

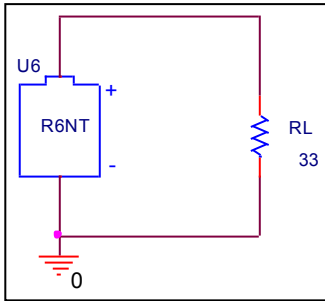
# Device Modeling Report

COMPONENTS: Manganese Cell  
PART NUMBER: R6NT  
MANUFACTURER: PANASONIC  
CONDITION:  $RL=33(\Omega)$

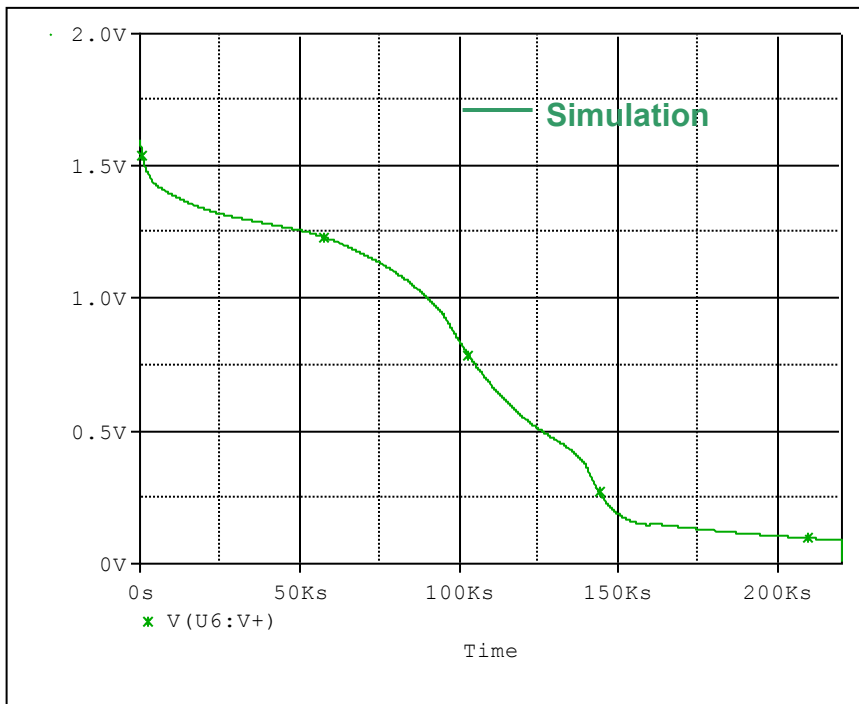


**Bee Technologies Inc.**

## Evaluation Circuit



## Simulation result



## Comparison Table

| Time (Sec) | Vdc(V)<br>Measurement | Vdc(V)<br>Simulation | %Error  |
|------------|-----------------------|----------------------|---------|
| 10.136     | 1.5993                | 1.5980               | 0.0806  |
| 500.002    | 1.5552                | 1.5573               | -0.1331 |
| 1000.002   | 1.5250                | 1.5258               | -0.0524 |
| 1500.002   | 1.5037                | 1.5026               | 0.0713  |
| 2000.002   | 1.4871                | 1.4856               | 0.0989  |
| 2500.002   | 1.4734                | 1.4729               | 0.0318  |
| 3000.002   | 1.4616                | 1.4626               | -0.0652 |
| 3500.002   | 1.4513                | 1.4526               | -0.0869 |
| 4000.002   | 1.4422                | 1.4393               | 0.1992  |
| 4500.002   | 1.4360                | 1.4341               | 0.1306  |
| 5000.002   | 1.4312                | 1.4299               | 0.0925  |
| 5500.002   | 1.4256                | 1.4258               | -0.0142 |
| 6000.002   | 1.4192                | 1.4218               | -0.1862 |
| 6500.002   | 1.4136                | 1.4179               | -0.3015 |
| 7000.002   | 1.4116                | 1.4141               | -0.1744 |
| 7500.002   | 1.4099                | 1.4103               | -0.0303 |
| 8000.002   | 1.4072                | 1.4066               | 0.0397  |
| 8500.002   | 1.4039                | 1.4030               | 0.0662  |
| 9000.002   | 1.4006                | 1.3994               | 0.0828  |
| 9500.002   | 1.3972                | 1.3961               | 0.0764  |
| 10000.002  | 1.3938                | 1.3927               | 0.0770  |
| 12000.002  | 1.3806                | 1.3801               | 0.0384  |
| 14000.002  | 1.3684                | 1.3685               | -0.0061 |
| 16000.002  | 1.3562                | 1.3580               | -0.1315 |
| 18000.002  | 1.3453                | 1.3484               | -0.2272 |
| 20000.002  | 1.3376                | 1.3397               | -0.1553 |
| 22000.002  | 1.3311                | 1.3318               | -0.0494 |
| 24000.002  | 1.3250                | 1.3246               | 0.0312  |
| 26000.002  | 1.3190                | 1.3180               | 0.0796  |
| 28000.002  | 1.3136                | 1.3120               | 0.1194  |
| 29000.002  | 1.3109                | 1.3092               | 0.1320  |
| 30000.002  | 1.3084                | 1.3065               | 0.1430  |
| 32000.002  | 1.3031                | 1.3013               | 0.1378  |
| 34000.002  | 1.2976                | 1.2964               | 0.0925  |
| 36000.002  | 1.2923                | 1.2917               | 0.0500  |
| 38000.002  | 1.2874                | 1.2872               | 0.0129  |
| 40000.002  | 1.2825                | 1.2827               | -0.0175 |
| 42000.002  | 1.2776                | 1.2782               | -0.0509 |
| 44000.002  | 1.2726                | 1.2736               | -0.0757 |

| <b>Time (Sec)</b> | <b>Vdc(V)<br/>Measurement</b> | <b>Vdc(V)<br/>Simulation</b> | <b>%Error</b> |
|-------------------|-------------------------------|------------------------------|---------------|
| 46000.002         | 1.2676                        | 1.2687                       | -0.0831       |
| 48000.002         | 1.2624                        | 1.2636                       | -0.0912       |
| 50000.002         | 1.2571                        | 1.2582                       | -0.0912       |
| 52000.002         | 1.2514                        | 1.2523                       | -0.0741       |
| 54000.002         | 1.2454                        | 1.2458                       | -0.0341       |
| 56000.002         | 1.2388                        | 1.2388                       | 0.0015        |
| 58000.002         | 1.2316                        | 1.2310                       | 0.0502        |
| 59000.002         | 1.2277                        | 1.2269                       | 0.0626        |
| 60000.002         | 1.2235                        | 1.2240                       | -0.0401       |
| 65000.002         | 1.1977                        | 1.1962                       | 0.1266        |
| 70000.002         | 1.1676                        | 1.1653                       | 0.1952        |
| 75000.002         | 1.1350                        | 1.1359                       | -0.0768       |
| 80000.002         | 1.0985                        | 1.0994                       | -0.0830       |
| 85000.002         | 1.0556                        | 1.0558                       | -0.0181       |
| 90000.002         | 1.0048                        | 1.0023                       | 0.2534        |
| 95000.002         | 0.9378                        | 0.9412                       | -0.3604       |
| 100000.002        | 0.8481                        | 0.8414                       | 0.8056        |
| 102000.002        | 0.8094                        | 0.8030                       | 0.7939        |
| 104000.002        | 0.7708                        | 0.7694                       | 0.1708        |
| 106000.002        | 0.7339                        | 0.7351                       | -0.1587       |
| 108000.002        | 0.6998                        | 0.7019                       | -0.2956       |
| 110000.002        | 0.6701                        | 0.6755                       | -0.8006       |
| 115000.002        | 0.6104                        | 0.6069                       | 0.5863        |
| 120000.002        | 0.5564                        | 0.5536                       | 0.5069        |
| 125000.002        | 0.5100                        | 0.5076                       | 0.4802        |
| 130000.002        | 0.4685                        | 0.4685                       | 0.0003        |
| 135000.002        | 0.4286                        | 0.4272                       | 0.3354        |
| 140000.002        | 0.3712                        | 0.3699                       | 0.3510        |
| 145000.002        | 0.2599                        | 0.2501                       | 3.8864        |
| 150000.002        | 0.1931                        | 0.1866                       | 3.4574        |
| 155000.002        | 0.1677                        | 0.1569                       | 6.8966        |
| 160000.002        | 0.1539                        | 0.1529                       | 0.6494        |
| 165000.002        | 0.1442                        | 0.1451                       | -0.5619       |
| 170000.002        | 0.1373                        | 0.1376                       | -0.1836       |
| 175000.002        | 0.1312                        | 0.1308                       | 0.3103        |
| 180000.002        | 0.1249                        | 0.1247                       | 0.1400        |
| 190000.002        | 0.1141                        | 0.1139                       | 0.1909        |
| 200000.002        | 0.1043                        | 0.1044                       | -0.0738       |
| 210000.002        | 0.0956                        | 0.0958                       | -0.2741       |
| 220000.002        | 0.0874                        | 0.0877                       | -0.4429       |

## Comparison Graph

