

Objectives:
Shunt resistor 4 m Ohms
Current unidirectional 8 A
Vout 0 at 0 A, 5V at 8A
VK between 20 and 40 V

Results:
See <https://github.com/farmerkeith/circuits/tree/master/currentShunt>
and file `currentSensing.ods` for circuit details and results

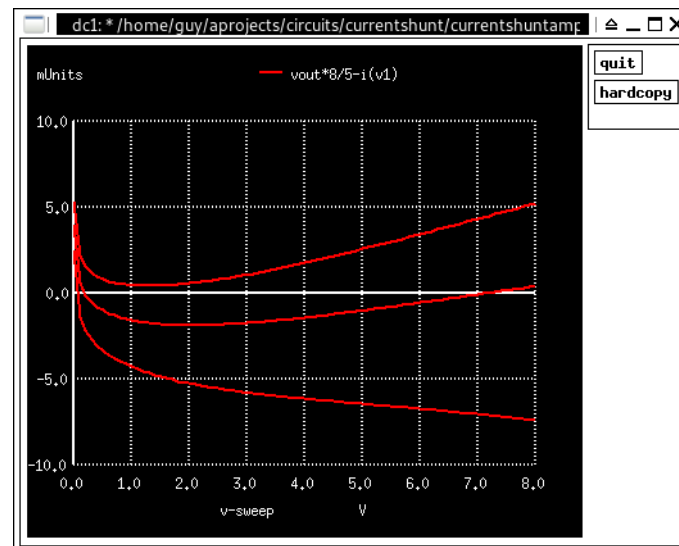
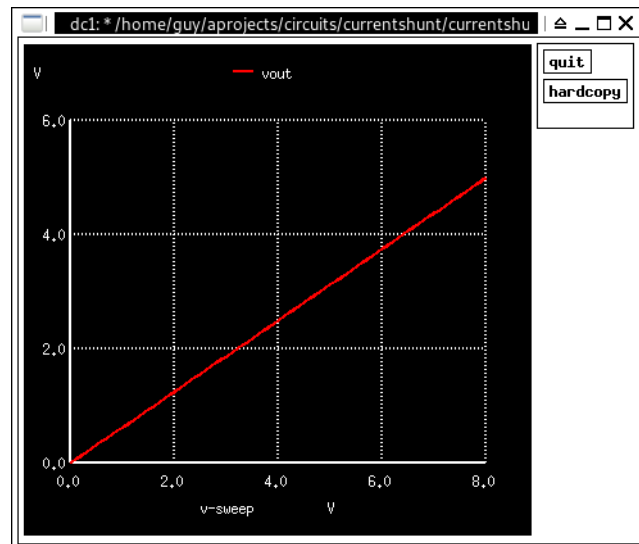
```

+PSPICE
*.include ../ComponentModels/1n4148.spi
*.include ../ComponentModels/2n3906.spi
*.include ../ComponentModels/ad822a.cir
*.include ../ComponentModels/1n4733.spi

.DC I1 0 8 0.1 V1 20 40 10
*.DC I1 -0.1 0.8 0.01
// DC analysis for 20, 30 and 40 Volts
// .DC I1 -0.5 8.5 0.1
// DC analysis from -0.5 to 8.5 Amps in steps of 0.1 Amp

*.TRAN 1us 10ms
// transient analysis for 10 ms in steps of 1 us (10,000 steps)
.control
run
*plot Va Ve1 Vk
*plot (VA-VK)*25+2.693 Vout
*plot (VA-VK)*25+2.693-Vout
*plot VA VK Vbase
*plot VK-Vref
*plot Ve1-Vc1 VA-Ve1 VA-Vc1 VK-Vc1
plot vout
plot vout-i(v1)*5/8 // voltage error
plot vout*8/5-i(v1) // current error
*plot i1

```



Shunt on high side

farmerkeith

Sheet:

File: currentShuntAmpOpAmpUni.sch

Title: currentShuntAmpOpAmpUnidirectional

Size: A4	Date: 2018-05-09
----------	------------------

Size: A4	Date:
KiCad E.D.A.	kicad 4.0.7

Rev:

Id: 1/1