



# TEST DATA OF SUS10123R3 SU CS10123R3

Regulated DC Power Supply  
Mar 24, 2005

Approved by : Tetsuo Sugimori  
Tetsuo Sugimori Design Manager

Prepared by : Yoshimichi Hirokawa  
Yoshimichi Hirokawa Design Engineer

**COSEL CO.,LTD.**

## CONTENTS

|  |    |
|--|----|
| 1. Input Current (by Input Voltage) . . . . .                    | 1  |
| 2. Input Current (by Load Current) . . . . .                     | 2  |
| 3. Input Power (by Load Current) . . . . .                       | 3  |
| 4. Efficiency (by Input Voltage) . . . . .                       | 4  |
| 5. Efficiency (by Load Current) . . . . .                        | 5  |
| 6. Line Regulation . . . . .                                     | 6  |
| 7. Load Regulation . . . . .                                     | 7  |
| 8. Dynamic Load Response . . . . .                               | 8  |
| 9. Ripple Voltage (by Load Current) . . . . .                    | 9  |
| 10. Ripple-Noise . . . . .                                       | 10 |
| 11. Ripple Voltage (by Ambient Temperature) . . . . .            | 11 |
| 12. Ambient Temperature Drift . . . . .                          | 12 |
| 13. Output Voltage Accuracy . . . . .                            | 13 |
| 14. Time Lapse Drift . . . . .                                   | 14 |
| 15. Rise and Fall Time . . . . .                                 | 15 |
| 16. Minimum Input Voltage for Regulated Output Voltage . . . . . | 16 |
| 17. Overcurrent Protection . . . . .                             | 17 |
| 18. Figure of Testing Circuitry . . . . .                        | 18 |

(Final Page 18)

**COSEL**

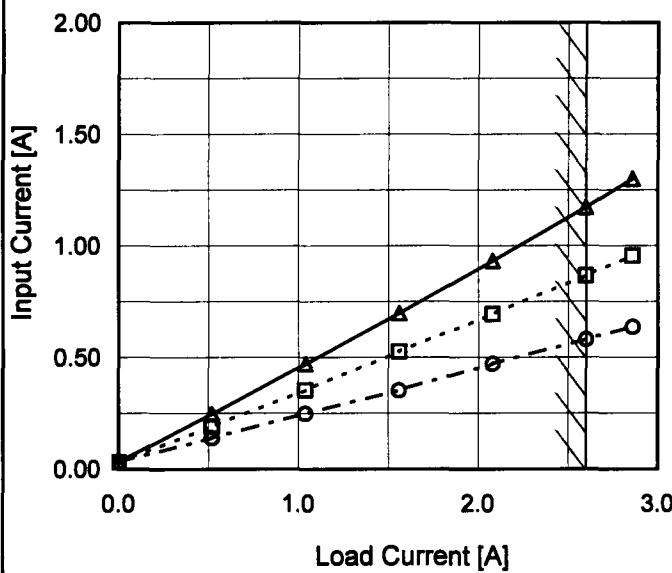
| Model  | SUS10123R3/SUCCS10123R3   |                   |                   |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
|--|---|-------------------|-------------------|--------------|---------------|---------|----------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|--|--|
| Item   | Input Current (by Input Voltage)  |                   |                   |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| Object   | <u> </u>  |                   |                   |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 1.Graph  | <p style="text-align: center;">—△— Load 100%<br/>     - - -□--- Load 50%<br/>     - - -○--- Load 0%</p> <table border="1"> <caption>Data points estimated from Graph</caption> <thead> <tr> <th>Input Voltage [V]</th> <th>Load 0% [A]</th> <th>Load 50% [A]</th> <th>Load 100% [A]</th> </tr> </thead> <tbody> <tr><td>5.4</td><td>0.043</td><td>0.304</td><td>0.240</td></tr> <tr><td>5.8</td><td>0.042</td><td>0.918</td><td>0.187</td></tr> <tr><td>6.0</td><td>0.041</td><td>0.882</td><td>0.188</td></tr> <tr><td>6.8</td><td>0.039</td><td>0.766</td><td>1.532</td></tr> <tr><td>8.0</td><td>0.037</td><td>0.644</td><td>1.266</td></tr> <tr><td>9.0</td><td>0.035</td><td>0.572</td><td>1.123</td></tr> <tr><td>10.0</td><td>0.034</td><td>0.517</td><td>1.005</td></tr> <tr><td>12.0</td><td>0.033</td><td>0.432</td><td>0.837</td></tr> <tr><td>14.0</td><td>0.032</td><td>0.371</td><td>0.718</td></tr> <tr><td>16.0</td><td>0.032</td><td>0.331</td><td>0.632</td></tr> <tr><td>18.0</td><td>0.033</td><td>0.301</td><td>0.581</td></tr> <tr><td>20.0</td><td>0.034</td><td>0.276</td><td>0.514</td></tr> </tbody> </table>   | Input Voltage [V] | Load 0% [A]       | Load 50% [A] | Load 100% [A] | 5.4     | 0.043    | 0.304     | 0.240 | 5.8   | 0.042 | 0.918 | 0.187 | 6.0   | 0.041 | 0.882 | 0.188 | 6.8   | 0.039 | 0.766 | 1.532 | 8.0   | 0.037 | 0.644 | 1.266 | 9.0   | 0.035 | 0.572 | 1.123 | 10.0  | 0.034 | 0.517 | 1.005 | 12.0  | 0.033 | 0.432 | 0.837 | 14.0  | 0.032 | 0.371 | 0.718 | 16.0  | 0.032 | 0.331 | 0.632 | 18.0  | 0.033 | 0.301 | 0.581 | 20.0  | 0.034 | 0.276 | 0.514 |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| Input Voltage [V]  | Load 0% [A]   | Load 50% [A]      | Load 100% [A]     |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 5.4  | 0.043   | 0.304             | 0.240             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 5.8  | 0.042   | 0.918             | 0.187             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 6.0  | 0.041   | 0.882             | 0.188             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 6.8  | 0.039   | 0.766             | 1.532             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 8.0  | 0.037   | 0.644             | 1.266             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 9.0  | 0.035   | 0.572             | 1.123             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 10.0   | 0.034   | 0.517             | 1.005             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 12.0   | 0.033   | 0.432             | 0.837             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 14.0   | 0.032   | 0.371             | 0.718             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 16.0   | 0.032   | 0.331             | 0.632             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 18.0   | 0.033   | 0.301             | 0.581             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 20.0   | 0.034   | 0.276             | 0.514             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 2.Values   | <table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="3">Input Current [A]</th> </tr> <tr> <th>Load 0%</th> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>2.0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>4.0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>5.4</td><td>0.043</td><td>0.304</td><td>0.240</td></tr> <tr><td>5.8</td><td>0.042</td><td>0.918</td><td>0.187</td></tr> <tr><td>6.0</td><td>0.041</td><td>0.882</td><td>0.188</td></tr> <tr><td>6.8</td><td>0.039</td><td>0.766</td><td>1.532</td></tr> <tr><td>8.0</td><td>0.037</td><td>0.644</td><td>1.266</td></tr> <tr><td>9.0</td><td>0.035</td><td>0.572</td><td>1.123</td></tr> <tr><td>10.0</td><td>0.034</td><td>0.517</td><td>1.005</td></tr> <tr><td>12.0</td><td>0.033</td><td>0.432</td><td>0.837</td></tr> <tr><td>14.0</td><td>0.032</td><td>0.371</td><td>0.718</td></tr> <tr><td>16.0</td><td>0.032</td><td>0.331</td><td>0.632</td></tr> <tr><td>18.0</td><td>0.033</td><td>0.301</td><td>0.581</td></tr> <tr><td>20.0</td><td>0.034</td><td>0.276</td><td>0.514</td></tr> <tr><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table> | Input Voltage [V] | Input Current [A] |              |               | Load 0% | Load 50% | Load 100% | 0.0   | 0.000 | 0.000 | 0.000 | 2.0   | 0.000 | 0.000 | 0.000 | 4.0   | 0.000 | 0.000 | 0.000 | 5.4   | 0.043 | 0.304 | 0.240 | 5.8   | 0.042 | 0.918 | 0.187 | 6.0   | 0.041 | 0.882 | 0.188 | 6.8   | 0.039 | 0.766 | 1.532 | 8.0   | 0.037 | 0.644 | 1.266 | 9.0   | 0.035 | 0.572 | 1.123 | 10.0  | 0.034 | 0.517 | 1.005 | 12.0  | 0.033 | 0.432 | 0.837 | 14.0  | 0.032 | 0.371 | 0.718 | 16.0 | 0.032 | 0.331 | 0.632 | 18.0 | 0.033 | 0.301 | 0.581 | 20.0 | 0.034 | 0.276 | 0.514 | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| Input Voltage [V]  | Input Current [A]   |                   |                   |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
|  | Load 0%   | Load 50%          | Load 100%         |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 0.0  | 0.000   | 0.000             | 0.000             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 2.0  | 0.000   | 0.000             | 0.000             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 4.0  | 0.000   | 0.000             | 0.000             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 5.4  | 0.043   | 0.304             | 0.240             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 5.8  | 0.042   | 0.918             | 0.187             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 6.0  | 0.041   | 0.882             | 0.188             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 6.8  | 0.039   | 0.766             | 1.532             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 8.0  | 0.037   | 0.644             | 1.266             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 9.0  | 0.035   | 0.572             | 1.123             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 10.0   | 0.034   | 0.517             | 1.005             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 12.0   | 0.033   | 0.432             | 0.837             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 14.0   | 0.032   | 0.371             | 0.718             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 16.0   | 0.032   | 0.331             | 0.632             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 18.0   | 0.033   | 0.301             | 0.581             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| 20.0   | 0.034   | 0.276             | 0.514             |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| -  | -   | -                 | -                 |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| -  | -   | -                 | -                 |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| -  | -   | -                 | -                 |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |
| Note: Slanted line shows the range of the rated input voltage. |   |                   |                   |              |               |         |          |           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |  |  |

**COSEL**

|        |                                 |
|--------|---------------------------------|
| Model  | SUS10123R3/SUCCS10123R3         |
| Item   | Input Current (by Load Current) |
| Object | _____                           |

 Temperature 25°C  
 Testing Circuitry Figure A

1. Graph
- △— Input Volt. 9V
  - -□-- Input Volt. 12V
  - ·○--- Input Volt. 18V



## 2. Values

| Load Current [A] | Input Current [A] |                   |                   |
|------------------|-------------------|-------------------|-------------------|
|                  | Input Volt. 9[V]  | Input Volt. 12[V] | Input Volt. 18[V] |
| 0.00             | 0.033             | 0.032             | 0.032             |
| 0.52             | 0.248             | 0.191             | 0.139             |
| 1.04             | 0.472             | 0.354             | 0.248             |
| 1.56             | 0.699             | 0.526             | 0.352             |
| 2.08             | 0.933             | 0.693             | 0.471             |
| 2.60             | 1.173             | 0.866             | 0.581             |
| 2.86             | 1.300             | 0.955             | 0.636             |
| --               | -                 | -                 | -                 |
| --               | -                 | -                 | -                 |
| --               | -                 | -                 | -                 |
| --               | -                 | -                 | -                 |

Note: Slanted line shows the range of the rated load current.

**COSEL**

| Model            | SUS10123R3/SUCCS10123R3   |   |                   |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
|------------------|---|---|-------------------|--|------------------|-----------------|--|--|------------------|-------------------|-------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|-------|-------|-------|----|---|---|---|----|---|---|---|----|---|---|---|----|---|---|---|
| Item             | Input Power (by Load Current)   |   |                   |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| Object           | _____   |   |                   |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 1.Graph          | <p>—△— Input Volt. 9V<br/>       - - -□- Input Volt. 12V<br/>       - - -○- Input Volt. 18V</p> |   |                   |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 2.Values         | Load Current [A]  | <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</th></tr> <tr> <th>Input Volt. 9[V]</th><th>Input Volt. 12[V]</th><th>Input Volt. 18[V]</th></tr> </thead> <tbody> <tr><td>0.00</td><td>0.30</td><td>0.38</td><td>0.60</td></tr> <tr><td>0.52</td><td>2.21</td><td>2.28</td><td>2.49</td></tr> <tr><td>1.04</td><td>4.18</td><td>4.20</td><td>4.44</td></tr> <tr><td>1.56</td><td>6.17</td><td>6.24</td><td>6.29</td></tr> <tr><td>2.08</td><td>8.20</td><td>8.20</td><td>8.41</td></tr> <tr><td>2.60</td><td>10.28</td><td>10.22</td><td>10.36</td></tr> <tr><td>2.86</td><td>11.36</td><td>11.25</td><td>11.35</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table> |                   |  | Load Current [A] | Input Power [W] |  |  | Input Volt. 9[V] | Input Volt. 12[V] | Input Volt. 18[V] | 0.00 | 0.30 | 0.38 | 0.60 | 0.52 | 2.21 | 2.28 | 2.49 | 1.04 | 4.18 | 4.20 | 4.44 | 1.56 | 6.17 | 6.24 | 6.29 | 2.08 | 8.20 | 8.20 | 8.41 | 2.60 | 10.28 | 10.22 | 10.36 | 2.86 | 11.36 | 11.25 | 11.35 | -- | - | - | - | -- | - | - | - | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Input Power [W]   |   |                   |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
|                  | Input Volt. 9[V]  | Input Volt. 12[V]   | Input Volt. 18[V] |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 0.00             | 0.30  | 0.38  | 0.60              |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 0.52             | 2.21  | 2.28  | 2.49              |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 1.04             | 4.18  | 4.20  | 4.44              |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 1.56             | 6.17  | 6.24  | 6.29              |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 2.08             | 8.20  | 8.20  | 8.41              |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 2.60             | 10.28   | 10.22   | 10.36             |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 2.86             | 11.36   | 11.25   | 11.35             |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --               | -   | -   | -                 |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --               | -   | -   | -                 |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --               | -   | -   | -                 |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --               | -   | -   | -                 |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| Note:            | Slanted line shows the range of the rated load current.   |   |                   |  |                  |                 |  |  |                  |                   |                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |

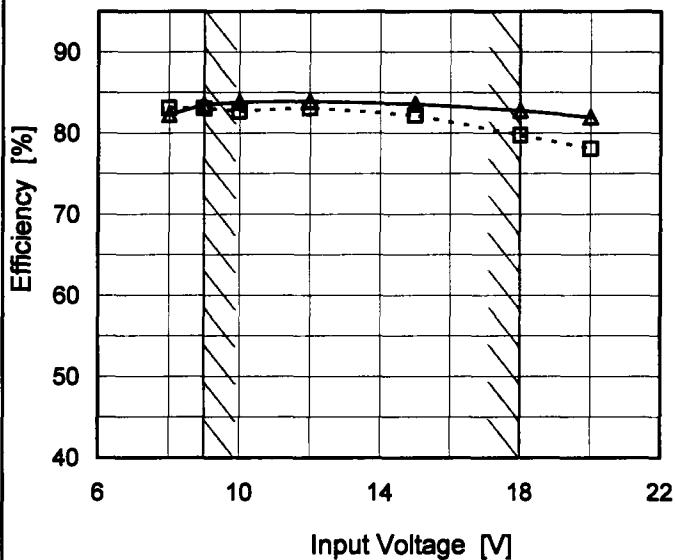
**COSEL**
**Model** SUS10123R3/SUCCS10123R3

**Item** Efficiency (by Input Voltage)

**Object** —————

**1. Graph**

---□--- Load 50%  
—△— Load 100%



Note: Slanted line shows the range of the rated input voltage.

**Temperature** 25°C  
**Testing Circuitry** Figure A

**2. Values**

| Input Voltage [V] | Efficiency [%] |           |
|-------------------|----------------|-----------|
|                   | Load 50%       | Load 100% |
| 8                 | 83.1           | 82.3      |
| 9                 | 83.1           | 83.5      |
| 10                | 82.7           | 83.8      |
| 12                | 83.1           | 84.0      |
| 15                | 82.2           | 83.6      |
| 18                | 79.7           | 82.8      |
| 20                | 78.1           | 82.0      |
| --                | -              | -         |
| --                | -              | -         |

**COSEL**

| Model            | SUS10123R3/SUCCS10123R3  |                   |                   |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
|------------------|--|-------------------|-------------------|------------------|----------------|--|--|------------------|-------------------|-------------------|------|---|---|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|---|---|---|----|---|---|---|----|---|---|---|----|---|---|---|
| Item             | Efficiency (by Load Current)   |                   |                   |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| Object           | <u> </u>   |                   |                   |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 1.Graph          | <p>Legend:</p> <ul style="list-style-type: none"> <li>Input Volt. 9V</li> <li>Input Volt. 12V</li> <li>Input Volt. 18V</li> </ul>  |                   |                   |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 2.Values         | <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Efficiency [%]</th> </tr> <tr> <th>Input Volt. 9[V]</th> <th>Input Volt. 12[V]</th> <th>Input Volt. 18[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.52</td><td>78.4</td><td>76.0</td><td>69.5</td></tr> <tr><td>1.04</td><td>82.5</td><td>82.1</td><td>77.6</td></tr> <tr><td>1.56</td><td>83.6</td><td>82.7</td><td>82.0</td></tr> <tr><td>2.08</td><td>83.7</td><td>83.8</td><td>81.7</td></tr> <tr><td>2.60</td><td>83.3</td><td>83.8</td><td>82.7</td></tr> <tr><td>2.86</td><td>82.9</td><td>83.7</td><td>83.0</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table> |                   |                   | Load Current [A] | Efficiency [%] |  |  | Input Volt. 9[V] | Input Volt. 12[V] | Input Volt. 18[V] | 0.00 | - | - | - | 0.52 | 78.4 | 76.0 | 69.5 | 1.04 | 82.5 | 82.1 | 77.6 | 1.56 | 83.6 | 82.7 | 82.0 | 2.08 | 83.7 | 83.8 | 81.7 | 2.60 | 83.3 | 83.8 | 82.7 | 2.86 | 82.9 | 83.7 | 83.0 | -- | - | - | - | -- | - | - | - | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Efficiency [%]   |                   |                   |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
|                  | Input Volt. 9[V]   | Input Volt. 12[V] | Input Volt. 18[V] |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 0.00             | -  | -                 | -                 |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 0.52             | 78.4   | 76.0              | 69.5              |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 1.04             | 82.5   | 82.1              | 77.6              |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 1.56             | 83.6   | 82.7              | 82.0              |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 2.08             | 83.7   | 83.8              | 81.7              |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 2.60             | 83.3   | 83.8              | 82.7              |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 2.86             | 82.9   | 83.7              | 83.0              |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --               | -  | -                 | -                 |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --               | -  | -                 | -                 |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --               | -  | -                 | -                 |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --               | -  | -                 | -                 |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| Note:            | Slanted line shows the range of the rated load current.  |                   |                   |                  |                |  |  |                  |                   |                   |      |   |   |   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |

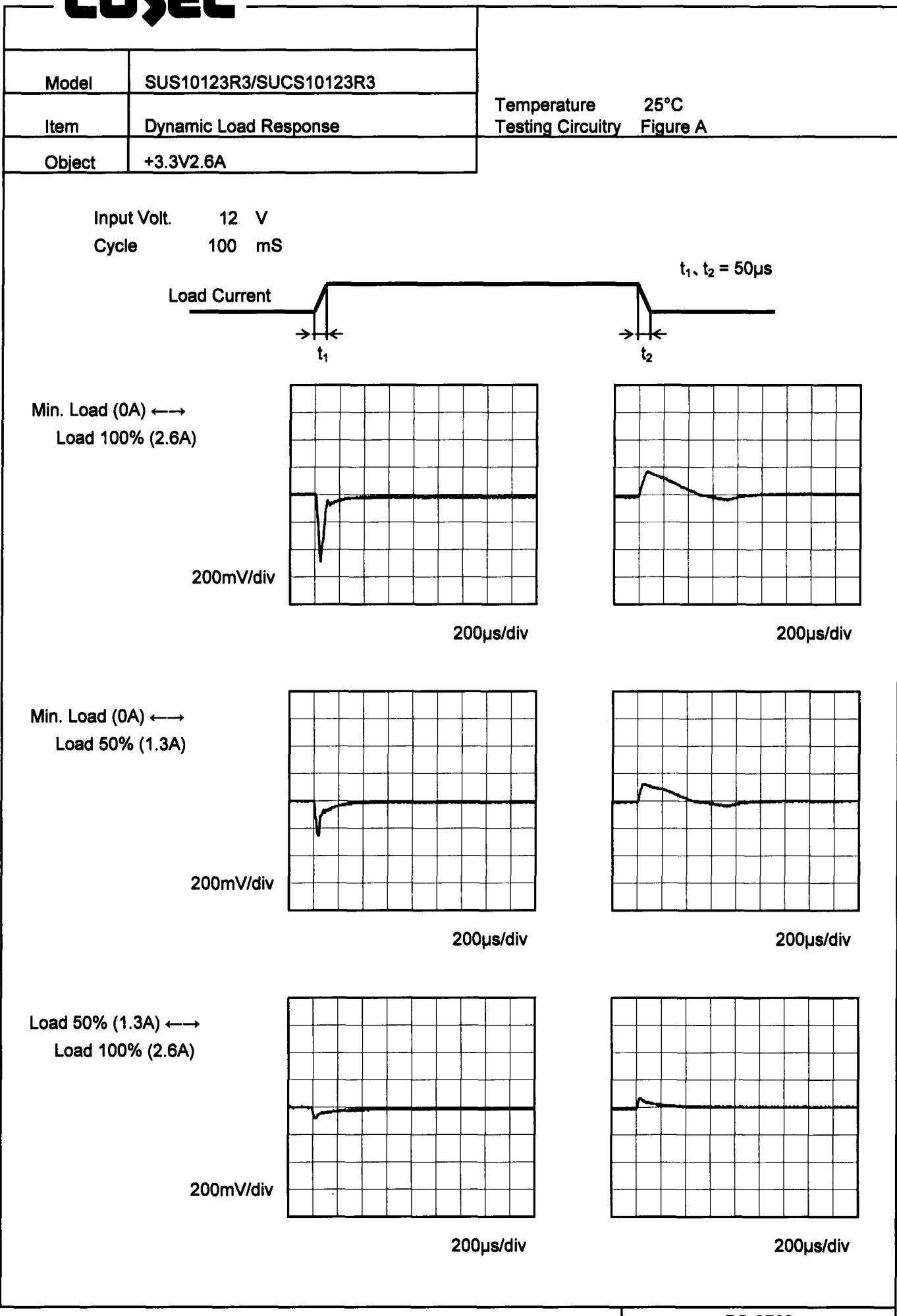
**COSEL**

| Model  | SUS10123R3/SUCCS10123R3 |  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
|--|-------------------------|--|-------------------|--------------------|--|----------|-----------|---|-------|-------|---|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|-------|-------|----|---|---|----|---|---|
| Item   | Line Regulation         | Temperature 25°C<br>Testing Circuitry Figure A |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| Object   | +3.3V2.6A               |  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 1. Graph   |                         |  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| <p>Output Voltage [V]</p> <p>Input Voltage [V]</p> <p>Legend: ---□--- Load 50%<br/>—△— Load 100%</p>   |                         |  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| Note: Slanted line shows the range of the rated input voltage.   |                         |  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 2. Values  |                         |  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| <table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Output Voltage [V]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr> <td>8</td><td>3.298</td><td>3.291</td> </tr> <tr> <td>9</td><td>3.299</td><td>3.291</td> </tr> <tr> <td>10</td><td>3.299</td><td>3.291</td> </tr> <tr> <td>12</td><td>3.299</td><td>3.291</td> </tr> <tr> <td>15</td><td>3.299</td><td>3.292</td> </tr> <tr> <td>18</td><td>3.299</td><td>3.293</td> </tr> <tr> <td>20</td><td>3.299</td><td>3.294</td> </tr> <tr> <td>--</td><td>-</td><td>-</td> </tr> <tr> <td>--</td><td>-</td><td>-</td> </tr> </tbody> </table> |                         |  | Input Voltage [V] | Output Voltage [V] |  | Load 50% | Load 100% | 8 | 3.298 | 3.291 | 9 | 3.299 | 3.291 | 10 | 3.299 | 3.291 | 12 | 3.299 | 3.291 | 15 | 3.299 | 3.292 | 18 | 3.299 | 3.293 | 20 | 3.299 | 3.294 | -- | - | - | -- | - | - |
| Input Voltage [V]  | Output Voltage [V]      |  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
|  | Load 50%                | Load 100%                                      |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 8  | 3.298                   | 3.291  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 9  | 3.299                   | 3.291  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 10   | 3.299                   | 3.291  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 12   | 3.299                   | 3.291  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 15   | 3.299                   | 3.292  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 18   | 3.299                   | 3.293  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| 20   | 3.299                   | 3.294  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| --   | -                       | -  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |
| --   | -                       | -  |                   |                    |  |          |           |   |       |       |   |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |       |       |    |   |   |    |   |   |

**COSEL**

| Model            | SUS10123R3/SUCS10123R3   |  |   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
|------------------|--|--|---|--------------------|--|--|------------------|-------------------|-------------------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|----|---|---|---|----|---|---|---|----|---|---|---|----|---|---|---|--|
| Item             | Load Regulation  |  |   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| Object           | +3.3V2.6A  |  |   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| 1.Graph          | —△— Input Volt. 9V<br>---□--- Input Volt. 12V<br>---○--- Input Volt. 18V | 2.Values   |   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
|                  | <p>Output Voltage [V]</p> <p>Load Current [A]</p>                        | <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 9[V]</th> <th>Input Volt. 12[V]</th> <th>Input Volt. 18[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>3.304</td><td>3.304</td><td>3.304</td></tr> <tr><td>0.52</td><td>3.302</td><td>3.302</td><td>3.302</td></tr> <tr><td>1.04</td><td>3.300</td><td>3.300</td><td>3.300</td></tr> <tr><td>1.56</td><td>3.296</td><td>3.298</td><td>3.299</td></tr> <tr><td>2.08</td><td>3.293</td><td>3.294</td><td>3.297</td></tr> <tr><td>2.60</td><td>3.291</td><td>3.291</td><td>3.293</td></tr> <tr><td>2.86</td><td>3.290</td><td>3.289</td><td>3.291</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table> | Load Current [A]  | Output Voltage [V] |  |  | Input Volt. 9[V] | Input Volt. 12[V] | Input Volt. 18[V] | 0.00 | 3.304 | 3.304 | 3.304 | 0.52 | 3.302 | 3.302 | 3.302 | 1.04 | 3.300 | 3.300 | 3.300 | 1.56 | 3.296 | 3.298 | 3.299 | 2.08 | 3.293 | 3.294 | 3.297 | 2.60 | 3.291 | 3.291 | 3.293 | 2.86 | 3.290 | 3.289 | 3.291 | -- | - | - | - | -- | - | - | - | -- | - | - | - | -- | - | - | - |  |
| Load Current [A] | Output Voltage [V]   |  |   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
|                  | Input Volt. 9[V]   | Input Volt. 12[V]  | Input Volt. 18[V]   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| 0.00             | 3.304  | 3.304  | 3.304   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| 0.52             | 3.302  | 3.302  | 3.302   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| 1.04             | 3.300  | 3.300  | 3.300   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| 1.56             | 3.296  | 3.298  | 3.299   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| 2.08             | 3.293  | 3.294  | 3.297   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| 2.60             | 3.291  | 3.291  | 3.293   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| 2.86             | 3.290  | 3.289  | 3.291   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| --               | -  | -  | -   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| --               | -  | -  | -   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| --               | -  | -  | -   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
| --               | -  | -  | -   |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |
|                  |  |  | Note: Slanted line shows the range of the rated load current. |                    |  |  |                  |                   |                   |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |  |

# COSEL

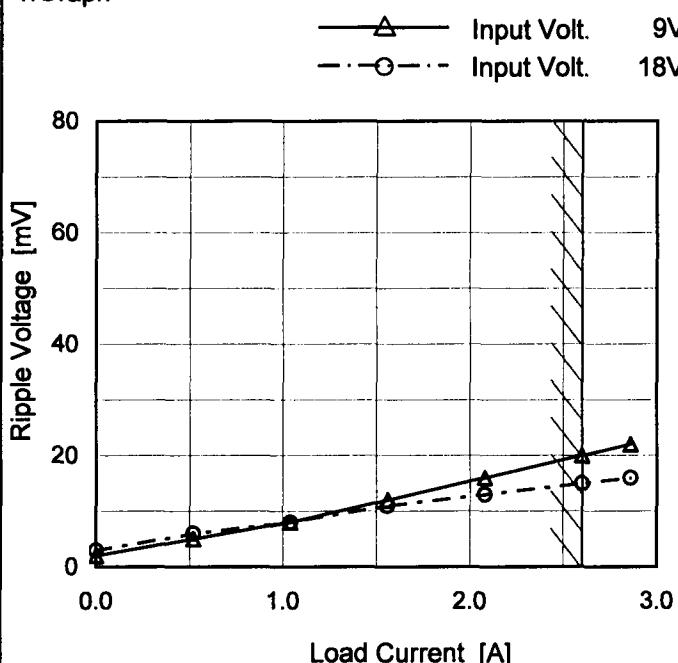


# COSEL

|        |                                  |
|--------|----------------------------------|
| Model  | SUS10123R3/SUCCS10123R3          |
| Item   | Ripple Voltage (by Load Current) |
| Object | +3.3V2.6A                        |

Temperature 25°C  
Testing Circuitry Figure B

## 1. Graph



## 2. Values

| Load Current [A] | Ripple Voltage [mV] |                    |
|------------------|---------------------|--------------------|
|                  | Input Volt. 9 [V]   | Input Volt. 18 [V] |
| 0.00             | 2                   | 3                  |
| 0.52             | 5                   | 6                  |
| 1.04             | 8                   | 8                  |
| 1.56             | 12                  | 11                 |
| 2.08             | 16                  | 13                 |
| 2.60             | 20                  | 15                 |
| 2.86             | 22                  | 16                 |
| --               | -                   | -                  |
| --               | -                   | -                  |
| --               | -                   | -                  |
| --               | -                   | -                  |

Measured by 100 MHz Oscilloscope.

Ripple Voltage is shown as p-p in the figure below.

Note: Slanted line shows the range of the rated load current.

Ripple [mVp-p]

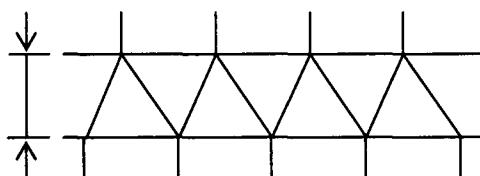


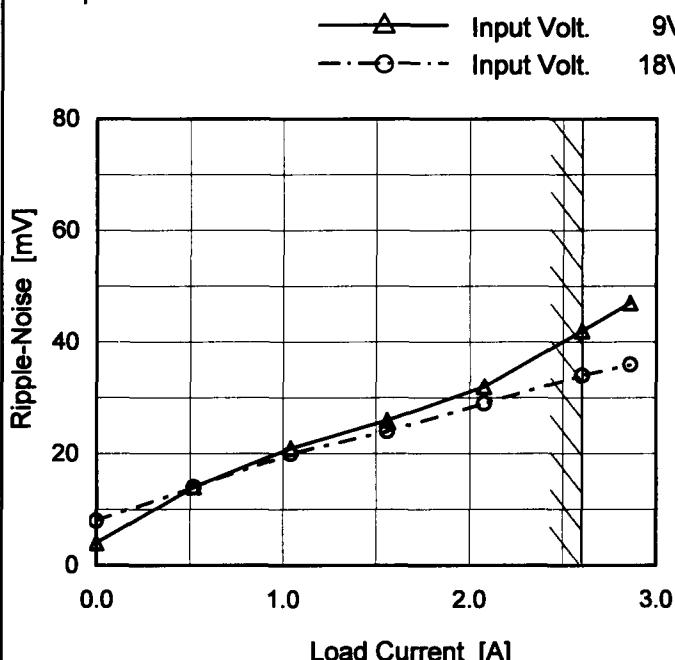
Fig. Complex Ripple Wave Form

**COSEL**

|        |                         |
|--------|-------------------------|
| Model  | SUS10123R3/SUCCS10123R3 |
| Item   | Ripple-Noise            |
| Object | +3.3V2.6A               |

 Temperature 25°C  
 Testing Circuitry Figure B

## 1. Graph



Measured by 100 MHz Oscilloscope.

Ripple-Noise is shown as p-p in the figure below.

Note: Slanted line shows the range of the rated load current.

## 2. Values

| Load Current [A] | Ripple-Noise [mV] |                    |
|------------------|-------------------|--------------------|
|                  | Input Volt. 9 [V] | Input Volt. 18 [V] |
| 0.00             | 4                 | 8                  |
| 0.52             | 14                | 14                 |
| 1.04             | 21                | 20                 |
| 1.56             | 26                | 24                 |
| 2.08             | 32                | 29                 |
| 2.60             | 42                | 34                 |
| 2.86             | 47                | 36                 |
| -                | -                 | -                  |
| -                | -                 | -                  |
| -                | -                 | -                  |
| -                | -                 | -                  |

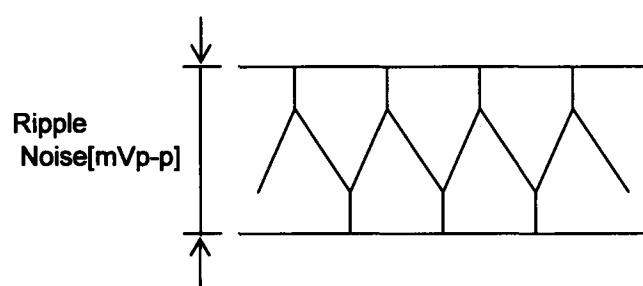
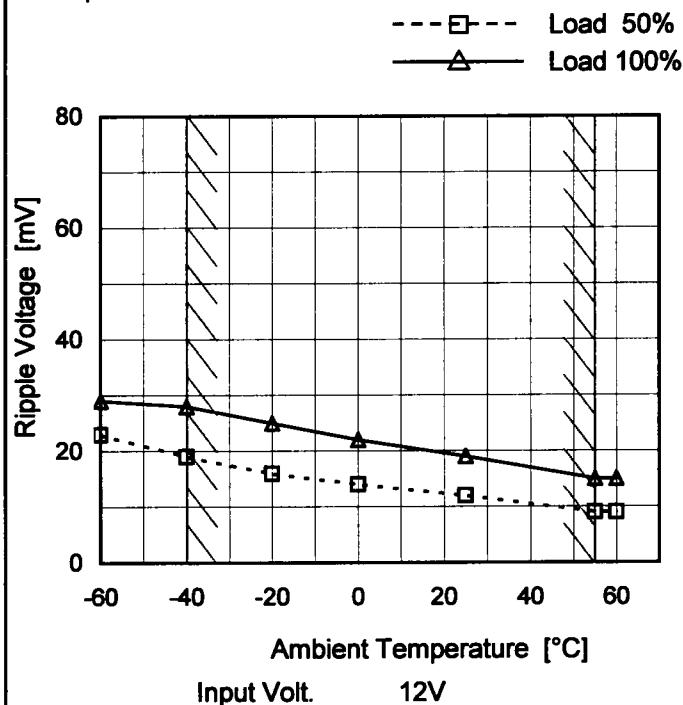


Fig.Complex Ripple Noise Wave Form

**COSEL**

|        |                                   |
|--------|-----------------------------------|
| Model  | SUS10123R3/SUCCS10123R3           |
| Item   | Ripple Voltage (by Ambient Temp.) |
| Object | +3.3V2.6A                         |

## 1. Graph



Measured by 100 MHz Oscilloscope.

Note: Slanted line shows the range of the rated ambient temperature.

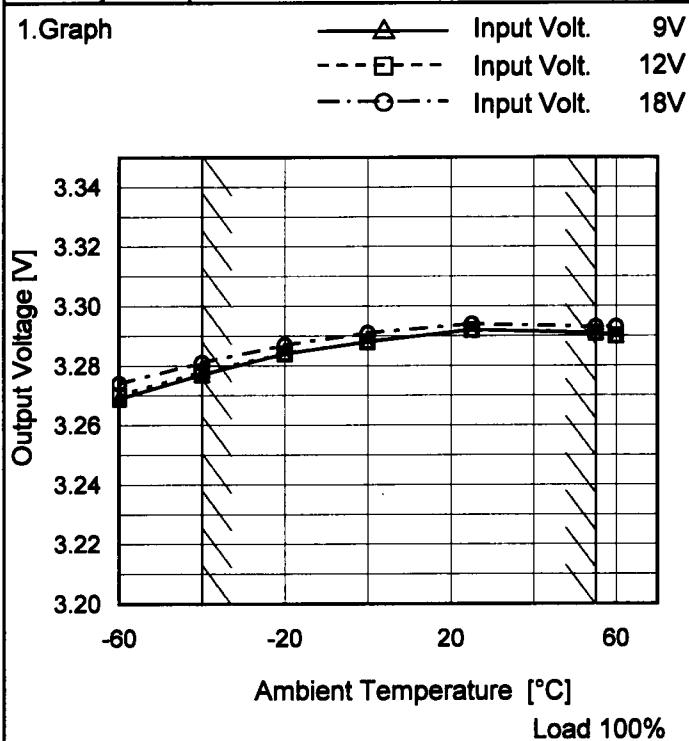
## Testing Circuitry Figure B

## 2. Values

| Ambient Temperature [°C] | Ripple Voltage [mV] |           |
|--------------------------|---------------------|-----------|
|                          | Load 50%            | Load 100% |
| -60                      | 23                  | 29        |
| -40                      | 19                  | 28        |
| -20                      | 16                  | 25        |
| 0                        | 14                  | 22        |
| 25                       | 12                  | 19        |
| 55                       | 9                   | 15        |
| 60                       | 9                   | 15        |
| -                        | -                   | -         |
| -                        | -                   | -         |
| -                        | -                   | -         |
| -                        | -                   | -         |

**COSEL**

|        |                           |
|--------|---------------------------|
| Model  | SUS10123R3/SUCS10123R3    |
| Item   | Ambient Temperature Drift |
| Object | +3.3V2.6A                 |



## Testing Circuitry Figure A

## 2.Values

| Ambient Temperature [°C] | Output Voltage [V] |                   |                   |
|--------------------------|--------------------|-------------------|-------------------|
|                          | Input Volt. 9[V]   | Input Volt. 12[V] | Input Volt. 18[V] |
| -60                      | 3.269              | 3.270             | 3.274             |
| -40                      | 3.277              | 3.278             | 3.281             |
| -20                      | 3.284              | 3.284             | 3.287             |
| 0                        | 3.288              | 3.288             | 3.291             |
| 25                       | 3.292              | 3.292             | 3.294             |
| 55                       | 3.291              | 3.291             | 3.293             |
| 60                       | 3.290              | 3.290             | 3.293             |
| -                        | -                  | -                 | -                 |
| -                        | -                  | -                 | -                 |
| --                       | --                 | --                | --                |
| --                       | --                 | --                | --                |

Note: Slanted line shows the range of the rated ambient temperature.



|        |                         |                            |
|--------|-------------------------|----------------------------|
| Model  | SUS10123R3/SUCCS10123R3 | Testing Circuitry Figure A |
| Item   | Output Voltage Accuracy |                            |
| Object | +3.3V2.6A               |                            |

### 1. Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -40 - 55°C

Input Voltage : 9 - 18V

Load Current : 0 - 2.6A

\* Output Voltage Accuracy =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

$$\text{* Output Voltage Accuracy (Ratio)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

### 2. Values

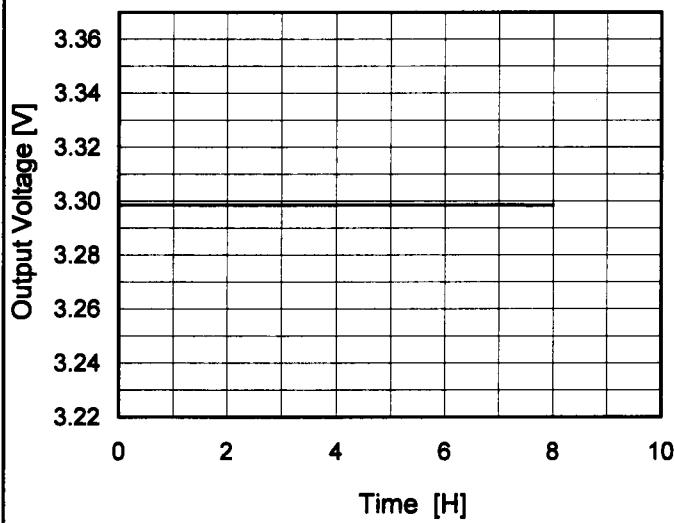
| Item            | Temperature<br>[°C] | Input<br>Voltage[V] | Output     |            | Output Voltage Accuracy |            |
|-----------------|---------------------|---------------------|------------|------------|-------------------------|------------|
|                 |                     |                     | Current[A] | Voltage[V] | Value [mV]              | Ration [%] |
| Maximum Voltage | 25                  | 9                   | 0          | 3.305      | $\pm 14$                | $\pm 0.4$  |
| Minimum Voltage | -40                 | 9                   | 2.6        | 3.277      |                         |            |

**COSEL**

|        |                        |
|--------|------------------------|
| Model  | SUS10123R3/SUCS10123R3 |
| Item   | Time Lapse Drift       |
| Object | +3.3V2.6A              |

Temperature 25°C  
 Testing Circuitry Figure A

## 1.Graph



## 2.Values

| Time since start [H] | Output Voltage [V] |
|----------------------|--------------------|
| 0.0                  | 3.298              |
| 0.5                  | 3.299              |
| 1.0                  | 3.299              |
| 2.0                  | 3.299              |
| 3.0                  | 3.299              |
| 4.0                  | 3.299              |
| 5.0                  | 3.299              |
| 6.0                  | 3.299              |
| 7.0                  | 3.299              |
| 8.0                  | 3.299              |

**COSEL**

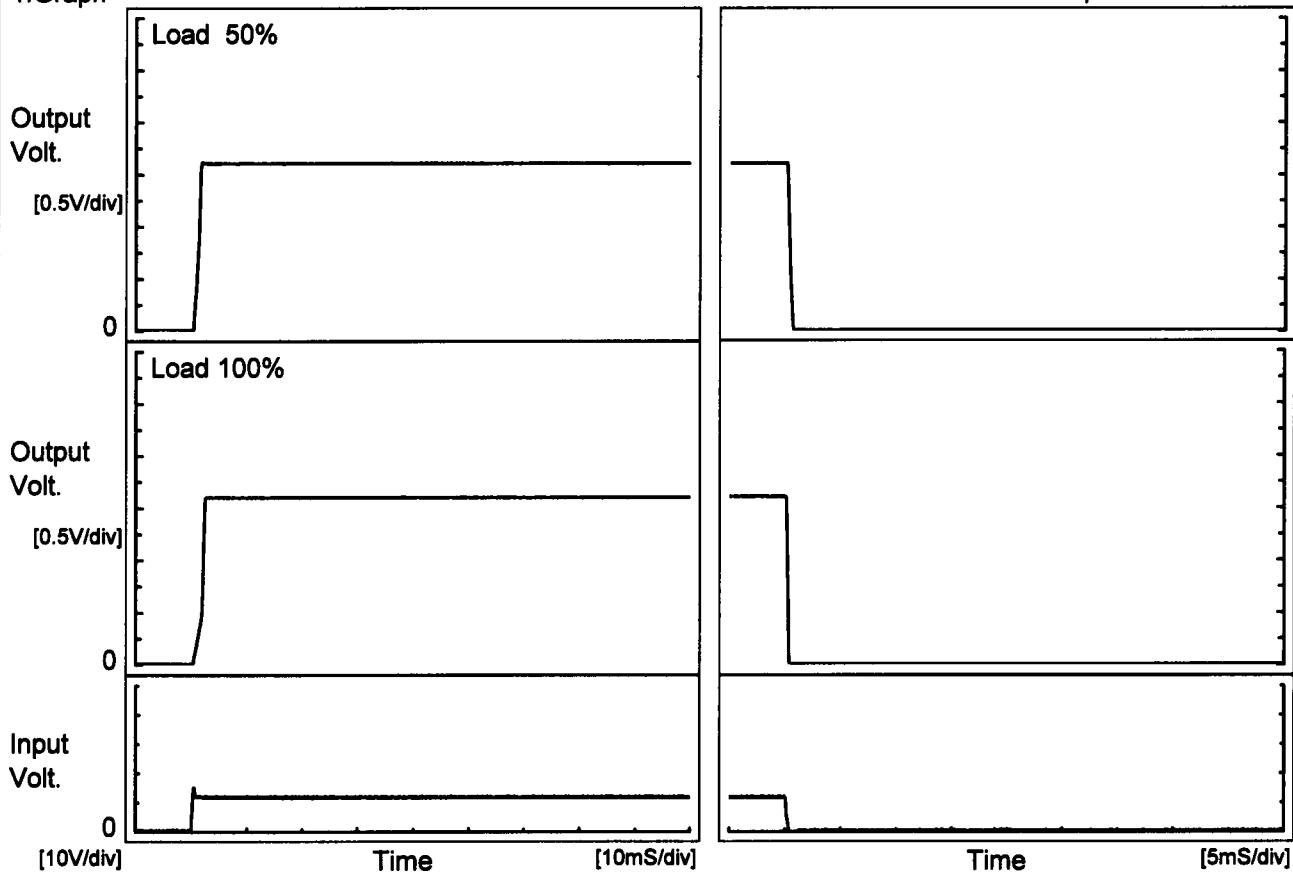
Model SUS10123R3/SUCS10123R3

Item Rise and Fall Time

Object +3.3V2.6A

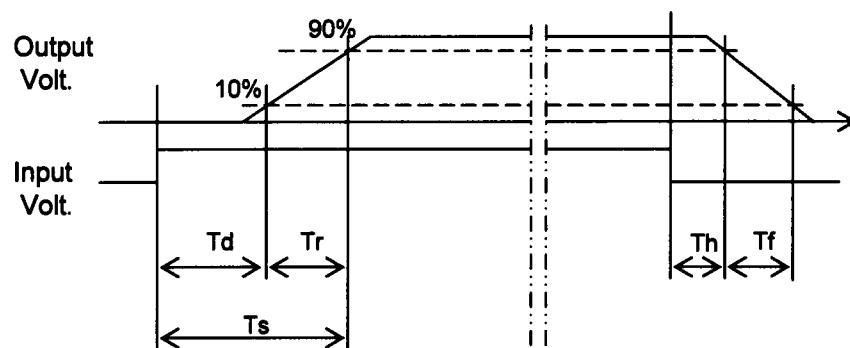
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

| Load  | Time | Td  | Tr  | Ts  | Th  | Tf  | [mS] |
|-------|------|-----|-----|-----|-----|-----|------|
| 50 %  |      | 0.5 | 1.2 | 1.7 | 0.2 | 0.4 |      |
| 100 % |      | 0.9 | 1.6 | 2.5 | 0.2 | 0.2 |      |



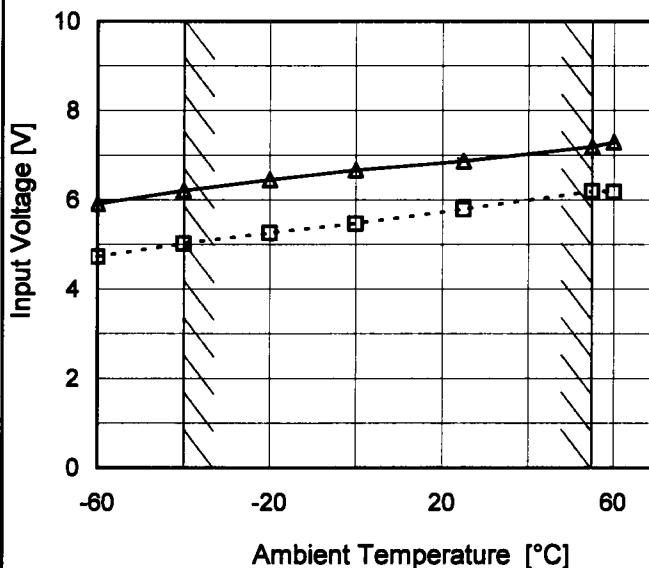
**COSEL**
**Model** SUS10123R3/SUCS10123R3

**Item** Minimum Input Voltage  
for Regulated Output Voltage

**Object** +3.3V2.6A

**1. Graph**

---□--- Load 50%  
—△— Load 100%



Note: Slanted line shows the range of the rated ambient temperature.

**Testing Circuitry Figure A**
**2. Values**

| Ambient Temperature<br>[°C] | Input Voltage [V] |           |
|-----------------------------|-------------------|-----------|
|                             | Load 50%          | Load 100% |
| -60                         | 4.8               | 6.0       |
| -40                         | 5.1               | 6.3       |
| -20                         | 5.3               | 6.5       |
| 0                           | 5.5               | 6.7       |
| 25                          | 5.8               | 6.9       |
| 55                          | 6.2               | 7.2       |
| 60                          | 6.2               | 7.3       |
| --                          | -                 | -         |
| --                          | -                 | -         |
| --                          | -                 | -         |
| --                          | -                 | -         |

**COSEL**

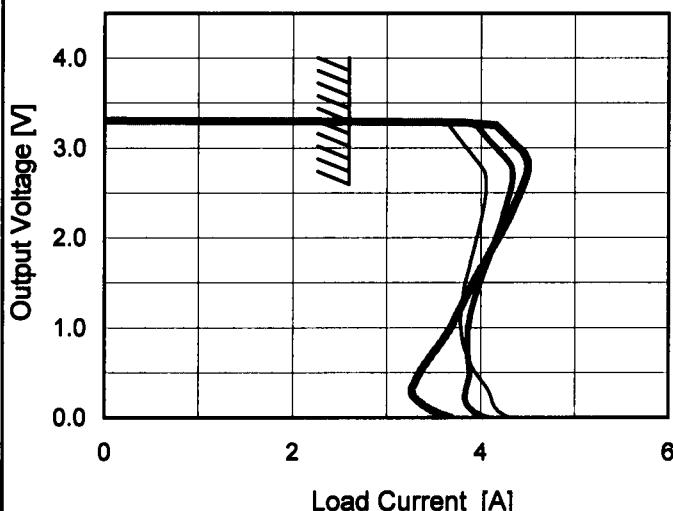
Model SUS10123R3/SUCS10123R3

Item Overcurrent Protection

Object +3.3V2.6A

## 1. Graph

— Input Volt. 9V  
 — Input Volt. 12V  
 — Input Volt. 18V



Note: Slanted line shows the range of the rated load current.

 Temperature 25°C  
 Testing Circuitry Figure A

## 2. Values

| Output Voltage [V] | Load Current [A] |                   |                   |
|--------------------|------------------|-------------------|-------------------|
|                    | Input Volt. 9[V] | Input Volt. 12[V] | Input Volt. 18[V] |
| 3.30               | 3.00             | 2.93              | 2.95              |
| 3.14               | 3.75             | 4.04              | 4.25              |
| 2.97               | 3.86             | 4.16              | 4.44              |
| 2.64               | 4.05             | 4.33              | 4.47              |
| 2.31               | 4.02             | 4.26              | 4.32              |
| 1.98               | 3.94             | 4.15              | 4.17              |
| 1.65               | 3.87             | 4.04              | 3.99              |
| 1.32               | 3.80             | 3.93              | 3.84              |
| 0.99               | 3.79             | 3.86              | 3.66              |
| 0.66               | 3.86             | 3.87              | 3.44              |
| 0.33               | 4.07             | 3.84              | 3.27              |
| 0.00               | 4.34             | 4.16              | 3.69              |

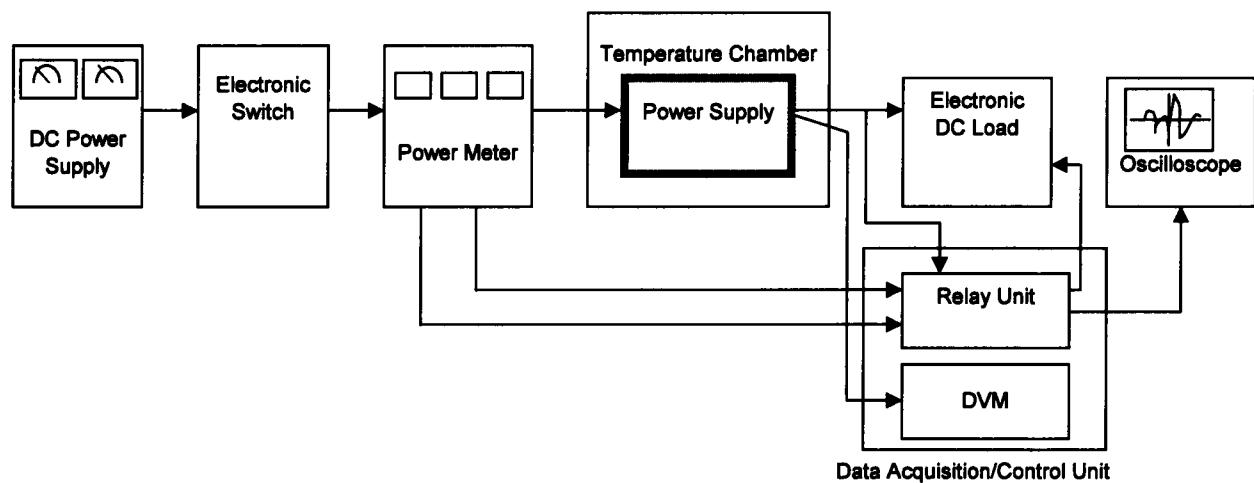


Figure A

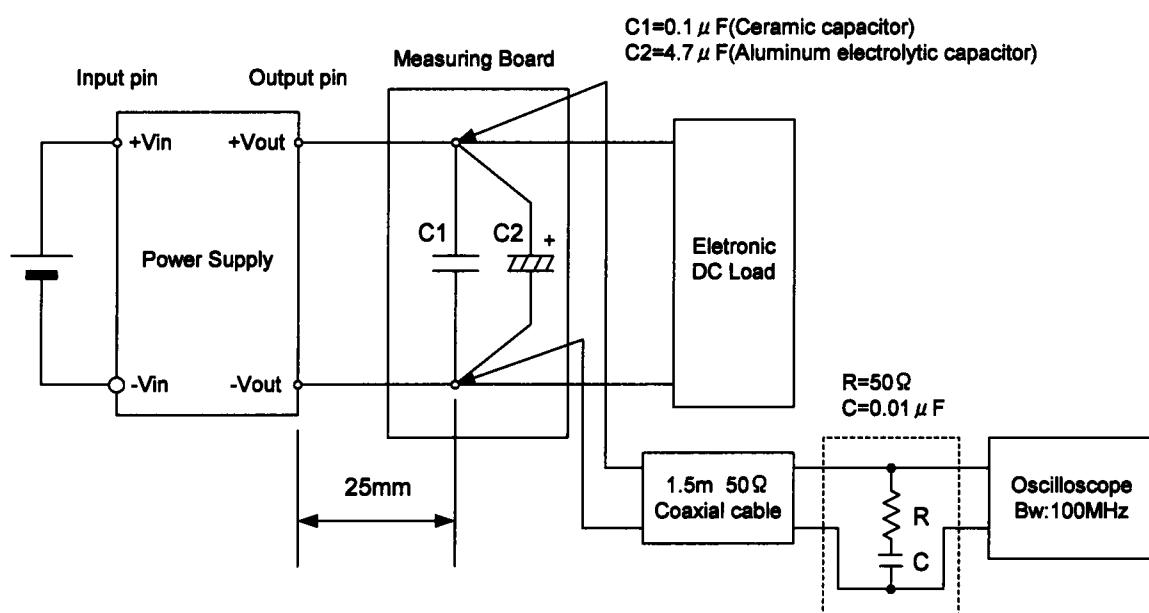


Figure B (Ripple and Ripple noise Characteristic)