

# Device Modeling Report

COMPONENTS:  
DIODE/ SCHOOTKY RECTIFIER / STANDARD  
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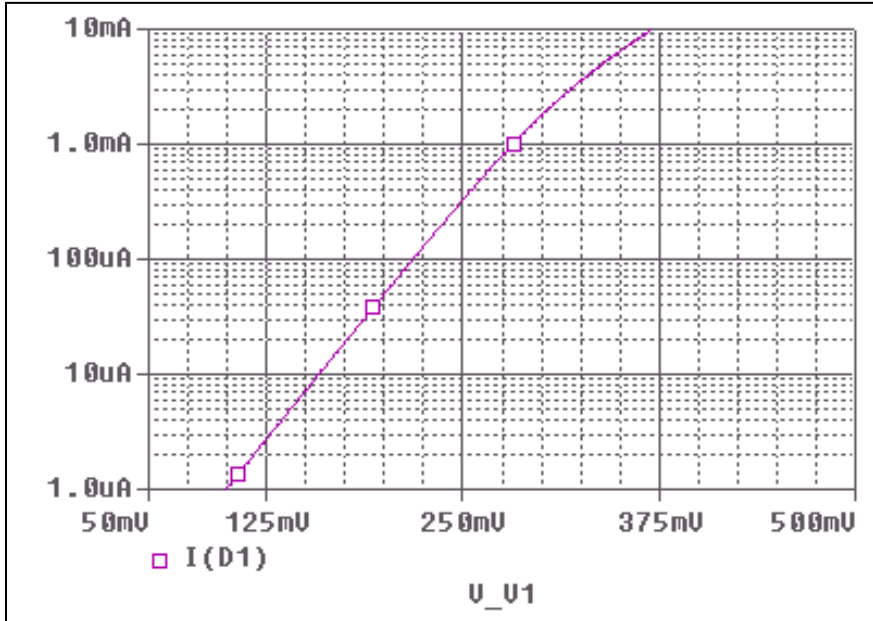


**Bee Technologies Inc.**

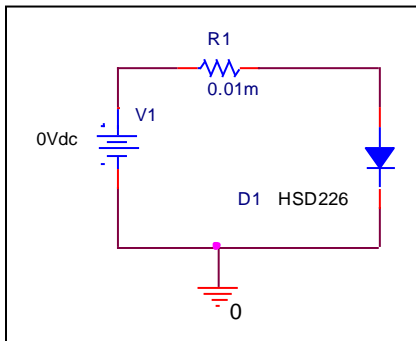
| PSpice model parameter | Model description                           |
|------------------------|---|
| IS                     | Saturation Current                          |
| N                      | Emission Coefficient                        |
| RS                     | Series Resistance                           |
| 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

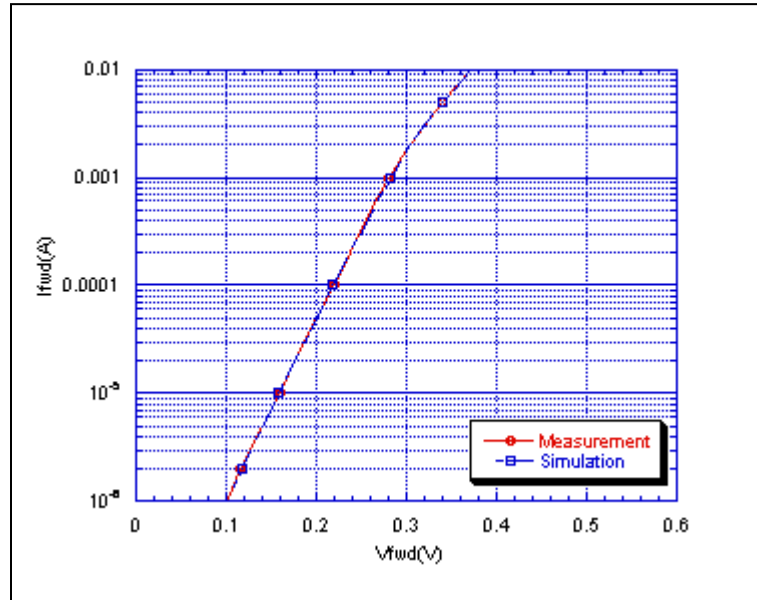


## Evaluation Circuit



# Comparison Graph

## Circuit Simulation Result

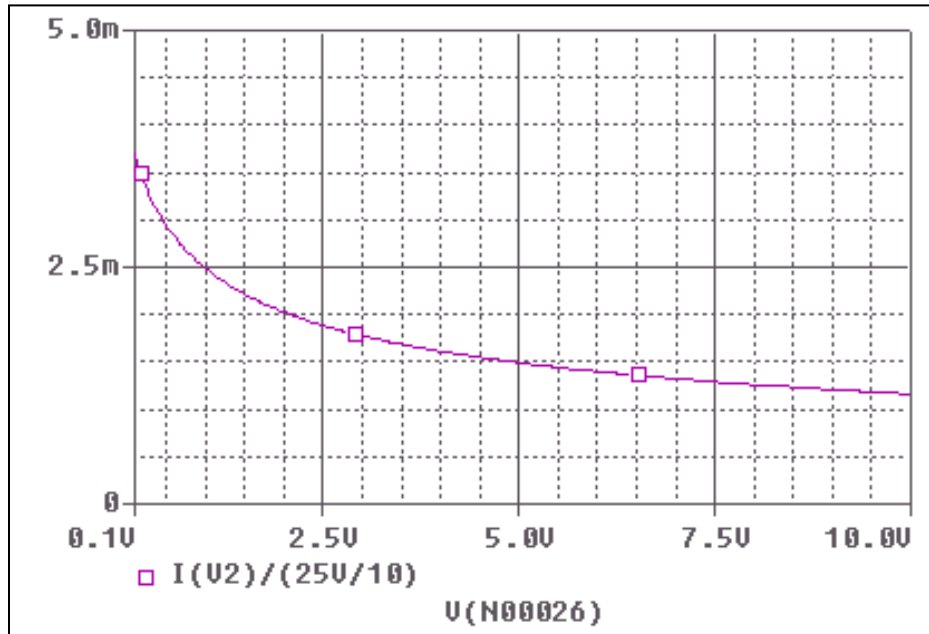


## Simulation Result

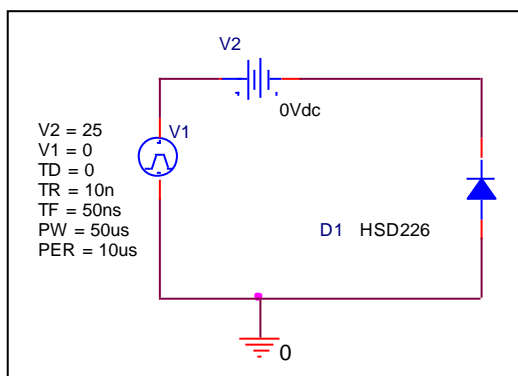
| Ifwd(A)  | Vfwd(V)<br>Measurement | Vfwd(V)<br>Simulation | %Error |
|----------|------------------------|-----------------------|--------|
| 1.00E-06 | 0.100                  | 0.099                 | -0.80  |
| 1.00E-05 | 0.160                  | 0.158                 | -1.06  |
| 0.0001   | 0.220                  | 0.218                 | -0.82  |
| 0.0002   | 0.238                  | 0.237                 | -0.63  |
| 0.0005   | 0.260                  | 0.262                 | 0.62   |
| 0.001    | 0.280                  | 0.282                 | 0.61   |
| 0.002    | 0.305                  | 0.304                 | -0.36  |
| 0.005    | 0.340                  | 0.339                 | -0.29  |
| 0.01     | 0.370                  | 0.371                 | 0.19   |

# Junction Capacitance Characteristic

## Circuit Simulation Result

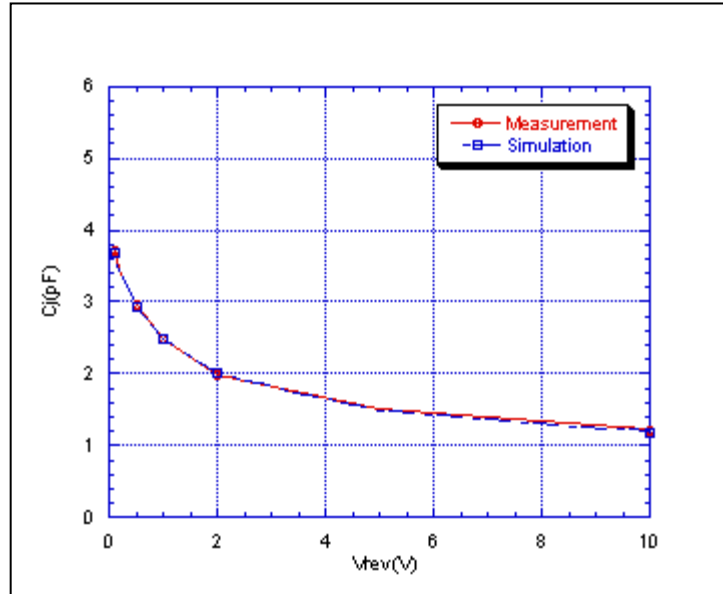


## Evaluation Circuit



## Comparison Graph

### Circuit Simulation Result



### Simulation Result

| $V_{rev}$ (V) | $C_j$ (pF)<br>Measurement | $C_j$ (pF)<br>Simulation | %Error |
|---------------|---------------------------|--------------------------|--------|
| 0.1           | 3.710                     | 3.690                    | -0.54  |
| 0.2           | 3.450                     | 3.440                    | -0.29  |
| 0.5           | 2.950                     | 2.940                    | -0.34  |
| 1             | 2.480                     | 2.490                    | 0.40   |
| 2             | 1.980                     | 2.020                    | 2.02   |
| 5             | 1.500                     | 1.490                    | -0.67  |
| 10            | 1.200                     | 1.170                    | -2.50  |