EUROPEAN PATENT OFFICE
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1778

DATE: AUGUST 1, 2025

PROJECT DP12707

The following classification changes will be effected by this Notice of Changes:

Action	**Subclass**	**Group(s)**
DEFINITIONS:		
Definitions New:	H10D	SUBCLASS
	H10D	1/00
	H10D	18/00
	H10D	30/00
	H10D	44/00
	H10D	48/04
	H10D	62/80, 62/815
	H10D	84/00
	H10D	86/00, 86/60
	H10D	87/00
	H10D	89/10, 89/60
	G01K	7/16
Definitions Modified:	H05K	SUBCLASS
	H05K	1/00
	H10B	51/00
	H10K	10/00
	H10K	19/00

No other subclasses/groups are impacted by this Notice of Changes.

This Notice of Changes includes the following *[Check the ones included]:*

1. CLASSIFICATION SCHEME CHANGES
   - ☐ A. New, Modified or Deleted Group(s)
   - ☐ B. New, Modified or Deleted Warning(s)
   - ☐ C. New, Modified or Deleted Note(s)
   - ☐ D. New, Modified or Deleted Guidance Heading(s)
2. DEFINITIONS
   - ☒ A. New or Modified Definitions (Full definition template)
   - ☐ B. Modified or Deleted Definitions (Definitions Quick Fix)
3. ☐ REVISION CONCORDANCE LIST (RCL)
4. ☐ CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)
5. ☐ CHANGES TO THE CROSS-REFERENCE LIST (CRL)

2. A. DEFINITIONS (new)

H10D

Definition statement

This place covers:

Electric semiconductor devices having inorganic semiconductor bodies.

This includes the following kinds of devices:

- individual inorganic semiconductor devices specially adapted for rectifying, amplifying, oscillating or switching, e.g. transistors or diodes;
- individual inorganic resistors or capacitors having potential barriers;
- individual resistors, capacitors or inductors having no potential barriers, and specially adapted for integration with other semiconductor components;
- integrated devices comprising at least one component covered by this subclass, e.g. CMOS integrated devices.

This place also covers:

- semiconductor bodies, or regions thereof, of devices covered by this subclass;
- electrodes of devices covered by this subclass;
- assemblies of devices comprising at least one device covered by this subclass;
- processes or apparatus specially adapted for the manufacture or treatment of the devices covered by this subclass.

In this subclass, the periodic system used is the I to VIII Group system indicated in the Periodic Table under Note (3) of section C.

References

Limiting references

This place does not cover:

Constructional details other than semiconductor bodies or electrodes thereof	H01L 23/00
Electronic memory devices	H10B

Semiconductor devices sensitive to infrared radiation, light, electromagnetic radiation of shorter wavelength or corpuscular radiation	H10F
Light-emitting semiconductor devices having potential barriers	H10H
Thermoelectric, thermomagnetic, piezoelectric, electrostrictive, magnetostrictive, magnetic-effect, superconducting, Ovshinsky-effect, bulk negative resistance effect devices	H10N

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Use of semiconductor devices for measuring	G01

Informative references

Attention is drawn to the following places, which may be of interest for search:

Organic electric solid-state devices	H10K
Conductors or conductive bodies characterised by the conductive materials	H01B 1/00
Printed circuits, hybrid circuits, casings or constructional details of electrical apparatus, manufacture of assemblages of electrical components	H05K

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

chip	a piece of a wafer or a substrate that has been processed to contain devices therein or thereon. The expression "diced chip" refers to the result of dicing a wafer or a substrate into a plurality of chips, whereas "undiced chip" refers to a chip before dicing or with no dicing.

device	an electric circuit element (e.g. diode, transistor, LED, etc.); (depending on the context) can also refer to an integrated device (e.g. CMOS-IC, DRAM device, etc.). A device may be in the form of a bare or packaged chip.
dopant	the atoms or compounds added to a material during doping
doping	the intentional addition of a small quantity of atoms or compounds into a material to achieve a desired characteristic, e.g. to produce an n-type or p-type material
individual	refers to: an electric circuit element not being an integrated device; or a component of an integrated device. Examples of individual devices include: diodes, transistors, photovoltaic cells, Josephson-junction devices, light-emitting diodes [LED], organic LEDs or a single LED component within an integrated device.
integrated device	a device consisting of a plurality of semiconductor or other solid-state electric circuit elements formed in or on a common substrate
integrated circuit	an integrated device where all the electric circuit elements (e.g. diodes, transistors, LEDs, etc.) are formed in or on a common substrate, including interconnections between the elements
component	an electric circuit element (e.g. diode, transistor, LED, etc.) that is one of a plurality of elements formed in or on a common substrate, e.g. in an integrated device
wafer	it can be one of the following: (a) a slice of semiconductor or electric solid-state active material. For example: a slice of silicon; a slice of a semiconducting compound, e.g. gallium nitride [GaN]; a slice of lithium tantalate [$LiTaO_3$] for superconductor applications. (b) A multilayered laminate, having at least one layer of semiconductor or electric solid-state active material, the layer being meant to be processed into devices. For example: silicon-on-insulator [SOI]; silicon-on-glass [SOG]; silicon-on-sapphire [SOS]; a composite wafer comprising silicon

	carbide [SiC] on polycrystalline silicon [Si] support; a layer of semiconducting nanowires on glass. A wafer is typically processed by (e.g.) deposition, etching, doping or diffusion, and is then typically diced into chips.
body	the region of semiconductor (resp. solid-state) material(s) within which, or at the surface of which, the physical effects that are characteristic of the device occur, and any bordering semiconductor (resp. solid-state) material(s) that are contiguous with this region. Examples: in a field-effect transistor [FET], the physical effects occur in the channel region between the source and the drain. The semiconductor body includes the channel region, the source and drain regions, and any contiguous semiconductor material; in a light-emitting diode [LED], the physical effects occur at a junction of active semiconductor layers. The semiconductor body includes these active semiconductor layers and any contiguous semiconductor layers, such as buffer layers, possibly a growth substrate, etc., that are between the cathode and anode electrodes; in a thermoelectric device, the solid-state body includes all solid-state materials in the path of current between the electrodes.
electrode	a conductive region in or on the semiconductor body or solid-state body of a device (and other than the body itself) which exerts an electrical influence on the body, irrespective of whether or not an external electrical connection is made thereto. The term covers metallic regions which exert electrical influence on the body through an insulating region (e.g. in intentional non-parasitic capacitive coupling), or inductive coupling arrangements. In a capacitive coupling arrangement, the dielectric region is regarded as part of the electrode. The overall conductive wiring may comprise multiple portions. In such a case, only the wiring portions that exert an electrical influence on the body are considered portions of the electrode. Examples: conductive layer(s) in

	direct physical contact with the body; conductive region(s) exerting an inductive coupling onto the body; a multilayer structure which exerts influence on the body through an insulating region, e.g. in intentional non-parasitic capacitive coupling.
interconnection	a conductive arrangement for conducting electric current from an electrode of a circuit element to another part of the circuit. Examples include metal wirings.
container	a solid construction in which (one or more) devices are placed, or which is formed around the devices, for forming packaged devices. A container requires a partial or total enclosure and it may also comprise a filling.
encapsulation	an enclosure consisting of (one or more) layers, e.g. comprising organic polymers, which at least partially enclose the (one or more) devices, thereby protecting them. An encapsulation is often used to hermetically seal devices.
field-effect	refers to semiconductor technology wherein a voltage applied to a gate electrode creates an electric field that allows for control of current near the interface of the gate and the body, e.g. to create an inversion channel between the source and drain of a MOSFET
package	the collection of all elements, which are external to the chip, that protect the chip or connect it to another object. Package therefore covers encapsulations, containers, package substrates, interposers, heatsinks or the like. Package does not include objects at a higher system level, like circuit boards and beyond, e.g. a housing in which the circuit board is enclosed.
unipolar	refers to semiconductor technology that primarily involves one type only of charge carrier, i.e. it involves either holes or electrons but not both
bipolar	refers to semiconductor technology that involves multi-carrier-type operation, i.e. which simultaneously uses both electrons and holes as charge carriers
MIS	metal-insulator-semiconductor

MOS	metal-oxide-semiconductor
FET	field-effect transistor
MISFET	metal-insulator-semiconductor field-effect transistor
TFT	thin-film transistor
thyristor	device having a control electrode and having regenerative action within four or more alternating P-type and N-type regions
Group IV material	material comprising only Group IV elements, except for dopants or other impurities
Group III-V material	material comprising only Group III and Group V elements, except for dopants or other impurities
Group II-VI material	material comprising only Group II and Group VI elements, except for dopants or other impurities
Group I-VI material	material comprising only comprising Group I or Group VI elements, except for dopants or other impurities
Group I-VII material	material comprising only comprising Group I or Group VII elements, except for dopants or other impurities

Synonyms and Keywords

In patent documents the following abbreviations are often used:

CMIS	complementary MIS
CMOS	complementary MOS
DMOS	double-diffused MOS
LDMOS	lateral DMOS
VDMOS	vertical DMOS
MNOS	metal-nitride-oxide-semiconductor
IMPATT	impact ionization avalanche transit-time
TRAPATT	trapped plasma avalanche triggered transit
BJT	bipolar junction transistor
HEMT	high-electron-mobility transistor
IGFET	insulated-gate FET
IGBT	insulated-gate bipolar transistor
CCD	charge-coupled device
CAD	computer-aided design
LSI	large-scale integration

H10D 1/00

Definition statement

This place covers:

Individual inorganic resistors or capacitors having potential barriers.

Individual resistors, capacitors or inductors having no potential barriers, and specially adapted for integration with other semiconductor components.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Resistors in general	H01C
Inductors in general	H01F
Capacitors in general	H01G
Organic resistors or capacitors having potential barriers	H10K 10/10

H10D 18/00

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

PNPN diodes, e.g. Shockley diodes, break-over diodes or thyristor diodes	H10D 8/80

H10D 30/00

References

Limiting references

This place does not cover:

Insulated-gate bipolar transistors	H10D 12/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Organic transistors	H10K 10/40

H10D 44/00

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Charge-coupled device [CCD] image sensors	H10F 39/15

H10D 48/04

Definition statement

This place covers:

Manufacture or treatment of individual devices having bodies comprising selenium or tellurium in uncombined form other than as impurities in semiconductor bodies of other materials.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Semiconductor bodies, or regions thereof, of devices having potential barriers and characterised by the materials being selenium or tellurium only	H10D 62/84

H10D 62/80

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Organic materials used in the body or electrodes of organic electric solid-state devices	H10K 85/00

H10D 62/815

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Structures with periodic or quasi periodic potential variation for the control of the intensity, phase, polarisation or colour	G02F 1/017
Semiconductor lasers having quantum well or superlattice structures	H01S 5/34
Individual inorganic light-emitting semiconductor devices having quantum effect structures or superlattices	H10H 20/811

H10D 84/00

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Three-dimensional integrated devices	H10D 88/00

H10D 86/00

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Three-dimensional integrated devices	H10D 88/00

H10D 86/60

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Active matrix addressed cells based on liquid crystals	G02F 1/1362
Arrangements or circuits for control of indicating devices using static means to present variable information	G09G
Active-matrix LED displays	H10H 29/30
Active-matrix OLED [AMOLED] displays	H10K 59/12

H10D 87/00

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Three-dimensional integrated devices	H10D 88/00

H10D 89/10

Definition statement

This place covers:

Integrated device layouts, e.g. top-view representations of integrated circuits using planar geometrical shapes.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Computer-aided design [CAD]	G06F 30/00
Computer-aided circuit design at the physical level	G06F 30/39

H10D 89/60

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Structural electrical arrangements for electrical protection	H01L 23/60, H01L 23/62

G01K 7/16

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Resistive elements per se	H01C, H10D 1/40, H10K 10/10

2. A. DEFINITIONS (modified)

H05K

Definition statement

Replace: The Definition statement text with the revised text below.

Constructional features of:

- Details of electronic circuit boards such as their materials or their interconnections;
- Printed circuit boards;
- Casings, cabinets or drawers for electric apparatus;
- Constructional details common to different types of electric apparatus such as modifications to facilitate cooling, ventilating or heating, e.g. cooling arrangement for casings/cabinets;
- Constructional details of screening for electric apparatus or components against electric or magnetic fields, e.g. EMI shielding arrangements for casings/cabinets;
- Manufacture of assemblages of electrical components;
- Machines for mounting electronic components on circuit boards.

References

Informative references

Replace: The Informative references table with the revised table below.

Constructional details of instruments or comparable details of other apparatus not otherwise provided for	G12B
Non-printed means for electric connections to or between printed circuits, electric connections or line connectors, apparatus or processes for manufacturing, assembling, maintaining or repairing such connections or connectors	H01R
Integrated devices having multiple passive components formed in or on insulating or conducting substrates	H10D 86/80

Glossary of terms

Replace: The Glossary of terms table with the revised table below.

printed circuits	the expression covers all kinds of mechanical arrangements of circuits that consist of an insulating base or substrate, having at least one conductive layer permanently formed on the base. The base often extends in a two-dimensional plane. Other conductive layers may be formed in a layer structure within the base. The base may support components on its surface or between its layers. Each conductive layer is formed as separate patterns or tracks to connect the components as required. The expression is also applied adjectivally to processes or apparatus for manufacturing such circuits, e.g. by mechanical or chemical treatment of conductive foil, paste or film that has been applied to an insulating base, support or substrate.

H05K 1/00

Definition statement

Replace: The Definition statement text with the revised text below.

- Details of printed circuit boards [PCBs], e.g. structural aspects or use of materials for PCBs;
- Printed elements for electrical connection to or between printed circuits;
- Printed electric components in PCBs, e.g. resistors, capacitors or inductors formed by printing materials onto the board, or within its layer structure;
- Structural association of two or more PCBs;
- Structural association of PCBs and non-printed electric components, e.g. within internal layers.

References

Application-oriented references

Insert: The following new row into the Application-oriented table.

Integrated devices having multiple passive components formed in or on insulating or conducting substrates	H10D 86/80

Informative references

Replace: The Informative references table with the revised table below.

Backplanes	H05K 7/14
Screening against electric or magnetic fields	H05K 9/00
Electrostatic discharge protection for electric apparatus in general	H05K 9/0067, H05K 9/0079
Handling/transporting	H05K 13/0061, B65G, H01L 21/68
Cleaning	B08B
Casting of metals	B22D
Metal powder processing	B22F
Mechanical drilling	B23B
Mechanical milling, e.g. metal milling	B23C
Slotting	B23D
Erosion by electric discharge	B23H
Soldering or welding	B23K
Laser ablation, e.g. patterning by laser ablation	B23K 26/00
Details of machining apparatus	B23Q
Grinding, polishing	B24B
Abrasive working	B24C
Cutting; Punching	B26D, B26F
Laminating	B32B 37/00
Printing forms, e.g. masks	B41C, B41N
Printing apparatus	B41F
Inkjet printing	B41J 2/00
Printing processes	B41M

Selective transfer processes	B41M 5/00
Handling flexible substrates	B65G
Etching polymeric substrates	C08J 7/00
Coating by dipping in molten metal	C23C 2/00
Coating by spraying with molten metal	C23C 4/00
Coating by physical vapour deposition or sputtering or ion implantation	C23C 14/00
Coating by chemical deposition	C23C 16/00
Coating by decomposition of compounds	C23C 18/00, C23C 20/00
Coating by electroless plating	C23C 18/16
Conversion coating of metals	C23C 22/00
Coating by powder methods	C23C 24/00
Other coating methods	C23C 26/00
Coating metal with enamel (glass)	C23D
Corrosion protection of metal	C23F
Cleaning or degreasing of metal	C23G
Electroplating of metal	C25D
Electroforming of metal	C25D 1/00
Anodizing of metal	C25D 11/00
Electrophoretic coating of metal	C25D 13/00
Electrolytic etching of metal	C25F
Lighting devices	F21K, F21S, F21V, H05B
Drying	F26B
Testing, inspection of material	G01N
Electrical testing	G01R 31/00
Electro-optical devices comprising optical waveguides, e.g. modules/PCBs having optical waveguides	G02B 6/00
Coupling light guides with opto-electronic components	G02B 6/42
Liquid crystal displays [LCD]	G02F 1/13
Photolithography masks	G03F 1/00
Lithography, e.g. photoresists	G03F 7/00
Photolithography registration	G03F 9/00
Electrography	G03G
Computers	G06F
Touch screens	G06F 3/00
Security details of computer components	G06F 21/70
Designing of the conductive pattern	G06F 30/00
Circuits for displays	G09F 9/00

Disk drive suspensions	G11B 5/00
Memory modules	G11C 5/00
Cables	H01B
Flat cables	H01B 7/00, H01B 13/00
Resistors, e.g. printed resistors	H01C
Printed inductors	H01F
Inductors	H01F
Printed capacitors	H01G
Capacitors, e.g. printed capacitors	H01G
Switches, fuses	H01H
Plasma displays	H01J 17/49
Semiconductor packages	H01L 21/48, H01L 23/00, H01L 24/00
Treatment apparatus for semiconductor components	H01L 21/68
Impedance arrangements, e.g. impedance matching, reduction of parasitic impedance for semiconductor devices	H01L 23/66
Batteries; Cells	H01M
Laser devices	H01S
Spark gaps; Overvoltage arresters	H01T
Emergency protective circuits	H02H
Power conversion	H02M
Receivers/transceivers (modules)	H04B 1/00
Telephones	H04M
Optical modules	H04N, G03B
Electromechanical transducers	H04R
Semiconductor devices per se and integrated devices consisting of a plurality of semiconductor or active solid-state devices	H10
Polymeric semiconductor devices	H10K 99/00
Thermoelectric devices	H10N 10/00
Piezoelectric devices	H10N 30/00

H10B 51/00

References

Informative references

Insert: The new row shown below into the existing Informative references table.

Ferroelectric transistors per se	H10D 30/60

H10K 10/00

Definition statement

Replace: The existing Definition statement text with the revised text below.

Organic devices wherein an electrical input is rectified, amplified, oscillated or switched.

Active resistors or capacitors using organic materials as the active layers, or using a combination of organic materials with other material as the active layers.

Examples include:

- Organic variable resistors;
- Organic variable capacitors;
- Organic diodes;
- Organic transistors.

References

Informative references

Replace: The Informative references table with the revised table below.

Manufacture or treatment specially adapted for organic devices	H10K 71/00
Constructional details generally applicable to all organic solid-state devices, not covered by this group	H10K 77/00

Organic material used in active layers, in layers having high carrier mobility or in electrodes	H10K 85/00
Individual inorganic semiconductor devices specially adapted for rectifying, amplifying, oscillating or switching; Individual inorganic resistors or capacitors having potential barriers; Individual resistors, capacitors or inductors having no potential barriers, and specially adapted for integration with other semiconductor components	H10D 1/00 - H10D 48/00

H10K 19/00

Definition statement

Replace: The Definition statement text with the revised text below.

Integrated devices comprising at least one organic component specially adapted for rectifying, amplifying, oscillating or switching covered by group H10K 10/00.

Assemblies of multiple devices comprising at least one organic device specially adapted for rectifying, amplifying, oscillating or switching covered by group H10K 10/00.