

Device Modeling Report

COMPONENTS: DIODE/ SCHOOTKY RECTIFIER
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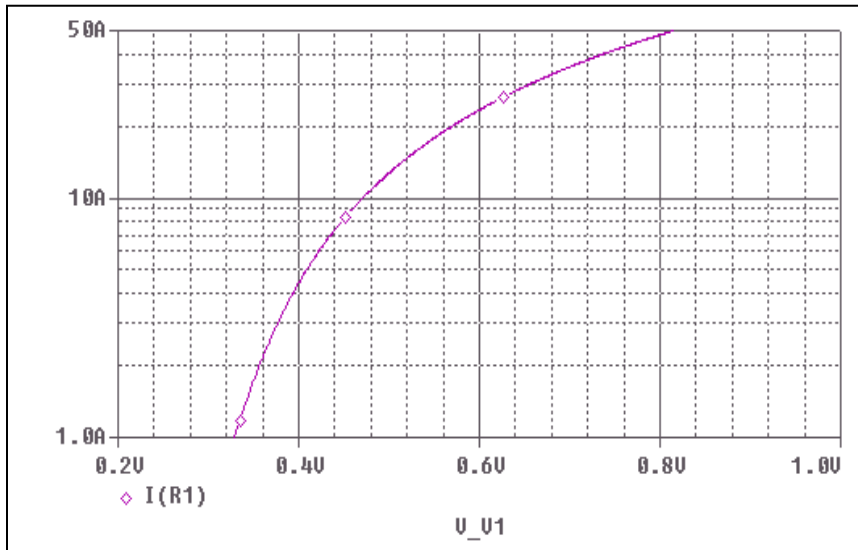


Bee Technologies Inc.

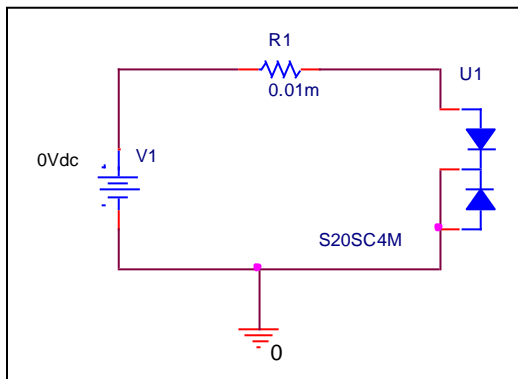
| PSpice model parameter | Model description |
|------------------------|---|
| IS | Saturation Current |
| N | Emission Coefficient |
| RS | Series Resistance |
| IKF | High-injection Knee Current |
| CJO | Zero-bias Junction Capacitance |
| M | Junction Grading Coefficient |
| VJ | Junction Potential |
| 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

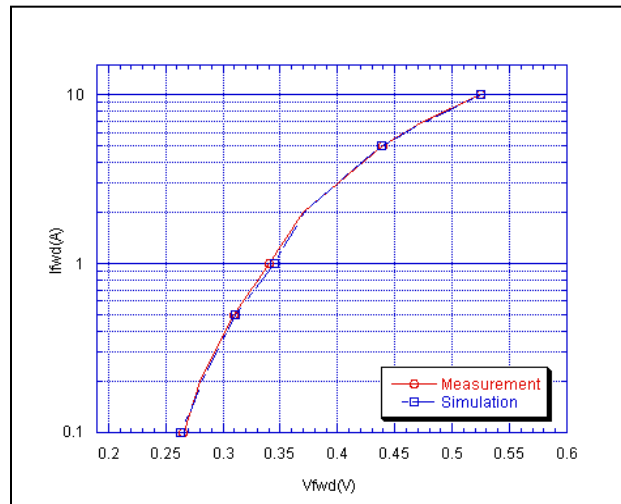


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

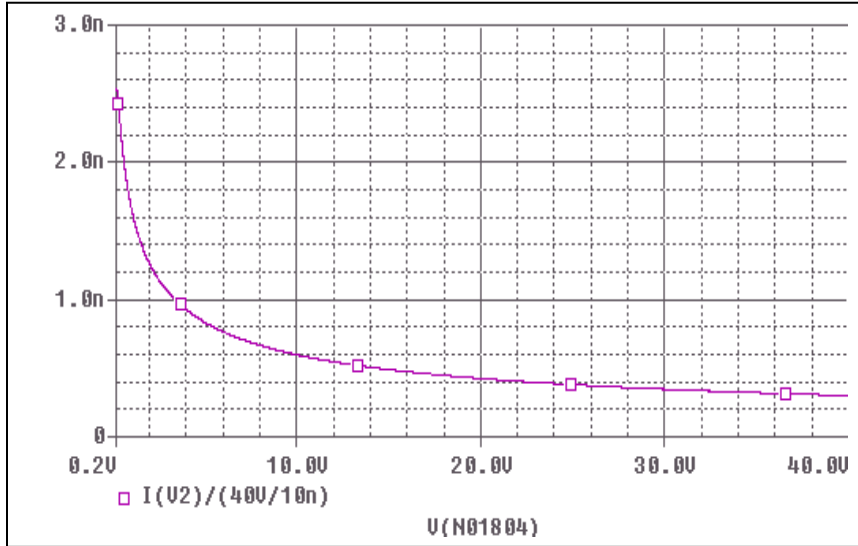


Simulation Result

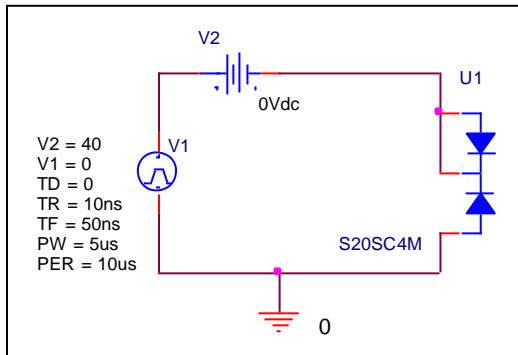
| I_{fwd} (A) | V_{fwd} (V) Measurement | V_{fwd} (V) Simulation | %Error |
|---------------|---------------------------|--------------------------|--------|
| 0.1 | 0.265 | 0.2631 | 0.7169 |
| 0.2 | 0.28 | 0.2827 | 0.9642 |
| 0.5 | 0.31 | 0.311 | 0.3225 |
| 1 | 0.34 | 0.345 | 1.4705 |
| 2 | 0.37 | 0.371 | 0.2702 |
| 5 | 0.44 | 0.4388 | 0.2727 |
| 7 | 0.475 | 0.4758 | 0.1684 |
| 10 | 0.525 | 0.5248 | 0.0380 |

Junction Capacitance Characteristic

Circuit Simulation Result

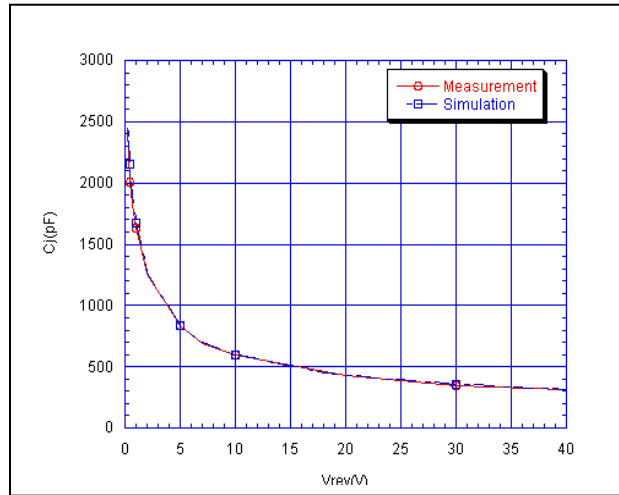


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

| Vrev(V) | Cj(pF) Measurement | Cj(pF) Simulation | %Error |
|---------|--------------------|-------------------|--------|
| 0.1 | 1380 | 1260 | 8.6956 |
| 0.2 | 1270 | 1300 | 2.3622 |
| 0.5 | 1080 | 1050 | 2.7777 |
| 1 | 897 | 916.4 | 2.1627 |
| 2 | 698 | 709.5 | 1.6475 |
| 5 | 475 | 479.9 | 1.0315 |
| 7 | 410 | 411.6 | 0.3902 |
| 10 | 350 | 348.2 | 0.5142 |
| 20 | 250 | 249.5 | 0.2 |
| 40 | 180 | 178.4 | 0.8888 |