

# Device Modeling Report

COMPONENTS:  
DIODE/ SCHOOTKY RECTIFIER /STANDARD  
PART NUMBER: ESL03B03-F  
MANUFACTURER: NIEC

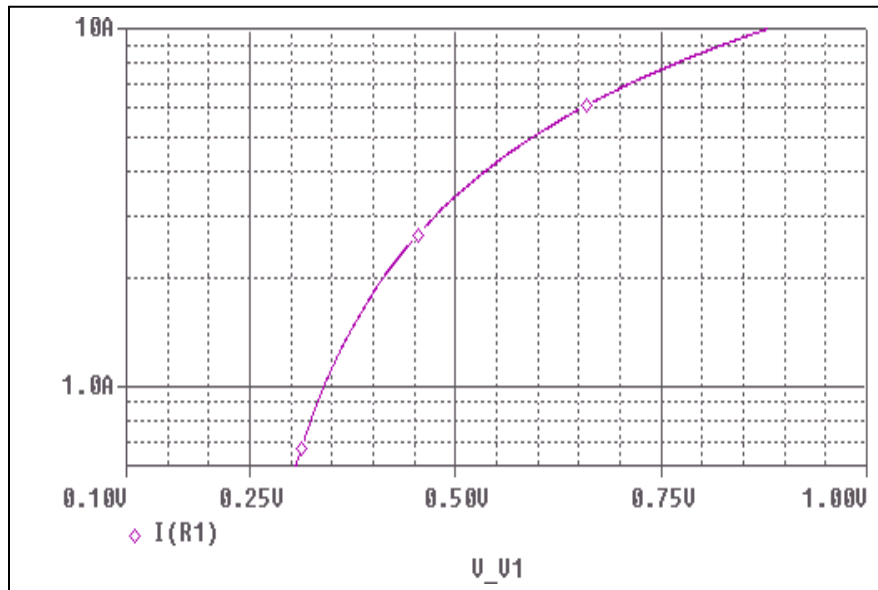


**Bee Technologies Inc.**

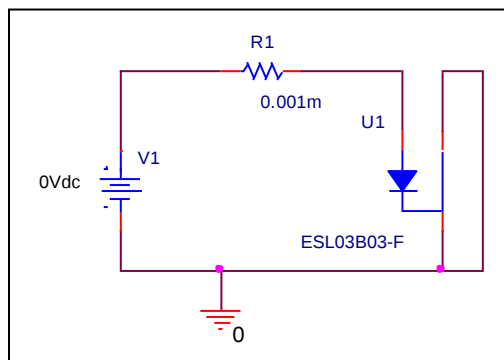
| PSpice model parameter | Model description                           |
|------------------------|---------------------------------------------|
| IS                     | Saturation Current                          |
| N                      | Emission Coefficient                        |
| RS    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

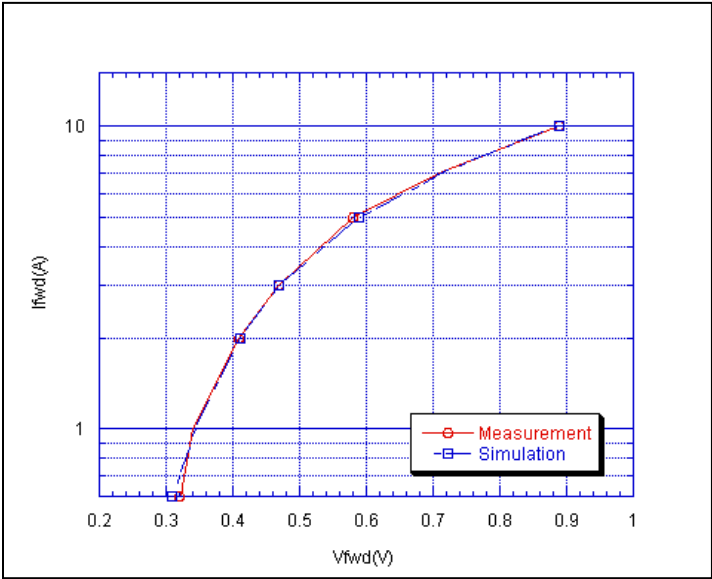


### Evaluation Circuit



# Comparison Graph

## Circuit Simulation Result

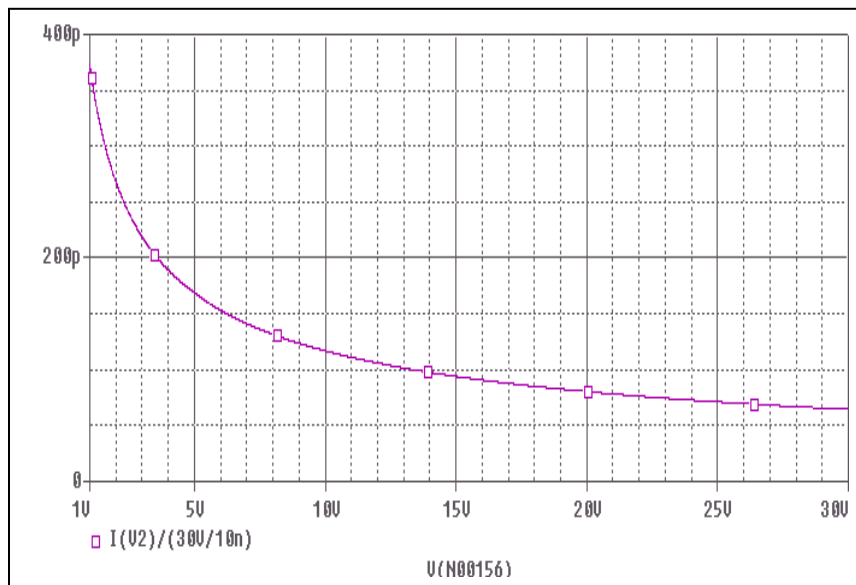


## Simulation Result

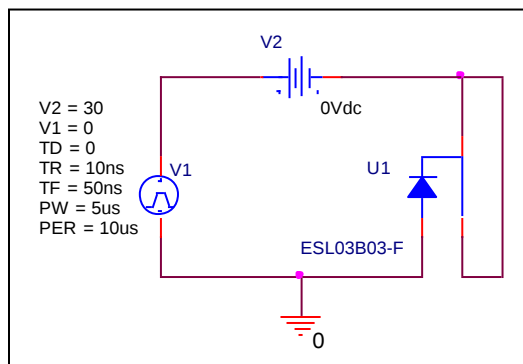
| Ifwd(A) | Vfwd(V)<br>Measurement | Vfwd(V)<br>Simulation | %Error |
|---------|------------------------|-----------------------|--------|
| 1       | 0.340                  | 0.345                 | 1.47   |
| 2       | 0.410                  | 0.412                 | 0.49   |
| 5       | 0.588                  | 0.590                 | 0.34   |
| 10      | 0.890                  | 0.885                 | -0.56  |

# Capacitance Characteristic

## Circuit Simulation Result

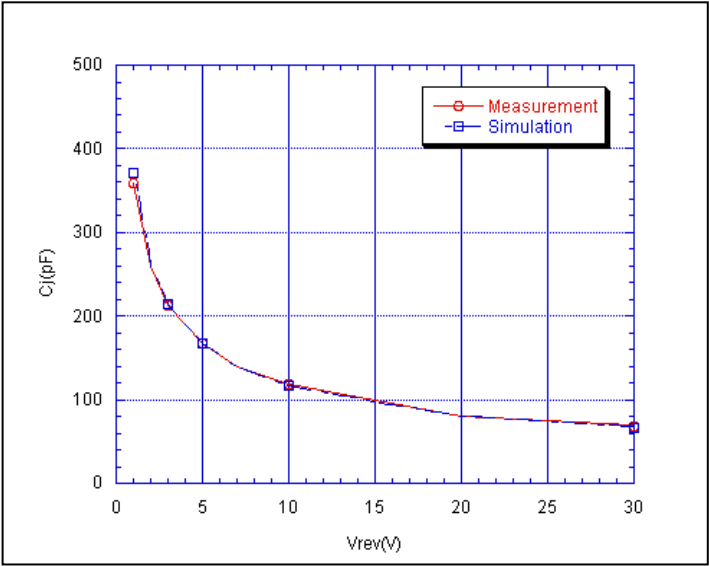


## Evaluation Circuit



# Comparison Graph

## Circuit Simulation Result



## Simulation Result

| Vrev(V) | Cj(pF)<br>Measurement | Cj(pF)<br>Simulation | %Error |
|---------|-----------------------|----------------------|--------|
| 1       | 359.000               | 372.000              | 3.62   |
| 2       | 259.000               | 261.000              | 0.77   |
| 5       | 167.000               | 168.000              | 0.60   |
| 10      | 118.000               | 117.000              | -0.85  |
| 20      | 80.400                | 80.300               | -0.12  |
| 30      | 68.000                | 67.000               | -1.47  |