

Ergänzung zum Beitrag in FA 8/14, S. 850 ff. „HF-Simulation mit QucsStudio (2)“

Hier kommt das vollständige Modell des OPV OPA404, das in der gedruckten Ausgabe keinen Platz mehr fand.

Kasten 3: SPICE-Modell des Operationsverstärkers OPA404, komplett

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* OPA404
*****
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*****
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** and performance is with the customer.
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* This model is subject to change without notice. Texas Instruments
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*
** Released by: Analog eLab Design Center, Texas Instruments Inc.
* Part: OPA404
* Date: 24JUN2011
* Model Type: ALL-IN-ONE
* Simulator: PSPICE
* Simulator Version: 16.0.0.p001
* EVM Order Number: N/A
* EVM Users Guide: N/A
* Datasheet: SBOS149
*
* Model Version: 1.0
*
*****
*
* Updates:
*
* Version 1.0 :
* Release to Web
*
*****
*
* CONNECTIONS: NON-INVERTING INPUT
*      | INVERTING INPUT
*      || POSITIVE POWER SUPPLY
*      ||| NEGATIVE POWER SUPPLY
*      |||| OUTPUT
*      ||||
.SUBCKT OPA404 1 2 3 4 5
*
C1 11 12 6.850E-12
C2 6 7 13.70E-12
DC 5 53 DX
DE 54 5 DX
DLP 90 91 DX
DLN 92 90 DX
DP 4 3 DX
EGND 99 0 POLY(2) (3,0) (4,0) 0 .5 .5
FB 7 99 POLY(5) VB VC VE VLP VLN 0 2.213E6 -2E6 2E6 2E6 -2E6
GA 6 0 11 12 602.6E-6
GCM 0 6 10 99 6.026E-9
ISS 3 10 DC 479.5E-6
HLIM 90 0 VLIM 1K
J1 11 2 10 JX
J2 12 64 10 JX
G11 2 4 POLY(4) (10,2) (11,2) (4,2) (66,0) 0 1E-12 1E-12 1E-12 600E-9
G21 1 4 POLY(4) (10,1) (12,1) (4,1) (66,0) 0 1E-12 1E-12 1E-12 600E-9
R2 6 9 100.0E3
RD1 4 11 1.660E3
RD2 4 12 1.660E3
RO1 8 5 25
RO2 7 99 75
* RP 3 4 13.33E3
RSS 10 99 417.1E3
VB 9 0 DC 0
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```
VC 3 53 DC 1.800
VE 54 4 DC 1.200
VLIM 7 8 DC 0
VLP 91 0 DC 18
VLN 0 92 DC 18

*****
* OPA404 "E" - ENHANCEMENTS
*****

* OUTPUT SUPPLY MIRROR
FQ3 0 20 POLY(1) VLIM 0 1
DQ1 20 21 DX
DQ2 22 20 DX
VQ1 21 0 0
VQ2 22 0 0
FQ1 3 0 POLY(1) VQ1 1.47E-3 1
FQ2 0 4 POLY(1) VQ2 1.47E-3 -1

* QUIESCIENT CURRENT
RQ 3 4 1.0E5

* DIFF INPUT CAPACITANCE
CDIF 1 2 1.0E-12

* COMMON MODE INPUT CAPACITANCE
C1CM 1 99 1.5E-12
C2CM 2 99 1.5E-12

* INPUT VOLTAGE NOISE
VN1 61 0 0.6
VN2 0 62 0.6
DN1 61 63 DY
DN2 63 62 DY
EN 64 1 63 0 1

* INPUT CURRENT NOISE
RN1 0 65 60.3865
RN2 65 66 60.3865
RN3 66 0 120.773
RN4 0 67 60.3865
RN5 67 68 60.3865
RN6 68 0 120.773
*****
.MODEL DY D(IS=1.8E-16 AF=1 KF=34.45E-18)
.MODEL DX D(IS=800.0E-18)
.MODEL JX PJF(IS=500.0E-15 BETA=3.785E-4 VTO=-1)
.ENDS
*End of model OPA404
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