

OP-97 Macromodel

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* Linear Technology OP97 op amp model
* Written: 12-06-89 Type: Bipolar npn input, internal comp.
* Typical specs:
* Vos=3.0e-05, Ib=3.0E-11, Ios=2.0E-11, GBP=6.0E+05Hz, Phase mar.= 70 deg,
* SR(+)=2.0E-01V/us, SR(-)=1.9E-01V/us, Av= 126 dB, CMMR= 132 dB,
* Vsat(+)=1.00V, Vsat(-)=1.00V, Isc=+/-12.5mA, Iq= 380uA
* (input differential mode clamp active)
*
* Connections: + - V+V-O
.subckt OP97 3 2 7 4 6
* input
rc1 7 80 8.842E+03
rc2 7 90 8.842E+03
q1 80 2 10 qm1
q2 90 3 11 qm2
ddm1 2 3 dm2
ddm2 3 2 dm2
c1 80 90 5.460E-12
re1 10 12 2.246E+02
re2 11 12 2.246E+02
iee 12 4 6.000E-06
re 12 0 3.333E+07
ce 12 0 1.579E-12
* intermediate
gcm 0 8 12 0 2.841E-11
ga 8 0 80 90 1.131E-04
r2 8 0 1.000E+05
c2 1 8 3.000E-11
gb 1 0 8 0 1.960E+02
* output
ro1 1 6 1.000E+02
ro2 1 0 9.000E+02
rc 17 0 1.063E-04
gc 0 17 6 0 9.408E+03
d1 1 17 dm1
d2 17 1 dm1
d3 6 13 dm2
d4 14 6 dm2
vc 7 13 1.785E+00
ve 14 4 1.785E+00
ip 7 4 3.740E-04
dsub 4 7 dm2
* models
.model qm1 npn (is=8.000E-16 bf=7.500E+04)
.model qm2 npn (is=8.008e-16 bf=1.500E+05)
.model dm1 d (is=1.179E-19)
.model dm2 d (is=8.000E-16)
.ends OP97
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* - - - - - * fini OP97 * - - - - - *
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