

Device Modeling Report

COMPONENTS:
DIODE/ SCHOOTKY RECTIFIER / STANDARD
PART NUMBER: DF10SC4M
MANUFACTURER: SHINDENGEN

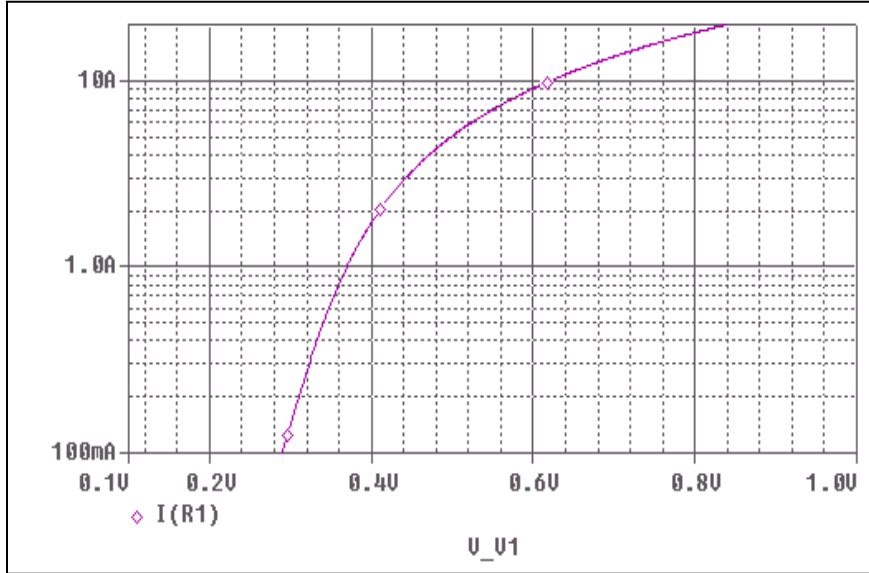


Bee Technologies Inc.

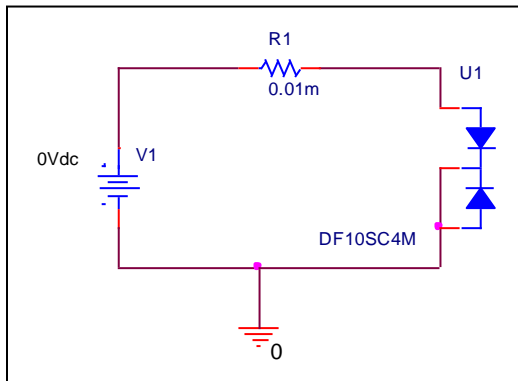
| PSpice model parameter | Model description |
|------------------------|---|
| IS | Saturation Current |
| N | Emission Coefficient |
| RS | Series Resistance |
| IKF | High-injection Knee Current |
| CJO | Zero-bias Junction Capacitance |
| M | Junction Grading Coefficient |
| VJ | Junction Potential |
| ISR | Recombination Current Saturation Value |
| BV | Reverse Breakdown Voltage(a positive value) |
| IBV | Reverse Breakdown Current(a positive value) |
| TT | Transit Time |
| EG | Energy-band Gap |

Forward Current Characteristic

Circuit Simulation Result

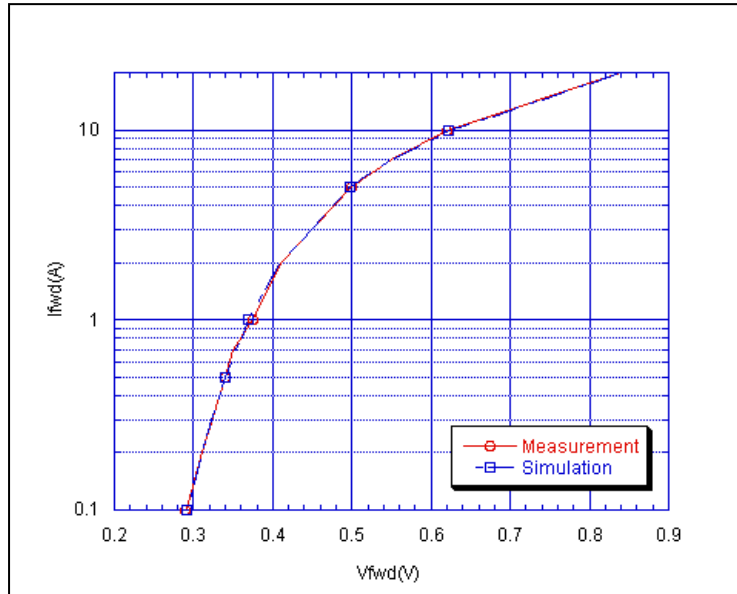


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

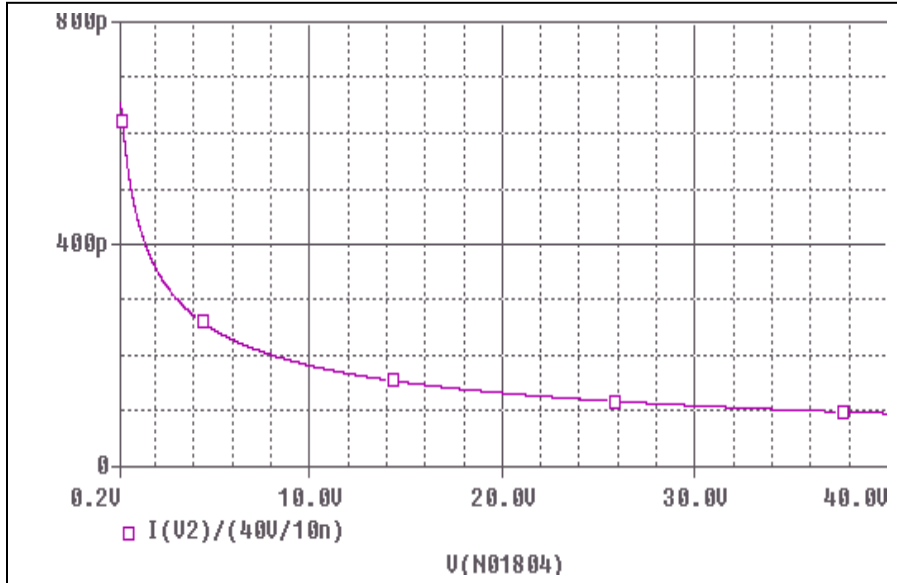


Simulation Result

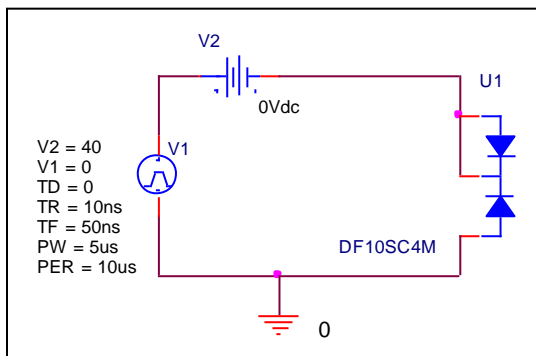
| Ifwd(A) | Vfwd(V) Measurement | Vfwd(V) Simulation | %Error |
|---------|---------------------|--------------------|--------|
| 0.1 | 0.290 | 0.291 | 0.21 |
| 0.2 | 0.310 | 0.310 | 0.06 |
| 0.5 | 0.340 | 0.341 | 0.26 |
| 1 | 0.375 | 0.370 | -1.36 |
| 2 | 0.410 | 0.410 | -0.10 |
| 5 | 0.500 | 0.498 | -0.32 |
| 10 | 0.620 | 0.621 | 0.18 |
| 20 | 0.840 | 0.841 | 0.12 |

Junction Capacitance Characteristic

Circuit Simulation Result

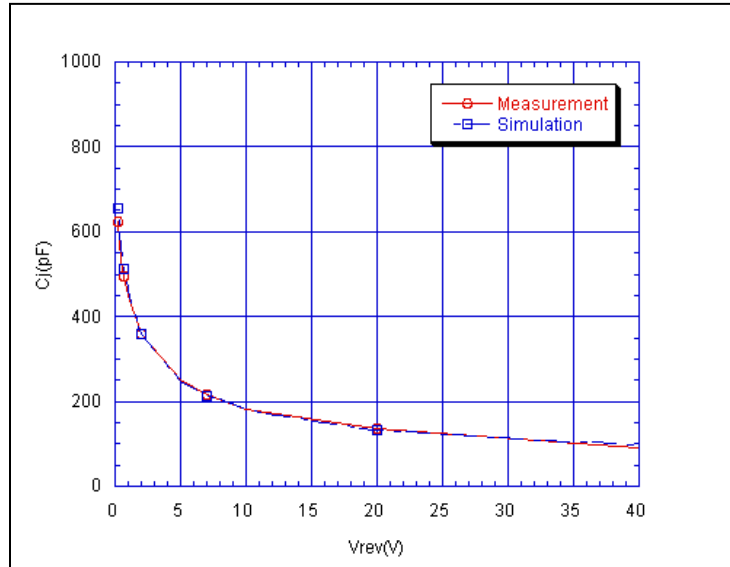


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

| Vrev(V) | Cj(pF) Measurement | Cj(pF) Simulation | %Error |
|---------|--------------------|-------------------|--------|
| 0.2 | 625.000 | 654.300 | 4.69 |
| 0.5 | 535.000 | 559.400 | 4.56 |
| 1 | 450.000 | 458.600 | 1.91 |
| 2 | 360.000 | 359.600 | -0.11 |
| 5 | 250.000 | 247.500 | -1.00 |
| 10 | 180.000 | 182.200 | 1.22 |
| 20 | 135.000 | 132.700 | -1.70 |
| 40 | 89.000 | 93.000 | 4.49 |