

# TEST DATA OF MGFW34815

Regulated DC Power Supply  
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Approved by : Takayuki Fukuda  
Takayuki Fukuda Design Manager

Prepared by : Takaaki Sekiguchi  
Takaaki Sekiguchi Design Engineer

**COSEL CO.,LTD.**

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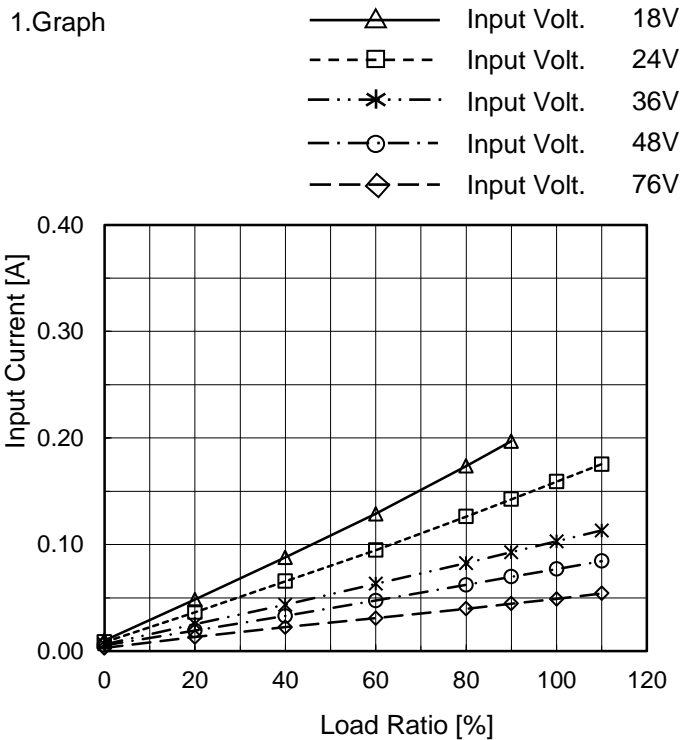


| <p>Model MGFW34815</p>  |                                  | <p>Temperature 25°C<br/>Testing Circuitry Figure A</p>   |                   |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
|---|----------------------------------|--|-------------------|-------------------|--|--|---------|----------|-----------|-----|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|----|---|---|---|----|---|---|---|----|---|---|---|----|---|---|---|
| Item  | Input Current (by Input Voltage) |  |                   |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| Object  | _____                            |  |                   |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| <p>1.Graph</p> <p> <span style="display: inline-block; width: 1em; border-bottom: 1px solid black; margin-right: 0.5em;"></span> <span style="display: inline-block; width: 1em; border-bottom: 1px dashed black; margin-right: 0.5em;"></span> <span style="display: inline-block; width: 1em; border-bottom: 1px dash-dot black; margin-right: 0.5em;"></span> </p> <p> <span style="display: inline-block; width: 1em; border-bottom: 1px solid black; margin-right: 0.5em;"></span> △ Load 100%<br/> <span style="display: inline-block; width: 1em; border-bottom: 1px dashed black; margin-right: 0.5em;"></span> □ Load 50%<br/> <span style="display: inline-block; width: 1em; border-bottom: 1px dash-dot black; margin-right: 0.5em;"></span> ○ Load 0%                 </p> <p>Note: Slanted line shows the range of the rated input voltage.</p> |                                  | <p>2.Values</p> <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>16.0</td><td>0.003</td><td>0.003</td><td>0.004</td></tr> <tr><td>16.2</td><td>0.004</td><td>0.004</td><td>0.003</td></tr> <tr><td>16.4</td><td>0.003</td><td>0.003</td><td>0.004</td></tr> <tr><td>16.6</td><td>0.011</td><td>0.119</td><td>0.233</td></tr> <tr><td>16.8</td><td>0.012</td><td>0.117</td><td>0.232</td></tr> <tr><td>17.0</td><td>0.011</td><td>0.116</td><td>0.230</td></tr> <tr><td>18.0</td><td>0.010</td><td>0.109</td><td>0.222</td></tr> <tr><td>24.0</td><td>0.009</td><td>0.081</td><td>0.159</td></tr> <tr><td>36.0</td><td>0.006</td><td>0.054</td><td>0.103</td></tr> <tr><td>48.0</td><td>0.006</td><td>0.041</td><td>0.077</td></tr> <tr><td>60.0</td><td>0.004</td><td>0.033</td><td>0.062</td></tr> <tr><td>76.0</td><td>0.003</td><td>0.027</td><td>0.049</td></tr> <tr><td>80.0</td><td>0.003</td><td>0.026</td><td>0.048</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> | Input Voltage [V] | Input Current [A] |  |  | Load 0% | Load 50% | Load 100% | 0.0 | 0.000 | 0.000 | 0.000 | 16.0 | 0.003 | 0.003 | 0.004 | 16.2 | 0.004 | 0.004 | 0.003 | 16.4 | 0.003 | 0.003 | 0.004 | 16.6 | 0.011 | 0.119 | 0.233 | 16.8 | 0.012 | 0.117 | 0.232 | 17.0 | 0.011 | 0.116 | 0.230 | 18.0 | 0.010 | 0.109 | 0.222 | 24.0 | 0.009 | 0.081 | 0.159 | 36.0 | 0.006 | 0.054 | 0.103 | 48.0 | 0.006 | 0.041 | 0.077 | 60.0 | 0.004 | 0.033 | 0.062 | 76.0 | 0.003 | 0.027 | 0.049 | 80.0 | 0.003 | 0.026 | 0.048 | -- | - | - | - | -- | - | - | - | -- | - | - | - | -- | - | - | - |
| Input Voltage [V]   | Input Current [A]                |  |                   |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
|   | Load 0%                          | Load 50%   | Load 100%         |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 0.0   | 0.000                            | 0.000  | 0.000             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 16.0  | 0.003                            | 0.003  | 0.004             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 16.2  | 0.004                            | 0.004  | 0.003             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 16.4  | 0.003                            | 0.003  | 0.004             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 16.6  | 0.011                            | 0.119  | 0.233             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 16.8  | 0.012                            | 0.117  | 0.232             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 17.0  | 0.011                            | 0.116  | 0.230             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 18.0  | 0.010                            | 0.109  | 0.222             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 24.0  | 0.009                            | 0.081  | 0.159             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 36.0  | 0.006                            | 0.054  | 0.103             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 48.0  | 0.006                            | 0.041  | 0.077             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 60.0  | 0.004                            | 0.033  | 0.062             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 76.0  | 0.003                            | 0.027  | 0.049             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| 80.0  | 0.003                            | 0.026  | 0.048             |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                                | -  | -                 |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                                | -  | -                 |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                                | -  | -                 |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |
| --  | -                                | -  | -                 |                   |  |  |         |          |           |     |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |      |       |       |       |    |   |   |   |    |   |   |   |    |   |   |   |    |   |   |   |



|        |                               |
|--------|-------------------------------|
| Model  | MGFW34815                     |
| Item   | Input Current (by Load Ratio) |
| Object | _____                         |

Temperature 25°C  
Testing Circuitry Figure A



2.Values

| Load Ratio [%] | Input Current [A] |                   |                   |                   |                   |
|----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                | Input Volt. 18[V] | Input Volt. 24[V] | Input Volt. 36[V] | Input Volt. 48[V] | Input Volt. 76[V] |
| 0              | 0.010             | 0.009             | 0.006             | 0.006             | 0.003             |
| 20             | 0.048             | 0.037             | 0.025             | 0.019             | 0.013             |
| 40             | 0.088             | 0.066             | 0.044             | 0.033             | 0.023             |
| 60             | 0.129             | 0.095             | 0.063             | 0.047             | 0.031             |
| 80             | 0.174             | 0.126             | 0.083             | 0.062             | 0.040             |
| 90             | 0.197             | 0.142             | 0.093             | 0.070             | 0.045             |
| 100            | - ※               | 0.159             | 0.103             | 0.077             | 0.049             |
| 110            | - ※               | 0.175             | 0.113             | 0.085             | 0.054             |
| --             | -                 | -                 | -                 | -                 | -                 |
| --             | -                 | -                 | -                 | -                 | -                 |
| --             | -                 | -                 | -                 | -                 | -                 |

※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.



| <b>COSEL</b>   |   |   |                   |                   |                   |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
|----------------|---|---|-------------------|-------------------|-------------------|--|----------------|-----------------|--|--|--|--|-------------------|-------------------|-------------------|-------------------|-------------------|---|------|------|------|------|------|----|------|------|------|------|------|----|------|------|------|------|------|----|------|------|------|------|------|----|------|------|------|------|------|----|------|------|------|------|------|-----|-----|------|------|------|------|-----|-----|------|------|------|------|----|---|---|---|---|---|----|---|---|---|---|---|----|---|---|---|---|---|
| Model          | MGFW34815   | Temperature 25°C<br>Testing Circuitry Figure A  |                   |                   |                   |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| Item           | Input Power (by Load Ratio)   |   |                   |                   |                   |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| Object         | _____   |   |                   |                   |                   |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 1.Graph        | <p>—△— Input Volt. 18V</p> <p>---□--- Input Volt. 24V</p> <p>-·-·*·-·-·- Input Volt. 36V</p> <p>-·-·○-·-·- Input Volt. 48V</p> <p>---◇--- Input Volt. 76V</p> | 2.Values  |                   |                   |                   |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
|                |   | <table border="1"> <thead> <tr> <th rowspan="2">Load Ratio [%]</th> <th colspan="5">Input Power [W]</th> </tr> <tr> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.19</td><td>0.21</td><td>0.23</td><td>0.26</td><td>0.25</td></tr> <tr><td>20</td><td>0.87</td><td>0.88</td><td>0.91</td><td>0.93</td><td>1.01</td></tr> <tr><td>40</td><td>1.58</td><td>1.57</td><td>1.58</td><td>1.58</td><td>1.71</td></tr> <tr><td>60</td><td>2.31</td><td>2.27</td><td>2.28</td><td>2.28</td><td>2.35</td></tr> <tr><td>80</td><td>3.11</td><td>3.03</td><td>2.98</td><td>2.99</td><td>3.02</td></tr> <tr><td>90</td><td>3.53</td><td>3.42</td><td>3.34</td><td>3.35</td><td>3.39</td></tr> <tr><td>100</td><td>- ※</td><td>3.80</td><td>3.71</td><td>3.72</td><td>3.76</td></tr> <tr><td>110</td><td>- ※</td><td>4.20</td><td>4.08</td><td>4.07</td><td>4.11</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table> |                   |                   |                   |  | Load Ratio [%] | Input Power [W] |  |  |  |  | Input Volt. 18[V] | Input Volt. 24[V] | Input Volt. 36[V] | Input Volt. 48[V] | Input Volt. 76[V] | 0 | 0.19 | 0.21 | 0.23 | 0.26 | 0.25 | 20 | 0.87 | 0.88 | 0.91 | 0.93 | 1.01 | 40 | 1.58 | 1.57 | 1.58 | 1.58 | 1.71 | 60 | 2.31 | 2.27 | 2.28 | 2.28 | 2.35 | 80 | 3.11 | 3.03 | 2.98 | 2.99 | 3.02 | 90 | 3.53 | 3.42 | 3.34 | 3.35 | 3.39 | 100 | - ※ | 3.80 | 3.71 | 3.72 | 3.76 | 110 | - ※ | 4.20 | 4.08 | 4.07 | 4.11 | -- | - | - | - | - | - | -- | - | - | - | - | - | -- | - | - | - | - | - |
| Load Ratio [%] | Input Power [W]   |   |                   |                   |                   |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
|                | Input Volt. 18[V]   | Input Volt. 24[V]   | Input Volt. 36[V] | Input Volt. 48[V] | Input Volt. 76[V] |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 0              | 0.19  | 0.21  | 0.23              | 0.26              | 0.25              |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 20             | 0.87  | 0.88  | 0.91              | 0.93              | 1.01              |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 40             | 1.58  | 1.57  | 1.58              | 1.58              | 1.71              |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 60             | 2.31  | 2.27  | 2.28              | 2.28              | 2.35              |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 80             | 3.11  | 3.03  | 2.98              | 2.99              | 3.02              |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 90             | 3.53  | 3.42  | 3.34              | 3.35              | 3.39              |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 100            | - ※   | 3.80  | 3.71              | 3.72              | 3.76              |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 110            | - ※   | 4.20  | 4.08              | 4.07              | 4.11              |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| --             | -   | -   | -                 | -                 | -                 |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| --             | -   | -   | -                 | -                 | -                 |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| --             | -   | -   | -                 | -                 | -                 |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
|                |   | <p>※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.</p>  |                   |                   |                   |  |                |                 |  |  |  |  |                   |                   |                   |                   |                   |   |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |    |      |      |      |      |      |     |     |      |      |      |      |     |     |      |      |      |      |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |

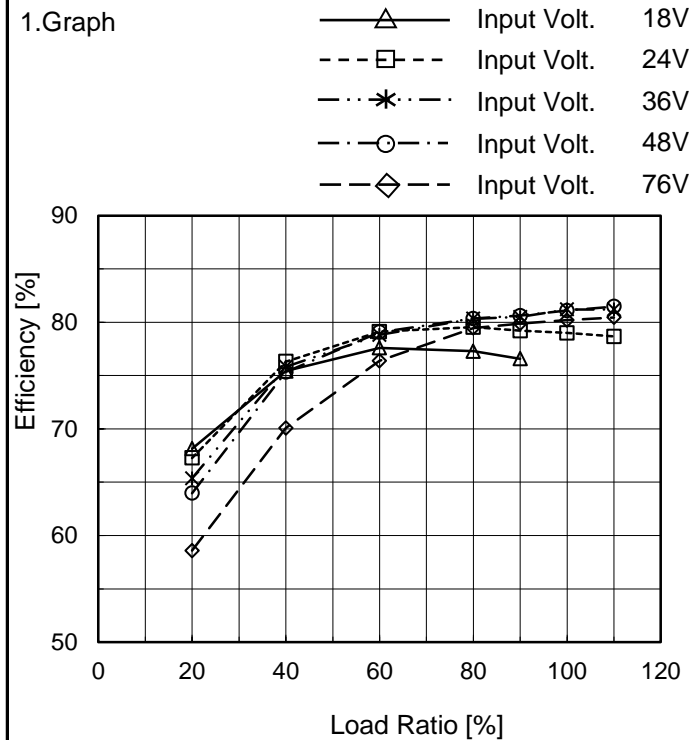


| Model   |                | MGFW34815  |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
|---|----------------|--|--|-------------------|----------------|--|----------|-----------|----|------|---------|----|------|---------|----|------|------|----|------|------|----|------|------|----|------|------|----|------|------|----|------|------|----|------|------|
| Item  |                | Efficiency (by Input Voltage)  |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| Object  |                | _____  |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| 1.Graph   |                | Temperature 25°C<br>Testing Circuitry Figure A   |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| <p>1.Graph</p> <p>---□--- Load 50%<br/>—△— Load 100%</p> <p>Efficiency [%]</p> <p>Input Voltage [V]</p> <p>Note: Slanted line shows the range of the rated input voltage.</p> |                | 2.Values   |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
|   |                | <table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Efficiency [%]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr> <td>17</td> <td>76.3</td> <td>77.1 ※1</td> </tr> <tr> <td>18</td> <td>77.1</td> <td>77.3 ※1</td> </tr> <tr> <td>24</td> <td>78.1</td> <td>79.0</td> </tr> <tr> <td>30</td> <td>77.8</td> <td>80.4</td> </tr> <tr> <td>36</td> <td>78.1</td> <td>81.2</td> </tr> <tr> <td>48</td> <td>76.9</td> <td>81.1</td> </tr> <tr> <td>60</td> <td>75.5</td> <td>81.1</td> </tr> <tr> <td>76</td> <td>73.5</td> <td>80.2</td> </tr> <tr> <td>80</td> <td>73.4</td> <td>79.1</td> </tr> </tbody> </table> |  | Input Voltage [V] | Efficiency [%] |  | Load 50% | Load 100% | 17 | 76.3 | 77.1 ※1 | 18 | 77.1 | 77.3 ※1 | 24 | 78.1 | 79.0 | 30 | 77.8 | 80.4 | 36 | 78.1 | 81.2 | 48 | 76.9 | 81.1 | 60 | 75.5 | 81.1 | 76 | 73.5 | 80.2 | 80 | 73.4 | 79.1 |
| Input Voltage [V]   | Efficiency [%] |  |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
|   | Load 50%       | Load 100%  |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| 17  | 76.3           | 77.1 ※1  |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| 18  | 77.1           | 77.3 ※1  |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| 24  | 78.1           | 79.0   |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| 30  | 77.8           | 80.4   |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| 36  | 78.1           | 81.2   |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| 48  | 76.9           | 81.1   |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| 60  | 75.5           | 81.1   |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| 76  | 73.5           | 80.2   |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
| 80  | 73.4           | 79.1   |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |
|   |                | ※1: Load 80%   |  |                   |                |  |          |           |    |      |         |    |      |         |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |    |      |      |



|        |                            |
|--------|----------------------------|
| Model  | MGFW34815                  |
| Item   | Efficiency (by Load Ratio) |
| Object | _____                      |

Temperature 25°C  
Testing Circuitry Figure A



2.Values

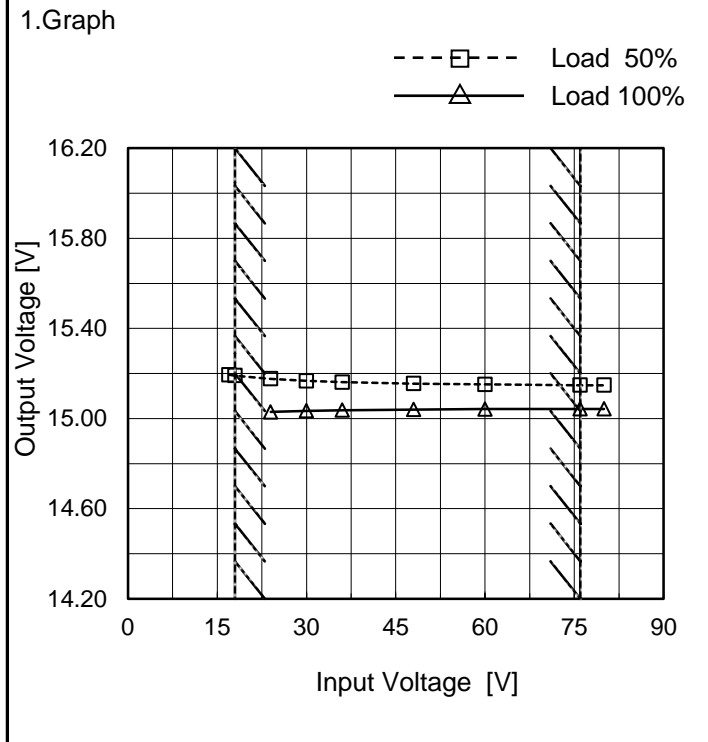
| Load Ratio [%] | Efficiency [%]    |                   |                   |                   |                   |
|----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                | Input Volt. 18[V] | Input Volt. 24[V] | Input Volt. 36[V] | Input Volt. 48[V] | Input Volt. 76[V] |
| 0              | -                 | -                 | -                 | -                 | -                 |
| 20             | 68.1              | 67.3              | 65.4              | 64.0              | 58.6              |
| 40             | 75.4              | 76.3              | 75.8              | 75.3              | 70.1              |
| 60             | 77.6              | 79.1              | 78.8              | 79.1              | 76.4              |
| 80             | 77.3              | 79.5              | 80.3              | 80.4              | 79.5              |
| 90             | 76.6              | 79.2              | 80.5              | 80.6              | 79.9              |
| 100            | - ※               | 79.0              | 81.2              | 81.1              | 80.2              |
| 110            | - ※               | 78.7              | 81.2              | 81.5              | 80.4              |
| --             | -                 | -                 | -                 | -                 | -                 |
| --             | -                 | -                 | -                 | -                 | -                 |
| --             | -                 | -                 | -                 | -                 | -                 |

※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.



|        |                 |
|--------|-----------------|
| Model  | MGFW34815       |
| Item   | Line Regulation |
| Object | +15V0.1A        |

Temperature 25°C  
Testing Circuitry Figure A

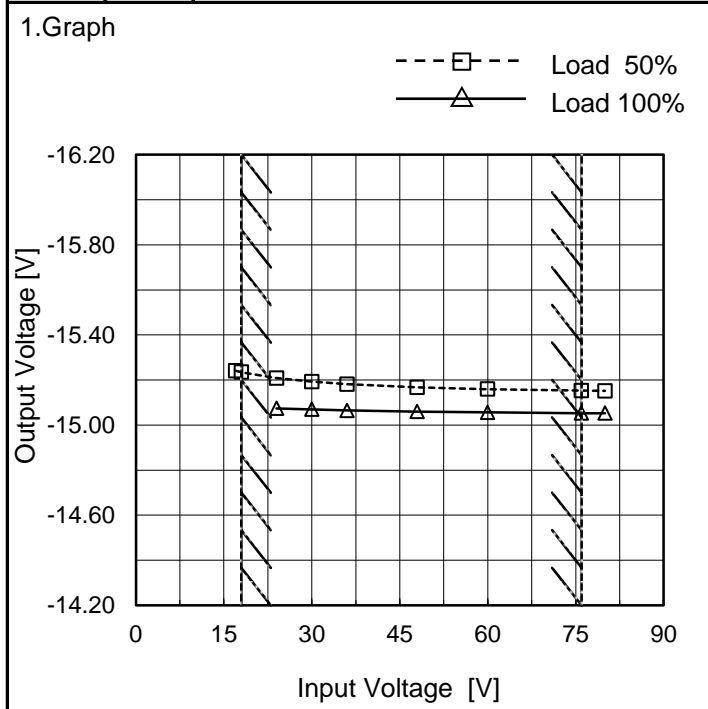


2.Values

| Input Voltage [V] | Output Voltage [V] |           |
|-------------------|--------------------|-----------|
|                   | Load 50%           | Load 100% |
| 17                | 15.194             | - ※       |
| 18                | 15.190             | - ※       |
| 24                | 15.176             | 15.029    |
| 30                | 15.167             | 15.035    |
| 36                | 15.162             | 15.037    |
| 48                | 15.155             | 15.040    |
| 60                | 15.152             | 15.042    |
| 76                | 15.148             | 15.043    |
| 80                | 15.148             | 15.043    |

-15V: Rated Load Current

|        |          |
|--------|----------|
| Object | -15V0.1A |
|--------|----------|



2.Values

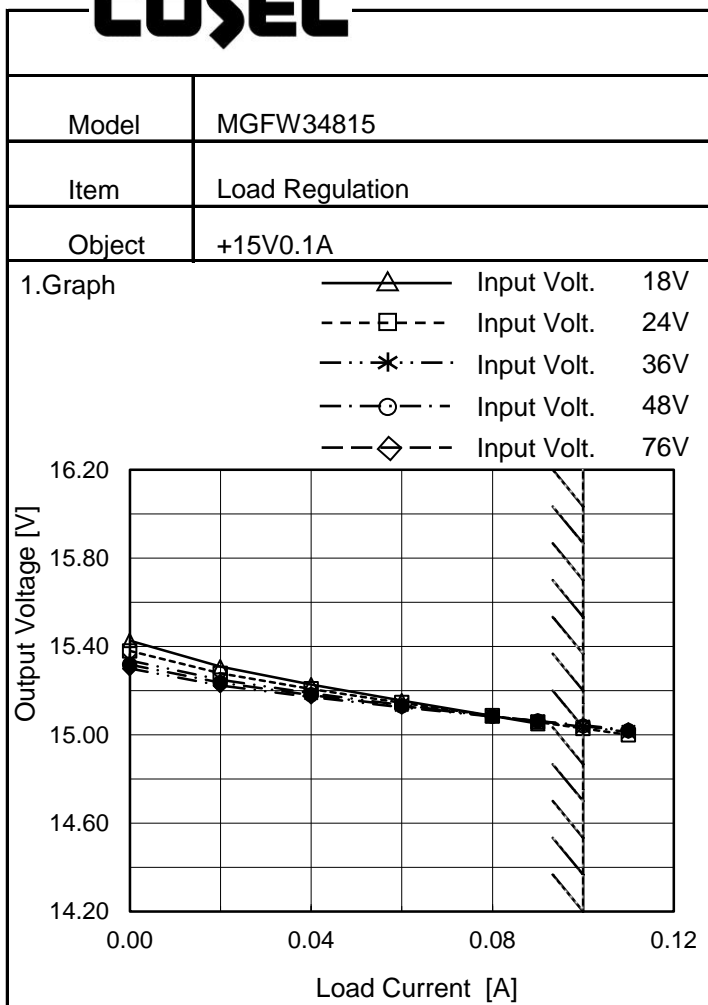
| Input Voltage [V] | Output Voltage [V] |           |
|-------------------|--------------------|-----------|
|                   | Load 50%           | Load 100% |
| 17                | -15.241            | - ※       |
| 18                | -15.235            | - ※       |
| 24                | -15.208            | -15.074   |
| 30                | -15.192            | -15.070   |
| 36                | -15.181            | -15.065   |
| 48                | -15.167            | -15.060   |
| 60                | -15.160            | -15.056   |
| 76                | -15.153            | -15.053   |
| 80                | -15.152            | -15.053   |

+15V: Rated Load Current

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

※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.



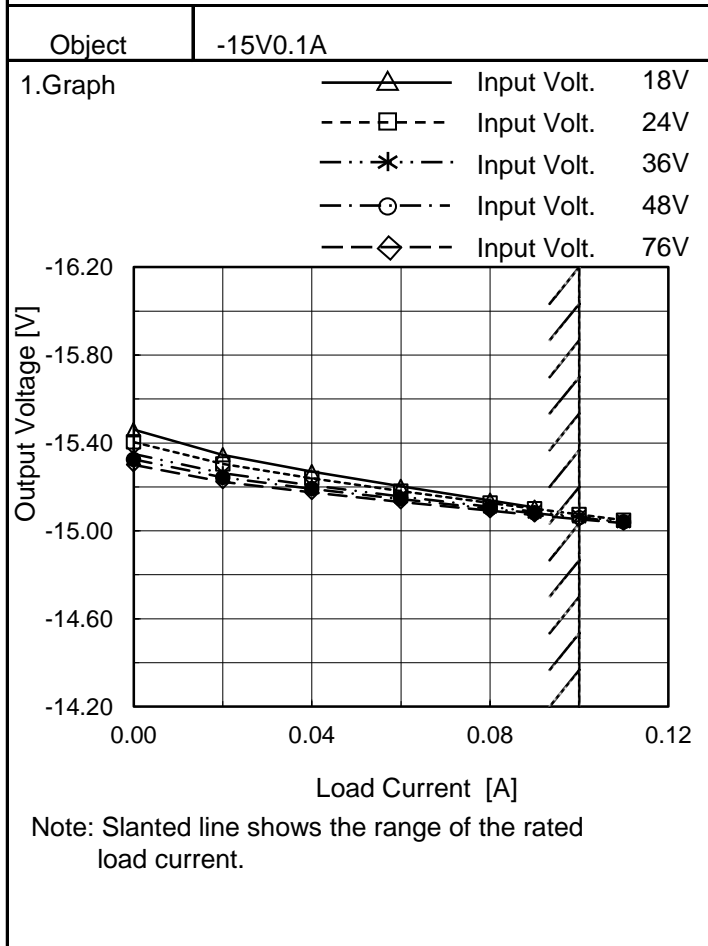


Temperature 25°C  
Testing Circuitry Figure A

2.Values

| Load Current [A] | Output Voltage [V] |                   |                   |                   |                   |
|------------------|--------------------|-------------------|-------------------|-------------------|-------------------|
|                  | Input Volt. 18[V]  | Input Volt. 24[V] | Input Volt. 36[V] | Input Volt. 48[V] | Input Volt. 76[V] |
| 0.00             | 15.427             | 15.380            | 15.337            | 15.318            | 15.300            |
| 0.02             | 15.309             | 15.278            | 15.249            | 15.236            | 15.223            |
| 0.04             | 15.228             | 15.208            | 15.189            | 15.180            | 15.171            |
| 0.06             | 15.155             | 15.145            | 15.135            | 15.130            | 15.126            |
| 0.08             | 15.085             | 15.086            | 15.085            | 15.084            | 15.083            |
| 0.09             | 15.050             | 15.058            | 15.061            | 15.062            | 15.063            |
| 0.10             | - ※                | 15.029            | 15.037            | 15.040            | 15.043            |
| 0.11             | - ※                | 15.000            | 15.013            | 15.018            | 15.022            |
| --               | -                  | -                 | -                 | -                 | -                 |
| --               | -                  | -                 | -                 | -                 | -                 |
| --               | -                  | -                 | -                 | -                 | -                 |

-15V: Rated Load Current



2.Values

| Load Current [A] | Output Voltage [V] |                   |                   |                   |                   |
|------------------|--------------------|-------------------|-------------------|-------------------|-------------------|
|                  | Input Volt. 18[V]  | Input Volt. 24[V] | Input Volt. 36[V] | Input Volt. 48[V] | Input Volt. 76[V] |
| 0.00             | -15.460            | -15.404           | -15.350           | -15.325           | -15.301           |
| 0.02             | -15.346            | -15.304           | -15.263           | -15.243           | -15.224           |
| 0.04             | -15.269            | -15.239           | -15.207           | -15.191           | -15.175           |
| 0.06             | -15.202            | -15.180           | -15.157           | -15.145           | -15.132           |
| 0.08             | -15.139            | -15.126           | -15.110           | -15.101           | -15.092           |
| 0.09             | -15.107            | -15.100           | -15.087           | -15.081           | -15.072           |
| 0.10             | - ※                | -15.074           | -15.065           | -15.060           | -15.053           |
| 0.11             | - ※                | -15.048           | -15.043           | -15.040           | -15.035           |
| --               | -                  | -                 | -                 | -                 | -                 |
| --               | -                  | -                 | -                 | -                 | -                 |
| --               | -                  | -                 | -                 | -                 | -                 |

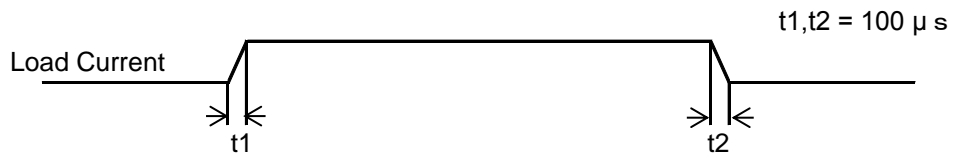
+15V: Rated Load Current

※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.



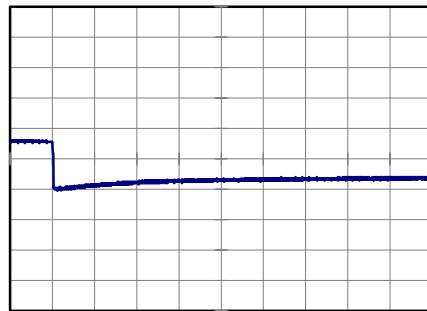
|        |  |                       |          |
|--------|--|-----------------------|----------|
| Model  |  | MGFW34815             |          |
| Item   |  | Dynamic Load Response |          |
| Object |  | +15V0.1A              |          |
|        |  | Temperature           | 25°C     |
|        |  | Testing Circuitry     | Figure A |

Input Volt. 48 V  
 -15V:rated load current.  
 Cycle 100 ms

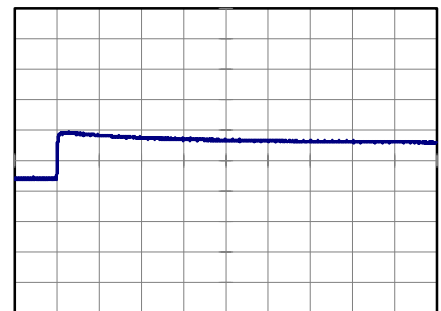


Min.Load (0A) ←→  
 Load 100% (0.1A)

200 mV/div



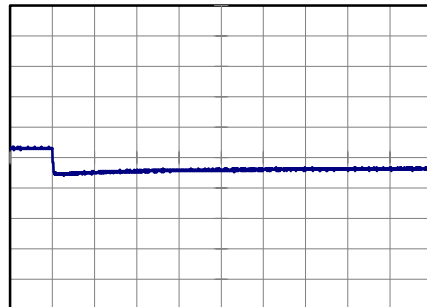
4 ms/div



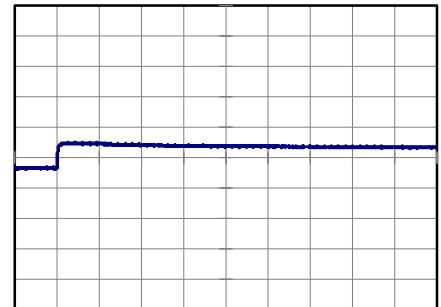
4 ms/div

Min.Load (0A) ←→  
 Load 50% (0.05A)

200 mV/div



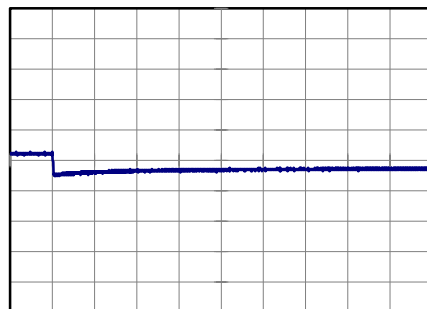
4 ms/div



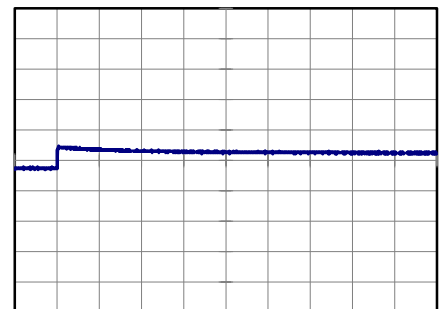
4 ms/div

Load 50% (0.05A) ←→  
 Load 100% (0.1A)

200 mV/div



4 ms/div



4 ms/div



|        |                       |                   |          |
|--------|-----------------------|-------------------|----------|
| Model  | MGFW34815             | Temperature       | 25°C     |
| Item   | Dynamic Load Response | Testing Circuitry | Figure A |
| Object | -15V0.1A              |                   |          |

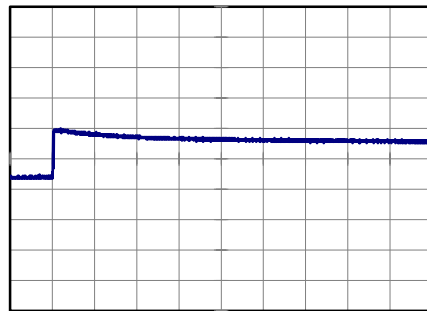
Input Volt. 48 V  
 +15V:rated load current.  
 Cycle 100 ms

t1,t2 = 100 μs

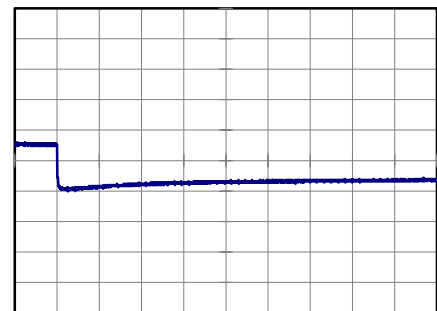


Min.Load (0A) ←→  
 Load 100% (0.1A)

200 mV/div



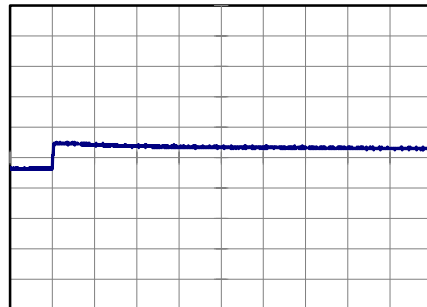
4 ms/div



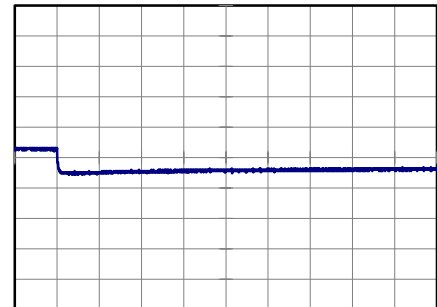
4 ms/div

Min.Load (0A) ←→  
 Load 50% (0.05A)

200 mV/div



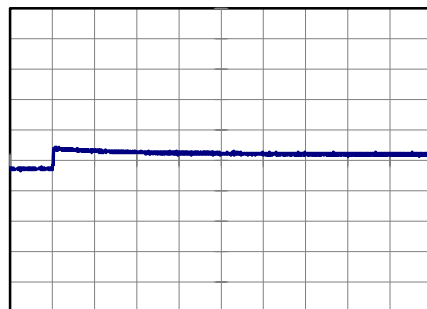
4 ms/div



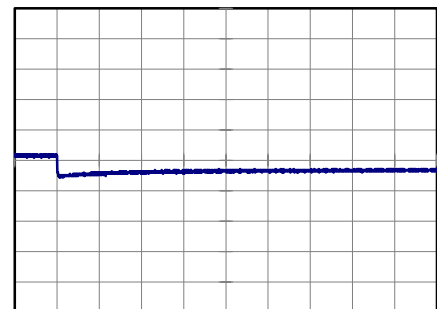
4 ms/div

Load 50% (0.05A) ←→  
 Load 100% (0.1A)

200 mV/div



4 ms/div



4 ms/div



| <p>Model MGFW34815</p>   |                                  | <p>Temperature 25°C<br/>Testing Circuitry Figure B</p>  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
|--|----------------------------------|---|------------------|---------------------|--|--------------------|--------------------|------|---|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|----|---|---|----|---|---|----|---|---|
| Item   | Ripple Voltage (by Load Current) |   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| Object   | +15V0.1A                         |   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| <p>1. Graph</p> <p>             —△— Input Volt. 24V<br/>             - - ○ - - Input Volt. 76V         </p>  |                                  | <p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Input Volt. 24 [V]</th> <th>Input Volt. 76 [V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>5</td><td>10</td></tr> <tr><td>0.02</td><td>20</td><td>15</td></tr> <tr><td>0.04</td><td>30</td><td>20</td></tr> <tr><td>0.06</td><td>45</td><td>25</td></tr> <tr><td>0.08</td><td>60</td><td>25</td></tr> <tr><td>0.09</td><td>65</td><td>30</td></tr> <tr><td>0.10</td><td>75</td><td>35</td></tr> <tr><td>0.11</td><td>85</td><td>40</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table> <p>-15V: Rated Load Current</p> | Load Current [A] | Ripple Voltage [mV] |  | Input Volt. 24 [V] | Input Volt. 76 [V] | 0.00 | 5 | 10 | 0.02 | 20 | 15 | 0.04 | 30 | 20 | 0.06 | 45 | 25 | 0.08 | 60 | 25 | 0.09 | 65 | 30 | 0.10 | 75 | 35 | 0.11 | 85 | 40 | -- | - | - | -- | - | - | -- | - | - |
| Load Current [A]   | Ripple Voltage [mV]              |   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
|  | Input Volt. 24 [V]               | Input Volt. 76 [V]  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.00   | 5                                | 10  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.02   | 20                               | 15  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.04   | 30                               | 20  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.06   | 45                               | 25  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.08   | 60                               | 25  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.09   | 65                               | 30  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.10   | 75                               | 35  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.11   | 85                               | 40  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| --   | -                                | -   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| --   | -                                | -   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| --   | -                                | -   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| <p>Measured by 100 MHz Oscilloscope.<br/>Ripple Voltage is shown as p-p in the figure below.<br/>Note: Slanted line shows the range of the rated load current.</p> |                                  |   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| <p>Ripple [mVp-p]</p> <p>Fig. Complex Ripple Wave Form</p>   |                                  |   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |

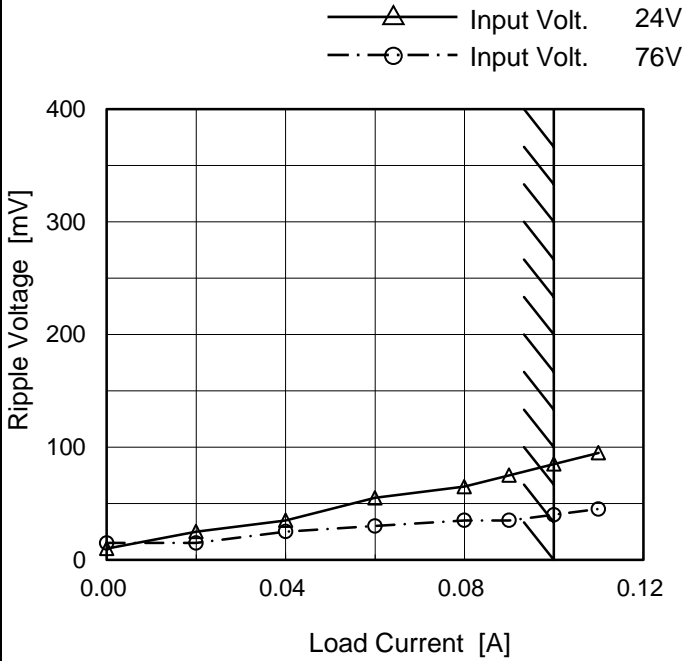


| <p>Model MGFW34815</p> <p>Item Ripple Voltage (by Load Current)</p> <p>Object -15V0.1A</p>  |                     | <p>Temperature 25°C</p> <p>Testing Circuitry Figure B</p>  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
|---|---------------------|--|------------------|---------------------|--|--------------------|--------------------|------|---|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|------|----|----|----|---|---|----|---|---|----|---|---|
| <p>1.Graph</p> <div style="text-align: right;"> <p>—△— Input Volt. 24V</p> <p>- - ○ - - Input Volt. 76V</p> </div> <p>Measured by 100 MHz Oscilloscope.<br/>Ripple Voltage is shown as p-p in the figure below.<br/>Note: Slanted line shows the range of the rated load current.</p> |                     | <p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Input Volt. 24 [V]</th> <th>Input Volt. 76 [V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>5</td><td>10</td></tr> <tr><td>0.02</td><td>20</td><td>15</td></tr> <tr><td>0.04</td><td>30</td><td>20</td></tr> <tr><td>0.06</td><td>45</td><td>25</td></tr> <tr><td>0.08</td><td>60</td><td>25</td></tr> <tr><td>0.09</td><td>65</td><td>30</td></tr> <tr><td>0.10</td><td>75</td><td>35</td></tr> <tr><td>0.11</td><td>85</td><td>40</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table> <p>+15V: Rated Load Current</p> | Load Current [A] | Ripple Voltage [mV] |  | Input Volt. 24 [V] | Input Volt. 76 [V] | 0.00 | 5 | 10 | 0.02 | 20 | 15 | 0.04 | 30 | 20 | 0.06 | 45 | 25 | 0.08 | 60 | 25 | 0.09 | 65 | 30 | 0.10 | 75 | 35 | 0.11 | 85 | 40 | -- | - | - | -- | - | - | -- | - | - |
| Load Current [A]  | Ripple Voltage [mV] |  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
|   | Input Volt. 24 [V]  | Input Volt. 76 [V]   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.00  | 5                   | 10   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.02  | 20                  | 15   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.04  | 30                  | 20   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.06  | 45                  | 25   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.08  | 60                  | 25   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.09  | 65                  | 30   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.10  | 75                  | 35   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| 0.11  | 85                  | 40   |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| --  | -                   | -  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| --  | -                   | -  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| --  | -                   | -  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |
| <p>Ripple [mVp-p]</p> <p>Fig.Complex Ripple Wave Form</p>   |                     |  |                  |                     |  |                    |                    |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |      |    |    |    |   |   |    |   |   |    |   |   |



|        |              |                   |          |
|--------|--------------|-------------------|----------|
| Model  | MGFW34815    | Temperature       | 25°C     |
| Item   | Ripple-Noise | Testing Circuitry | Figure B |
| Object | +15V0.1A     |                   |          |

1.Graph



2.Values

| Load Current [A] | Ripple-Noise [mV]  |                    |
|------------------|--------------------|--------------------|
|                  | Input Volt. 24 [V] | Input Volt. 76 [V] |
| 0.00             | 10                 | 15                 |
| 0.02             | 25                 | 15                 |
| 0.04             | 35                 | 25                 |
| 0.06             | 55                 | 30                 |
| 0.08             | 65                 | 35                 |
| 0.09             | 75                 | 35                 |
| 0.10             | 85                 | 40                 |
| 0.11             | 95                 | 45                 |
| --               | -                  | -                  |
| --               | -                  | -                  |
| --               | -                  | -                  |

-15V: Rated Load Current

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.

Ripple Noise[mVp-p]

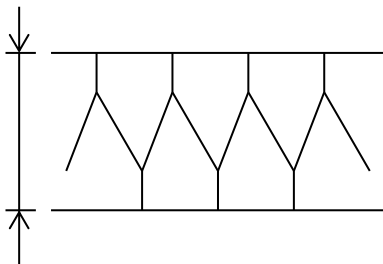
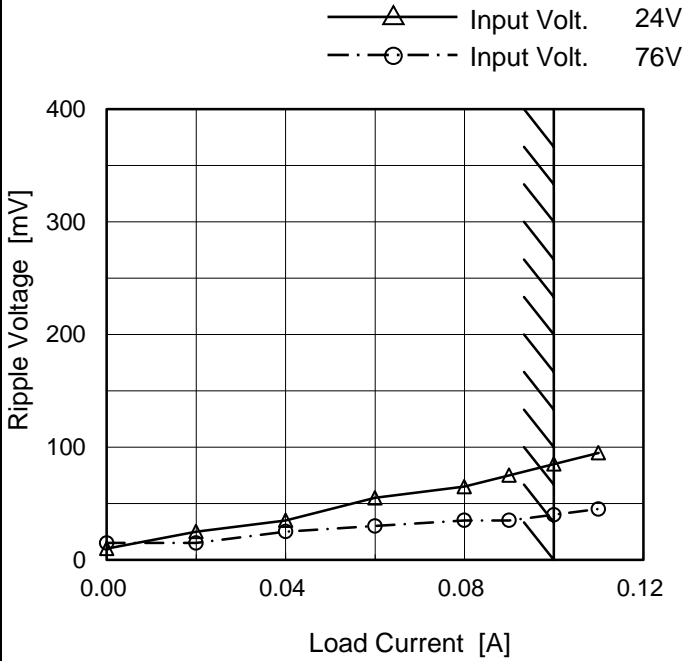


Fig.Complex Ripple Noise Wave Form



|        |              |                   |          |
|--------|--------------|-------------------|----------|
| Model  | MGFW34815    | Temperature       | 25°C     |
| Item   | Ripple-Noise | Testing Circuitry | Figure B |
| Object | -15V0.1A     |                   |          |

1.Graph



2.Values

| Load Current [A] | Ripple-Noise [mV]  |                    |
|------------------|--------------------|--------------------|
|                  | Input Volt. 24 [V] | Input Volt. 76 [V] |
| 0.00             | 10                 | 15                 |
| 0.02             | 25                 | 15                 |
| 0.04             | 35                 | 25                 |
| 0.06             | 55                 | 30                 |
| 0.08             | 65                 | 35                 |
| 0.09             | 75                 | 35                 |
| 0.10             | 85                 | 40                 |
| 0.11             | 95                 | 45                 |
| --               | -                  | -                  |
| --               | -                  | -                  |
| --               | -                  | -                  |

+15V: Rated Load Current

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.

Ripple Noise[mVp-p]

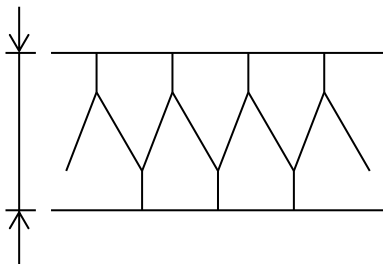


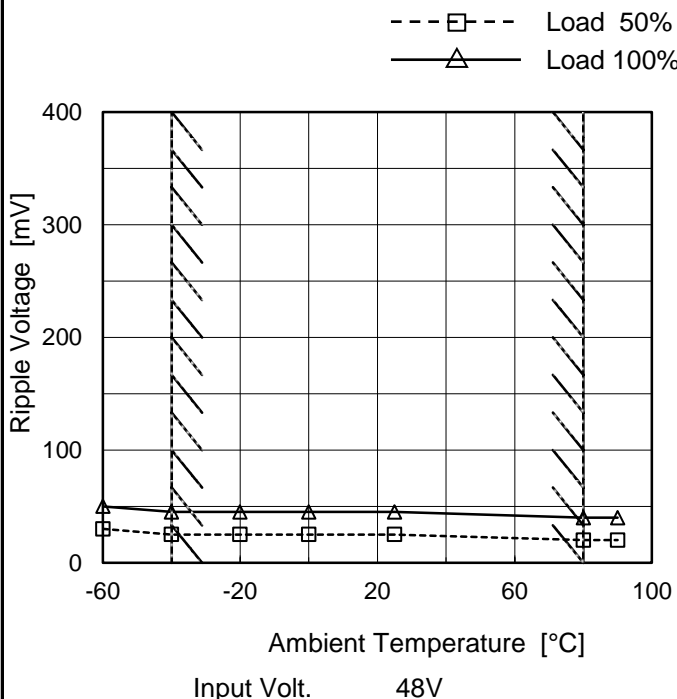
Fig.Complex Ripple Noise Wave Form



|              |                                   |
|--------------|-----------------------------------|
| <b>COSEL</b> |                                   |
| Model        | MGFW34815                         |
| Item         | Ripple Voltage (by Ambient Temp.) |
| Object       | +15V0.1A                          |

Testing Circuitry Figure B

1.Graph



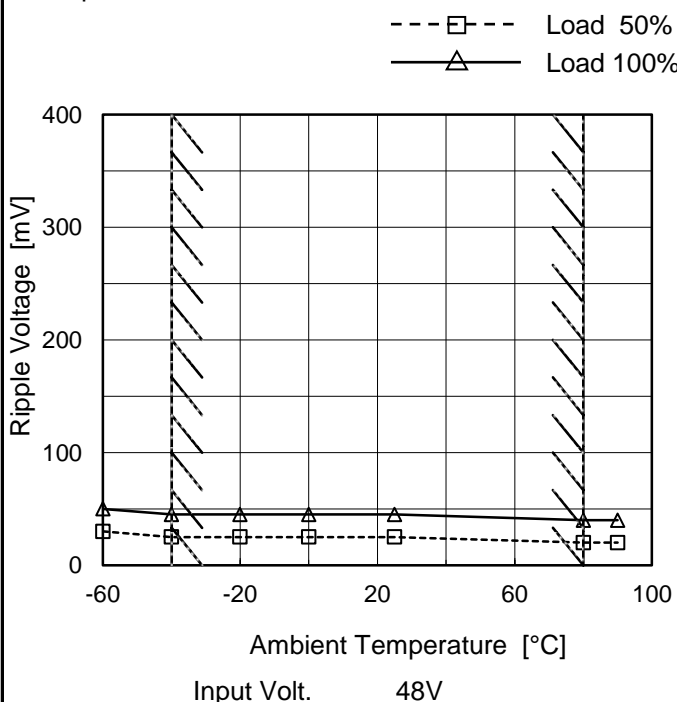
2.Values

| Ambient Temperature [°C] | Ripple Voltage [mV] |           |
|--------------------------|---------------------|-----------|
|                          | Load 50%            | Load 100% |
| -60                      | 30                  | 50        |
| -40                      | 25                  | 45        |
| -20                      | 25                  | 45        |
| 0                        | 25                  | 45        |
| 25                       | 25                  | 45        |
| 80                       | 20                  | 40        |
| 90                       | 20                  | 40        |
| --                       | -                   | -         |
| --                       | -                   | -         |
| --                       | -                   | -         |
| --                       | -                   | -         |

-15V: Rated Load Current

|        |          |
|--------|----------|
| Object | -15V0.1A |
|--------|----------|

1.Graph



2.Values

| Ambient Temperature [°C] | Ripple Voltage [mV] |           |
|--------------------------|---------------------|-----------|
|                          | Load 50%            | Load 100% |
| -60                      | 30                  | 50        |
| -40                      | 25                  | 45        |
| -20                      | 25                  | 45        |
| 0                        | 25                  | 45        |
| 25                       | 25                  | 45        |
| 80                       | 20                  | 40        |
| 90                       | 20                  | 40        |
| --                       | -                   | -         |
| --                       | -                   | -         |
| --                       | -                   | -         |
| --                       | -                   | -         |

+15V: Rated Load Current

Measured by 100 MHz Oscilloscope.

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





| <b>COSEL</b>  |  |   |                          |                    |                   |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
|---|--|---|--------------------------|--------------------|-------------------|--|--|--|-------------------|-------------------|-------------------|-------------------|-------------------|-----|---------|---------|---------|---------|---------|-----|---------|---------|---------|---------|---------|-----|---------|---------|---------|---------|---------|---|---------|---------|---------|---------|---------|----|---------|---------|---------|---------|---------|----|---------|---------|---------|---------|---------|----|---------|---------|---------|---------|---------|----|---|---|---|---|---|----|---|---|---|---|---|----|---|---|---|---|---|----|---|---|---|---|---|
| Model   | MGFW34815  |   |                          |                    |                   |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| Item  | Ambient Temperature Drift  | Testing Circuitry Figure A  |                          |                    |                   |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| Object  | +15V0.1A   |   |                          |                    |                   |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 1.Graph   | <p> <span style="display: inline-block; width: 100px; border-bottom: 1px solid black; margin-right: 5px;"></span>△<span style="margin-left: 5px;">Input Volt. 18V</span><br/> <span style="display: inline-block; width: 100px; border-bottom: 1px dashed black; margin-right: 5px;"></span>□<span style="margin-left: 5px;">Input Volt. 24V</span><br/> <span style="display: inline-block; width: 100px; border-bottom: 1px dotted black; margin-right: 5px;"></span>*<span style="margin-left: 5px;">Input Volt. 36V</span><br/> <span style="display: inline-block; width: 100px; border-bottom: 1px dash-dot black; margin-right: 5px;"></span>○<span style="margin-left: 5px;">Input Volt. 48V</span><br/> <span style="display: inline-block; width: 100px; border-bottom: 1px long-dash black; margin-right: 5px;"></span>◇<span style="margin-left: 5px;">Input Volt. 76V</span> </p> <p style="text-align: center;">Ambient Temperature [°C]</p> | 2.Values  |                          |                    |                   |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
|   |  | <table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="5">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr><td>-60</td><td>14.994</td><td>14.992</td><td>14.996</td><td>14.998</td><td>15.000</td></tr> <tr><td>-40</td><td>15.012</td><td>15.010</td><td>15.015</td><td>15.017</td><td>15.020</td></tr> <tr><td>-20</td><td>15.024</td><td>15.021</td><td>15.027</td><td>15.030</td><td>15.033</td></tr> <tr><td>0</td><td>15.030</td><td>15.027</td><td>15.034</td><td>15.036</td><td>15.039</td></tr> <tr><td>25</td><td>15.033</td><td>15.029</td><td>15.037</td><td>15.040</td><td>15.043</td></tr> <tr><td>80</td><td>15.013</td><td>15.009</td><td>15.018</td><td>15.021</td><td>15.024</td></tr> <tr><td>90</td><td>15.011</td><td>15.006</td><td>15.016</td><td>15.019</td><td>15.023</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table> <p style="text-align: center;">-15V: Rated Load Current</p>                                    | Ambient Temperature [°C] | Output Voltage [V] |                   |  |  |  | Input Volt. 18[V] | Input Volt. 24[V] | Input Volt. 36[V] | Input Volt. 48[V] | Input Volt. 76[V] | -60 | 14.994  | 14.992  | 14.996  | 14.998  | 15.000  | -40 | 15.012  | 15.010  | 15.015  | 15.017  | 15.020  | -20 | 15.024  | 15.021  | 15.027  | 15.030  | 15.033  | 0 | 15.030  | 15.027  | 15.034  | 15.036  | 15.039  | 25 | 15.033  | 15.029  | 15.037  | 15.040  | 15.043  | 80 | 15.013  | 15.009  | 15.018  | 15.021  | 15.024  | 90 | 15.011  | 15.006  | 15.016  | 15.019  | 15.023  | -- | - | - | - | - | - | -- | - | - | - | - | - | -- | - | - | - | - | - | -- | - | - | - | - | - |
| Ambient Temperature [°C]  | Output Voltage [V]   |   |                          |                    |                   |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
|   | Input Volt. 18[V]  | Input Volt. 24[V]   | Input Volt. 36[V]        | Input Volt. 48[V]  | Input Volt. 76[V] |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| -60   | 14.994   | 14.992  | 14.996                   | 14.998             | 15.000            |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| -40   | 15.012   | 15.010  | 15.015                   | 15.017             | 15.020            |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| -20   | 15.024   | 15.021  | 15.027                   | 15.030             | 15.033            |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 0   | 15.030   | 15.027  | 15.034                   | 15.036             | 15.039            |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 25  | 15.033   | 15.029  | 15.037                   | 15.040             | 15.043            |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 80  | 15.013   | 15.009  | 15.018                   | 15.021             | 15.024            |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 90  | 15.011   | 15.006  | 15.016                   | 15.019             | 15.023            |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| --  | -  | -   | -                        | -                  | -                 |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| --  | -  | -   | -                        | -                  | -                 |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| --  | -  | -   | -                        | -                  | -                 |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| --  | -  | -   | -                        | -                  | -                 |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| Object  | -15V0.1A   |   |                          |                    |                   |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 1.Graph   | <p> <span style="display: inline-block; width: 100px; border-bottom: 1px solid black; margin-right: 5px;"></span>△<span style="margin-left: 5px;">Input Volt. 18V</span><br/> <span style="display: inline-block; width: 100px; border-bottom: 1px dashed black; margin-right: 5px;"></span>□<span style="margin-left: 5px;">Input Volt. 24V</span><br/> <span style="display: inline-block; width: 100px; border-bottom: 1px dotted black; margin-right: 5px;"></span>*<span style="margin-left: 5px;">Input Volt. 36V</span><br/> <span style="display: inline-block; width: 100px; border-bottom: 1px dash-dot black; margin-right: 5px;"></span>○<span style="margin-left: 5px;">Input Volt. 48V</span><br/> <span style="display: inline-block; width: 100px; border-bottom: 1px long-dash black; margin-right: 5px;"></span>◇<span style="margin-left: 5px;">Input Volt. 76V</span> </p> <p style="text-align: center;">Ambient Temperature [°C]</p> | 2.Values  |                          |                    |                   |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
|   |  | <table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="5">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr><td>-60</td><td>-15.033</td><td>-15.036</td><td>-15.031</td><td>-15.025</td><td>-15.017</td></tr> <tr><td>-40</td><td>-15.050</td><td>-15.053</td><td>-15.047</td><td>-15.041</td><td>-15.033</td></tr> <tr><td>-20</td><td>-15.060</td><td>-15.064</td><td>-15.057</td><td>-15.051</td><td>-15.044</td></tr> <tr><td>0</td><td>-15.066</td><td>-15.070</td><td>-15.062</td><td>-15.056</td><td>-15.049</td></tr> <tr><td>25</td><td>-15.070</td><td>-15.074</td><td>-15.065</td><td>-15.060</td><td>-15.053</td></tr> <tr><td>80</td><td>-15.050</td><td>-15.054</td><td>-15.046</td><td>-15.041</td><td>-15.036</td></tr> <tr><td>90</td><td>-15.048</td><td>-15.052</td><td>-15.044</td><td>-15.039</td><td>-15.034</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table> <p style="text-align: center;">+15V: Rated Load Current</p> | Ambient Temperature [°C] | Output Voltage [V] |                   |  |  |  | Input Volt. 18[V] | Input Volt. 24[V] | Input Volt. 36[V] | Input Volt. 48[V] | Input Volt. 76[V] | -60 | -15.033 | -15.036 | -15.031 | -15.025 | -15.017 | -40 | -15.050 | -15.053 | -15.047 | -15.041 | -15.033 | -20 | -15.060 | -15.064 | -15.057 | -15.051 | -15.044 | 0 | -15.066 | -15.070 | -15.062 | -15.056 | -15.049 | 25 | -15.070 | -15.074 | -15.065 | -15.060 | -15.053 | 80 | -15.050 | -15.054 | -15.046 | -15.041 | -15.036 | 90 | -15.048 | -15.052 | -15.044 | -15.039 | -15.034 | -- | - | - | - | - | - | -- | - | - | - | - | - | -- | - | - | - | - | - | -- | - | - | - | - | - |
| Ambient Temperature [°C]  | Output Voltage [V]   |   |                          |                    |                   |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
|   | Input Volt. 18[V]  | Input Volt. 24[V]   | Input Volt. 36[V]        | Input Volt. 48[V]  | Input Volt. 76[V] |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| -60   | -15.033  | -15.036   | -15.031                  | -15.025            | -15.017           |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| -40   | -15.050  | -15.053   | -15.047                  | -15.041            | -15.033           |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| -20   | -15.060  | -15.064   | -15.057                  | -15.051            | -15.044           |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 0   | -15.066  | -15.070   | -15.062                  | -15.056            | -15.049           |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 25  | -15.070  | -15.074   | -15.065                  | -15.060            | -15.053           |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 80  | -15.050  | -15.054   | -15.046                  | -15.041            | -15.036           |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| 90  | -15.048  | -15.052   | -15.044                  | -15.039            | -15.034           |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| --  | -  | -   | -                        | -                  | -                 |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| --  | -  | -   | -                        | -                  | -                 |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| --  | -  | -   | -                        | -                  | -                 |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| --  | -  | -   | -                        | -                  | -                 |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |
| <p>Note: Slanted line shows the range of the rated ambient temperature.</p> |  | <p>Note: In case of Input Volt. 18V, Load 80%.<br/>Other case Load 100%.</p>  |                          |                    |                   |  |  |  |                   |                   |                   |                   |                   |     |         |         |         |         |         |     |         |         |         |         |         |     |         |         |         |         |         |   |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |         |         |         |         |         |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |



|              |                         |                            |
|--------------|-------------------------|----------------------------|
| <b>COSEL</b> |                         | Testing Circuitry Figure A |
| Model        | MGFW34815               |                            |
| Item         | Output Voltage Accuracy |                            |

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 - 80°C

Input Voltage : 24 - 76V

Load Current (AVR 1) : 0 - 0.1A (AVR 2) : 0 - 0.1A

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

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

2. Values

| Object          |                  | +15V0.1A         |            |            |                         |           |
|-----------------|------------------|------------------|------------|------------|-------------------------|-----------|
| Item            | Temperature [°C] | Input Voltage[V] | Output     |            | Output Voltage Accuracy |           |
|                 |                  |                  | Current[A] | Voltage[V] | Value [mV]              | Ratio [%] |
| Maximum Voltage | 80               | 24               | 0          | 15.377     | ±345                    | ±2.3      |
| Minimum Voltage | 80               | 24               | 0.1        | 14.687     |                         |           |

| Object          |                  | -15V0.1A         |            |            |                         |           |
|-----------------|------------------|------------------|------------|------------|-------------------------|-----------|
| Item            | Temperature [°C] | Input Voltage[V] | Output     |            | Output Voltage Accuracy |           |
|                 |                  |                  | Current[A] | Voltage[V] | Value [mV]              | Ratio [%] |
| Maximum Voltage | 80               | 24               | 0          | -15.399    | ±345                    | ±2.3      |
| Minimum Voltage | 80               | 24               | 0.1        | -14.710    |                         |           |



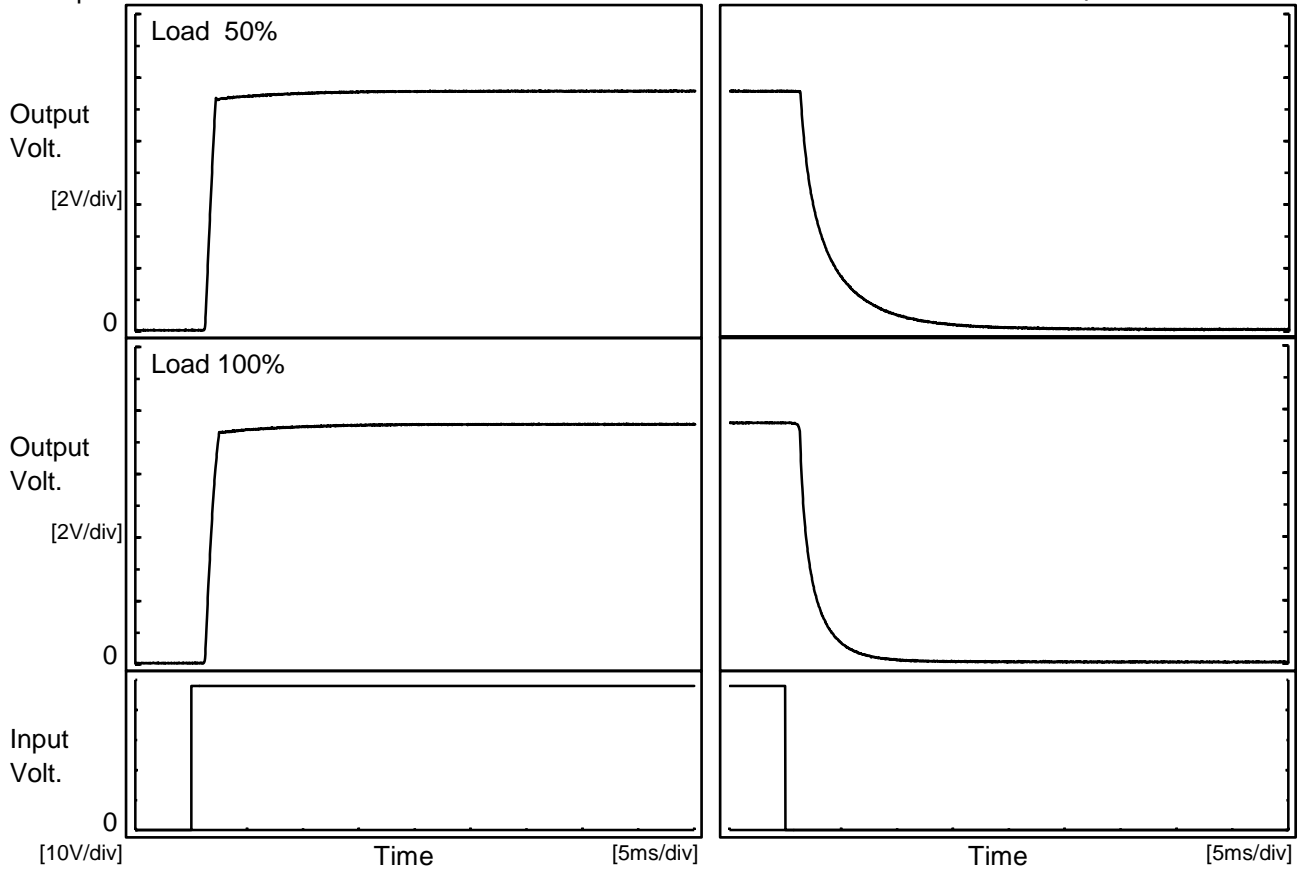
| <b>COSEL</b>  |                    |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
|---|--------------------|--|----------|----------------------|--------------------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|
| Model   | MGFW34815          | Temperature  | 25°C     |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| Item  | Time Lapse Drift   | Testing Circuitry  | Figure A |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| Object  | +15V0.1A           |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| <p>1.Graph</p> <p style="text-align: center;">Time [H]</p> <p>Input Volt.     48V<br/>Load             100%</p> |                    | <p>2.Values</p> <table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>15.035</td></tr> <tr><td>0.5</td><td>15.032</td></tr> <tr><td>1.0</td><td>15.032</td></tr> <tr><td>2.0</td><td>15.031</td></tr> <tr><td>3.0</td><td>15.031</td></tr> <tr><td>4.0</td><td>15.031</td></tr> <tr><td>5.0</td><td>15.031</td></tr> <tr><td>6.0</td><td>15.031</td></tr> <tr><td>7.0</td><td>15.031</td></tr> <tr><td>8.0</td><td>15.031</td></tr> </tbody> </table> <p style="text-align: center;">-15V: Rated Load Current</p>           |          | Time since start [H] | Output Voltage [V] | 0.0 | 15.035  | 0.5 | 15.032  | 1.0 | 15.032  | 2.0 | 15.031  | 3.0 | 15.031  | 4.0 | 15.031  | 5.0 | 15.031  | 6.0 | 15.031  | 7.0 | 15.031  | 8.0 | 15.031  |
| Time since start [H]  | Output Voltage [V] |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 0.0   | 15.035             |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 0.5   | 15.032             |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 1.0   | 15.032             |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 2.0   | 15.031             |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 3.0   | 15.031             |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 4.0   | 15.031             |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 5.0   | 15.031             |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 6.0   | 15.031             |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 7.0   | 15.031             |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 8.0   | 15.031             |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| Object  | -15V0.1A           |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| <p>1.Graph</p> <p style="text-align: center;">Time [H]</p> <p>Input Volt.     48V<br/>Load             100%</p> |                    | <p>2.Values</p> <table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>-15.063</td></tr> <tr><td>0.5</td><td>-15.062</td></tr> <tr><td>1.0</td><td>-15.062</td></tr> <tr><td>2.0</td><td>-15.062</td></tr> <tr><td>3.0</td><td>-15.062</td></tr> <tr><td>4.0</td><td>-15.062</td></tr> <tr><td>5.0</td><td>-15.061</td></tr> <tr><td>6.0</td><td>-15.062</td></tr> <tr><td>7.0</td><td>-15.061</td></tr> <tr><td>8.0</td><td>-15.062</td></tr> </tbody> </table> <p style="text-align: center;">+15V: Rated Load Current</p> |          | Time since start [H] | Output Voltage [V] | 0.0 | -15.063 | 0.5 | -15.062 | 1.0 | -15.062 | 2.0 | -15.062 | 3.0 | -15.062 | 4.0 | -15.062 | 5.0 | -15.061 | 6.0 | -15.062 | 7.0 | -15.061 | 8.0 | -15.062 |
| Time since start [H]  | Output Voltage [V] |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 0.0   | -15.063            |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 0.5   | -15.062            |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 1.0   | -15.062            |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 2.0   | -15.062            |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 3.0   | -15.062            |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 4.0   | -15.062            |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 5.0   | -15.061            |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 6.0   | -15.062            |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 7.0   | -15.061            |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |
| 8.0   | -15.062            |  |          |                      |                    |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |     |         |



|        |                    |                   |          |
|--------|--------------------|-------------------|----------|
| Model  | MGFW34815          | Temperature       | 25°C     |
| Item   | Rise and Fall Time | Testing Circuitry | Figure A |
| Object | +15V0.1A           |                   |          |

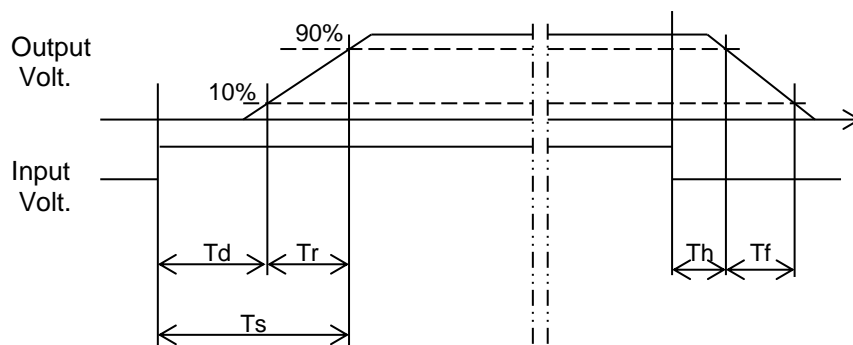
1. Graph

Input Volt. 48 V



2. Values

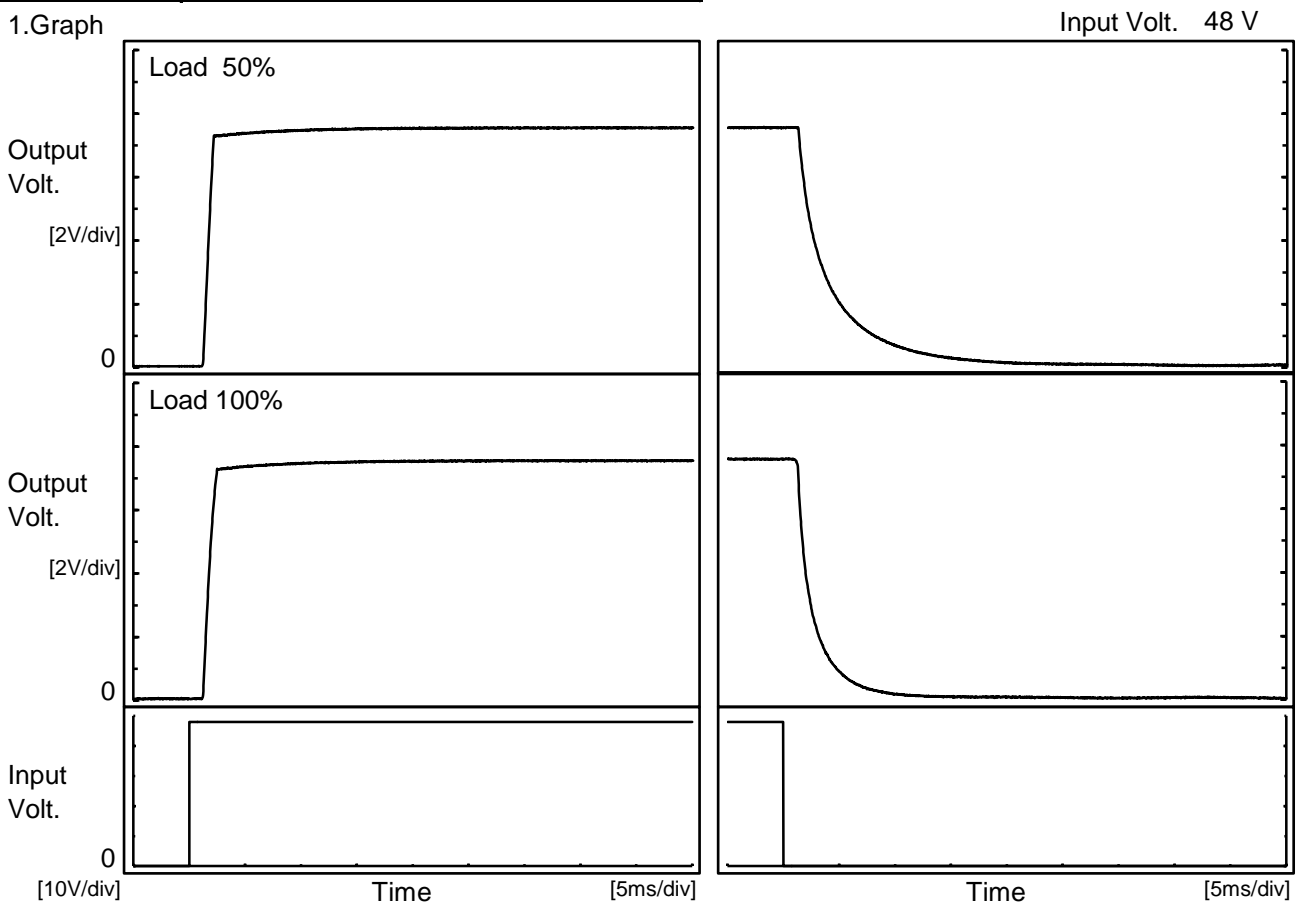
|             |     | [ms] |     |     |     |  |
|-------------|-----|------|-----|-----|-----|--|
| Load \ Time | Td  | Tr   | Ts  | Th  | Tf  |  |
| 50 %        | 1.3 | 0.8  | 2.1 | 1.5 | 6.6 |  |
| 100 %       | 1.3 | 1.0  | 2.3 | 1.4 | 3.2 |  |





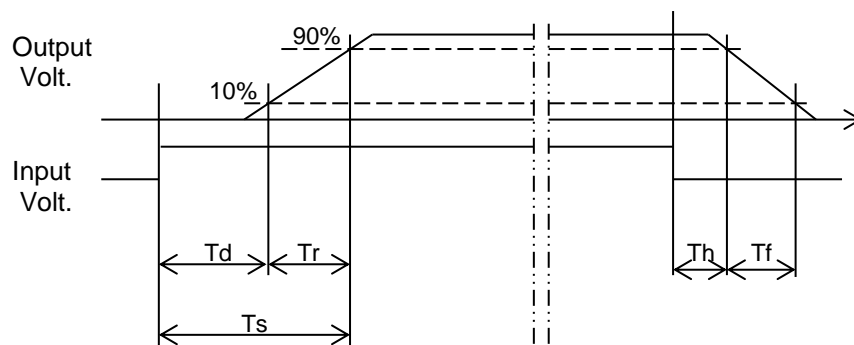
|        |                    |                   |          |
|--------|--------------------|-------------------|----------|
| Model  | MGFW34815          | Temperature       | 25°C     |
| Item   | Rise and Fall Time | Testing Circuitry | Figure A |
| Object | -15V0.1A           |                   |          |

1.Graph



2.Values

| Load \ Time | Td  | Tr  | Ts  | Th  | Tf  |
|-------------|-----|-----|-----|-----|-----|
| 50 %        | 1.3 | 0.8 | 2.1 | 1.5 | 7.9 |
| 100 %       | 1.3 | 1.0 | 2.3 | 1.4 | 4.0 |

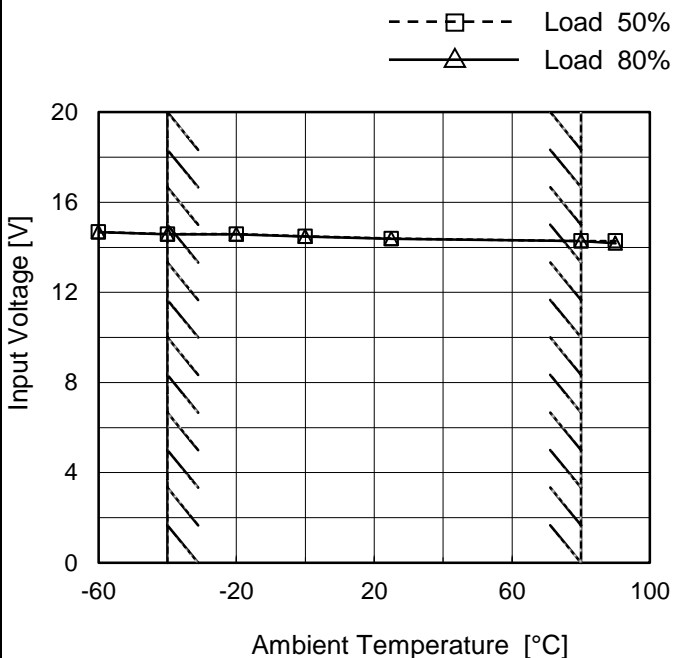




|        |  |
|--------|--|
| Model  | MGFW34815  |
| Item   | Minimum Input Voltage for Regulated Output Voltage |
| Object | +15V0.1A   |

Testing Circuitry Figure A

1.Graph

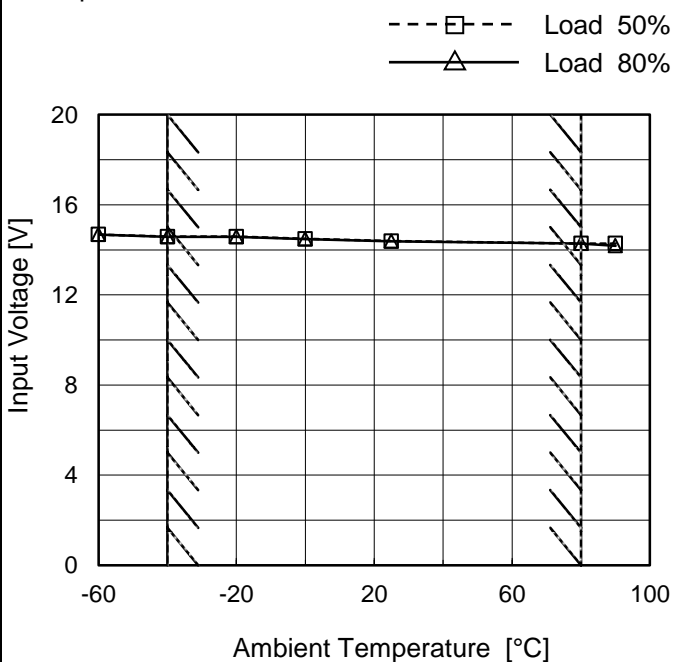


2.Values

| Ambient Temperature [°C] | Input Voltage [V] |          |
|--------------------------|-------------------|----------|
|                          | Load 50%          | Load 80% |
| -60                      | 14.7              | 14.7     |
| -40                      | 14.6              | 14.6     |
| -20                      | 14.6              | 14.6     |
| 0                        | 14.5              | 14.5     |
| 25                       | 14.4              | 14.4     |
| 80                       | 14.3              | 14.3     |
| 90                       | 14.3              | 14.2     |
| --                       | -                 | -        |
| --                       | -                 | -        |
| --                       | -                 | -        |
| --                       | -                 | -        |

|        |          |
|--------|----------|
| Object | -15V0.1A |
|--------|----------|

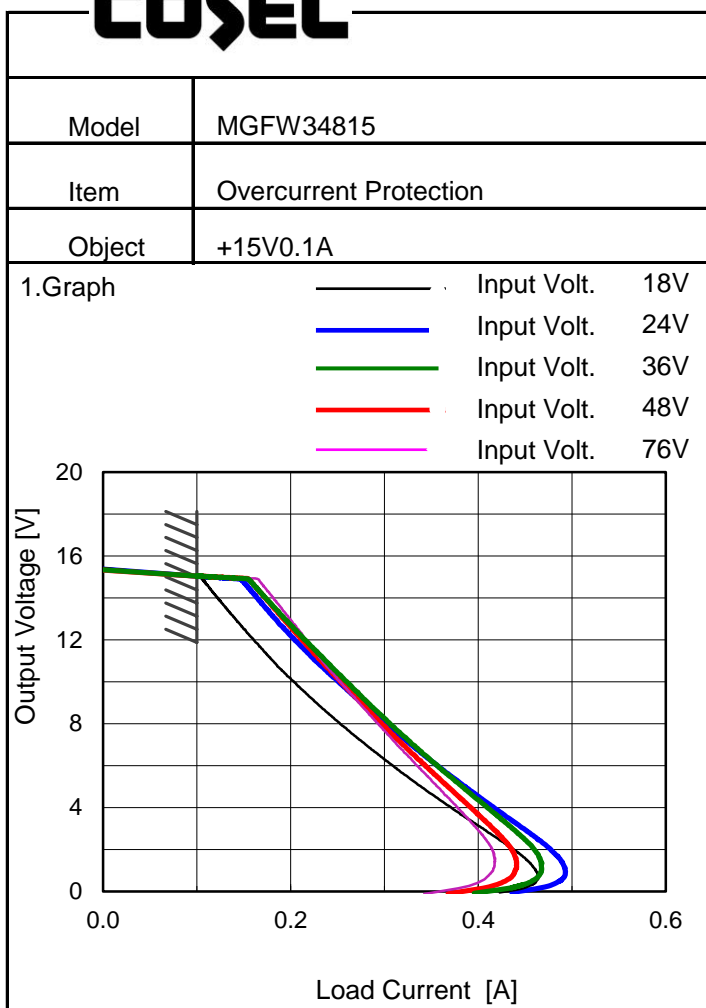
1.Graph



2.Values

| Ambient Temperature [°C] | Input Voltage [V] |          |
|--------------------------|-------------------|----------|
|                          | Load 50%          | Load 80% |
| -60                      | 14.7              | 14.7     |
| -40                      | 14.6              | 14.6     |
| -20                      | 14.6              | 14.6     |
| 0                        | 14.5              | 14.5     |
| 25                       | 14.4              | 14.4     |
| 80                       | 14.3              | 14.3     |
| 90                       | 14.3              | 14.2     |
| --                       | -                 | -        |
| --                       | -                 | -        |
| --                       | -                 | -        |
| --                       | -                 | -        |

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

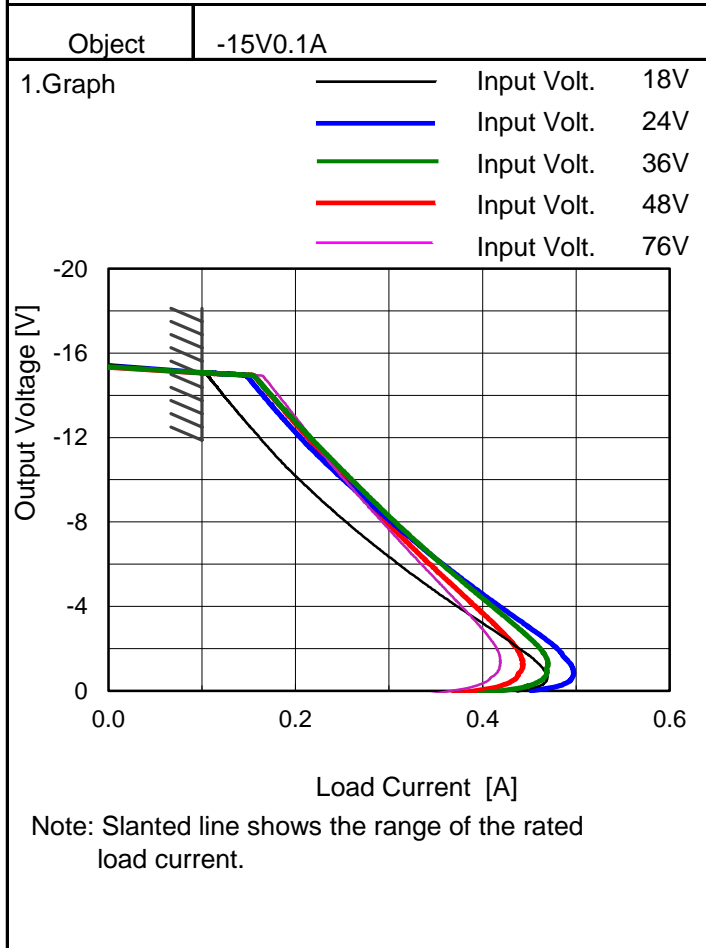


Temperature 25°C  
Testing Circuitry Figure A

2.Values

| Output Voltage [V] | Load Current [A]  |                   |                   |                   |                   |
|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                    | Input Volt. 18[V] | Input Volt. 24[V] | Input Volt. 36[V] | Input Volt. 48[V] | Input Volt. 76[V] |
| 14.3               | 0.117             | 0.160             | 0.168             | 0.167             | 0.177             |
| 13.5               | 0.131             | 0.173             | 0.183             | 0.182             | 0.190             |
| 12.0               | 0.160             | 0.204             | 0.215             | 0.212             | 0.216             |
| 10.5               | 0.191             | 0.238             | 0.248             | 0.243             | 0.243             |
| 9.0                | 0.227             | 0.275             | 0.282             | 0.275             | 0.273             |
| 7.5                | 0.266             | 0.314             | 0.318             | 0.307             | 0.303             |
| 6.0                | 0.308             | 0.356             | 0.356             | 0.343             | 0.335             |
| 4.5                | 0.354             | 0.400             | 0.396             | 0.379             | 0.367             |
| 3.0                | 0.405             | 0.447             | 0.436             | 0.415             | 0.398             |
| 1.5                | 0.452             | 0.488             | 0.466             | 0.440             | 0.418             |
| 0.0                | 0.423             | 0.436             | 0.396             | 0.368             | 0.342             |
| --                 | -                 | -                 | -                 | -                 | -                 |

-15V: Rated Load Current



2.Values

| Output Voltage [V] | Load Current [A]  |                   |                   |                   |                   |
|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                    | Input Volt. 18[V] | Input Volt. 24[V] | Input Volt. 36[V] | Input Volt. 48[V] | Input Volt. 76[V] |
| -14.3              | 0.118             | 0.160             | 0.170             | 0.169             | 0.177             |
| -13.5              | 0.132             | 0.174             | 0.184             | 0.183             | 0.190             |
| -12.0              | 0.161             | 0.205             | 0.216             | 0.213             | 0.217             |
| -10.5              | 0.192             | 0.239             | 0.249             | 0.243             | 0.242             |
| -9.0               | 0.228             | 0.276             | 0.282             | 0.274             | 0.272             |
| -7.5               | 0.267             | 0.315             | 0.318             | 0.308             | 0.302             |
| -6.0               | 0.310             | 0.356             | 0.356             | 0.343             | 0.334             |
| -4.5               | 0.355             | 0.402             | 0.396             | 0.379             | 0.366             |
| -3.0               | 0.406             | 0.450             | 0.437             | 0.415             | 0.398             |
| -1.5               | 0.454             | 0.489             | 0.469             | 0.442             | 0.419             |
| 0.0                | 0.437             | 0.452             | 0.397             | 0.368             | 0.341             |
| --                 | -                 | -                 | -                 | -                 | -                 |

+15V: Rated Load Current

Maximum output current at minimum input Voltage is 80% of rated load current.  
Refer to instruction manuals for details of input derating.



| Model   |                   | MGFW34815  |                   | Temperature 25°C   |                   |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
|---|-------------------|--|-------------------|--|-------------------|--|--|--|--|-------------------|-------------------|-------------------|-------------------|-------------------|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|----|---|---|---|---|---|----|---|---|---|---|---|----|---|---|---|---|---|--|--|
| Item  |                   | Switching frequency (by Load Current)  |                   | Testing Circuitry Figure A   |                   |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| Object  |                   | +/-15V0.1A   |                   |  |                   |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| 1.Graph   |                   | <p>—△— Input Volt. 18V</p> <p>---□--- Input Volt. 24V</p> <p>-··*·-·- Input Volt. 36V</p> <p>-··○-·- Input Volt. 48V</p> <p>--◇-- Input Volt. 76V</p>  |                   | 2.Values   |                   |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
|   |                   | <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="5">Input Current [A]</th> </tr> <tr> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>435</td><td>500</td><td>585</td><td>633</td><td>663</td></tr> <tr><td>0.02</td><td>314</td><td>381</td><td>473</td><td>529</td><td>592</td></tr> <tr><td>0.04</td><td>243</td><td>308</td><td>394</td><td>451</td><td>518</td></tr> <tr><td>0.06</td><td>197</td><td>256</td><td>339</td><td>392</td><td>461</td></tr> <tr><td>0.08</td><td>164</td><td>218</td><td>296</td><td>347</td><td>414</td></tr> <tr><td>0.09</td><td>152</td><td>204</td><td>279</td><td>329</td><td>395</td></tr> <tr><td>0.10</td><td>- ※</td><td>190</td><td>262</td><td>311</td><td>377</td></tr> <tr><td>0.11</td><td>- ※</td><td>178</td><td>248</td><td>296</td><td>361</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table> |                   | Load Current [A]   | Input Current [A] |  |  |  |  | Input Volt. 18[V] | Input Volt. 24[V] | Input Volt. 36[V] | Input Volt. 48[V] | Input Volt. 76[V] | 0.00 | 435 | 500 | 585 | 633 | 663 | 0.02 | 314 | 381 | 473 | 529 | 592 | 0.04 | 243 | 308 | 394 | 451 | 518 | 0.06 | 197 | 256 | 339 | 392 | 461 | 0.08 | 164 | 218 | 296 | 347 | 414 | 0.09 | 152 | 204 | 279 | 329 | 395 | 0.10 | - ※ | 190 | 262 | 311 | 377 | 0.11 | - ※ | 178 | 248 | 296 | 361 | -- | - | - | - | - | - | -- | - | - | - | - | - | -- | - | - | - | - | - |  |  |
| Load Current [A]  | Input Current [A] |  |                   |  |                   |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
|   | Input Volt. 18[V] | Input Volt. 24[V]  | Input Volt. 36[V] | Input Volt. 48[V]  | Input Volt. 76[V] |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| 0.00  | 435               | 500  | 585               | 633  | 663               |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| 0.02  | 314               | 381  | 473               | 529  | 592               |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| 0.04  | 243               | 308  | 394               | 451  | 518               |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| 0.06  | 197               | 256  | 339               | 392  | 461               |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| 0.08  | 164               | 218  | 296               | 347  | 414               |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| 0.09  | 152               | 204  | 279               | 329  | 395               |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| 0.10  | - ※               | 190  | 262               | 311  | 377               |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| 0.11  | - ※               | 178  | 248               | 296  | 361               |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| --  | -                 | -  | -                 | -  | -                 |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| --  | -                 | -  | -                 | -  | -                 |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| --  | -                 | -  | -                 | -  | -                 |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |
| <p>Note: Slanted line shows the range of the rated load current.</p> <p>When load current is low, MG operates intermittently, so switching frequency would not become constant.</p> |                   |  |                   | <p>※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.</p> |                   |  |  |  |  |                   |                   |                   |                   |                   |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |      |     |     |     |     |     |    |   |   |   |   |   |    |   |   |   |   |   |    |   |   |   |   |   |  |  |



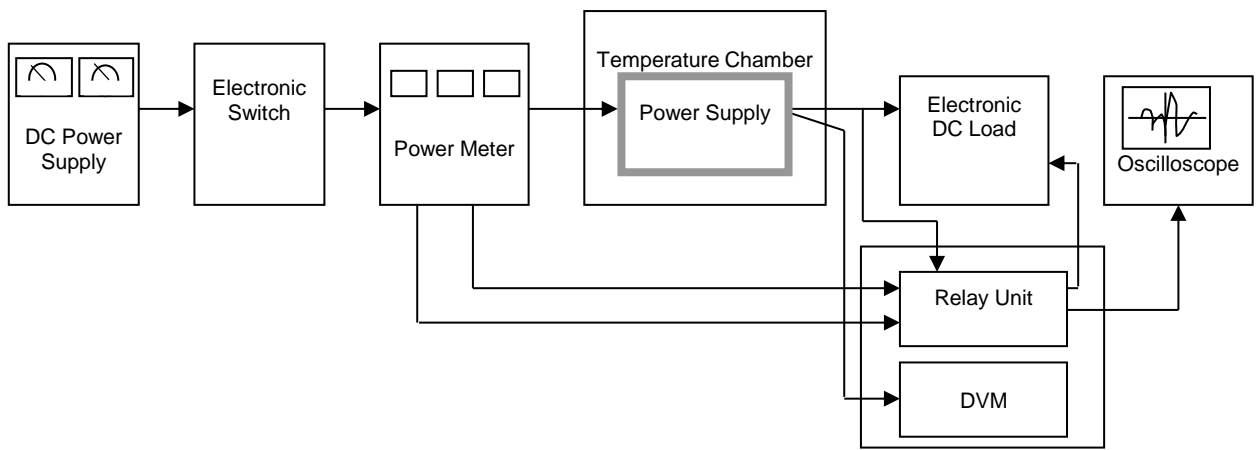


Figure A

Data Acquisition/Control Unit

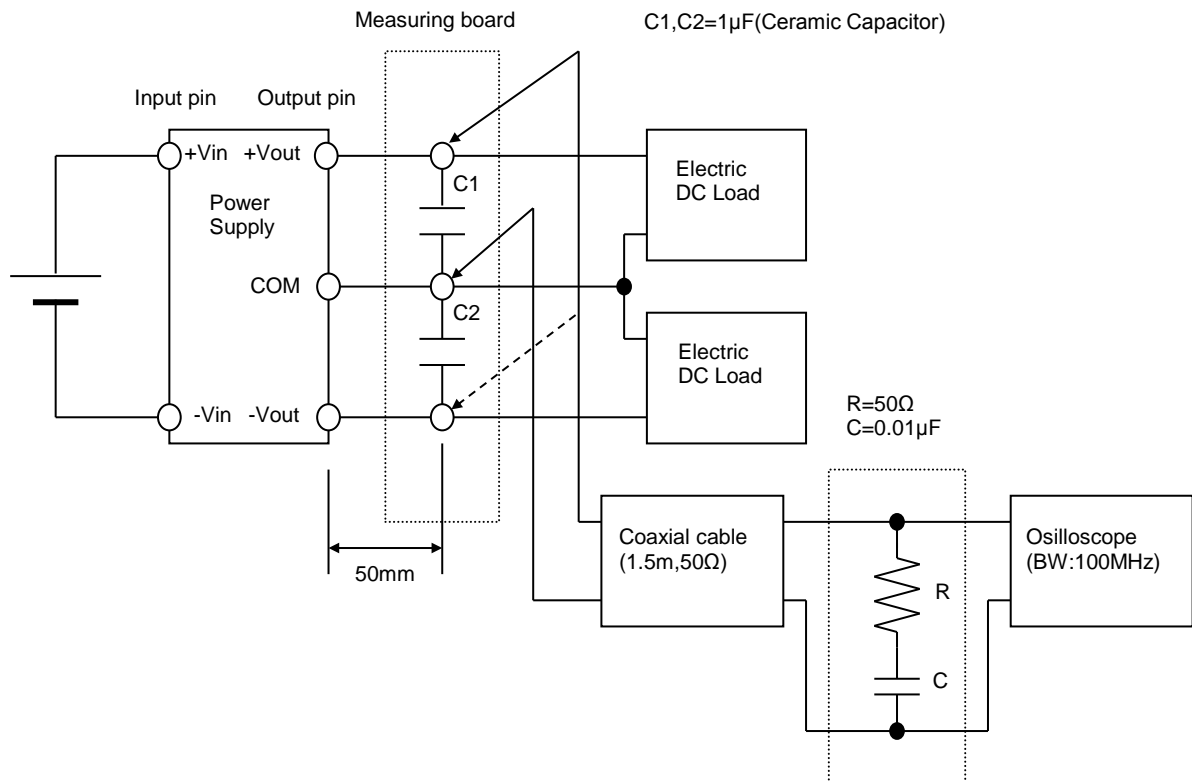


Figure B (Ripple and Ripple noise Characteristic)