

Caleb Alexander

VI 1 0 DC 0  
VDD 6 0 DC 15  
VSS 7 0 DC -15  
R1 2 1 2k

D1 3 2 SIMPLE  
D2 2 4 SIMPLE  
D3 3 5 SIMPLE  
D4 5 4 SIMPLE

R3 3 6 5.1K  
R4 4 7 5.1K

R2 5 8 3K  
X1 0 5 6 7 8 TL071

\* TL071 OPERATIONAL AMPLIFIER "MACROMODEL" SUBCIRCUIT  
\* CREATED USING PARTS RELEASE 4.01 ON 06/16/89 AT 13:08  
\* (REV N/A) SUPPLY VOLTAGE: +/-15V  
\* CONNECTIONS: NON-INVERTING INPUT  
\* | INVERTING INPUT  
\* | | POSITIVE POWER SUPPLY  
\* | | | NEGATIVE POWER SUPPLY  
\* | | | | OUTPUT  
\* | | | | |  
.SUBCKT TL071 1 2 3 4 5  
\*

C1 11 12 3.498E-12  
C2 6 7 15.00E-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 4.715E6 -5E6 5E6 5E6 -5E6  
GA 6 0 11 12 282.8E-6  
GCM 0 6 10 99 8.942E-9  
ISS 3 10 DC 195.0E-6  
HLIM 90 0 VLIM 1K  
J1 11 2 10 JX  
J2 12 1 10 JX  
R2 6 9 100.0E3  
RD1 4 11 3.536E3  
RD2 4 12 3.536E3  
RO1 8 5 150  
RO2 7 99 150  
RP 3 4 2.143E3  
RSS 10 99 1.026E6  
VB 9 0 DC 0  
VC 3 53 DC 2.200  
VE 54 4 DC 2.200

```
VLIM 7 8 DC 0
VLP 91 0 DC 25
VLN 0 92 DC 25
.MODEL DX D(IS=800.0E-18)
.MODEL JX PJF(IS=15.00E-12 BETA=270.1E-6 VTO=-1)
.ENDS TL071
.DC VI -5 5 0.01
.MODEL SIMPLE D(IS=12.61F N=1.8 BV=100V)
.PROBE
.END
```