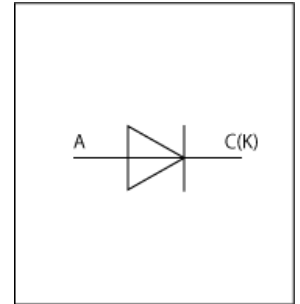


PSpice Model

Rectifier Diode

TAIWAN SEMICONDUCTOR

HT18GA1



Model Information

Model A macro model based on general SPICE diode model
Call Name MDC_HT18GA1_PS
Pin Assign 1:A 2:C
File List Model Library MDC_HT18GA1_PS01.lib
 Model Report MDC_HT18GA1_PS.pdf (this file)

Verified Simulator Version PSpice version 17.2
Note

References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version Unknown
- Product name HT18GA1
- Company name Taiwan Semiconductor Co., Ltd.
- Characteristics IrVr[Temp],IfVf[Temp],CjVr,TrrIfIrr,TrrWaveform,SurgeWaveform

Simulation Range

This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

| Item | Range | | | Unit |
|-----------------|-------|----|-------|-------|
| | Min. | | Max. | |
| Reverse Voltage | 0 | to | 1,000 | V |
| Temperature | -55 | to | 150 | deg C |

Diode

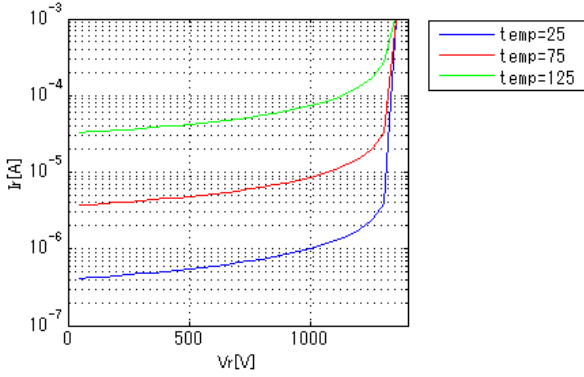
○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table
RANK=1

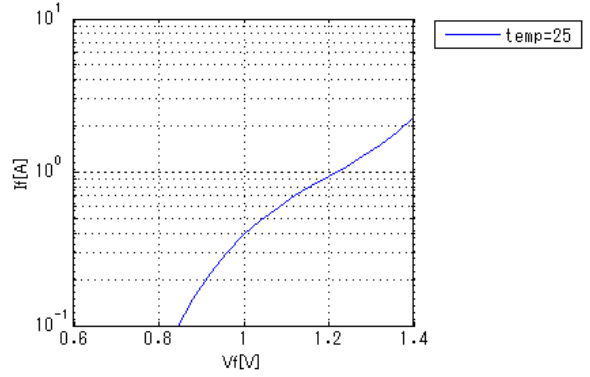
| Functions | RANK | Implemented |
|---------------------------------------|------|-------------|
| IF-VF(Temp) | 1 | ○ |
| IR-VR(Temp) | 1 | ○ |
| Capacitance | 1 | ○ |
| Reverse recovery characteristics | 1 | ○ |
| Rectification characteristics(Bridge) | 1 | — |
| Surge voltage-Transient | 2 | — |

Simulation results are following.
 Explanatory notes — : simulated

IrVr[Temp]

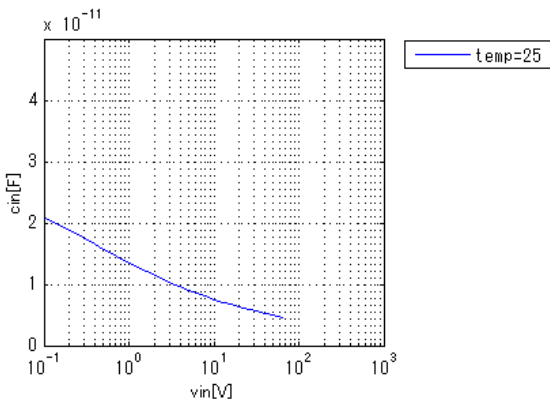


IfVf[Temp]



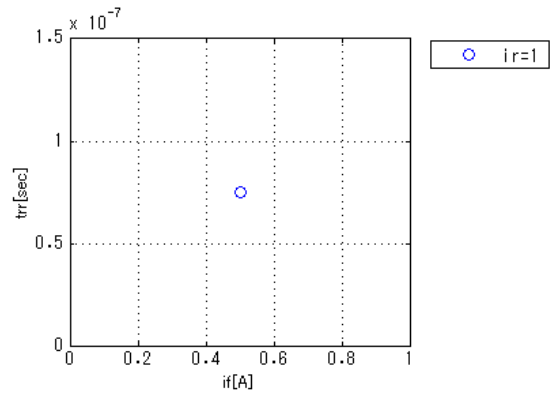
CjVr

Freq = 1000000Hz



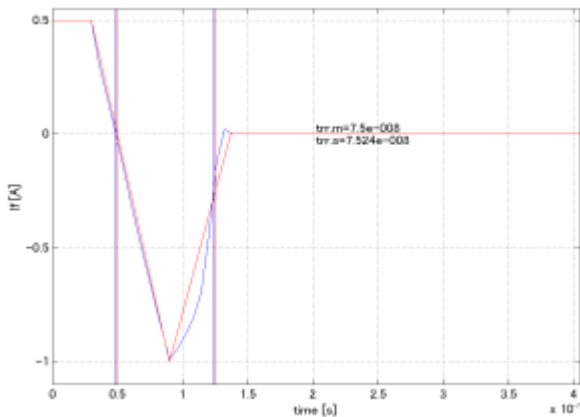
TrrIfIr

irr = 0.25A, didt = 25A/us



TrrWaveform (Red : Datasheet Blue : Simulation)

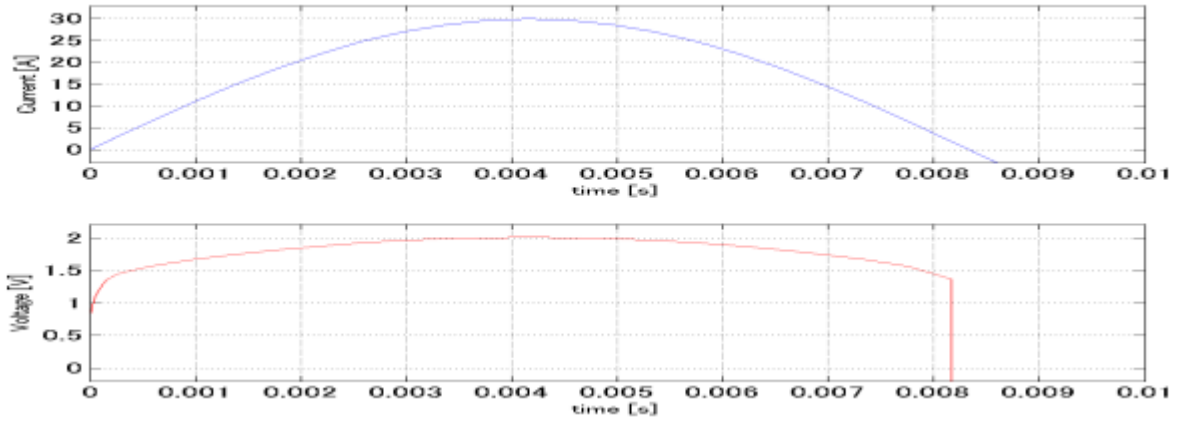
If = 0.5A, ir = 1A, irr = 0.25A, didt = 25A/us



Simulation results are following.

Explanatory notes — : simulated

Surge Waveform (60Hz half sine wave)



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