

SECTION H — ELECTRICITY

H10 SEMICONDUCTOR DEVICES; ELECTRIC SOLID-STATE DEVICES NOT OTHERWISE PROVIDED FOR**H10H INORGANIC LIGHT-EMITTING SEMICONDUCTOR DEVICES HAVING POTENTIAL BARRIERS [2025.01]****Note(s) [2025.01]**

1. This subclass covers inorganic light-emitting semiconductor devices that emit visible, infrared [IR] or ultraviolet [UV] light. This includes light-emitting diodes [LED] and superluminescent diodes [SLD].
2. This subclass does not cover semiconductor lasers, which are covered by group H01S 5/00.
3. 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.

20/00	Individual inorganic light-emitting semiconductor devices having potential barriers, e.g. light-emitting diodes [LED] [2025.01]	20/824	• • • • comprising only Group III-V materials, e.g. GaP [2025.01]
20/01	• Manufacture or treatment [2025.01]	20/825	• • • • containing nitrogen, e.g. GaN [2025.01]
20/80	• Constructional details [2025.01]	20/826	• • • • comprising only Group IV materials [2025.01]
20/81	• • Bodies [2025.01]	20/83	• • Electrodes [2025.01]
20/811	• • • having quantum effect structures or superlattices, e.g. tunnel junctions [2025.01]	20/831	• • • characterised by their shape [2025.01]
20/812	• • • • within the light-emitting regions, e.g. having quantum confinement structures [2025.01]	20/832	• • • characterised by their material [2025.01]
20/813	• • • having a plurality of light-emitting regions, e.g. multi-junction LEDs or light-emitting devices having photoluminescent regions within the bodies [2025.01]	20/833	• • • • Transparent materials [2025.01]
20/814	• • • having reflecting means, e.g. semiconductor Bragg reflectors [2025.01]	20/84	• • Coatings, e.g. passivation layers or antireflective coatings [2025.01]
20/815	• • • having stress relaxation structures, e.g. buffer layers [2025.01]	20/841	• • • Reflective coatings, e.g. dielectric Bragg reflectors [2025.01]
20/816	• • • having carrier transport control structures, e.g. highly-doped semiconductor layers or current-blocking structures [2025.01]	20/85	• • Packages [2025.01]
20/817	• • • characterised by the crystal structures or orientations, e.g. polycrystalline, amorphous or porous [2025.01]	20/851	• • • Wavelength conversion means [2025.01]
20/818	• • • within the light-emitting regions [2025.01]	20/852	• • • Encapsulations [2025.01]
	<u>Note(s) [2025.01]</u>	20/853	• • • • characterised by their shape [2025.01]
	When classifying in this group, classification is also made in group H10H 20/822 in order to identify the chemical composition of the light-emitting region.	20/854	• • • • characterised by their material, e.g. epoxy or silicone resins [2025.01]
20/819	• • • characterised by their shape, e.g. curved or truncated substrates [2025.01]	20/855	• • • Optical field-shaping means, e.g. lenses [2025.01]
20/82	• • • • Roughened surfaces, e.g. at the interface between epitaxial layers [2025.01]	20/856	• • • • Reflecting means [2025.01]
20/821	• • • • of the light-emitting regions, e.g. non-planar junctions [2025.01]	20/857	• • • Interconnections, e.g. lead-frames, bond wires or solder balls [2025.01]
20/822	• • • Materials of the light-emitting regions [2025.01]	20/858	• • • Means for heat extraction or cooling [2025.01]
	<u>Note(s) [2025.01]</u>	29/00	Integrated devices, or assemblies of multiple devices, comprising at least one light-emitting semiconductor element covered by group H10H 20/00 [2025.01]
	When classifying in this group, constituents of a material are considered irrespective of any dopants or other impurities.	29/01	• Manufacture or treatment [2025.01]
20/823	• • • comprising only Group II-VI materials, e.g. ZnO [2025.01]	29/02	• • using pick-and-place processes [2025.01]
		29/03	• • using mass transfer of LEDs, e.g. by using liquid suspensions [2025.01]
		29/10	• Integrated devices comprising at least one light-emitting semiconductor component covered by group H10H 20/00 (active-matrix LED displays H10H 29/30) [2025.01]
		29/14	• • comprising multiple light-emitting semiconductor components [2025.01]
		29/20	• Assemblies of multiple devices comprising at least one light-emitting semiconductor device covered by group H10H 20/00 (active-matrix LED displays H10H 29/30) [2025.01]

H10H

29/24 • • comprising multiple light-emitting semiconductor devices [2025.01]

29/30 • Active-matrix LED displays [2025.01]

Note(s) [2025.01]

This group covers active-matrix displays where the emphasis of the invention concerns the LEDs, the layers closely related to the LEDs or constructional details closely related to the LEDs, e.g. interconnections between the LEDs or their encapsulations.

29/32 • • characterised by the geometry or arrangement of elements within a subpixel, e.g. arrangement of the transistor within its RGB subpixel [2025.01]

29/34 • • characterised by the geometry or arrangement of subpixels within a pixel, e.g. relative disposition of the RGB subpixels [2025.01]

29/37 • • Pixel-defining structures, e.g. banks between the LEDs [2025.01]

29/39 • • Connection of the pixel electrodes to the driving transistors [2025.01]

29/41 • • Insulating layers formed between the driving transistors and the LEDs [2025.01]

29/45 • • comprising two substrates, each having active devices thereon, e.g. displays comprising LED arrays and driving circuitry on different substrates [2025.01]

29/49 • • Interconnections, e.g. wiring lines or terminals (connection of the pixel electrodes to the driving transistors H10H 29/39) [2025.01]

29/80 • Constructional details [2025.01]

Note(s) [2025.01]

Classification is made in group H10H 29/80 when the constructional detail is relevant to integrated devices or assemblies comprising multiple devices. When the constructional detail is relevant to individual devices, then classification is made in group H10H 20/80.

29/85 • • Packages [2025.01]

29/851 • • • Wavelength conversion means [2025.01]

29/852 • • • Encapsulations [2025.01]

29/853 • • • • characterised by their shape [2025.01]

29/854 • • • • characterised by their material, e.g. epoxy or silicone resins [2025.01]

29/855 • • • Optical field-shaping means, e.g. lenses [2025.01]

29/856 • • • Reflecting means [2025.01]

99/00 Subject matter not provided for in other groups of this subclass [2025.01]