereon H01L 21/44, H10D 64/01) [2, 2006.01]
- 21/461 • • • • • to change their surface-physical characteristics or shape, e.g. etching, polishing, cutting [2, 2006.01]
- 21/463 • • • • • Mechanical treatment, e.g. grinding, ultrasonic treatment [2, 2006.01]
- 21/465 • • • • • Chemical or electrical treatment, e.g. electrolytic etching (to form insulating layers H01L 21/469) [2, 2006.01]
- 21/467 • • • • • using masks [2, 2006.01]
- 21/469 • • • • • to form insulating layers thereon, e.g. for masking or by using photolithographic techniques (encapsulating layers H01L 21/56); After-treatment of these layers [2, 5, 2006.01]
- 21/47 • • • • • Organic layers, e.g. photoresist (H01L 21/475, H01L 21/4757 take precedence) [2, 5, 2006.01]
- 21/471 • • • • • Inorganic layers (H01L 21/475, H01L 21/4757 take precedence) [2, 5, 2006.01]
- 21/473 • • • • • composed of oxides or glassy oxides or oxide-based glass [2, 2006.01]
- 21/475 • • • • • using masks [2, 5, 2006.01]
- 21/4757 • • • • • After-treatment [5, 2006.01]
- 21/4763 • • • • • Deposition of non-insulating-, e.g. conductive-, resistive-, layers on insulating layers; After-treatment of these layers (manufacture of electrodes H01L 21/28, H10D 64/01) [5, 2006.01]
- 21/477 • • • • • Thermal treatment for modifying the properties of semiconductor bodies, e.g. annealing, sintering (H01L 21/36-H01L 21/449, H01L 21/461-H01L 21/475 take precedence) [2, 2006.01]
- 21/479 • • • • • Application of electric currents or fields, e.g. for electroforming (H01L 21/36-H01L 21/449, H01L 21/461-H01L 21/477 take precedence) [2, 2006.01]
- 21/48 • • • • Manufacture or treatment of parts, e.g. containers, prior to assembly of the devices, using processes not provided for in a single one of the groups H01L 21/18-H01L 21/326 or H10D 48/04-H10D 48/07 [2, 2006.01]
- 21/50 • • • • Assembly of semiconductor devices using processes or apparatus not provided for in a single one of the groups H01L 21/18-H01L 21/326 or H10D 48/04-H10D 48/07 [2, 2006.01]

H01L

- 21/52 • • • • Mounting semiconductor bodies in containers [2, 2006.01]
- 21/54 • • • • Providing fillings in containers, e.g. gas fillings [2, 2006.01]
- 21/56 • • • • Encapsulations, e.g. encapsulating layers, coatings [2, 2006.01]
- 21/58 • • • • Mounting semiconductor devices on supports [2, 2006.01]
- 21/60 • • • • Attaching leads or other conductive members, to be used for carrying current to or from the device in operation [2, 2006.01]
- 21/603 • • • • • involving the application of pressure, e.g. thermo-compression bonding (H01L 21/607 takes precedence) [2, 2006.01]
- 21/607 • • • • • involving the application of mechanical vibrations, e.g. ultrasonic vibrations [2, 2006.01]
- 21/62 • • the devices having no potential barriers [2, 2006.01]
- 21/64 • Manufacture or treatment of solid-state devices other than semiconductor devices, or of parts thereof, not specially adapted for a single type of device provided for in subclasses H10F, H10H, H10K or H10N [2, 2006.01]
- 21/66 • Testing or measuring during manufacture or treatment [2, 2006.01]
- 21/67 • Apparatus specially adapted for handling semiconductor or electric solid state devices during manufacture or treatment thereof; Apparatus specially adapted for handling wafers during manufacture or treatment of semiconductor or electric solid state devices or components [2006.01]
- 21/673 • • using specially adapted carriers [2006.01]
- 21/677 • • for conveying, e.g. between different work stations [2006.01]
- 21/68 • • for positioning, orientation or alignment [2, 2006.01]
- 21/683 • • for supporting or gripping (for positioning, orientation or alignment H01L 21/68) [2006.01]
- 21/687 • • • using mechanical means, e.g. chucks, clamps or pinches [2006.01]
- 21/70 • Manufacture or treatment of devices consisting of a plurality of solid state components or integrated circuits formed in or on a common substrate or of specific parts thereof; Manufacture of integrated circuit devices or of specific parts thereof (manufacture of assemblies consisting of preformed electrical components H05K 3/00, H05K 13/00) [2, 2006.01]
- 21/71 • • Manufacture of specific parts of devices defined in group H01L 21/70 (H01L 21/28, H01L 21/44, H01L 21/48 and H10D 64/01 take precedence) [6, 2006.01]
- 21/74 • • • Making of buried regions of high impurity concentration, e.g. buried collector layers, internal connections [2, 2006.01]
- 21/76 • • • Making of isolation regions between components [2, 2006.01]
- 21/761 • • • • PN junctions [6, 2006.01]
- 21/762 • • • • Dielectric regions [6, 2006.01]
- 21/763 • • • • Polycrystalline semiconductor regions [6, 2006.01]
- 21/764 • • • • Air gaps [6, 2006.01]
- 21/765 • • • • by field-effect [6, 2006.01]
- 21/768 • • • Applying interconnections to be used for carrying current between separate components within a device [6, 2006.01]
- 21/77 • • Manufacture or treatment of devices consisting of a plurality of solid state components or integrated circuits formed in, or on, a common substrate (manufacture or treatment of electronic memory devices H10B) [6, 2006.01, 2017.01]
- 21/78 • • • with subsequent division of the substrate into plural individual devices (cutting to change the surface-physical characteristics or shape of semiconductor bodies H01L 21/304) [2, 6, 2006.01]
- 21/98 • • Assembly of devices consisting of solid state components formed in or on a common substrate; Assembly of integrated circuit devices (H01L 21/50 takes precedence) [2, 5, 2006.01]
- 23/00 Details of semiconductor or other solid state devices (H01L 25/00 takes precedence) [2, 5, 2006.01]**
- Note(s)**
- This group does not cover:
 - details of semiconductor bodies or of electrodes of devices provided for in subclass H10D, which details are covered by that subclass;
 - details peculiar to devices provided for in a single subclass of subclasses H10F, H10H, H10K or H10N, which details are covered by those places.
- 23/02 • Containers; Seals (H01L 23/12, H01L 23/34, H01L 23/48, H01L 23/552 take precedence) [2, 5, 2006.01]
- 23/04 • • characterised by the shape [2, 2006.01]
- 23/043 • • • the container being a hollow construction and having a conductive base as a mounting as well as a lead for the semiconductor body [5, 2006.01]
- 23/045 • • • • the other leads having an insulating passage through the base [5, 2006.01]
- 23/047 • • • • the other leads being parallel to the base [5, 2006.01]
- 23/049 • • • • the other leads being perpendicular to the base [5, 2006.01]
- 23/051 • • • • another lead being formed by a cover plate parallel to the base plate, e.g. sandwich type [5, 2006.01]
- 23/053 • • • the container being a hollow construction and having an insulating base as a mounting for the semiconductor body [5, 2006.01]
- 23/055 • • • • the leads having a passage through the base [5, 2006.01]
- 23/057 • • • • the leads being parallel to the base [5, 2006.01]
- 23/06 • • characterised by the material of the container or its electrical properties [2, 2006.01]
- 23/08 • • • the material being an electrical insulator, e.g. glass [2, 2006.01]
- 23/10 • • characterised by the material or arrangement of seals between parts, e.g. between cap and base of the container or between leads and walls of the container [2, 2006.01]
- 23/12 • Mountings, e.g. non-detachable insulating substrates [2, 2006.01]
- 23/13 • • characterised by the shape [5, 2006.01]
- 23/14 • • characterised by the material or its electrical properties [2, 2006.01]
- 23/15 • • • Ceramic or glass substrates [5, 2006.01]

- 23/16 • Fillings or auxiliary members in containers, e.g. centering rings (H01L 23/42, H01L 23/552 take precedence) [2, 5, 2006.01]
- 23/18 • • Fillings characterised by the material, its physical or chemical properties, or its arrangement within the complete device [2, 2006.01]
- Note(s) [2]**
- Group H01L 23/26 takes precedence over groups H01L 23/20-H01L 23/24.
- 23/20 • • • gaseous at the normal operating temperature of the device [2, 2006.01]
- 23/22 • • • liquid at the normal operating temperature of the device [2, 2006.01]
- 23/24 • • • solid or gel, at the normal operating temperature of the device [2, 2006.01]
- 23/26 • • • including materials for absorbing or reacting with moisture or other undesired substances [2, 2006.01]
- 23/28 • Encapsulation, e.g. encapsulating layers, coatings (H01L 23/552 takes precedence) [2, 5, 2006.01]
- 23/29 • • characterised by the material [5, 2006.01]
- 23/31 • • characterised by the arrangement [5, 2006.01]
- 23/32 • Holders for supporting the complete device in operation, i.e. detachable fixtures (H01L 23/40 takes precedence) [2, 5, 2006.01]
- 23/34 • Arrangements for cooling, heating, ventilating or temperature compensation [2, 5, 2006.01]
- 23/36 • • Selection of materials, or shaping, to facilitate cooling or heating, e.g. heat sinks [2, 2006.01]
- 23/367 • • • Cooling facilitated by shape of device [5, 2006.01]
- 23/373 • • • Cooling facilitated by selection of materials for the device [5, 2006.01]
- 23/38 • • Cooling arrangements using the Peltier effect [2, 2006.01]
- 23/40 • • Mountings or securing means for detachable cooling or heating arrangements [2, 2006.01]
- 23/42 • • Fillings or auxiliary members in containers selected or arranged to facilitate heating or cooling [2, 5, 2006.01]
- 23/427 • • • Cooling by change of state, e.g. use of heat pipes [5, 2006.01]
- 23/433 • • • Auxiliary members characterised by their shape, e.g. pistons [5, 2006.01]
- 23/44 • • the complete device being wholly immersed in a fluid other than air (H01L 23/427 takes precedence) [2, 5, 2006.01]
- 23/46 • • involving the transfer of heat by flowing fluids (H01L 23/42, H01L 23/44 take precedence) [2, 2006.01]
- 23/467 • • • by flowing gases, e.g. air [5, 2006.01]
- 23/473 • • • by flowing liquids [5, 2006.01]
- 23/48 • Arrangements for conducting electric current to or from the solid state body in operation, e.g. leads or terminal arrangements [2, 2006.01]
- 23/482 • • consisting of lead-in layers inseparably applied to the semiconductor body [5, 2006.01]
- 23/485 • • • consisting of layered constructions comprising conductive layers and insulating layers, e.g. planar contacts [5, 2006.01]
- 23/488 • • consisting of soldered or bonded constructions [5, 2006.01]
- 23/49 • • • wire-like [5, 2006.01]
- 23/492 • • • Bases or plates [5, 2006.01]
- 23/495 • • • Lead-frames [5, 2006.01]
- 23/498 • • • Leads on insulating substrates [5, 2006.01]
- 23/50 • • for integrated circuit devices (H01L 23/482-H01L 23/498 take precedence) [2, 5, 2006.01]
- 23/52 • Arrangements for conducting electric current within the device in operation from one component to another [2, 2006.01]
- 23/522 • • including external interconnections consisting of a multilayer structure of conductive and insulating layers inseparably formed on the semiconductor body [5, 2006.01]
- 23/525 • • • with adaptable interconnections [5, 2006.01]
- 23/528 • • • Layout of the interconnection structure [5, 2006.01]
- 23/532 • • • characterised by the materials [5, 2006.01]
- 23/535 • • including internal interconnections, e.g. cross-under constructions [5, 2006.01]
- 23/538 • • the interconnection structure between a plurality of semiconductor chips being formed on, or in, insulating substrates [5, 2006.01]
- 23/544 • Marks applied to semiconductor devices, e.g. registration marks, test patterns [5, 2006.01]
- 23/552 • Protection against radiation, e.g. light [5, 2006.01]
- 23/556 • • against alpha rays [5, 2006.01]
- 23/58 • Structural electrical arrangements for semiconductor devices not otherwise provided for [5, 2006.01]
- 23/60 • • Protection against electrostatic charges or discharges, e.g. Faraday shields [5, 2006.01]
- 23/62 • • Protection against overcurrent or overload, e.g. fuses, shunts [5, 2006.01]
- 23/64 • • Impedance arrangements [5, 2006.01]
- 23/66 • • • High-frequency adaptations [5, 2006.01]
- 25/00 Assemblies consisting of a plurality of individual semiconductor or other solid-state devices** (devices consisting of a plurality of solid-state components formed in or on a common substrate H10D 89/00; photovoltaic modules or arrays of photovoltaic cells H10F 19/00) [2, 5, 2006.01]
- 25/03 • all the devices being of a type provided for in a single subclass of subclasses H10B, H10D, H10F, H10H, H10K or H10N, e.g. assemblies of rectifier diodes [5, 2006.01]
- 25/04 • the devices not having separate containers [2, 2006.01, 2014.01, 2023.01]
- 25/065 • • • the devices being of a type provided for in group H10D 89/00 [5, 2006.01, 2023.01]
- 25/07 • • • the devices being of a type provided for in subclass H10D [5, 2006.01]
- 25/075 • • • the devices being of a type provided for in group H10H 20/00 [5, 2006.01]
- 25/10 • • the devices having separate containers [2, 2006.01]
- 25/11 • • • the devices being of a type provided for in subclass H10D [5, 2006.01]
- 25/13 • • • the devices being of a type provided for in group H10H 20/00 [5, 2006.01]
- 25/16 • the devices being of types provided for in two or more different subclasses of H10B, H10D, H10F, H10H, H10K or H10N, e.g. forming hybrid circuits [2, 2006.01, 2023.01]
- 25/18 • the devices being of types provided for in two or more different main groups of the same subclass of H10B, H10D, H10F, H10H, H10K or H10N [5, 2006.01, 2023.01]