LTspice Model
Power Clamper
Shindengen
ST03D-200-7001P12.5

Model Information

Model   A macro model
Call Name   MDC_ST03D-200-7001P12_5_LT
Pin Assign 1:Port1 2:Port2
File List   Model Library   MDC_ST03D-200-7001P12_5_LT.lib
                Model Report   MDC_ST03D-200-7001P12_5_LT.pdf(this file)
Verified Simulator Version   LTspice XVII
Note

References
The information which was used for modeling is as follow:

[Data Sheet]
●Date/Version   ST03D-200_Rev.01(2020.01)
●Product name   ST03D-200-7001P12_5
●Company name   Shindengen Electric Manufacturing Co., Ltd.

[Characteristics listed]

●Characteristics

Breakdown Voltage – Temp
Reverse Current – Temp
Junction Capacitance - Applied 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	20	deg C

Model Functions Table

Functions	Implemented
Breakdown Voltage – Temp	◯
Reverse Current – Temp	◯
Junction Capacitance - Applied Voltage	◯

Breakdown Voltage – Temp
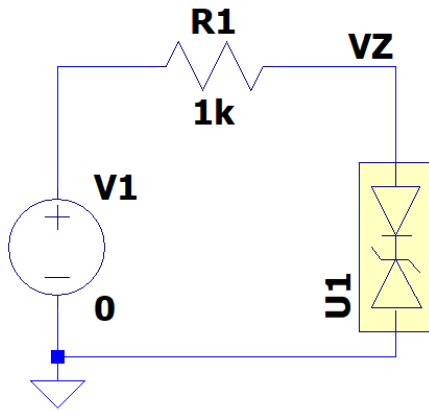
TestBench

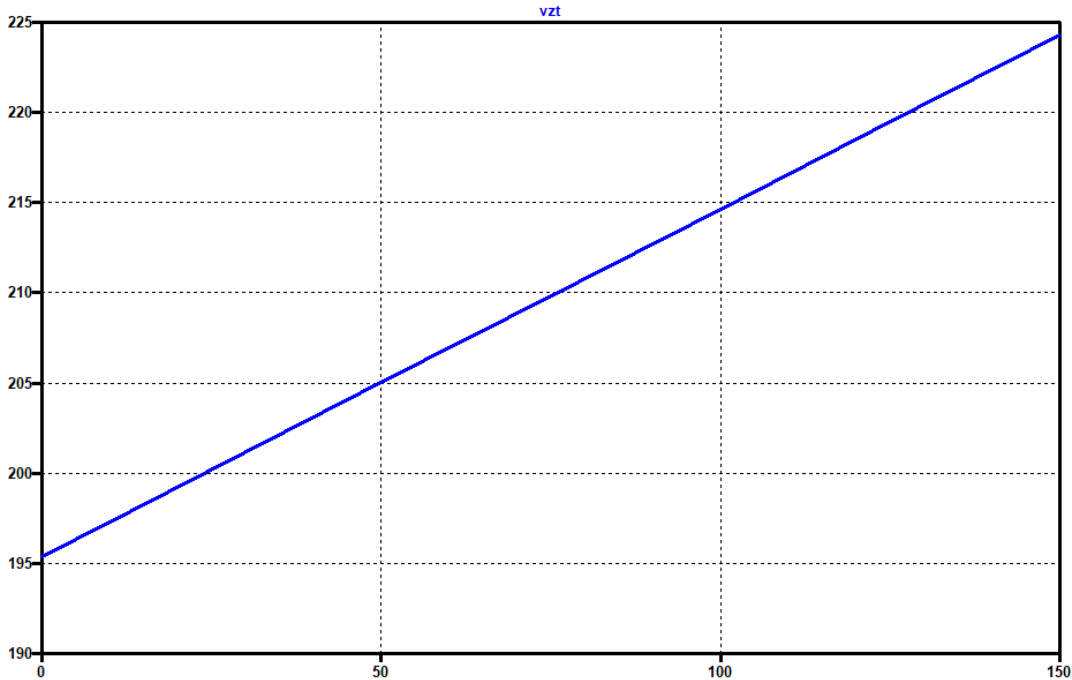**.meas VZT FIND V(VZ) WHEN -I(V1)=1m**

.dc V1 180 300 1
.OPTION TNOM=25
.TEMP 0 10 50 75 100 125 150
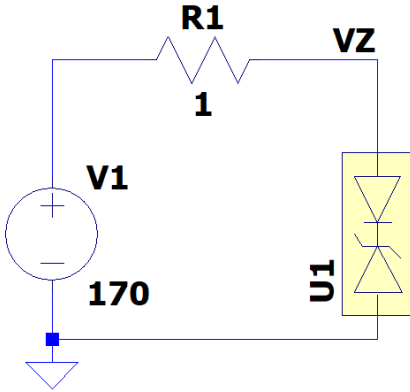
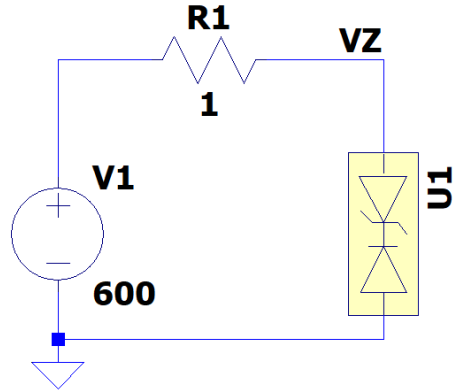Simulation results are following.
Explanatory notes   — : simulated

Reverse Current – Temp

TestBench

```
.op
.OPTION TNOM=25 GMIN=1e-15
.TEMP  25 50 75 100 125 150
```
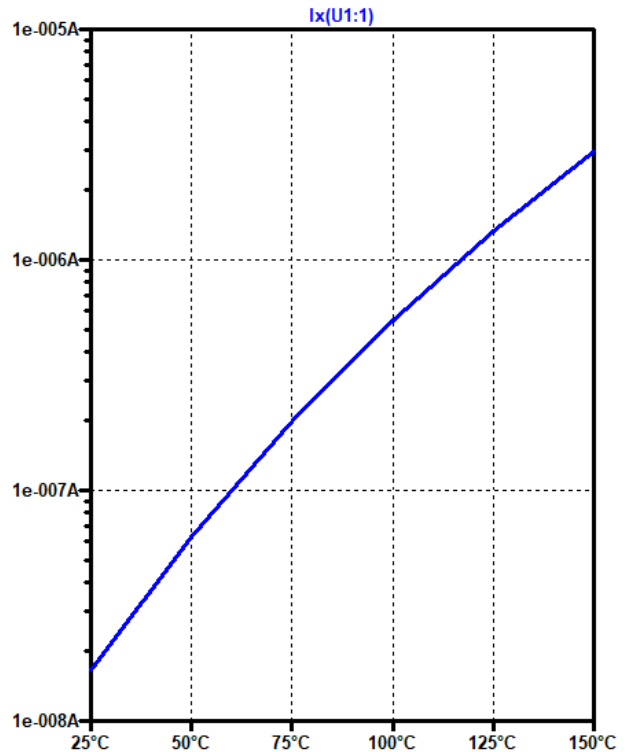
R1 VZ
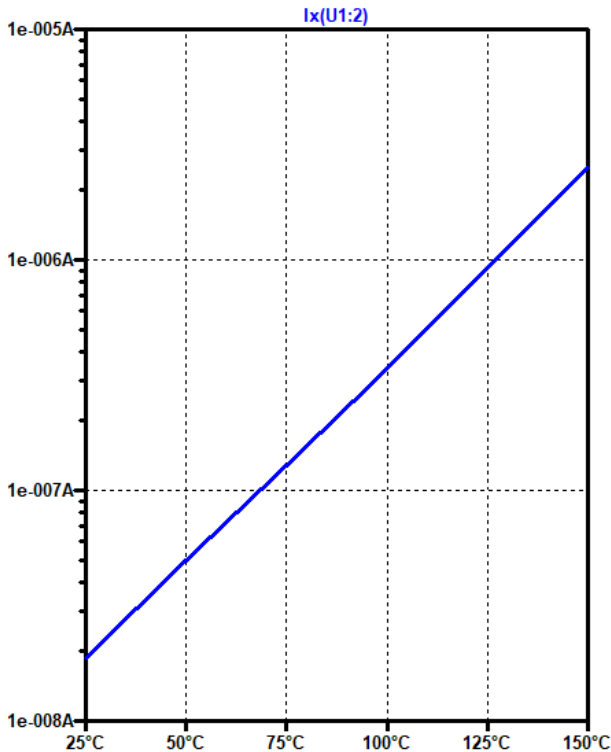1
V1
170 U1

```
.op
.OPTION TNOM=25
.TEMP  25 50 75 100 125 150
```

R1 VZ
1
V1
600 U1

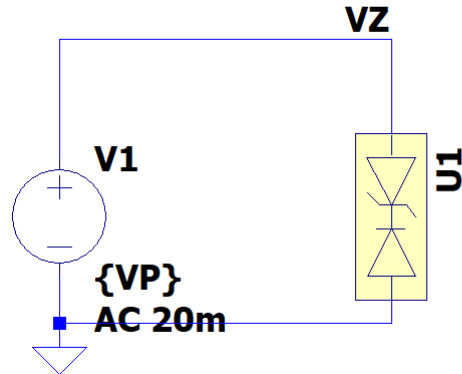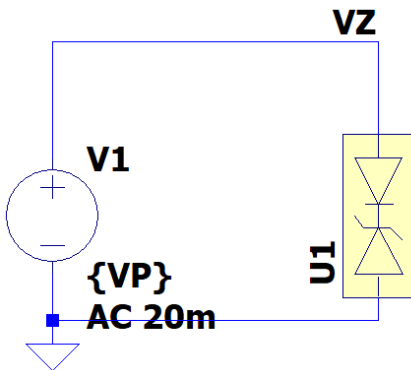Simulation results are following.
Explanatory notes   — : simulated
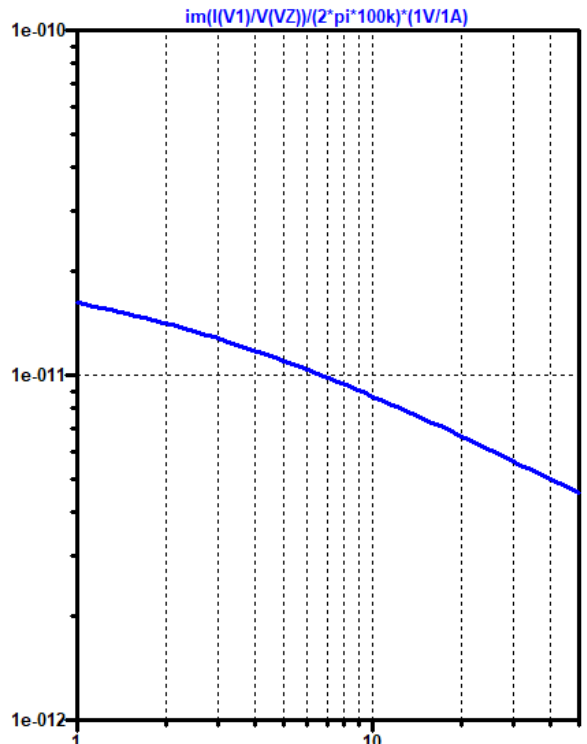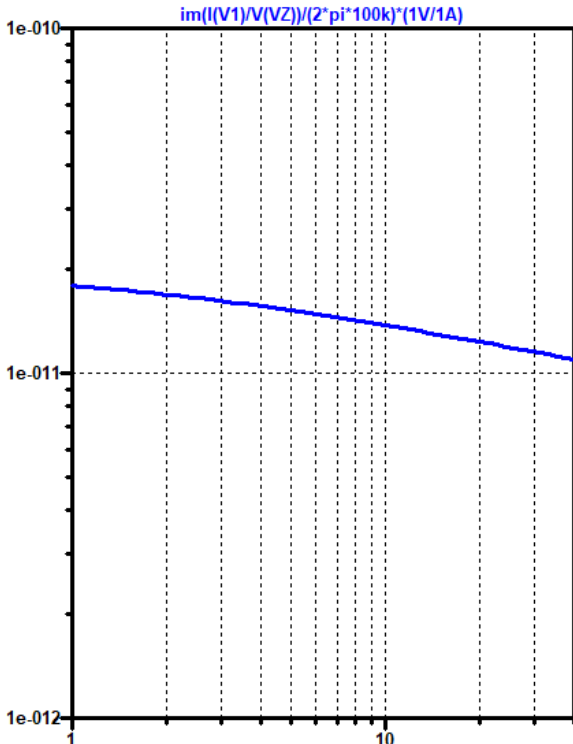
Junction Capacitance - Applied Voltage

TestBench

.step dec param VP 1 40 10
.ac lin 1 100k 100k
.OPTION TNOM=25 GMIN=1e-15
.TEMP 25

.step dec param VP 1 50 10
.ac lin 1 100k 100k
.OPTION TNOM=25 GMIN=1e-15
.TEMP 25

Simulation results are following.
Explanatory notes   — : simulated

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