



(51) International Patent Classification:
H03K 17/687 (2006.01)

(21) International Application Number:
PCT/US2024/048270

(22) International Filing Date:
25 September 2024 (25.09.2024)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
18/477,058 28 September 2023 (28.09.2023) US

(71) Applicant: **BAE SYSTEMS INFORMATION AND ELECTRONIC SYSTEMS INTEGRATION INC.**
[US/US]; P.O. Box 868, NHQ1-719, Nashua, New Hampshire 03061-0868 (US).

(72) Inventors: **MADISON, Gary M.**; PO Box 868, NHQ1-719, Nashua, New Hampshire 03061-0868 (US).
GROUT, Kevin; PO Box 868, NHQ1-719, Nashua, New Hampshire 03061-0868 (US).

(74) Agent: **ASMUS, Scott J.**; PO Box 868, NHQ1-719, Nashua, New Hampshire 03061-0868 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE,

(54) Title: HIGH DYNAMIC RANGE TRACK AND HOLD AMPLIFIER OUTPUT STAGE USING LOW VOLTAGE DEVICES

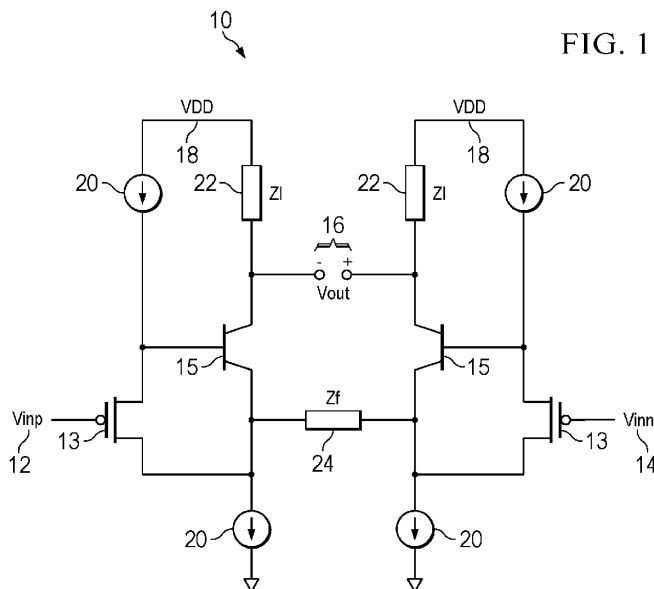


FIG. 1

(57) Abstract: A sample and hold amplifier output buffer with the low leakage of metal oxide semiconductor field effect transistors (MOSFET) combined with the linearity and dynamic range of silicon-germanium (SiGe) bipolar junction transistors (BJT). In one aspect, the present disclosure provides a sample and hold amplifier output buffer placing a MOSFET input device between the base and emitter of a high linearity SiGe BJT.

[Continued on next page]

SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:

04 December 2025 (04.12.2025)