COOPERATIVE PATENT CLASSIFICATION

ELECTRICITY

BASIC ELECTRONIC CIRCUITY

AMPLIFIERS (measuring, testing G01R; optical parametric amplifiers G02F; circuit arrangement with secondary emission tubes H01J 43/30; masers, lasers H01S; control of amplification H03G; coupling arrangements independent of the nature of the amplifiers, voltage dividers H03H; amplifiers capable only of dealing with pulses H03K; repeater circuits in transmission lines H04B 3/36, H04B 3/58; application of speech amplifiers in telephonic communication H04M 1/60, H04M 3/40)

NOTE

This subclass covers:
- linear amplification, there being linear relationship between the amplitudes of input and output, and the output having substantially the same waveform as the input;
- dielectric amplifiers, magnetic amplifiers, and parametric amplifiers when used as oscillators or frequency-changers;
- constructions of active elements of dielectric amplifiers and parametric amplifiers if no provision exists elsewhere.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

<table>
<thead>
<tr>
<th>IPC group</th>
<th>CPC group</th>
</tr>
</thead>
<tbody>
<tr>
<td>H03F 1/44</td>
<td>covered by H03F 1/42</td>
</tr>
<tr>
<td>H03F 1/46</td>
<td>covered by H03F 1/42</td>
</tr>
<tr>
<td>H03F 3/18</td>
<td>covered by H03F 3/00</td>
</tr>
<tr>
<td>H03F 3/32</td>
<td>covered by H03F 3/30</td>
</tr>
<tr>
<td>H03F 7/06</td>
<td>covered by H03F 7/00</td>
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</table>

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

I/00

Details of amplifiers with only discharge tubes, only semiconductor devices or only unspecified devices as amplifying elements

I/02 . . . Modifications of amplifiers to raise the efficiency, e.g. gliding Class A stages, use of an auxiliary oscillation

I/0205 . . . {in transistor amplifiers}

I/0211 . . . {with control of the supply voltage or current}

I/0216 . . . [Continuous control]

I/0222 . . . . . {by using a signal derived from the input signal}

I/0227 . . . . . {by using supply converters}

I/0233 . . . . . {by using a signal derived from the output signal, e.g. bootstrapping the voltage supply}

I/0238 . . . . . {by using supply converters}

I/0244 . . . . . [Step control]

I/025 . . . . . . {by using a signal derived from the input signal}

I/0255 . . . . . . {by using a signal derived from the output signal}

I/0261 . . . . . {with control of the polarisation voltage or current, e.g. gliding Class A}

I/0266 . . . . . {by using a signal derived from the input signal}

I/0272 . . . . . {by using a signal derived from the output signal}

I/0277 . . . {Selecting one or more amplifiers from a plurality of amplifiers}

I/0283 . . . {Reducing the number of Dc-current paths}

I/0288 . . . . . . {using a main and one or several auxiliary peaking amplifiers whereby the load is connected to the main amplifier using an impedance inverter, e.g. Doherty amplifiers}

I/0294 . . . . . . {using vector summing of two or more constant amplitude phase-modulated signals}

I/04 . . . . . in discharge-tube amplifiers

I/06 . . . . . to raise the efficiency of amplifying modulated radio frequency waves; to raise the efficiency of amplifiers acting also as modulators {modulation H03C}

I/07 . . . . . Doherty-type amplifiers

I/08 . . . Modifications of amplifiers to reduce detrimental influences of internal impedances of amplifying elements {wide-band amplifiers with inter-stage coupling networks incorporating these impedances H03F 1/42; eliminating transit-time effects in vacuum tubes H01J 21/34}

I/083 . . . . . {in transistor amplifiers (H03F 1/10 - H03F 1/22 take precedence)}

I/086 . . . . . {with FET’s}

I/10 . . . . . by use of amplifying elements with multiple electrode connections

I/12 . . . . . by use of attenuating means {attenuators H03G}

I/13 . . . . . in discharge tube amplifiers
H03F

1/14 . . . by use of neutralising means
1/16 . . . in discharge tube amplifiers
1/18 . . . by use of distributed coupling {, i.e. distributed amplifiers (distributed amplifiers using coupling networks with distributed constants H03F 3/605)}
1/20 . . . in discharge-tube amplifiers
1/22 . . . by use of cascode coupling, i.e. earthed cathode or emitter stage followed by earthed grid or base stage respectively
1/223 . . . {with MOSFET's}
1/226 . . . {with junction-FET's}
1/24 . . . in discharge-tube amplifiers
1/26 . Modifications of amplifiers to reduce influence of noise generated by amplifying elements
1/28 . . . in discharge-tube amplifiers {constructional modifications H01L 2/11}
1/30 . Modifications of amplifiers to reduce influence of variations of temperature or supply voltage {or other physical parameters (in differential amplifiers H03F 3/45479)}
1/301 . . . {in MOSFET amplifiers (H03F 1/303, H03F 1/305, H03F 1/308 take precedence)}
1/302 . . . {in bipolar transistor amplifiers (H03F 1/303, H03F 1/305, H03F 1/307 take precedence)}
1/303 . . . {using a switching device (H03F 1/305, H03F 3/308, H03F 3/38 take precedence)}
1/304 . . . {and using digital means}
1/305 . . . {in case of switching on or off of a power supply}
1/306 . . . {in junction-FET amplifiers (H03F 1/303, H03F 1/305, H03F 1/309 take precedence)}
1/307 . . . {in push-pull amplifiers}
1/308 . . . {using MOSFET}
1/309 . . . {using junction-FET}
1/32 . Modifications of amplifiers to reduce non-linear distortion (by negative feedback H03F 1/34)
1/3205 . . . {in field-effect transistor amplifiers}
1/3211 . . . {in differential amplifiers}
1/3217 . . . {in single ended push-pull amplifiers}
1/3223 . . . {using feed-forward (H03F 1/3211 takes precedence)}
1/3229 . . . {using a loop for error extraction and another loop for error subtraction}
1/3235 . . . {using a pilot signal}
1/3241 . . . {using predistortion circuits (H03F 1/3211, H03F 1/3217 take precedence)}
1/3247 . . . {using feedback acting on predistortion circuits (H03F 1/3264 takes precedence)}
1/3252 . . . {using multiple parallel paths between input and output (H03F 1/3258, H03F 1/3282, H03F 1/3294 take precedence)}
1/3258 . . . {based on polynomial terms}
1/3264 . . . {in audio amplifiers}
1/327 . . . . . . {to emulate discharge tube amplifier characteristics}
1/3276 . . . {using the nonlinearity inherent to components, e.g. a diode}
1/3282 . . . {Acting on the phase and the amplitude of the input signal}
1/3288 . . . . . . {to compensate phase shift as a function of the amplitude}
1/3294 . . . {Acting on the real and imaginary components of the input signal}
1/33 . . . in discharge-tube amplifiers

1/34 . . . Negative-feedback-circuit arrangements with or without positive feedback (H03F 1/02 - H03F 1/30, H03F 1/38 - H03F 1/50, H03F 3/50 take precedence; for rejection of common mode signals H03F 3/45479)
1/342 . . . {in field-effect transistor amplifiers}
1/345 . . . {using hybrid or directional couplers}
1/347 . . . {using transformers}
1/36 . . . in discharge-tube amplifiers
1/38 . Positive-feedback circuit arrangements without negative feedback
1/40 . . . in discharge-tube amplifiers
1/42 . . . Modifications of amplifiers to extend the bandwidth
1/48 . . . of aperiodic amplifiers
1/483 . . . {with field-effect transistors}
1/486 . . . {with IC amplifier blocks}
1/50 . . . {with tubes only}
1/52 . Circuit arrangements for protecting such amplifiers {monitoring arrangements G01R 31/28; increasing reliability in communication systems, e.g. using redundancy H04B 1/74}
1/523 . . . {for amplifiers using field-effect devices (H03F 1/526 takes precedence)}
1/526 . . . {protecting by using redundant amplifiers}
1/54 . . . with tubes only {testing of vacuum tubes G01R 31/25}
1/542 . . . {Replacing by standby devices}
1/544 . . . {Protection of filaments}
1/546 . . . {Delaying application of anode power supply with respect to application of filament heating power supply}
1/548 . . . {Protection of anode or grid circuit against overload}
1/56 . Modifications of input or output impedances, not otherwise provided for
1/565 . . . {using inductive elements}
3/00 Amplifiers with only discharge tubes or only semiconductor devices as amplifying elements
3/005 . . . {using switched capacitors, e.g. dynamic amplifiers; using switched capacitors as resistors in differential amplifiers (H03F 3/45 takes precedence)}

NOTE

Groups H03F 3/20 - H03F 3/72 take precedence over groups H03F 3/02 - H03F 3/195
3/183 . . . with semiconductor devices only
3/185 . . . with field-effect devices (H03F 3/187 takes precedence)
3/1855 . . . . [with junction-FET devices]
3/187 . . . in integrated circuits
3/189 . . . . High frequency amplifiers, e.g. radio frequency amplifiers
3/19 . . . . with semiconductor devices only
3/191 . . . Tuned amplifiers (H03F 3/193, H03F 3/195 take precedence)
3/193 . . . . with field-effect devices (H03F 3/195 takes precedence)
3/1935 . . . . [with junction-FET devices]
3/195 . . . in integrated circuits
3/20 . . . Power amplifiers, e.g. Class B amplifiers, Class C amplifiers (H03F 3/26 - H03F 3/30 take precedence)
3/21 . . . with semiconductor devices only ([H03F 3/245 takes precedence])
3/211 . . . . [using a combination of several amplifiers (H03F 3/260 takes precedence)]
3/213 . . . in integrated circuits
3/217 . . . . Class D power amplifiers; Switching amplifiers
3/2171 . . . . [with field-effect devices (H03F 3/2173 - H03F 3/2178 take precedence)]
3/2173 . . . . [of the bridge type]
3/2175 . . . . [using analogue-digital or digital-analogue conversion (H03F 3/2173 takes precedence)]
3/2176 . . . . [Class E amplifiers]
3/2178 . . . . [using more than one switch or switching amplifier in parallel or in series (H03F 3/2173, H03F 3/2175 take precedence)]
3/22 . . . with tubes only (H03F 3/24 takes precedence)
3/24 . . . of transmitter output stages
3/245 . . . . [with semiconductor devices only]
3/26 . . . Push-pull amplifiers; Phase-splitters therefor (duplicated single-ended push-pull arrangements or phase-splitters therefor (H03F 3/30)]
3/265 . . . . [with field-effect transistors only]
3/28 . . . with tubes only
3/30 . . . Single-ended push-pull ([SEPP]) amplifiers [(single-ended sense amplifiers G11C 7/067)]; Phase-splitters therefor
3/3001 . . . . [with field-effect transistors]
3/3008 . . . . [Bifet SEPP output stages]
3/301 . . . . [CMOS common drain output SEPP amplifiers (H03F 3/3008 takes precedence)]
3/3011 . . . . [with asymmetrical driving of the end stage]
3/3013 . . . . [using a common drain driving stage, i.e. follower stage]
3/3015 . . . . [using a common source driving stage, i.e. inverting stage]
3/3016 . . . . [with symmetrical driving of the end stage]
3/3018 . . . . [using opamps as driving stages]
3/302 . . . . [using two SEPP driving stages]
3/3022 . . . . [CMOS common source output SEPP amplifiers (H03F 3/3008 takes precedence)]
3/3023 . . . . [with asymmetrical driving of the end stage]
3/3025 . . . . [using a common drain driving stage, i.e. follower stage]
3/3027 . . . . [using a common source driving stage, i.e. inverting stage]
Differential amplifiers (differential sense amplifiers)

Amplifiers with two or more amplifying elements having their dc paths in series with the load, the control electrode of each element being excited by at least part of the input signal, e.g. so-called totem-pole amplifiers

Dc amplifiers in which all stages are dc-coupled (H03F 3/45 takes precedence)

With semiconductor devices only

With tubes only

Dc amplifiers with modulator at input and demodulator at output; Modulators or demodulators specially adapted for use in such amplifiers (switched capacitor amplifiers H03F 3/005; modulators in general H03C; demodulators in general H03D; amplitude modulation of pulses in general H03K 7/02; amplitude demodulation of pulses in general H03K 9/02)

With semiconductor devices only

With field-effect devices

With tubes only

Amplifiers with two or more amplifying elements having their dc paths in series with the load, the control electrode of each element being excited by at least part of the input signal, e.g. so-called totem-pole amplifiers

With MOSFET's

With junction-FET's

With tubes only

Differential amplifiers (differential sense amplifiers G11C 7/062)

With semiconductor devices only

characterised by the way of implementation of the active amplifying circuit in the differential amplifier

Using bipolar transistors as the active amplifying circuit (H03F 3/45278 takes precedence)

Long tail pairs (H03F 3/45112, H03F 3/45139 take precedence)

Non-folded cascode stages

Folded cascode stages

Folded cascode stages

PI types (H03F 3/45125, H03F 3/45152 take precedence)

Non-folded cascode stages

Folded cascode stages

Folded cascode stages

Complementary long tail pairs having parallel inputs and being supplied in parallel

Non-folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages

Folded cascode stages
3/45327 . . . . . . . . . . . . . . . . (Non-folded cascode stages)
3/45331 . . . . . . . . . . . . . . . . (Folded cascode stages)
3/45336 . . . . . . . . . . . . . . . . (Complementary long tailed pairs having parallel inputs and being supplied in series)
3/4534 . . . . . . . . . . . . . . . . (Non-folded cascode stages)
3/45345 . . . . . . . . . . . . . . . . (Folded cascode stages)
3/45349 . . . . . . . . . . . . . . . . (Complementary PI types having parallel inputs and being supplied in series)
3/45354 . . . . . . . . . . . . . . . . (Non-folded cascode stages)
3/45358 . . . . . . . . . . . . . . . . (Folded cascode stages)
3/45363 . . . . . . . . . . . . . . . . (Complementary cross coupled types)
3/45367 . . . . . . . . . . . . . . . . (Complementary non-cross coupled types)
3/45372 . . . . . . . . . . . . . . . . (Mirror types)
3/45376 . . . . . . . . . . . . . . . . [using junction FET transistors as the active amplifying circuit (H03F 3/45278 takes precedence)]
3/45381 . . . . . . . . . . . . . . . . (Long tailed pairs (H03F 3/45408, H03F 3/45434 take precedence))
3/45385 . . . . . . . . . . . . . . . . (Non-folded cascode stages)
3/4539 . . . . . . . . . . . . . . . . (Folded cascode stages)
3/45394 . . . . . . . . . . . . . . . . (PI types (H03F 3/45421, H03F 3/45448 take precedence))
3/45399 . . . . . . . . . . . . . . . . (Non-folded cascode stages)
3/45403 . . . . . . . . . . . . . . . . (Folded cascode stages)
3/45408 . . . . . . . . . . . . . . . . (Complementary long tailed pairs having parallel inputs and being supplied in parallel)
3/45412 . . . . . . . . . . . . . . . . (Non-folded cascode stages)
3/45417 . . . . . . . . . . . . . . . . (Folded cascode stages)
3/45421 . . . . . . . . . . . . . . . . (Complementary PI types having parallel inputs and being supplied in parallel)
3/45426 . . . . . . . . . . . . . . . . (Non-folded cascode stages)
3/4543 . . . . . . . . . . . . . . . . (Folded cascode stages)
3/45434 . . . . . . . . . . . . . . . . (Complementary long tailed pairs having parallel inputs and being supplied in series)
3/45439 . . . . . . . . . . . . . . . . (Non-folded cascode stages)
3/45443 . . . . . . . . . . . . . . . . (Folded cascode stages)
3/45448 . . . . . . . . . . . . . . . . (Complementary PI types having parallel inputs and being supplied in series)
3/45452 . . . . . . . . . . . . . . . . (Non-folded cascode stages)
3/45457 . . . . . . . . . . . . . . . . (Folded cascode stages)
3/45461 . . . . . . . . . . . . . . . . (Complementary cross coupled types)
3/45466 . . . . . . . . . . . . . . . . (Complementary non-cross coupled types)
3/4547 . . . . . . . . . . . . . . . . (Mirror types)
3/45475 . . . . . . . . . . . . . . . . [using IC blocks as the active amplifying circuit]
3/45479 . . . . . . . . . . . . . . . . [characterised by the way of common mode signal rejection]
3/45484 . . . . . . . . . . . . . . . . [in differential amplifiers with bipolar transistors as the active amplifying circuit (H03F 3/4578 takes precedence)]
3/45488 . . . . . . . . . . . . . . . . [by using feedback means (H03F 3/4578 takes precedence)]
3/45493 . . . . . . . . . . . . . . . . [Measuring at the loading circuit of the differential amplifier]
3/45497 . . . . . . . . . . . . . . . . [Controlling the input circuit of the differential amplifier]
3/45502 . . . . . . . . . . . . . . . . [Controlling the common emitter circuit of the differential amplifier]
3/45506 . . . . . . . . . . . . . . . . [Controlling the active amplifying circuit of the differential amplifier]
3/45511 . . . . . . . . . . . . . . . . [Controlling the loading circuit of the differential amplifier]
3/45515 . . . . . . . . . . . . . . . . [Measuring at the active amplifying circuit of the differential amplifier]
3/4552 . . . . . . . . . . . . . . . . [Controlling the input circuit of the differential amplifier]
3/45524 . . . . . . . . . . . . . . . . [Controlling the common emitter circuit of the differential amplifier]
3/45529 . . . . . . . . . . . . . . . . [Controlling the active amplifying circuit of the differential amplifier]
3/45533 . . . . . . . . . . . . . . . . [Measuring at the common emitter circuit of the differential amplifier]
3/45538 . . . . . . . . . . . . . . . . [Controlling the input circuit of the differential amplifier]
3/45542 . . . . . . . . . . . . . . . . [Controlling the common emitter circuit of the differential amplifier]
3/45544 . . . . . . . . . . . . . . . . [by using feedforward means (H03F 3/45596 takes precedence)]
3/45551 . . . . . . . . . . . . . . . . [Measuring at the input circuit of the differential amplifier]
3/45556 . . . . . . . . . . . . . . . . [Controlling the input circuit of the differential amplifier]
3/4556 . . . . . . . . . . . . . . . . [Controlling the common emitter circuit of the differential amplifier]
3/45565 . . . . . . . . . . . . . . . . [Controlling the active amplifying circuit of the differential amplifier]
3/45569 . . . . . . . . . . . . . . . . [Controlling the loading circuit of the differential amplifier]
3/45573 . . . . . . . . . . . . . . . . [Measuring at the active amplifying circuit of the differential amplifier]
3/45578 . . . . . . . . . . . . . . . . [Controlling the loading circuit of the differential amplifier]
3/45582 . . . . . . . . . . . . . . . . [Measuring at the common emitter circuit of the differential amplifier]
3/45587 . . . . . . . . . . . . . . . . [Controlling the active amplifying circuit of the differential amplifier]
3/45591 . . . . . . . . . . . . . . . . [Controlling the loading circuit of the differential amplifier]
3/45596 . . . . . . . . . . . . . . . . [by offset reduction]
3/456 . . . . . . . . . . . . . . . . [by using a feedback circuit]
3/45605 . . . . . . . . . . . . . . . . [using switching means, e.g. sample and hold]
3/45609 . . . . . . . . . . . . . . . . [by using a feedforward circuit]
3/45614 . . . . . . . . . . . . . . . . [using switching means, e.g. sample and hold]
3/45618 . . . . . . . . . . . . . . . . [by using balancing means]
3/45623 . . . . . . . . . . . . . . . . [using switching means]
3/45627 . . . . . . . . . . . . . . . . [by using cross switches]
3/45632 . . . . . . . . . . . . . . . . [in differential amplifiers with FET transistors as the active amplifying circuit (H03F 3/4578 takes precedence)]
3/45636 . . . . . . . . . . . . . . . . [by using feedback means (H03F 3/45744 takes precedence)]
3/45641 . . . . . . . . . . . . . . . . [Measuring at the loading circuit of the differential amplifier]
3/45645 . . . . . . . . . . . . . . . . [Controlling the input circuit of the differential amplifier]
3/4565 . . . . . . . . . . . . . . . . [Controlling the common source circuit of the differential amplifier]
3/45654 . . . . . . . . . . . . . . . . [Controlling the active amplifying circuit of the differential amplifier]
3/45659 . . . . . . . . . . . . . . . . [Controlling the loading circuit of the differential amplifier]
transistors as the active amplifying circuit in differential amplifiers with BiFET takes precedence)
Magnetic amplifiers

9/02. current-controlled, i.e. the load current flowing in both directions through a main coil
2200/147. the feedback circuit comprising a series resonance circuit
2200/15. the supply or bias voltage or current at the drain side of a FET being continuously controlled by a controlling signal
2200/151. A source follower being used in a feedback circuit of an amplifier stage
2200/153. Feedback used to stabilise the amplifier
2200/156. One or more switches are realised in the feedback circuit of the amplifier stage
2200/159. the feedback circuit being closed during a switching time
2200/162. FETs are biased in the weak inversion region
2200/165. A filter circuit coupled to the input of an amplifier
2200/168. Two amplifying stages are coupled by means of a filter circuit
2200/171. A filter circuit coupled to the output of an amplifier
2200/174. Floating gate implemented in MOS technology
2200/177. Folded cascode realised by a folding coil
2200/18. the bias of the gate of a FET being controlled by a control signal
2200/181. A coil being added in the gate circuit of a FET amplifier stage, e.g. for noise reducing purposes
2200/183. the amplifier comprising a gated diode
2200/186. the ground, reference potential being controlled by a series resonance circuit
2200/189. the ground, reference or shield potential difference between different chips being controlled
2200/192. A hybrid coupler being used at the input of an amplifier circuit
2200/195. A hybrid coupler being used as power measuring circuit at the input of an amplifier circuit
2200/198. A hybrid coupler being used as coupling circuit between stages of an amplifier circuit
2200/201. A hybrid coupler being used as power measuring inter-stage circuit between two stages of an amplifier circuit
2200/204. A hybrid coupler being used at the output of an amplifier circuit
2200/207. A hybrid coupler being used as power measuring circuit at the output of an amplifier circuit
2200/21. Bias resistors are added at the input of an amplifier
2200/211. the input of an amplifier can be attenuated by a continuously controlled transistor attenuator
2200/213. A variable capacitor being added in the input circuit, e.g. base, gate, of an amplifier stage
2200/216. A coil being added in the input circuit, e.g. base, gate, of an amplifier stage
2200/219. Follower transistors are added at the input of the amplifier, e.g. source or emitter followers
2200/222. A circuit being added at the input of an amplifier to adapt the input impedance of the amplifier
2200/225. the input circuit of an amplifying stage comprising an LC-network
2200/228. A measuring circuit being coupled to the input of an amplifier
2200/231. the input of an amplifier can be switched on or off by a switch to amplify or not an input signal
2200/234. the input amplifying stage being one or more operational amplifiers
2200/237. A parallel resonance being added in series in the input circuit, e.g. base, gate, of an amplifier stage
2200/24. the supply or bias voltage or current at the source side of a FET being continuously controlled by a controlling signal
2200/241. A parallel resonance being added in shunt in the input circuit, e.g. base, gate, of an amplifier stage
2200/243. A series resonance being added in series in the input circuit, e.g. base, gate, of an amplifier stage
2200/246. A series resonance being added in shunt in the input circuit, e.g. base, gate, of an amplifier stage, e.g. as a trap
2200/249. A switch coupled in the input circuit of an amplifier being controlled by a circuit, e.g. feedback circuitry being controlling the switch
2200/252. Multiple switches coupled in the input circuit of an amplifier are controlled by a circuit, e.g. feedback circuitry being controlling the switch
2200/255. Amplifier input adaptation especially for transmission line coupling purposes, e.g. impedance adaptation
2200/258. the input of the amplifier has voltage limiting means
2200/261. Amplifier which being suitable for instrumentation applications
2200/264. An operational amplifier based integrator or transistor based integrator being used in an amplifying circuit
2200/267. A capacitor based passive circuit, e.g. filter, being used in an amplifying circuit
2200/27. A biasing circuit node being switched in an amplifying circuit
2200/271. the DC-isolation amplifier, e.g. chopper amplifier, modulation/demodulation amplifier, uses capacitive isolation means, e.g. capacitors
2200/273. the DC-isolation amplifier, e.g. chopper amplifier, modulation/demodulation amplifier, uses inductive isolation means, e.g. transformers
2200/276. the DC-isolation amplifier, e.g. chopper amplifier, modulation/demodulation amplifier, uses optical isolation means, e.g. optical couplers
2200/279. the level shifting stage between two amplifying stages being realised by an explicit differential amplifier
2200/282. the level shifting stage between two amplifying stages being realised by a diode
2200/285. the level shifting stage between two amplifying stages being realised by an emitter follower
2200/288. the level shifting stage between two amplifying stages being realised by a resistor or potentiometer
2200/291. the level shifting stage between two amplifying stages being realised by a source follower
2200/294. the amplifier being a low noise amplifier [LNA]
2200/297. the loading circuit of an amplifying stage comprising a capacitor
2200/301. the loading circuit of an amplifying stage comprising a coil
2200/303. the loading circuit of an amplifying stage comprising a diode or diode coupled transistor
2200/306. the loading circuit of an amplifying stage being a parallel resonance circuit
2200/309. the loading circuit of an amplifying stage being a series resonance circuit
2200/31. the switching power stage comprising circuitry for emulating the behaviour of a bootstrap diode
2200/312. the loading circuit of an amplifying stage comprising one or more switches
2200/315. the loading circuit of an amplifying stage comprising a transmission line
A matching circuit being used as coupling element between two amplifying stages
Use of a microprocessor in an amplifier circuit or its control circuit
An amplitude modulator or demodulator being used in the amplifier circuit
Amplitude shift keying modulation being used in an amplifying circuit
Bridge form coupled amplifiers; H-form coupled amplifiers
Sigma delta modulation being used in an amplifying circuit
A frequency modulator or demodulator being used in the amplifier circuit
A I/Q, i.e. phase quadrature, modulator or demodulator being used in an amplifying circuit
Pulse amplitude modulation being used in an amplifying circuit
Pulse code modulation being used in an amplifying circuit
Pulse density modulation being used in an amplifying circuit
Pulse frequency modulation being used in an amplifying circuit
Pulse width modulation being used in an amplifying circuit
the amplifier comprising MOS which are biased in the moderate inversion region
the amplifier comprising MOS which are biased in the weak inversion region
the amplifier comprising means for increasing the bandwidth
Transistor with multiple collectors
Transistor with multiple emitters
Multiple MOSFETs are coupled in parallel
A negative impedance circuit being added to an amplifier circuit
Noise reduction and elimination in amplifier
Circuitry to compensate the offset being present in an amplifier
A variable capacitor being added in the output circuit, e.g. collector, drain, of an amplifier stage
An active variable resistor, e.g. controlled transistor, being coupled in the output circuit of an amplifier to control the output
Amplifier without output filter, i.e. directly connected to the load
A circuit being added at the output of an amplifier to adapt the output impedance of the amplifier
Different band amplifiers are coupled in parallel to broadband the whole amplifying circuit
the output circuit of an amplifying stage comprising an LC-network
A measuring circuit being coupled to the output of an amplifier
the output of an amplifier can be switched on or off by a switch to couple the output signal to a load
A parallel resonance being added in shunt in the output circuit, e.g. base, gate, of an amplifier stage
A series resonance being added in shunt in the output circuit, e.g. base, gate, of an amplifier stage
the output amplifying stage of an amplifier comprising more than three power stages
the output amplifying stage of an amplifier comprising three power stages
A switch being coupled in the output circuit of an amplifier to switch the output on/off
A switch coupled in the output circuit of an amplifier being controlled by a circuit
the input to the amplifier being made by capacitive coupling means
Multiple switches coupled in the output circuit of an amplifier are controlled by a circuit
Amplifier output adaptation especially for transmission line coupling purposes, e.g. impedance adaptation
the amplifier comprising circuitry for protection against overload
Two or more amplifiers or one amplifier with filters for different frequency bands are coupled in parallel at the input or output
Two or more amplifiers of different type are coupled in parallel at the input or output, e.g. a class D and a linear amplifier, a class B and a class A amplifier
A peak detection being used in a signal measuring circuit in a controlling circuit of an amplifier
Separate feedback of amplitude and phase signals being present
Protection of an amplifier being implemented by clamping means
Diode used as protection means in an amplifier, e.g. as a limiter or as a switch
the amplifier being protected to temperature influence
the load of the amplifier being a capacitive element, e.g. CRT
the amplifier being a radio frequency amplifier
Controlling being realised by adding a replica circuit or by using one among multiple identical circuits as a replica circuit
A scaled replica of a transistor being present in an amplifier
Ripple reduction circuitry being used in an amplifying circuit
the current being sensed
Power sensing
the temperature being sensed
the voltage being sensed
A current mirror being used as sensor
Paralleled transistors are used as sensors
the output of the amplifier being coupled out by a capacitor
A resistor being used as sensor
A shunting switch being paralleled to the sensor
the current in the load of an amplifying stage being sensed by a torus
A coil being added in the source circuit of a common source stage, e.g. as degeneration means
A coil being added in the source circuit of a transistor amplifier stage as degenerating element
A parallel resonance circuit being added in the source circuit of a FET amplifier
A resistor being added in the source circuit of a transistor amplifier stage as degenerating element
Class B amplifiers, Class C amplifiers

Amplifier comprising means for compensating memory effects

Using a control circuit to adjust amplitude and phase of a signal in a signal path

To increase the output power or efficiency

The main amplifier or error amplifier being a feedforward amplifier

Predistortion by overamplifying in a feedforward stage the distortion signal to have a combined main signal and “negative” distortion to form the predistorted signal for a further stage. so that after amplification in the further stage only the amplified main signal remains

Predistortion being done for compensating memory effects

Adaptive predistortion based on amplitude, envelope or power level feedback from the output of the main amplifier

Adaptive predistortion using phase feedback from the output of the main amplifier

Adaptive predistortion using lookup table, e.g. memory, RAM, ROM, LUT, to generate the predistortion

A generated signal, e.g. a pulse or an inverted synchronous signal, being added to avoid certain conditions, e.g. clipping
signal continuously measured, e.g. by a resistor, the supply current of a power amplifier being switchable controlled, e.g. by controlling different current sources or resistors

Power transistors are made by coupling a on/off switched A series resonance circuit being coupled at the output of a power amplifier

A parallel resonance circuit being coupled at the output of a power amplifier measured by voltage measuring at the output of a power amplifier

Output signals of a plurality of power amplifiers are parallel combined to a common output

Output signals are combined by switching a plurality of paralleled power amplifiers to a common output

Output signals of a plurality of power amplifiers are parallel combined to a common output

A filter circuit being added at the output of a power amplifier stage

A filter circuit being added at the output of a power amplifier

A output signal dependant signal being measured by current measuring at the input of a power amplifier

A output signal dependant signal being measured by current measuring at the input of a power amplifier

A output signal dependant signal being measured by current measuring at the input of a power amplifier

A parallel resonance circuit being coupled at the output of a power amplifier

A series resonance circuit being coupled at the output of a power amplifier

A series resonance circuit being coupled at the output of a power amplifier

Power transistors are made by coupling a plurality of single transistors in parallel

the supply current of a power amplifier being continuously controlled, e.g. by controlling current sources or resistors

the supply current of a power amplifier being continuously controlled, e.g. by an active potentiometer

the supply voltage of a power amplifier being continuously controlled, e.g. by an active potentiometer

the supply voltage of a power amplifier being switchable controlled

Indexing scheme relating to single-ended push-pull [SEPP]: Phase-splitters therefor

the SEPP amplifier stage comprising calibration possibility the push and pull stages of the SEPP amplifier are both current mirrors

the push and pull stages of the SEPP amplifier are both cascode current mirrors

the two SEPP amplifying transistors are Darlington composite transistors

An input signal dependent control signal controls the bias of an output stage in the SEPP

A series coupled active resistor and capacitor are coupled in a feedback circuit of a SEPP amplifier

A capacitor being coupled in a feedback circuit of a SEPP amplifier

A series coupled resistor and capacitor are coupled in a feedback circuit of a SEPP amplifier

A feedback circuit to stabilise the SEPP being used

A SEPP bias current being controlled by a control signal from a feedback circuit

A SEPP bias voltage being controlled by a control signal from a feedback circuit

A resistor being coupled as feedback circuit in the SEPP amplifier

A series coupled active resistor and capacitor are coupled in a feedback circuit of a SEPP amplifier

A capacitor being coupled in a feedback circuit of a SEPP amplifier

A filter circuit being added at the output of a power amplifier

A filter circuit being added at the output of a power amplifier stage

A filter circuit being added at the output of a power amplifier stage

A output signal dependant signal being measured by current measuring at the input of a power amplifier

A parallel resonance circuit being coupled at the output of a power amplifier

A series resonance circuit being coupled at the output of a power amplifier

A output signal of a power amplifier being on/off switched

An impedance adaptation circuit being added at the output of a power amplifier stage

Output signals of a plurality of power amplifiers are parallel combined to a common output

Output signals are combined by switching a plurality of paralleled power amplifiers to a common output

Output signals of a plurality of power amplifiers are parallel combined to a common output

Output signals of a plurality of power amplifiers are parallel combined to a common output

A filter circuit being added at the output of a power amplifier stage

A filter circuit being added at the output of a power amplifier stage

A output signal dependant signal being measured by current measuring at the input of a power amplifier

A output signal dependant signal being measured by current measuring at the input of a power amplifier

A parallel resonance circuit being coupled at the output of a power amplifier

A series resonance circuit being coupled at the output of a power amplifier

A output signal of a power amplifier being on/off switched

Power transistors are made by coupling a plurality of single transistors in parallel

the supply current of a power amplifier being continuously controlled, e.g. by controlling current sources or resistors

the supply current of a power amplifier being continuously measured, e.g. by a resistor, a current mirror, to produce a controlling signal

A differential amplifier being used in the bias circuit or in the control circuit of the SEPP-amplifier

A optical element being used in the bias circuit of the SEPP-amplifier

A SEPP amplifier with a reactive element in the bias circuit
Indexing scheme relating to differential amplifiers

- The SEPP has a power supply switchable by a controlling signal derived from the input signal
- The SEPP has a power supply switchable by a controlling signal derived from the output signal
- A resistor being added in the pull stage of the SEPP amplifier
- The pull transistor circuit comprising one or more capacitors
- The pull circuit of the SEPP amplifier being a cascode circuit
- Only the bias of the pull transistor of the SEPP being dynamically controlled by the input signal
- The pull side of the SEPP amplifier has an extra drive follower stage to control this pull side
- The pull side of the SEPP amplifier has an extra drive inverter stage to control this pull side
- An op amp being used as extra drive amp for the pull side of the SEPP
- The pull transistor being gated by a switching element
- The pull transistor has a measuring transistor for controlling purposes
- The pull transistor of the asymmetrically driven SEPP amplifier being a driven current mirror
- The pull transistor of the SEPP amplifier being a cascode current mirror
- A resistor being added in the push stage of the SEPP amplifier
- The push transistor circuit comprising one or more capacitors
- The push circuit of the SEPP amplifier being a cascode circuit
- Only the bias of the push transistor of the SEPP being dynamically controlled by the input signal
- The push side of the SEPP amplifier has an extra drive follower stage to control this push side
- The push side of the SEPP amplifier has an extra drive inverter stage to control this push side
- An op amp being used as extra drive amp for the push side of the SEPP
- The push transistor being gated by a switching element
- The push transistor has a measuring transistor for controlling purposes
- The push transistor of the asymmetrically driven SEPP amplifier being a driven current mirror
- The push transistor of the SEPP amplifier being a cascode current mirror
- A resistor being added in the push stage of the SEPP amplifier

- The cascode stage of the cascode differential amplifier being a coupled signal
- Two or more differential amplifiers cascade coupled
- The cascode stage of the cascode differential amplifier being controlled by a controlling signal, which controlling signal can also be the input signal
- The cascode stage of the cascode differential amplifier being a current mirror
One or both transistors of the cascode stage of a differential amplifier being composed of more than one transistor

the cascode stage of the differential amplifier comprising a reactive element

the common mode reference signal being taken or deducted from the one or more inputs of the differential amplifier

the common mode signal, e.g. voltage or current being added to the cascode stage of the cascode or folded cascode differential amplifier

the resulting deducted common mode signal being added to the folding circuit of the folded differential amplifier

the resulting deducted common mode signal being added at the one or more inputs of the differential amplifier

the resulting deducted common mode signal being added at the one or more outputs of the differential amplifier

... A comparator circuit compares the common mode signal to a reference before controlling the differential amplifier or related stages

... the resulting deducted common mode signal being added to or controls the differential amplifier, and being a current signal

... the common mode signal being taken or deducted from the one or more inputs of the differential amplifier

... the common mode signal being level shifted before using it for controlling or adding

... the common mode signal being taken or deducted from the one or more outputs of the differential amplifier

... the common mode signal circuit comprising one or more inductive or capacitive elements, e.g. filter circuitry

... the common mode signal being taken or deducted from the tail circuit of the differential amplifier

... the resulting deducted common mode signal being added to or controls the differential amplifier, and being a voltage signal

... Two complementary type differential amplifiers are paralleled, e.g. one of the p-type and one of the n-type

... Two current sources bias one set of two common base transistors cascaded with two other common base transistors, the common base transistors being driven complementary

... the dif amp being realized by coupling the emitters respectively sources of two common collector respectively drain transistors of a first type to the emitters respectively sources of two common base respectively gate transistors of a second complementary type

... the difference of two signals being made by, e.g. combining two or more current mirrors, e.g. differential current mirror

... Two current mirrors coupled in a subtracting configuration

... Control of the DC level being present

... A diode being used as clamping element at the input of the dif amp

... A diode being used as clamping element at the loading circuit of the dif amp

... A diode being used as clamping element at the output of the dif amp

... A diode being used as level shifter between stages or in a follower in relation with a dif amp

... Two dif amps of the same type are used one dif amp for each input signal

... the biasing of the differential amplifier being controlled from the input or the output signal

... the differential amplifier contains another differential amplifier in its feedback circuit

... Feedback coupled to the input of the differential amplifier

... At least one reactive element being added to at least one feedback circuit of a dif amp

... A floating gate element being part of a dif amp

... the folded cascode stage of the folded cascode differential amplifier being controlled by a controlling signal

... the folded cascode stage of the folded cascode dif amp being a current mirror

... One or both transistors of the folded cascode stage of a folded cascode dif amp are composed of more than one transistor

... the folded cascode stage of the folded cascode dif amp contains a reactive element

... A follower being added between the dif amp and other explicit stages in the amplifying circuit

... A source follower using multiple single follower stages cascaded in a composed follower being added to the dif amp

... the whole differential amplifier together with other coupled stages being fully differential realised

... One differential amplifier in IC-block form being shown

... Two or more differential amplifiers in IC-block form are combined, e.g. measuring amplifiers

... A cross coupled pair of transistors being added in the input circuit of a differential amplifier

... At least one diode being added at the input of a dif amp

... At least one follower being added at the input of a dif amp

... At least one op amp being added at the input of a dif amp

... At least one reactive element being added at the input of a dif amp

... At least one resistor being added at the input of a dif amp

... At least one resistor being added at the input of a dif amp

... Balancing means being added at the input of a dif amp to reduce the offset of the dif amp

... the bias at the input of the amplifying transistors being controlled

... At least one capacitor being added at the input of a dif amp

... One or more diodes coupled at the inputs of a dif amp as clamping elements
control of the substrate voltage, the voltage being reduced offset the differential amplifier being designed to have a cross coupling emitter of the amplifying transistors current source being coupled to the common circuit of the dif amp being of the long tail pair type, one or more load circuits of the dif amp A series resonance circuit being added in the one or more load circuits of the dif amp only one input of the dif amp being used for an input signal A dif amp being used as input stage to one or more other non-differential stages the input signal being switched to the one or more input terminals of the differential amplifier a transformer being added at the input of the dif amp the application of the differential amplifier being in an integrator circuit a cross coupling circuit, e.g. consisting of two cross coupled transistors, being added in the load circuit of the amplifying transistors of a differential amplifier the differential amplifier contains one or more extra resistors in the active load circuit compensation of unbalanced loading in dif amps, e.g. unbalancing by connecting unequal circuits on both load circuits of the dif amp the differential amplifier contains one or more cascode current mirrors in the load the differential amplifier has one or more cascode current sources in the load the differential amplifier contains clamping components in the load circuit the differential amplifier contains one or more current sources in the load one or more diodes not belonging to a current mirror as loads of a dif amp the differential amplifier contains current mirrors comprising diodes which act as a load for the differential amplifier at least one active load circuit of the two load circuits in a differential amplifier being realised with a combination of more than one transistor a differential amplifier with one or more parallel coupled LC-circuits as load a parallel resonance circuit being added in the one or more load circuits of the dif amp the differential amplifier contains one or more reactive elements, i.e. capacitive or inductive elements, in the load the differential amplifier contains only resistors in the load a series resonance circuit being added in the one or more load circuits of the dif amp one or two switches are coupled in the loading circuit of the dif amp the dif amp being of the long tail pair type, one current source being coupled to the common emitter of the amplifying transistors the amplifying transistors have multiple collectors with a cross coupling the differential amplifier being designed to have a reduced offset offset in a differential amplifier being reduced by control of the substrate voltage, the voltage being either fixed or variable a cross coupling circuit being added at the output terminals of the amplifying transistors of a differential amplifier diode clamping means are present at the output of a differential amplifier the output signal being taken from the two complementary outputs of the differential amplifier the differential amplifier output being directly controlled by a feedback or feedforward circuit coupled at the output of the dif amp one output of the differential amplifier being taken into consideration the output signal being switched taken from the one or more output terminals of the differential amplifier a transformer being added at the output or the load circuit of the dif amp two dif amps of the cascode type are paralleled at their input gates or bases two dif amps of the folded cascode type are paralleled at their input gates or bases two dif amps, one of them being of the cascade type and the other one of the folded cascade type, are paralleled at their input gates or bases two dif amps realised in MOS or JFET technology, one of them being of the p-channel type and the other one of the n-channel type, are coupled in parallel with their gates two dif amps realised in FET technology, the dif amps being either both of the NMOS type or both of the PMOS type, are coupled in parallel with their gates two dif amps realised in MOS or JFET technology, the dif amps being either both of the n-channel type or both of the p-channel type, are coupled in parallel with their gates two dif amps are paralleled at their inputs, the dif amps being of different types, e.g. one long tail type and one complementary or pi type the differential amplifier contains one or more explicit bias circuits, e.g. to bias the tail current sources, to bias the load transistors the dif amp being biased in the subthreshold region the dif amp being designed for improving the slew rate the dif amp has a cross coupling circuit in the source circuit of the amplifying transistors diodes are added in the source circuit of the amplifying FETs of the dif amp a parallel resonance circuit being added in the one or more source circuits of the amplifying FETs of the dif amp one or more reactive elements are added in the source circuit of the amplifying FETs of the dif amp resistors are added in the source circuit of the amplifying FETs of the dif amp a series resonance circuit being added in the one or more source circuits of the amplifying FETs of the dif amp the two amplifying FETs, amplifying two complementary input signals, are not source coupled, i.e. no tail being present
the stage cascaded to the dif amp being an asymmetrical follower stage

A common gate stage being coupled at the one or more outputs of the dif amp

the output current being reduced by a transistor which being controlled by the input signal to sink current

the output current being increased by a transistor which being controlled by the input signal to source current

Level shifting stages are added to the differential amplifier at a position other than the one or more inputs of the dif amp

An op amp as stage being coupled to the output of a dif amp

Two SEPP stages are added to the differential amplifier, the outputs of the two SEPP stages being the two outputs of the whole amplifier

One SEPP output stage being added to the differential amplifier

the differential amplifier being coupled to a symmetrical follower output stage

Sensing the temperature dependence by a temperature dependant sensor, e.g. a resistor, a diode

the temperature dependence of a differential amplifier being controlled

Differential amplifier with circuit arrangements to enhance the transconductance

the active amplifying circuit [AAC] comprising balancing means

the AAC comprising biasing means controlled by the signal

the AAC comprising biasing means to stabilise itself

the AAC comprising one or more discrete capacitive elements, e.g. a transistor coupled as capacitor

the AAC comprising one or more combinations of discrete capacitor and resistor elements, e.g. active elements using a transistor as a capacitor or as a resistor

there are multiple cascaded folded or not folded common gate stages of a cascode dif amp

the common gate stage of a cascode dif amp being controlled

the common gate stage of a BIFET cascode dif amp being implemented fully by FETs

the common gate stage implemented as dif amp eventually for cascode dif amp

the common gate stage of a cascode dif amp being implemented as one mirror circuit

the common gate stage of a cascode dif amp being implemented by multiple transistors

there being only one common gate stage of a cascode dif amp

the AAC comprising clamping means, e.g. diodes

the AAC comprising one or more discrete inductive elements or coils

the AAC comprising a cross coupling circuit, e.g. two extra transistors cross coupled

the common source stage of a BIFET cascode dif amp being implemented fully by FETs

One or more current sources are added to the AAC

the AAC comprising a Darlington transistor circuit

the AAC comprising one or more extra diodes, e.g. as level shifter, as diode coupled transistors

the AAC comprising one diode coupled AAC-transistor in a follower combination with the other AAC circuit part

the AAC comprising one or more diodes coupled as a shunt between the AAC-transistors in the AAC

the AAC comprising one or more capacitors as feedback circuit elements

the AAC comprising one or more dif amps as feedback circuit elements

the AAC comprising one or more resistors as feedback circuit elements

the AAC comprising one or more series circuits of a resistor and a capacitor as feedback circuit elements

the AAC comprising controlled floating gates

the AAC comprising control means on a back gate of the AAC

At least one of the AAC sub-circuits being a current mirror

the AAC comprising one or more FETs with multiple drains

the AAC comprising one or more FETs with multiple gates

the AAC comprising one or more FETs with multiple sources

the AAC comprising a combination of a plurality of transistors, e.g. Darlington coupled transistors

the AAC comprising offset means

the AAC comprising one or more op-amps, e.g. IC-blocks

the AAC comprising multiple transistors parallel coupled at their sources and drains only, e.g. in a cascode dif amp, only those forming the composite common source transistor

the AAC comprising multiple transistors parallel coupled at their drains only, e.g. in a cascode dif amp, only those forming the composite common source transistor

the AAC comprising multiple transistors parallel coupled at their gates and drains only, e.g. in a cascode dif amp, only those forming the composite common source transistor

the AAC comprising multiple transistors parallel coupled at their gates only, e.g. in a cascode dif amp, only those forming the composite common source transistor

the AAC comprising multiple transistors parallel coupled at their sources only, e.g. in a cascode dif amp, only those forming the composite common source transistor
the AAC comprising parallel coupled multiple transistors at their source and gate and drain or at their base and emitter and collector, e.g. in a cascode dif amp, only those forming the composite common source transistor or the composite common emitter transistor respectively

the AAC comprising one or more potentiometers

the AAC comprising one or more discrete resistors

the AAC comprising one or more discrete resistors as shunts between collectors or drains

the AAC comprising saturation or cutoff avoiding means, e.g. as a feedback circuit

the AAC comprising multiple transistors coupled in shunt

the AAC comprising common gate stages in the source circuit of the AAC before the common source coupling

the AAC comprising common gate stages in the source circuit of the AAC before the common source coupling in which the common gate stage being controlled

the AAC comprising one or more coils in the source circuit

the AAC comprising diodes in the source circuit of the AAC before the common source coupling

the AAC comprising potentiometers in the source circuit of the AAC before the common source coupling

the AAC comprising resistors in the source circuit of the AAC before the common source coupling

the AAC of the dif amp comprising FETs whose sources are not coupled, i.e. the AAC being a pseudo-differential amplifier

the AAC comprising one or more switches

the AAC comprising a voltage generating circuit as bias circuit for the AAC

the AAC comprising a voltage generating circuit for the AAC

the AAC comprising one or more op-amps

the AAC comprising offset means

the supply voltage, no other components being used at the place of the resistor

the CSC being a pi circuit and the resistor being used at the place of the resistor

the CSC being a pi circuit and a capacitor being present

the CSC comprising one or more extra resistors

the CSC comprising one or more potentiometers

the CSC comprising one or more transistors being implemented by one or more controlled transistors

the CSC being a pi circuit and the resistor being implemented by one or more transistors

the CSC comprising only a direct connection to the supply voltage

the CSC comprising only resistors

the CSC comprising one or more capacitors

the CSC comprising temperature coefficient dependent control

the CSC comprising bias stabilisation means, e.g. DC-level stability, positive or negative temperature coefficient dependent control

the CSC comprising biasing means controlled by the input signal

the CSC comprising balancing means

the CSC comprising a cascode mirror circuit

the CSC comprising a mirror circuit

the CSC comprising one or more switched capacitors

the CSC comprising an addition circuit made by mirrors

there are two or more CMCLs

the CMCL comprising a comparator circuit with extra buffering means before comparison of the common mode signal, e.g. by a follower

the CMCL comprising a comparator circuit using a four inputs dif amp

the CMCL output control signal being a current signal

the CMCL output control signal being a current signal and being buffered before used to control

the CMCL output control signal being a voltage signal

the CMCL output control signal being a voltage signal and being buffered before used to control

the CMCL uses digital signals

the CMCL comprising an integrating circuit

the CMCL comprising multiple loops for the same stage or for different stages in the amplifier

the CMCL comprising a sample and hold circuit

there are two or more CMCLs

the CMCL comprising a cascode circuit

the CMCL comprising capacitors

the CMCL comprising one or more discrete capacitors

the CMCL comprising a sample and hold circuit for different stages in the amplifier

the CMCL comprising a cascode mirror circuit

the CMCL comprising a comparator circuit using a four inputs dif amp

the CMCL comprising one or more discrete capacitors

the CMCL comprising a sample and hold circuit

the CMCL comprising biasing means controlled by the input signal

the CMCL comprising balancing means

the CMCL comprising one or more potentiometers

the CMCL comprising one or more discrete capacitors

the CMCL comprising capacitors containing, not in parallel with the resistors, an addition circuit

the CMCL comprising a common source node of a long tail FET pair as an addition circuit

the CMCL comprising a short circuited differential output of a dif amp as an addition circuit

the CMCL comprising a diode addition circuit, e.g. using diode connected transistors

the CMCL comprising a folding circuit as addition circuit

the CMCL comprising a current mirror addition circuit

the CMCL comprising no addition of the dif signals to produce a common mode signal

the CMCL comprising a resistor addition circuit

the CMCL comprising a switched capacitor addition circuit

the CMCL comprising one or more capacitors not as integrating capacitor, e.g. for stability purposes

the CMCL comprising a comparator circuit
H03F

2203/45501 . . . the CSC comprising a L-C parallel resonance circuit
2203/45502 . . . the CSC comprising a L-C series resonance circuit
2203/45504 . . . the CSC comprising more than one switch
2203/45506 . . . the CSC comprising only one switch
2203/45508 . . . the CSC comprising a voltage generating circuit as bias circuit for the CSC
2203/45511 . . . the feedback circuit [FBC] comprising one or more transistor stages, e.g. cascaded stages of the dif amp, and being coupled between the loading circuit [LC] and the input circuit [IC]
2203/45512 . . . the FBC comprising one or more capacitors, not being switched capacitors, and being coupled between the LC and the IC
2203/45514 . . . the FBC comprising one or more switched capacitors, and being coupled between the LC and the IC
2203/45516 . . . the FBC comprising a coil and being coupled between the LC and the IC
2203/45518 . . . the FBC comprising one or more diodes and being coupled between the LC and the IC
2203/45521 . . . the FBC comprising op amp stages, e.g. cascaded stages of the dif amp and being coupled between the LC and the IC
2203/45522 . . . the FBC comprising one or more potentiometers
2203/45524 . . . the FBC comprising one or more active resistors and being coupled between the LC and the IC
2203/45526 . . . the FBC comprising a resistor-capacitor combination and being coupled between the LC and the IC
2203/45528 . . . the FBC comprising one or more passive resistors and being coupled between the LC and the IC
2203/45531 . . . the FBC comprising a parallel resonance circuit and being coupled between the LC and the IC
2203/45532 . . . the FBC comprising a series resonance circuit and being coupled between the LC and the IC
2203/45534 . . . the FBC comprising multiple switches and being coupled between the LC and the IC
2203/45536 . . . the FBC comprising a switch and being coupled between the LC and the IC
2203/45538 . . . the IC comprising balancing means, e.g. trimming means
2203/45541 . . . the IC comprising dynamic biasing means, i.e. controlled by the input signal
2203/45542 . . . the IC comprising bias stabilisation means, e.g. DC level stabilisation, and temperature coefficient dependent control, e.g. by DC level shifting
2203/45544 . . . the IC comprising one or more capacitors, e.g. coupling capacitors
2203/45546 . . . the IC comprising one or more capacitors feedback coupled to the IC
2203/45548 . . . the IC comprising one or more capacitors as shunts to earth or as short circuit between inputs
2203/45551 . . . the IC comprising one or more switched capacitors
2203/45552 . . . the IC comprising clamping means, e.g. diodes
2203/45554 . . . the IC comprising one or more coils
2203/45556 . . . the IC comprising a common gate stage as input stage to the dif amp
2203/45558 . . . the IC being coupled at the sources of the source coupled pair

2203/45561 . . . the IC being controlled, e.g. by a signal derived from a non specified place in the dif amp circuit
2203/45562 . . . the IC comprising a cross coupling circuit, e.g. comprising two cross-coupled transistors
2203/45564 . . . the IC comprising one or more extra current sources
2203/45566 . . . the IC comprising one or more dif stages in cascade with the dif amp
2203/45568 . . . the IC comprising one or more diodes as shunt to the input leads
2203/45571 . . . the IC comprising two diodes, e.g. Gilbert circuit
2203/45572 . . . the IC comprising one or more Zener diodes to the input leads
2203/45574 . . . the IC comprising four or more input leads connected to four or more AAC-transistors
2203/45576 . . . the IC comprising input impedance adapting or controlling means
2203/45578 . . . the IC comprising one or more diodes as level shifters
2203/45581 . . . the IC comprising one or more resistors as level shifters
2203/45582 . . . the IC comprising one or more voltage sources as level shifters
2203/45584 . . . the IC comprising extra differentially coupled transistors for controlling purposes only
2203/45586 . . . the IC comprising offset generating means
2203/45588 . . . the IC comprising offset compensating means
2203/45591 . . . the IC comprising one or more potentiometers
2203/45592 . . . the IC comprising one or more buffer stages other than emitter or source followers between the input signal leads and input leads of the dif amp, e.g. inverter stages
2203/45594 . . . the IC comprising one or more resistors, which are not biasing resistor
2203/45596 . . . the IC comprising one or more biasing resistors
2203/45598 . . . the IC comprising an input shunting circuit comprising a resistor and a capacitor in series
2203/45601 . . . the IC comprising one or more passive resistors by feedback
2203/45602 . . . the IC comprising one or more active resistors by feedback
2203/45604 . . . the IC comprising a input shunting resistor
2203/45606 . . . the IC comprising one or more parallel resonance circuits
2203/45608 . . . the IC comprising one or more series resonance circuits
2203/45611 . . . the IC comprising one input signal connection lead for one phase of the signal
2203/45612 . . . the IC comprising one or more input source followers as input stages in the IC
2203/45614 . . . the IC comprising two cross coupled switches
2203/45616 . . . the IC comprising more than one switch, which are not cross coupled
2203/45618 . . . the IC comprising only one switch
2203/45621 . . . the IC comprising a transformer for phase splitting the input signal
2203/45622 . . . the IC comprising a voltage generating circuit
2203/45624 . . . the LC comprising balancing means, e.g. trimming means
2203/45626 . . . the LC comprising biasing means controlled by the input signal
the LC comprising bias stabilisation means, e.g. DC level stabilisation means, and temperature coefficient dependent control, e.g. DC level shifting means

the LC comprising one or more capacitors, e.g. coupling capacitors

the LC comprising one or more capacitors coupled to the LC by feedback

the LC comprising one or more switched capacitors

the LC comprising clamping means, e.g. diodes

the LC comprising one or more coils

the LC being controlled, e.g. by a signal derived from a non specified place in the dif amp circuit

the LC, and possibly also cascaded stages following it, being (are) controlled by the common mode signal derived to control a dif amp

the LC comprising a cross coupling circuit, e.g. comprising two cross-coupled transistors

the LC comprising an extra current source

the LC comprising two current sources, which are not cascode current sources

the LC comprising two cascode current sources

the LC comprising one or more further dif amp stages, either identical to the dif amp or not, in cascade

the LC comprising one or more extra diodes not belonging to mirrors

the LC comprising one diode of a current mirror, i.e. forming an asymmetrical load

the LC comprising two diodes of current mirrors

the LC comprising one or more controlled floating gates

the LC comprising inductive coupled loading elements

the LC comprising one or more cascoded inverter stages as output stage at one output of the dif amp circuit

the LC comprising two anti-phase controlled inverter circuits as output stages, e.g. fully differential

the LC comprising a level shifter circuit, which does not comprise diodes

the LC comprising one or more diodes as level shifter

the LC comprising one or more resistors as level shifter

the LC comprising one cascode current mirror

the LC comprising one cascode current mirror

the LC comprising offset generating means

the LC comprising offset compensating means

the LC comprising one or more op-amps

the LC comprising one or more buffers or driving stages not being of the emitter respectively source follower type, between the output of the dif amp and the output stage

the LC comprising one or more potentiometers, which are not shunting potentiometers

the LC comprising one or more shunting potentiometers

the LC comprising one or more transistors as active loading resistors

the LC comprising one or more resistors in series with a capacitor coupled to the LC by feedback

the LC comprising more than one shunting resistor

the LC comprising more than two resistors

the LC comprising one or more resistors coupled to the LC by feedback (active or passive)

the LC comprising one resistor

the LC comprising two resistors

the LC comprising one or more parallel resonance circuits

the LC comprising one or more series resonance circuits

the LC comprising one SEPP circuit as output stage

the LC comprising two anti-phase controlled SEPP circuits as output stages, e.g. fully differential

the LC comprising a capacitor as shunt

the LC comprising a coil as shunt

the LC comprising a RC-series circuit as shunt, e.g. for stabilisation

the LC comprising a resistor as shunt

the LC comprising only an output circuit for one phase of the signal

the LC comprising one or more source followers, as post buffer or driver stages, in cascade in the LC

the LC comprising two cross coupled switches

the LC comprising more than one switch, which are not cross coupled

the LC comprising one switch

the LC comprising a transformer

the LC comprising a voltage generating circuit

Indexing scheme relating to amplifiers in which input being applied to, or output being derived from, an impedance common to input and output circuits of the amplifying element, e.g. cathode follower

the sources of two source followers are differentially coupled

the input signal being capacitively coupled to the gate of the source follower

the output signal being capacitively coupled to the source of the source follower

the source follower has a controlled source circuit, the controlling signal being derived from the drain circuit of the follower

the source follower has a controlled source circuit, the controlling signal being derived from the gate circuit of the follower

the source follower has a controlled source circuit, the controlling signal being derived from the source circuit of the follower

the source follower has a controlled source circuit, the source circuit being controlled via a capacitor, i.e. AC-controlled

the source follower has a current mirror output circuit in its source circuit

the source circuit of the follower being a current source

Two source followers are controlled at their inputs by a differential signal

the source follower has a resistor in its source circuit
the source circuit of the follower has one or more capacitors between source and supply
the source circuit of the follower has one or more coils between source and supply
the source follower has a level shifter between source and output, e.g. a diode-connected transistor

Indexing scheme relating to gated amplifiers, i.e. amplifiers which are rendered operative or inoperative by means of a control signal

the gated amplifier being switched on or off by a switch in the bias circuit of the amplifier controlling a bias current in the amplifier
the gated amplifier being switched on or off by a switch in the bias circuit of the amplifier controlling a bias voltage in the amplifier
the gated amplifier being switched from a first band to a second band
the gated amplifier being switched on or off by switching off or on a feedback control loop of the amplifier
the gated amplifier being switched on or off by a switch at the input of the amplifier
the gated amplifier being switched on or off by clamping by a switch at the input of the amplifier
the gated amplifier being switched on or off by a switch at the output of the amplifier
the gated amplifier being switched on or off by clamping by a switch at the output of the amplifier
the gated amplifier being switched on or off by a switch in the supply circuit of the amplifier
the gated amplifier being switched on or off by putting into cascade or not, by choosing between amplifiers by one or more switch(es)
the gated amplifier, switched on or off not, by choosing between amplifiers and shunting lines by one or more switch(es)

the gated amplifier being switched on or off by putting into parallel or not, by choosing between amplifiers by one or more switch(es)
the gated amplifier being switched on or off by putting into parallel or not, by choosing between amplifiers by a switch(es)