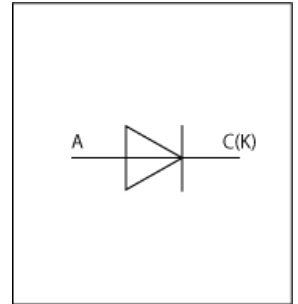


LTspice Model

ESD Protection Diode (TVS)

Microsemi

MSMLJ10AE3



Model Information

Model A macro model based on general SPICE diode model
Call Name MDC_MSMLJ10AE3_LT
Pin Assign 1:A 2:C
File List Model Library MDC_MSMLJ10AE3_LT01.lib
 Model Report MDC_MSMLJ10AE3_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 Unknown
- Product name MSMLJ10AE3
- Company name Microsemi Corporation
- Characteristics IrVr[Temp],BreakdownVoltage,ClampingVoltage,LekageCurrent,CjVr,SurgeCurrentWaveform

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 Breakdown Voltage (typ)	0	to	11.7(at 1mA)	V
Reverse Clamping Voltage (max)	0	to	17(at 176.4A)	V
Temperature	-65	to	175	deg C

Diode

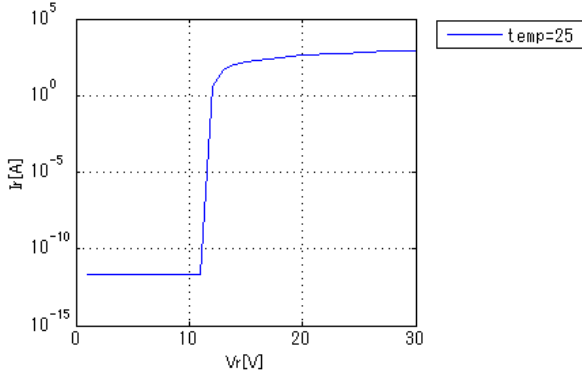
○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table
RANK=1

Functions	RANK	Implemented
IF-VF(Temp)	1	—
IR-VR(Temp)	1	○
Capacitance	1	○
Reverse recovery characteristics	1	—
Zz-Iz	1	—
Rectification characteristics(Bridge)	1	—
Surge-Transient	1	○
tlp	1	—

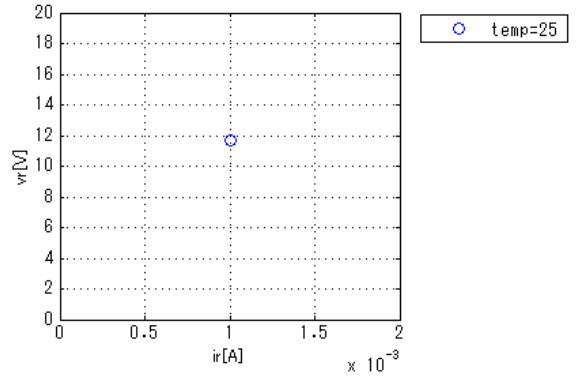
Simulation results are following.
 Explanatory notes — : simulated

IrVr[Temp]



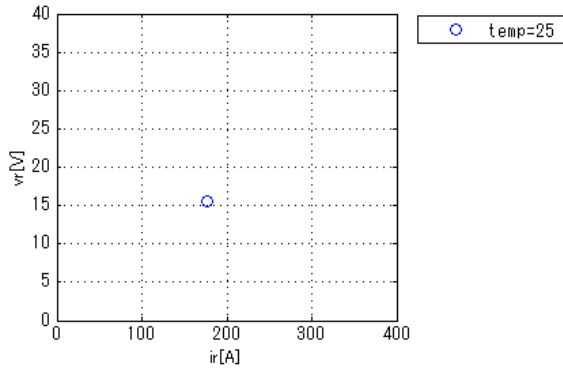
VBR(Breakdown Voltage)

at IR=0.001A



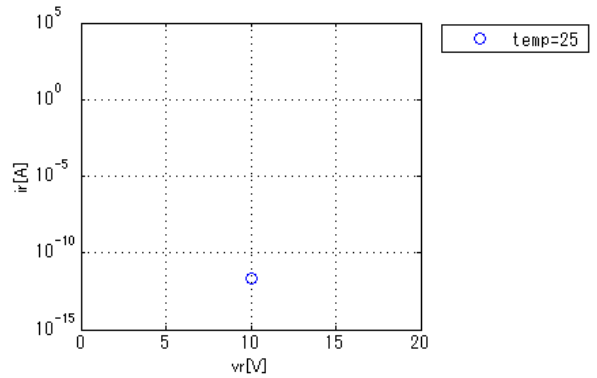
VC(Clamping Voltage)

at IPPM=176.4A max-10%



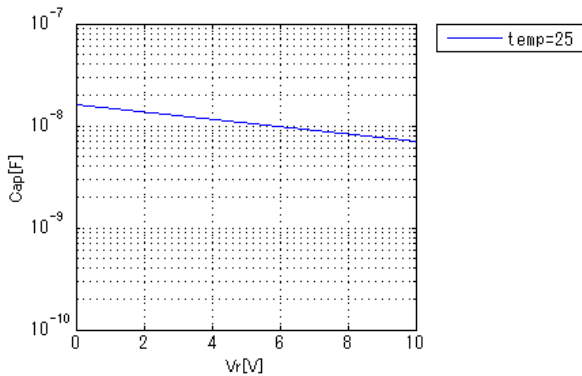
Leakage Current

at VWM(StandOff)=10V max(5uA)/1000 under



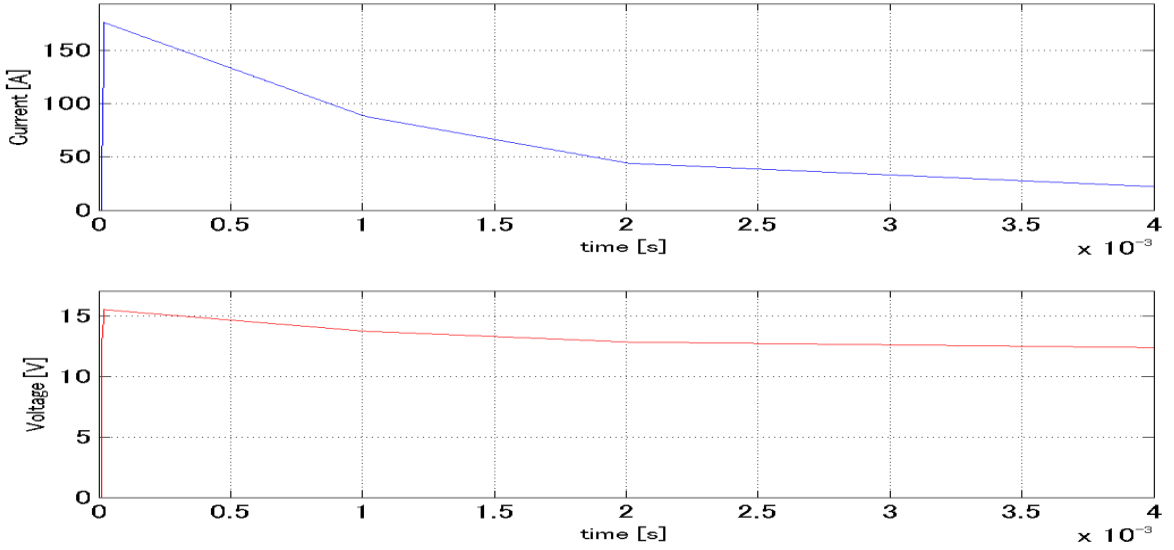
CjVr

Freq = 1000000Hz



Simulation results are following.
Explanatory notes — : simulated

Surge Current Waveform (Reverse 10u/1000u)



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