

## LM118 Macromodel

```

*
* Linear Technology LM118 op amp model
* Written: 11-21-1989 Type: Bipolar npn input, internal comp.
* Typical specs:
*   Ref. LM118 data sheet, LTC 1990 databook p2-313
* Comments:
*   Uses extended phase compensation; input differential mode clamp.
*
* Connections: + - V+V-0
.subckt LM118 3 2 7 4 6
* input
rc1 7 80 7.074E+02
rc2 7 90 7.074E+02
q1 80 2 10 qm1
q2 90 3 11 qm1
*
c1 80 91 300e-12
rxcl 91 90 1e3
cxcl 91 90 15e-12
c2 1 8 5.000E-12
*
rb1 2 102 1.0000E+00
rb2 3 103 1.0000E+00
ddm1 102 104 dm2
vz1 104 103 5.5
ddm2 103 105 dm2
vz2 105 102 5.5
re1 10 12 6.209E+02
re2 11 12 6.209E+02
iee 12 4 6.000E-04
re 12 0 3.332E+05
ce 12 0 2.632E-13
*
gcm 0 8 12 0 1.414E-08
ga 8 0 80 90 1.414E-03
r2 8 0 1.000E+05
gb 1 0 8 0 5.318E+01
ro2 1 0 7.400E+01
*
rs 1 6 1
ec1 18 0 1 6 3.172e+01
gc1 0 8 20 0 1
rc1 20 0 1e3
d1 18 20 dm1
d2 20 18 dm1

```

```

*
d3a 131 70 dm3
d3b 13 131 dm3
gp1 0 8 70 7 1
vc 13 6 3.6473
rpla 7 70 1e4
rplb 7 131 1e5
d4a 60 141 dm3
d4b 141 14 dm3
gn1 0 8 60 4 1
ve 6 14 3.6473
rnla 60 4 1e4
rn1b 141 4 1e5
*
ip 7 4 4.400E-03
dsub 4 7 dm2
* models
.model qm1 npn (is=8.0000E-16
bf=2.4390E+03)
.model qm2 npn (is=8.6435E-16
bf=2.5641E+03)
*
.model dm1 d (is=1.000e-19)
.model dm2 d (is=8.000E-16)
.model dm3 d (is=1.000e-20)
.ends LM118
*
* - - - - - * fini LM118 * - - - - - *

```