LTspice Model
Monoral Class-D Audio Power Amp.
Texas Instruments Inc.
TPA3111D1PWPR

Model Information

Model   An original macro model
Call Name   MDC_TPA3111D1PWPR_LT
Pin Assign   1:_SD 2:_FAULT 3:GND 4:GND 5:GAIN0 6:GAIN1 7:AVCC 8:AGND 9:GVDD 10:PLIMIT 11:INN 12:INP 13:NC 14:PBTL
15:PVCC 16:PVCC 17:BSP 18:OUTP 19:PGND 20:OUTP 21:BSP 22:BSN 23:OUTN 24:PGND 25:OUTN 26:BSN 27:PVCC 28:PVCC

File List   Model Library   MDC_TPA3111D1PWPR_LT.lib
                   Model Report   MDC_TPA3111D1PWPR_LT.pdf (this file)
Verified Simulator Version   LTspice version XVII
Note

References

The information which was used for modeling is as follow:

    [Data Sheet]
       ●Date/Version   JAJS397F –AUGUST 2009–REVISED JULY 2016
       ●Product name   TPA3111D1
       ●Company name   Texas Instruments Inc.

    [Characteristics listed]
       ●Characteristics   Transient
                    Gain Control
                    THD-Freq
                    limit on the output peak-to-peak voltage

Simulation Condition

This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.
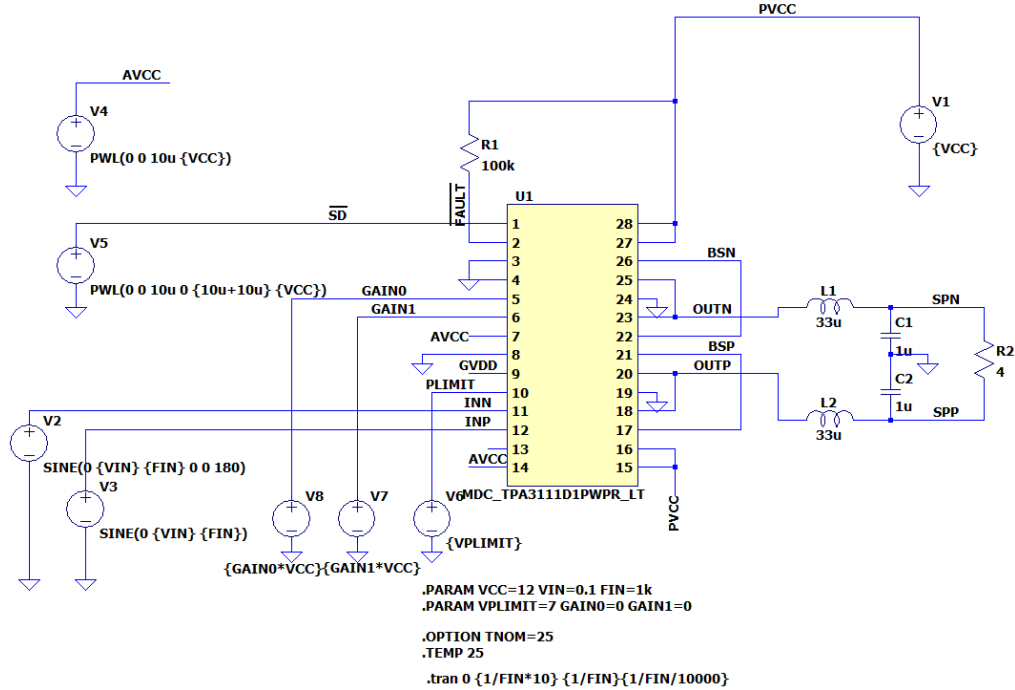
Item	Condition	Unit
Temperature	25	deg C

○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table

	RANK=1	
Functions	RANK	Implemented
Transient	1	○
Gain Control	1	○
Total Harmonic Distortion	1	○
limit on the output peak-to-peak voltage	1	○

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Transient Testbench

Referred to Data Sheet


```
.PARAM VCC=12 VIN=0.1 FIN=1k
.PARAM VPLIMIT=7 GAIN0=0 GAIN1=0

.OPTION TNOM=25
.TEMP 25

.tran 0 {1/FIN*10} {1/FIN}{1/FIN/10000}
```
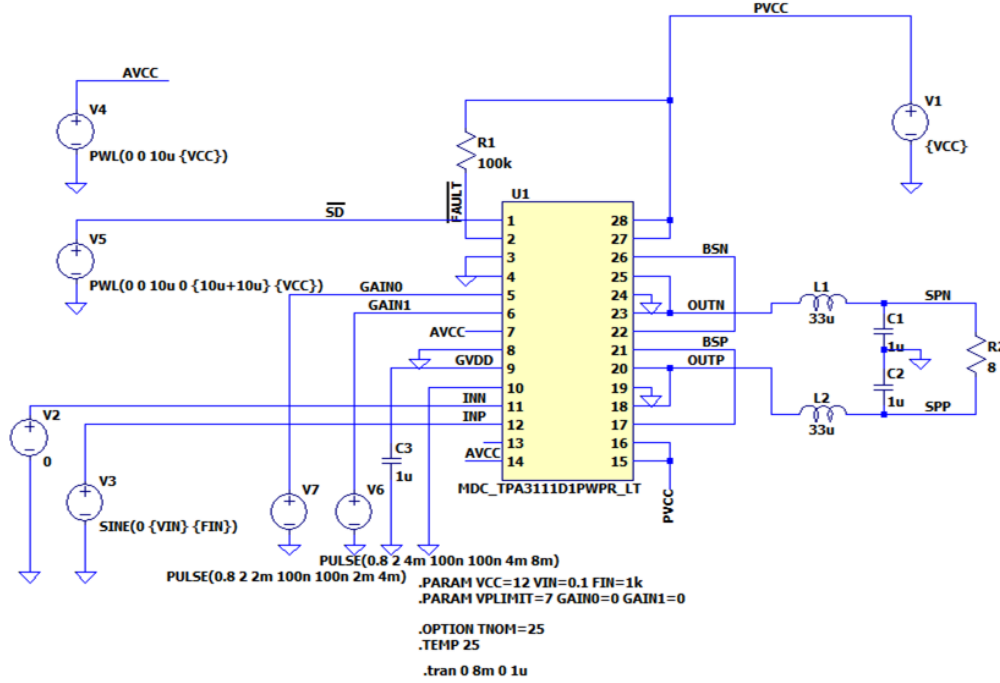
Simulation results are following.
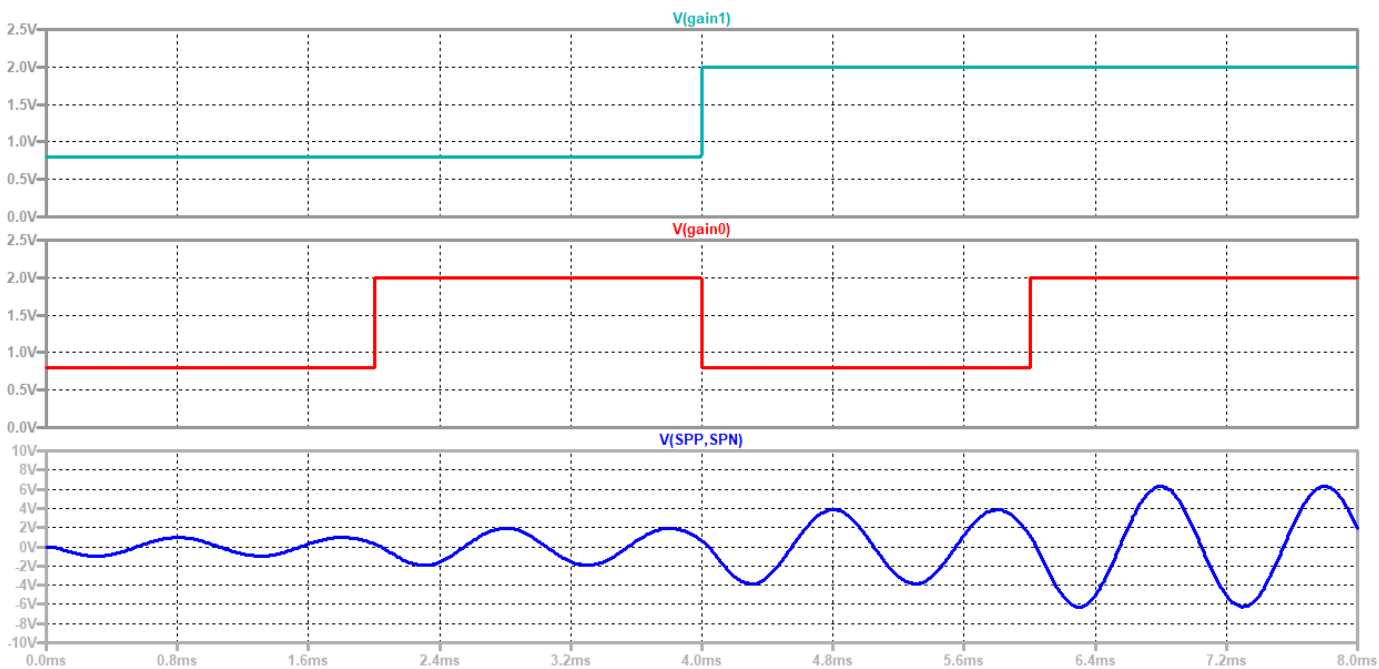Explanatory notes　　─ : simulated

Transient
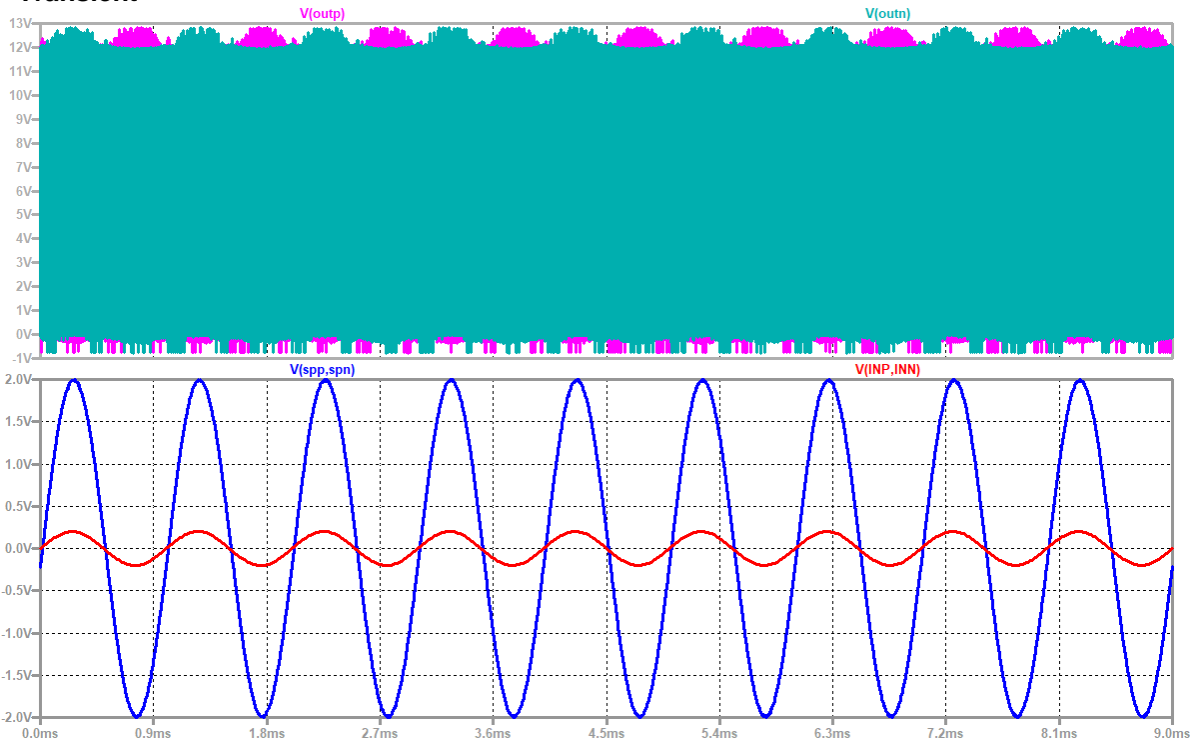
Gain Control Testbench
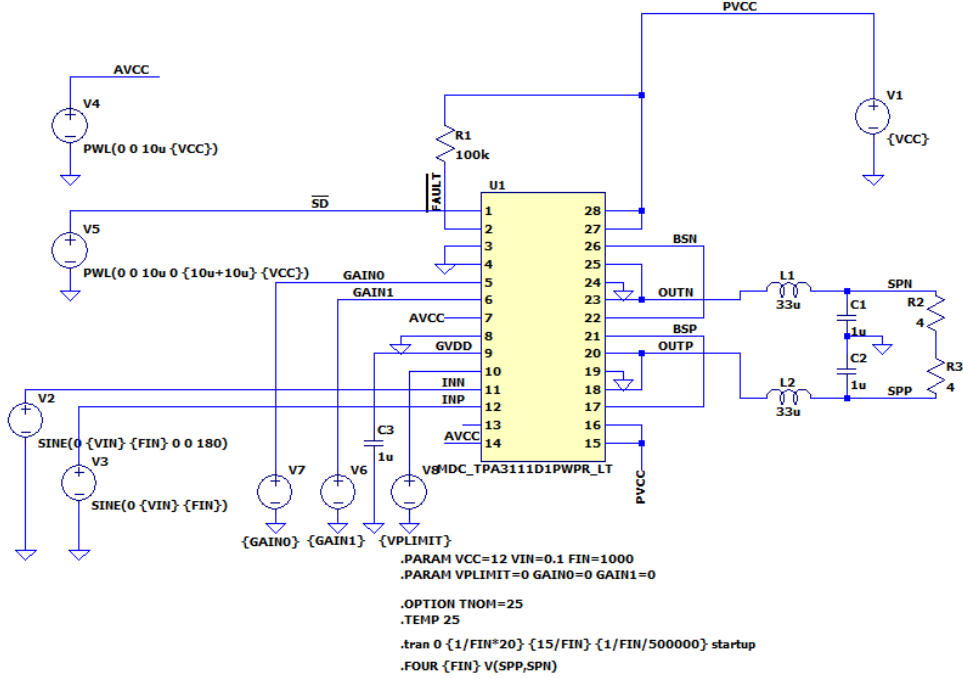
Referred to Data Sheet

Simulation results are following.
Explanatory notes　— : simulated

Gain Control

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THD Testbench

Referred to Data Sheet

Simulation results are following.
Explanatory notes ─ : simulated
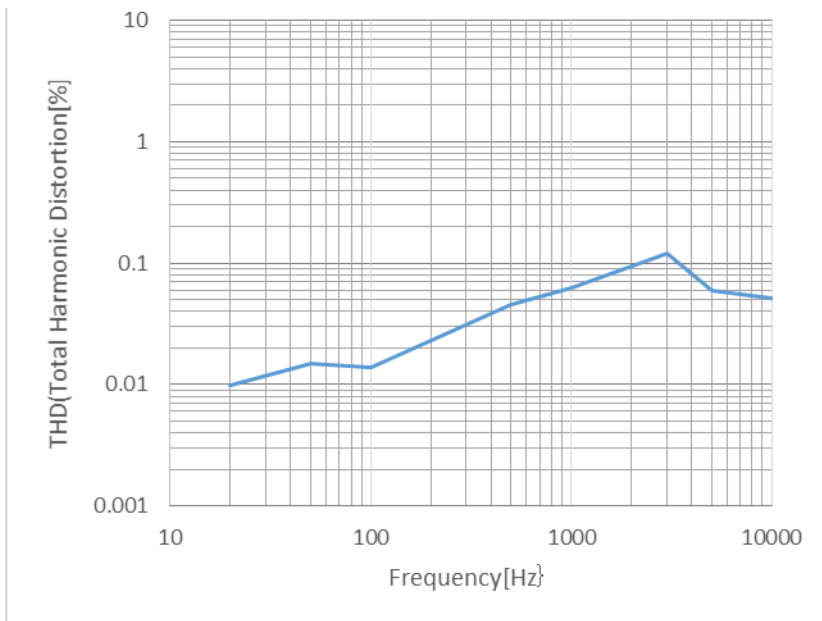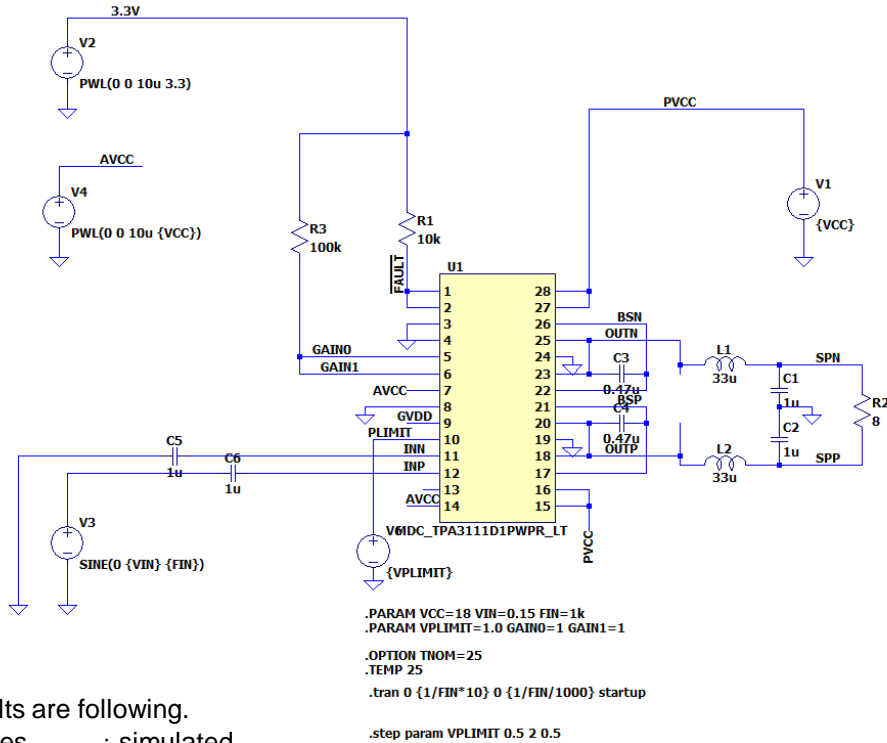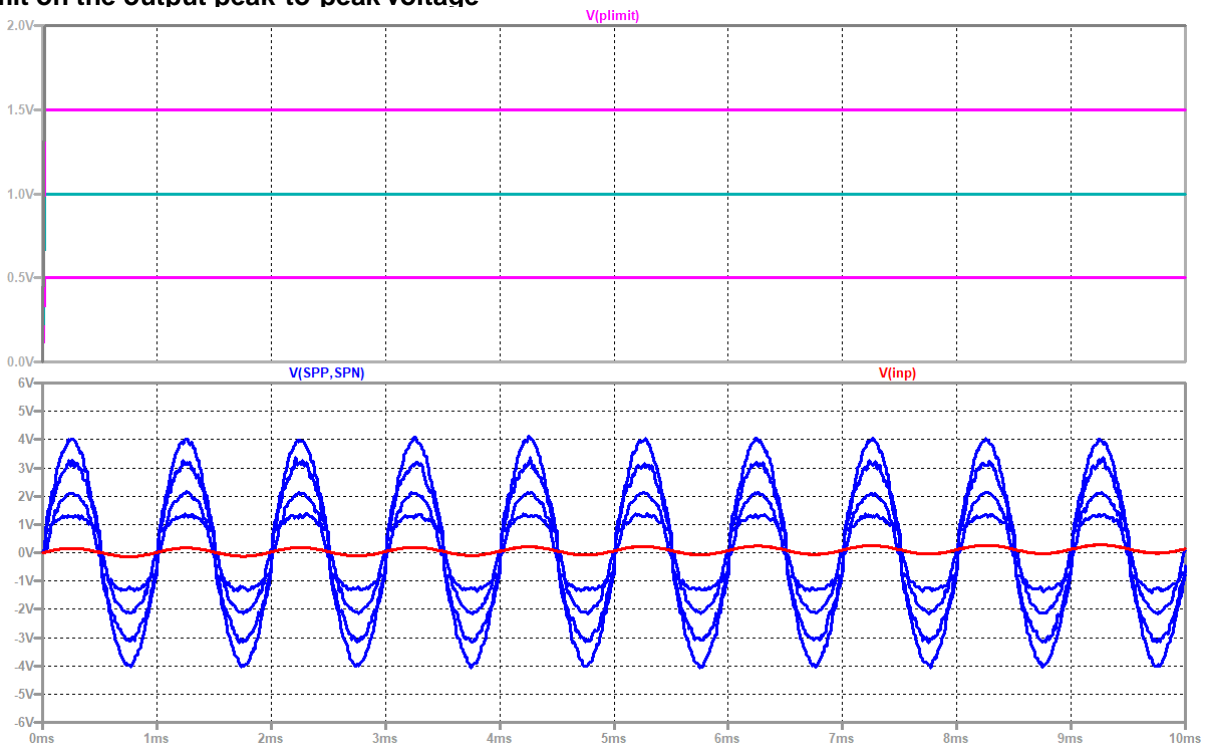
THD

limit on the output peak-to-peak voltage Testbench

Referred to Data Sheet

Simulation results are following.
Explanatory notes ― : simulated

limit on the output peak-to-peak voltage

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