

**H 05 K PRINTED CIRCUITS; CASINGS OR CONSTRUCTIONAL DETAILS OF ELECTRIC APPARATUS; MANUFACTURE OF ASSEMBLAGES OF ELECTRICAL COMPONENTS** (details of instruments or comparable details of other apparatus not otherwise provided for [G 12 B](#); thin-film or thick-film circuits [H 01 L 27/01](#), [27/13](#); non-printed means for electric connections to or between printed circuits [H 01 R](#); casings for, or constructional details of, particular types of apparatus, see the relevant subclasses; processes involving only a single technical art, e.g. heating, spraying, for which provision exists elsewhere, see the relevant classes)

### Notes

- (1) This subclass covers:
- combinations of a radio or television receiver with apparatus having a different main function;
  - printed circuits structurally associated with non-printed electric components.
- (2) In this subclass, the following expression is used with the meaning indicated:
- “printed circuits” covers all kinds of mechanical constructions of circuits that consist of an insulating base or support carrying the conductor and are combined structurally with the conductor throughout their length, especially in a two-dimensional plane, the conductors of which are secured to the base in a non-dismountable manner, and also covers the processes or apparatus for manufacturing such constructions, e.g. forming the circuit by mechanical or chemical treatment of a conductive foil, paste, or film on an insulating support.

### Subclass Index

PRINTED CIRCUITS ASSOCIATED OR NOT ASSOCIATED WITH NON-PRINTED ELECTRIC COMPONENTS	COMBINATIONS OF A RADIO OR TELEVISION RECEIVER WITH OTHER APPARATUS.....	11/00
Types; manufacture .....	MANUFACTURE OF ELECTRONIC ASSEMBLAGES.....	13/00
CASINGS, CABINETS OR DRAWERS; CONSTRUCTIONAL DETAILS.....	ARRANGEMENTS FOR IMPROVING THE OPERATING RELIABILITY .....	10/00
SCREENING .....		9/00

<b>1/00</b> <b>Printed circuits</b> (assemblies of a plurality of individual semiconductor or solid state devices <a href="#">H 01 L 25/00</a> ; devices consisting of a plurality of solid state components formed in or on a common substrate, e.g. integrated circuits, thin-film or thick-film circuits, <a href="#">H 01 L 27/00</a> )	3/10	. in which conductive material is applied to the insulating support in such a manner as to form the desired conductive pattern
1/02 . Details	3/12	. . using printing techniques to apply the conductive material
1/03 . . Use of materials for the substrate [3]	3/14	. . using spraying techniques to apply the conductive material
1/05 . . . Insulated metal substrate [3]	3/16	. . . by cathodic sputtering
1/09 . . Use of materials for the metallic pattern [3]	3/18	. . using precipitation techniques to apply the conductive material
1/11 . . Printed elements for providing electric connections to or between printed circuits [3]	3/20	. . by affixing prefabricated conductor pattern
1/14 . . Structural association of two or more printed circuits (providing electric connection to or between printed circuits <a href="#">1/11</a> , <a href="#">H 01 R 12/00</a> )	3/22	. Secondary treatment of printed circuits
1/16 . incorporating printed electric components, e.g. printed resistor, capacitor, inductor	3/24	. . Reinforcing of the conductive pattern
1/18 . Printed circuits structurally associated with non-printed electric components ( <a href="#">1/16</a> takes precedence)	3/26	. . Cleaning or polishing of the conductive pattern
<b>3/00</b> <b>Apparatus or processes for manufacturing printed circuits</b> (photomechanical production of textured or patterned surfaces, materials or originals therefor, apparatus specially adapted therefor, in general <a href="#">G 03 F</a> ; involving the manufacture of semiconductor devices <a href="#">H 01 L</a> ) [3]	3/28	. . Applying non-metallic protective coatings
3/02 . in which the conductive material is applied to the surface of the insulating support and is thereafter removed from such areas of the surface which are not intended for current conducting or shielding	3/30	. Assembling printed circuits with electric components, e.g. with resistor
3/04 . . the conductive material being removed mechanically, e.g. by punching	3/32	. . electrically connecting electric components or wires to printed circuits
3/06 . . the conductive material being removed chemically or electrolytically, e.g. by photo-etch process	3/34	. . . by soldering
3/07 . . . being removed electrolytically [3]	3/36	. Assembling printed circuits with other printed circuits
3/08 . . the conductive material being removed by electric discharge, e.g. by spark erosion	3/38	. Improvement of the adhesion between the insulating substrate and the metal [3]
	3/40	. Forming printed elements for providing electric connections to or between printed circuits [3]
	3/42	. . Plated through-holes [3]
	3/44	. Manufacturing insulated metal core circuits [3]
	3/46	. Manufacturing multi-layer circuits [3]
	<b>5/00</b>	<b>Casings, cabinets or drawers for electric apparatus</b> (in general <a href="#">A 47 B</a> ; radio receiver cabinets <a href="#">H 04 B 1/08</a> ; television receiver cabinets <a href="#">H 04 N 5/64</a> )
	5/02	. Details
	5/03	. . Covers

## H 05 K

- 5/04 . Metal casings
- 5/06 . Hermetically-sealed casings
- 7/00 Constructional details common to different types of electric apparatus** (casings, cabinets, drawers 5/00)
- 7/02 . Arrangements of circuit components or wiring on supporting structure
- 7/04 . . on conductive chassis
- 7/06 . . on insulating boards
- 7/08 . . . on perforated boards
- 7/10 . . Plug-in assemblages of components
- 7/12 . . Resilient or clamping means for holding component to structure (holding two-part couplings together H 01 R 13/00)
- 7/14 . Mounting supporting structure in casing or on frame or rack
- 7/16 . . on hinges or pivots
- 7/18 . Construction of rack or frame
- 7/20 . Modifications to facilitate cooling, ventilating, or heating
- 9/00 Screening of apparatus or components against electric or magnetic fields** (devices for absorbing radiation from an aerial H 01 Q 17/00)
- 10/00 Arrangements for improving the operating reliability of electronic equipment, e.g. by providing a similar stand-by unit**

### Note

Attention is drawn to the following appropriate places: [6]

- G 05 B 9/03 Electric redundant control systems [6]
- G 06 F 11/16 Error detection or correction of data by redundancy in digital computer hardware [6]

- G 08 B 29/16 Security signalling or alarm systems [6]
- H 02 H 3/05 Redundant emergency protective circuit arrangements [6]
- H 02 J 3/38 Arrangements for parallelly feeding a single network [6]
- H 02 J 9/04 Circuit arrangements with stand-by power supply [6]
- H 03 K 19/003 Modifications for increasing the reliability of logic circuits or inverting circuits [6]
- H 03 K 19/007 Fail-safe logic circuits or inverting circuits [6]
- H 03 L 7/07 Redundant clock signal generation in generators of electronic oscillations or pulses [6]
- H 04 B 1/74 Transmission systems using redundant channels or apparatus [6]
- H 04 L 1/22 Redundant apparatus for increasing reliability of arrangements used for the transmission of digital information. [6]

### 11/00 Combinations of a radio or television receiver with apparatus having a different main function

- 11/02 . with vehicles

### 13/00 Apparatus or processes specially adapted for manufacturing or adjusting assemblages of electric components

- 13/02 . Feeding of components (in general B 65 G)
- 13/04 . Mounting of components
- 13/06 . Wiring by machine
- 13/08 . Monitoring manufacture of assemblages