

# TEST DATA OF MGFW154812

Regulated DC Power Supply  
September 7, 2010

Approved by : Kazunari Asano  
Kazunari Asano Design Manager

Prepared by : Yuichiro Ohashi  
Yuichiro Ohashi Design Engineer

**COSEL CO.,LTD.**

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Model	MGFW154812																																																																																	
Item	Input Current (by Input Voltage)	Temperature	25°C																																																																															
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<div><div><div>—△—</div><div>Load 100%</div></div><div><div>---□---</div><div>Load 50%</div></div><div><div>-·-○-·-</div><div>Load 0%</div></div></div> <p>Note: Slanted line shows the range of the rated input voltage.</p>		<table><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><tr><td>0.0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr><tr><td>5.0</td><td>0.002</td><td>0.002</td><td>0.002</td></tr><tr><td>10.0</td><td>0.002</td><td>0.002</td><td>0.002</td></tr><tr><td>15.0</td><td>0.002</td><td>0.002</td><td>0.002</td></tr><tr><td>16.0</td><td>0.002</td><td>0.002</td><td>0.002</td></tr><tr><td>16.5</td><td>0.032</td><td>0.552</td><td>1.126</td></tr><tr><td>17.0</td><td>0.031</td><td>0.538</td><td>1.099</td></tr><tr><td>17.5</td><td>0.030</td><td>0.523</td><td>1.066</td></tr><tr><td>18.0</td><td>0.029</td><td>0.510</td><td>1.035</td></tr><tr><td>24.0</td><td>0.021</td><td>0.381</td><td>0.767</td></tr><tr><td>36.0</td><td>0.016</td><td>0.255</td><td>0.508</td></tr><tr><td>48.0</td><td>0.011</td><td>0.189</td><td>0.381</td></tr><tr><td>76.0</td><td>0.008</td><td>0.125</td><td>0.242</td></tr><tr><td>80.0</td><td>0.008</td><td>0.119</td><td>0.231</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></table>		Input Voltage [V]	Input Current [A]			Load 0%	Load 50%	Load 100%	0.0	0.000	0.000	0.000	5.0	0.002	0.002	0.002	10.0	0.002	0.002	0.002	15.0	0.002	0.002	0.002	16.0	0.002	0.002	0.002	16.5	0.032	0.552	1.126	17.0	0.031	0.538	1.099	17.5	0.030	0.523	1.066	18.0	0.029	0.510	1.035	24.0	0.021	0.381	0.767	36.0	0.016	0.255	0.508	48.0	0.011	0.189	0.381	76.0	0.008	0.125	0.242	80.0	0.008	0.119	0.231	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Model

MGFW154812

Item

Input Current (by Load Current)

Object

1.Graph

△

Input Volt.

18V

□

Input Volt.

24V

\*

Input Volt.

36V

○

Input Volt.

48V

◇

Input Volt.

76V

Input Current [A]

2.00

1.50

1.00

0.50

0.00

0

20

40

60

80

100

120

Load Ratio [%]

2.Values

Load Ration [%]	Input Current [A]				
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	0.029	0.021	0.016	0.011	0.008
20	0.219	0.163	0.111	0.086	0.056
40	0.413	0.309	0.207	0.157	0.101
60	0.601	0.454	0.300	0.230	0.148
80	0.807	0.595	0.398	0.298	0.193
100	1.009	0.749	0.499	0.374	0.238
110	1.116	0.825	0.547	0.407	0.260
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

Temperature

25°C

Testing Circuitry

Figure A

- 2 -

BC-10472



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<div><div><div>—△—</div><div>Input Volt.</div><div>18V</div></div><div><div>---□---</div><div>Input Volt.</div><div>24V</div></div><div><div>---*---</div><div>Input Volt.</div><div>36V</div></div><div><div>---○---</div><div>Input Volt.</div><div>48V</div></div><div><div>---◇---</div><div>Input Volt.</div><div>76V</div></div></div> <div><div><div>Input Power [W]</div><div>25</div><div>20</div><div>15</div><div>10</div><div>5</div><div>0</div></div><div><div>0</div><div>20</div><div>40</div><div>60</div><div>80</div><div>100</div><div>120</div></div></div> <div><div>Load Ration [%]</div><div>0</div><div>20</div><div>40</div><div>60</div><div>80</div><div>100</div><div>120</div></div> <div><table><tr><th rowspan="2">Load Ration [%]</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><tr><td>0</td><td>0.53</td><td>0.50</td><td>0.57</td><td>0.55</td><td>0.62</td></tr><tr><td>20</td><td>3.94</td><td>3.89</td><td>4.00</td><td>4.12</td><td>4.27</td></tr><tr><td>40</td><td>7.37</td><td>7.40</td><td>7.44</td><td>7.53</td><td>7.66</td></tr><tr><td>60</td><td>10.83</td><td>10.83</td><td>10.78</td><td>11.01</td><td>11.23</td></tr><tr><td>80</td><td>14.49</td><td>14.30</td><td>14.34</td><td>14.29</td><td>14.69</td></tr><tr><td>100</td><td>18.18</td><td>17.97</td><td>17.91</td><td>17.92</td><td>18.06</td></tr><tr><td>110</td><td>20.07</td><td>19.78</td><td>19.66</td><td>19.48</td><td>19.74</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></table></div>		Load Ration [%]	Input Power [W]					Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0	0.53	0.50	0.57	0.55	0.62	20	3.94	3.89	4.00	4.12	4.27	40	7.37	7.40	7.44	7.53	7.66	60	10.83	10.83	10.78	11.01	11.23	80	14.49	14.30	14.34	14.29	14.69	100	18.18	17.97	17.91	17.92	18.06	110	20.07	19.78	19.66	19.48	19.74	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
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		---□--- Input Volt. 24V		<table><tr><th rowspan="2">Load Current [A]</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><tr><td>0.000</td><td>12.659</td><td>12.625</td><td>12.574</td><td>12.557</td><td>12.560</td></tr><tr><td>0.130</td><td>12.221</td><td>12.221</td><td>12.220</td><td>12.220</td><td>12.219</td></tr><tr><td>0.260</td><td>12.161</td><td>12.161</td><td>12.161</td><td>12.160</td><td>12.160</td></tr><tr><td>0.390</td><td>12.127</td><td>12.126</td><td>12.125</td><td>12.125</td><td>12.125</td></tr><tr><td>0.520</td><td>12.100</td><td>12.098</td><td>12.098</td><td>12.098</td><td>12.098</td></tr><tr><td>0.650</td><td>12.075</td><td>12.074</td><td>12.074</td><td>12.074</td><td>12.074</td></tr><tr><td>0.715</td><td>12.062</td><td>12.064</td><td>12.063</td><td>12.064</td><td>12.064</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></table>		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]	0.000	12.659	12.625	12.574	12.557	12.560	0.130	12.221	12.221	12.220	12.220	12.219	0.260	12.161	12.161	12.161	12.160	12.160	0.390	12.127	12.126	12.125	12.125	12.125	0.520	12.100	12.098	12.098	12.098	12.098	0.650	12.075	12.074	12.074	12.074	12.074	0.715	12.062	12.064	12.063	12.064	12.064	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
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]																																																																											
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0.130	12.221	12.221	12.220			12.220	12.219																																																																											
0.260	12.161	12.161	12.161	12.160	12.160																																																																													
0.390	12.127	12.126	12.125	12.125	12.125																																																																													
0.520	12.100	12.098	12.098	12.098	12.098																																																																													
0.650	12.075	12.074	12.074	12.074	12.074																																																																													
0.715	12.062	12.064	12.063	12.064	12.064																																																																													
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		-...*-... Input Volt. 36V																																																																																
		-...○-... Input Volt. 48V																																																																																
		--◇-- Input Volt. 76V																																																																																



Model	MGFW154812	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+12V0.65A	

Input Volt. 48 V

Other output current rated

Cycle 1000 ms

$t_1, t_2 = 50\mu\text{s}$



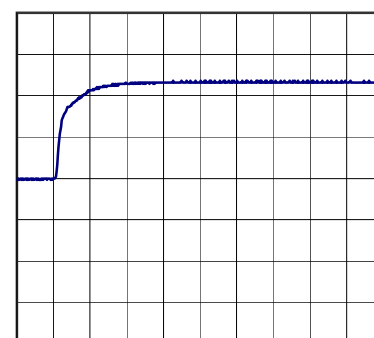
Min. Load (0A)  $\longleftrightarrow$

Load 100% (0.65A)

200mV/div



200 $\mu\text{s}$ /div

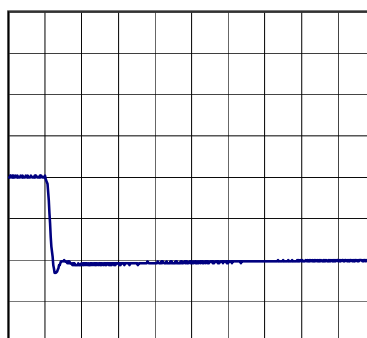


200 $\mu\text{s}$ /div

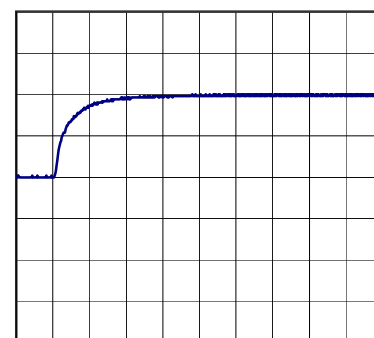
Min. Load (0A)  $\longleftrightarrow$

Load 50% (0.325A)

200mV/div



200 $\mu\text{s}$ /div

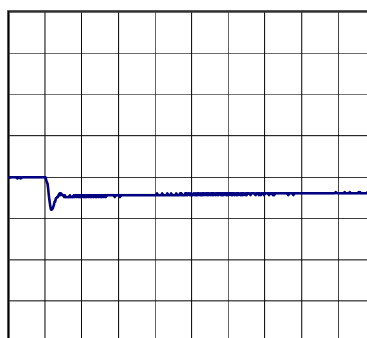


200 $\mu\text{s}$ /div

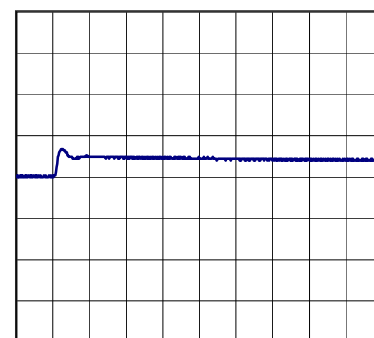
Load 50% (0.325A)  $\longleftrightarrow$

Load 100% (0.65A)

200mV/div



200 $\mu\text{s}$ /div



200 $\mu\text{s}$ /div



Model		MGFW154812	Temperature 25°C Testing Circuitry Figure A
Item		Dynamic Load Response	
Object		-12V0.65A	

Input Volt. 48 V

Other output current rated

Cycle 1000 ms

$t_1, t_2 = 50\mu\text{s}$



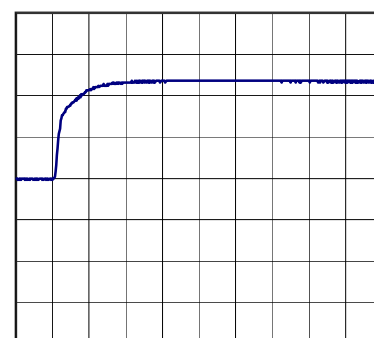
Min. Load (0A)  $\longleftrightarrow$

Load 100% (0.65A)

200mV/div



200 $\mu\text{s}$ /div

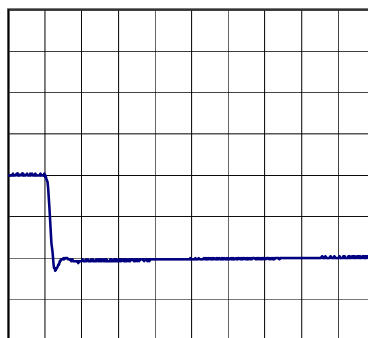


200 $\mu\text{s}$ /div

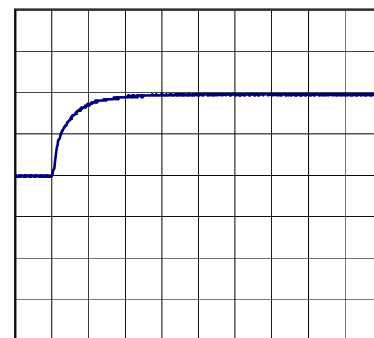
Min. Load (0A)  $\longleftrightarrow$

Load 50% (0.325A)

200mV/div



200 $\mu\text{s}$ /div

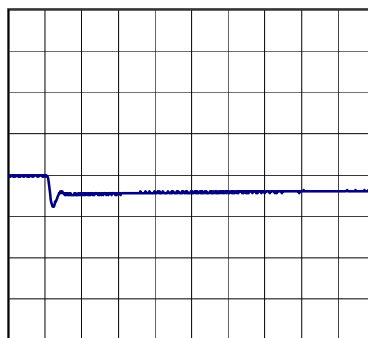


200 $\mu\text{s}$ /div

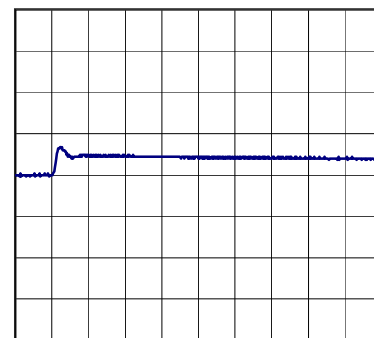
Load 50% (0.325A)  $\longleftrightarrow$

Load 100% (0.65A)

200mV/div



200 $\mu\text{s}$ /div



200 $\mu\text{s}$ /div

Model		MGFW154812																																							
Item		Ripple Voltage (by Load Current)																																							
Object		+12V0.65A																																							
1.Graph		2.Values																																							
<div><div><div>—△—</div><div>Input Volt.</div><div>18V</div></div><div><div>-.-○-.-</div><div>Input Volt.</div><div>76V</div></div></div> <div><p>Ripple Voltage [mV]</p><p>Load Current [A]</p></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 18 [V]</th><th>Input Volt. 76 [V]</th></tr><tr><td>0.000</td><td>5</td><td>5</td></tr><tr><td>0.130</td><td>6</td><td>6</td></tr><tr><td>0.260</td><td>8</td><td>9</td></tr><tr><td>0.390</td><td>9</td><td>10</td></tr><tr><td>0.520</td><td>10</td><td>11</td></tr><tr><td>0.650</td><td>11</td><td>12</td></tr><tr><td>0.715</td><td>12</td><td>13</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><tr><td>--</td><td>-</td><td>-</td></tr></table> <p>-12V: Rated output current</p>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 18 [V]	Input Volt. 76 [V]	0.000	5	5	0.130	6	6	0.260	8	9	0.390	9	10	0.520	10	11	0.650	11	12	0.715	12	13	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																								
	Input Volt. 18 [V]	Input Volt. 76 [V]																																							
0.000	5	5																																							
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--	-	-																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
<p>Measured by 100 MHz Oscilloscope.</p> <p>Ripple Voltage is shown as p-p in the figure below.</p> <p>Note: Slanted line shows the range of the rated load current.</p>																																									
<div><p>Ripple [mVp-p]</p><p>Fig.Complex Ripple Wave Form</p></div>																																									

- 10 -

BC-10472


Model		MGFW154812		Temperature 25°C	
Item		Ripple Voltage (by Load Current)		Testing Circuitry Figure B	
Object		-12V0.65A			
1.Graph				2.Values	
<div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><d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Model	MGFW154812																																								
Item	Ripple-Noise	Temperature	25°C																																						
Object	+12V0.65A	Testing Circuitry	Figure B																																						
1.Graph		2.Values																																							
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Model		MGFW154812																																							
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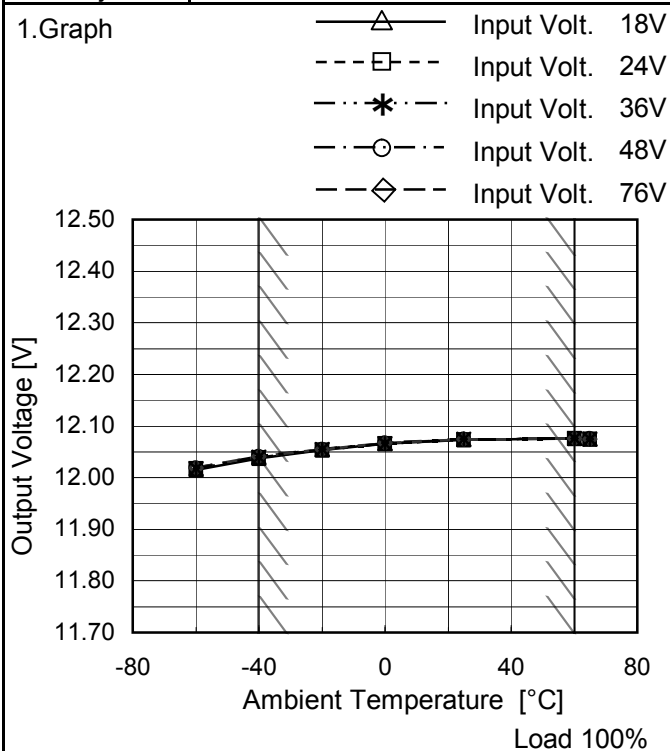
Model	MGFW154812	Testing Circuitry    Figure B																																							
Item	Ripple Voltage (by Ambient Temp.)																																								
Object	+12V0.65A																																								
1.Graph		2.Values																																							
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Note: Slanted line shows the range of the rated ambient temperature.																																									



	
Model	MGFW154812
Item	Ambient Temperature Drift
Object	+12V0.65A

Testing Circuitry Figure A

## 1. Graph

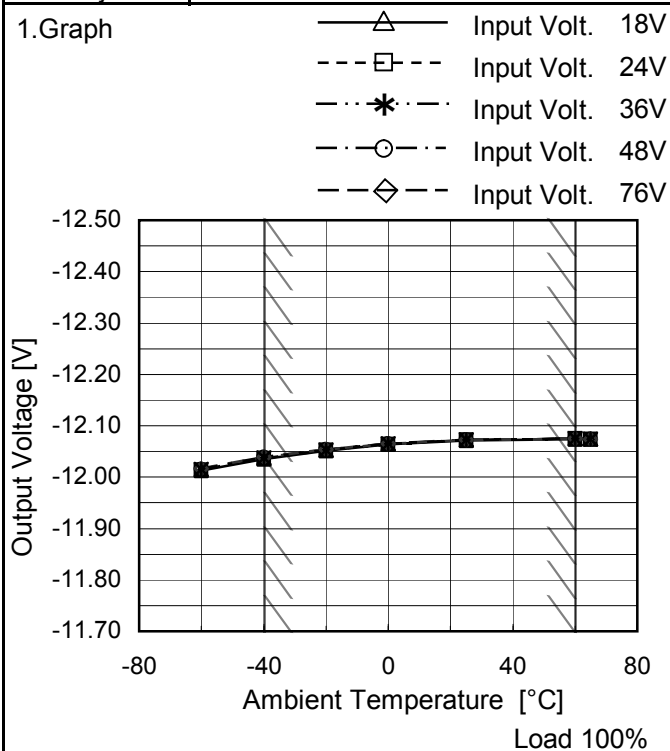


## 2.Values

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	12.015	12.017	12.018	12.019	12.019
-40	12.038	12.039	12.040	12.041	12.041
-20	12.053	12.054	12.055	12.055	12.055
0	12.065	12.066	12.067	12.067	12.067
25	12.074	12.074	12.074	12.075	12.075
60	12.076	12.076	12.076	12.076	12.076
65	12.075	12.075	12.075	12.075	12.075
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

Object	-12V0.65A
--------	-----------

## 1.Graph



## 2.Values

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	-12.012	-12.014	-12.015	-12.016	-12.016
-40	-12.035	-12.037	-12.038	-12.038	-12.039
-20	-12.051	-12.053	-12.053	-12.054	-12.054
0	-12.064	-12.064	-12.065	-12.065	-12.066
25	-12.072	-12.072	-12.073	-12.073	-12.073
60	-12.074	-12.075	-12.075	-12.075	-12.075
65	-12.074	-12.074	-12.074	-12.074	-12.074
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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



		Testing Circuitry Figure A
Model	MGFW154812	
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 - 60°C

Input Voltage : 18 - 76V

Load Current (AVR 1) : 0 - 0.65A (AVR 2) : 0 - 0.65A

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

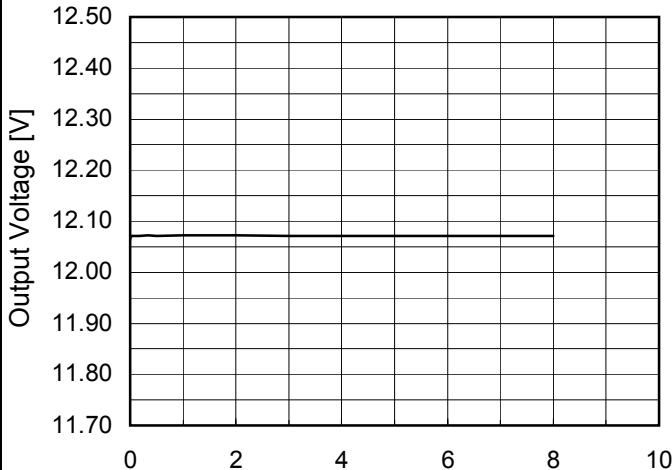
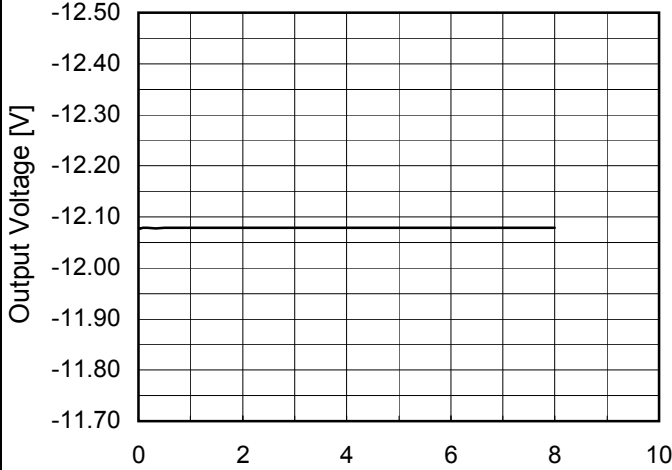
\* Output Voltage Accuracy (Ratio) =  $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

## 2. Values

Object	+12V0.65A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	18	0	12.649	±306	±2.6
Minimum Voltage	-40	18	0.65	12.038		

Object	-12V0.65A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	18	0	-12.594	±280	±2.3
Minimum Voltage	-40	18	0.65	-12.035		

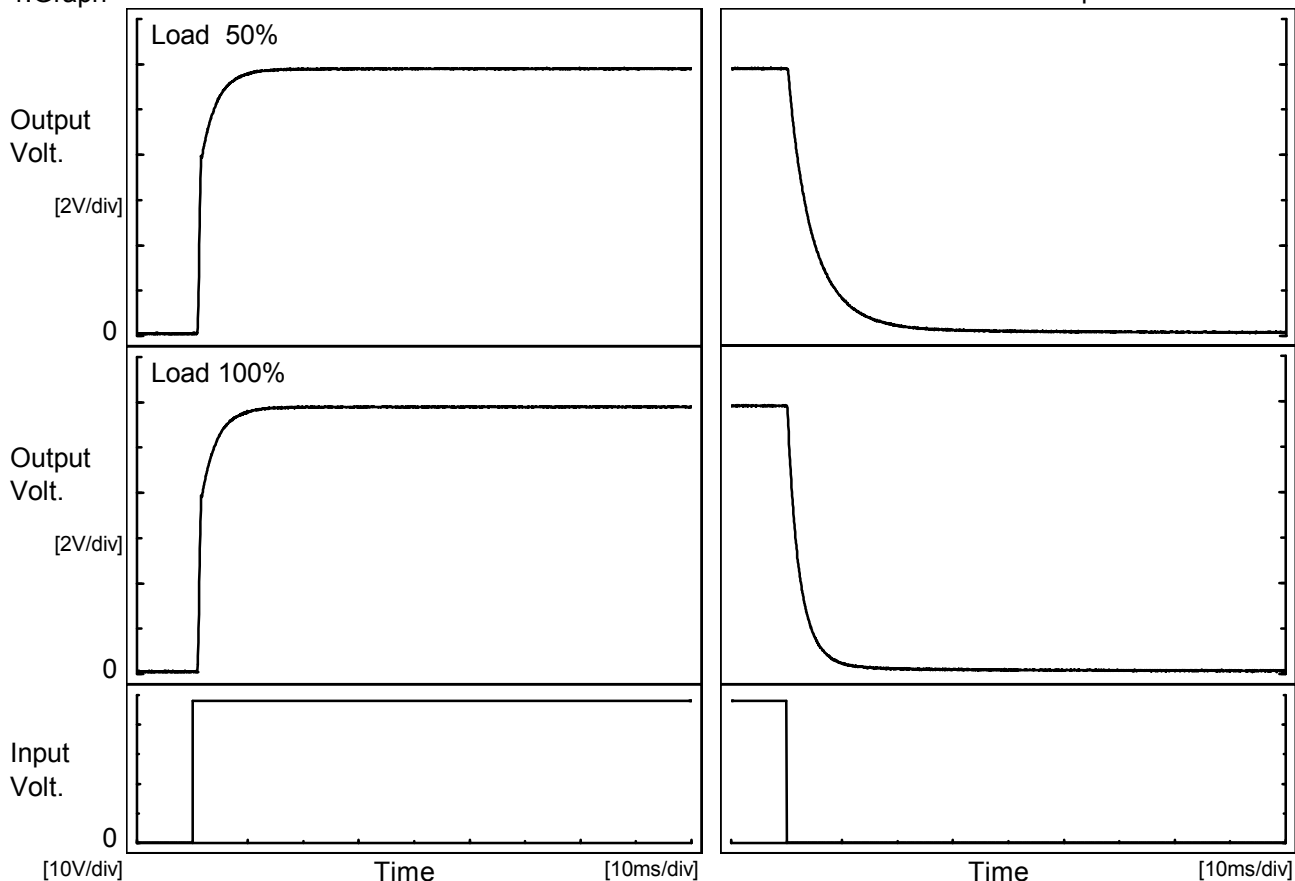
# COSEL

Model	MGFW154812																								
Item	Time Lapse Drift	Temperature	25°C																						
		Testing Circuitry	Figure A																						
Object	+12V0.65A																								
1.Graph		2.Values																							
<div></div> <div>Output Voltage [V]</div> <div>Time [H]</div> <div>Input Volt. 48V</div> <div>Load 100%</div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>12.065</td></tr><tr><td>0.5</td><td>12.072</td></tr><tr><td>1.0</td><td>12.072</td></tr><tr><td>2.0</td><td>12.072</td></tr><tr><td>3.0</td><td>12.072</td></tr><tr><td>4.0</td><td>12.072</td></tr><tr><td>5.0</td><td>12.072</td></tr><tr><td>6.0</td><td>12.072</td></tr><tr><td>7.0</td><td>12.072</td></tr><tr><td>8.0</td><td>12.071</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	12.065	0.5	12.072	1.0	12.072	2.0	12.072	3.0	12.072	4.0	12.072	5.0	12.072	6.0	12.072	7.0	12.072	8.0	12.071
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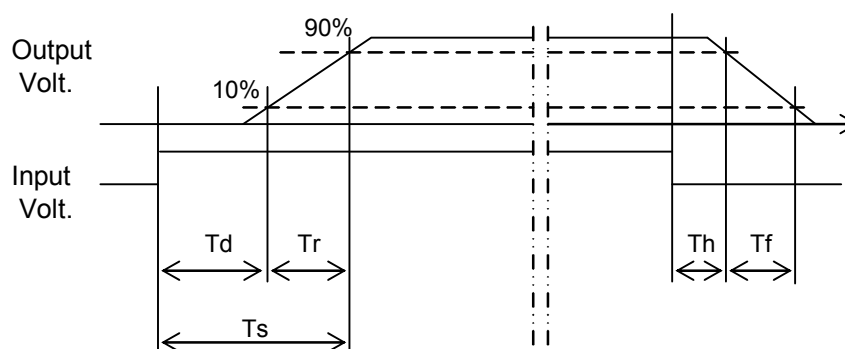
Model	MGFW154812		
Item	Rise and Fall Time	Temperature	25°C
Object	+12V0.65A	Testing Circuitry	Figure A

## 1.Graph



## 2.Values

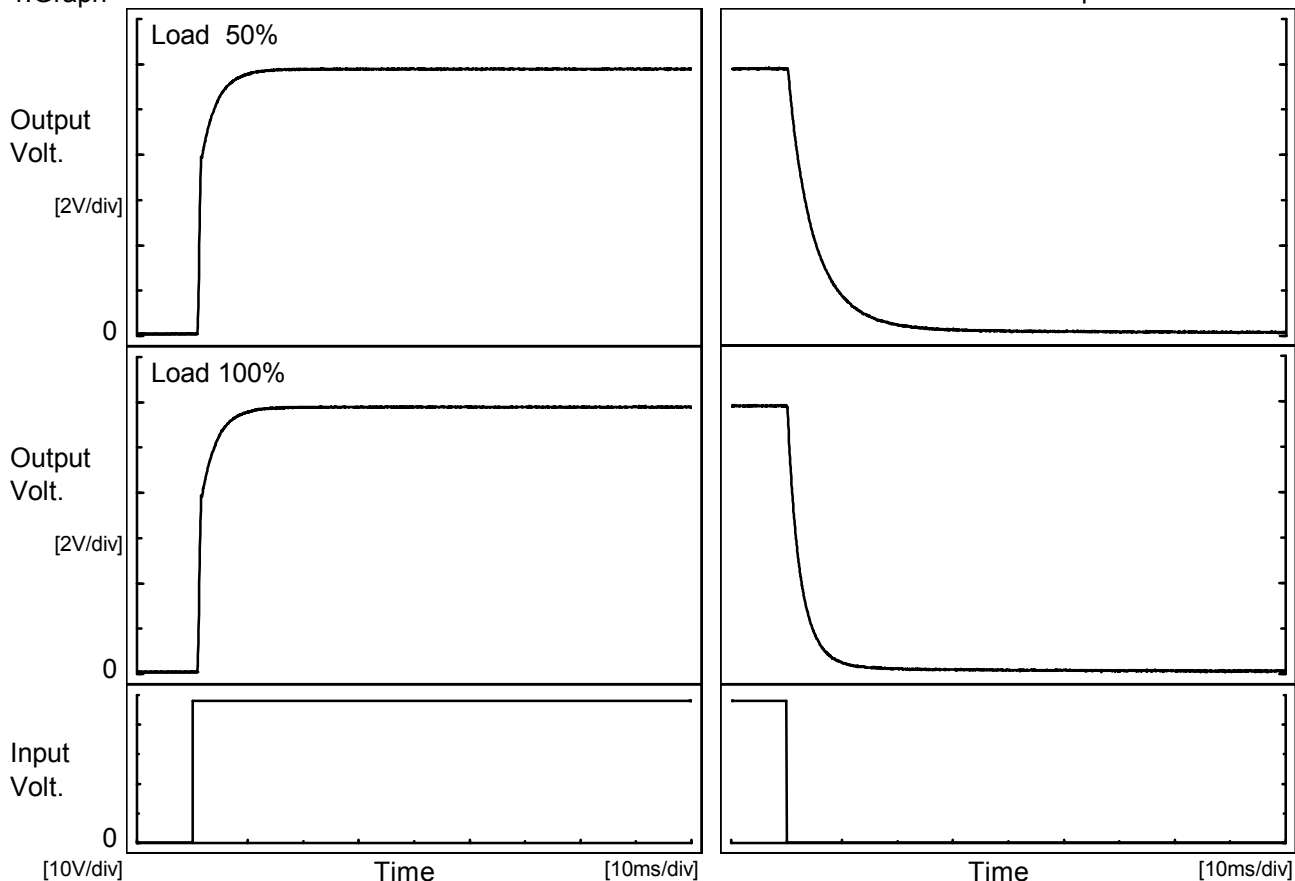
		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		1.1	4.7	5.8	0.5	11.1
100 %		1.1	4.7	5.8	0.3	5.5





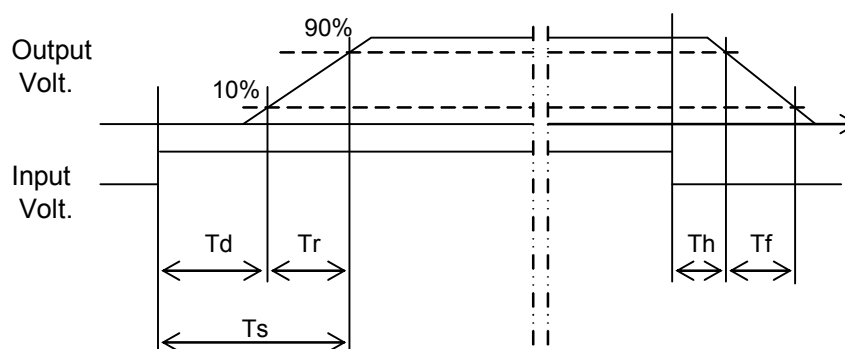
Model	MGFW154812		
Item	Rise and Fall Time	Temperature	25°C
Object	-12V0.65A	Testing Circuitry	Figure A

## 1.Graph



## 2.Values

		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		1.1	4.7	5.8	0.5	11.5
100 %		1.1	4.7	5.8	0.3	5.8



Model	MGFW154812	Testing Circuitry    Figure A	
Item	Minimum Input Voltage for Regulated Output Voltage		
Object	+12V0.65A		
1.Graph		2.Values	
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**Model**: MGFW154812  
**Item**: Overcurrent Protection  
**Object**: +12V0.65A

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

### 1.Graph

	Input Volt.	18V	24V	36V	48V	76V
△	Input Volt.	18V	24V	36V	48V	76V
□	Input Volt.	24V	36V	48V	76V	-
*	Input Volt.	36V	48V	76V	-	-
○	Input Volt.	48V	76V	-	-	-
◇	Input Volt.	76V	-	-	-	-

**Output Voltage [V]** vs **Load Current [A]**

Note: Slanted line shows the range of the rated load current.  
Intermittent operation occurs when overcurrent protection is activated.

### 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]
12.0	0.922	1.102	1.289	1.393	1.406
11.4	-	-	-	-	-
10.8	-	-	-	-	-
9.6	-	-	-	-	-
8.4	-	-	-	-	-
7.2	-	-	-	-	-
6.0	-	-	-	-	-
4.8	-	-	-	-	-
3.6	-	-	-	-	-
2.4	-	-	-	-	-
1.2	-	-	-	-	-
0.0	-	-	-	-	-

**-12V: Rated output current**

---

**Object**: -12V0.65A

### 1.Graph

	Input Volt.	18V	24V	36V	48V	76V
△	Input Volt.	18V	24V	36V	48V	76V
□	Input Volt.	24V	36V	48V	76V	-
*	Input Volt.	36V	48V	76V	-	-
○	Input Volt.	48V	76V	-	-	-
◇	Input Volt.	76V	-	-	-	-

**Output Voltage [V]** vs **Load Current [A]**

Note: Slanted line shows the range of the rated load current.  
Intermittent operation occurs when overcurrent protection is activated.

### 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]
-12.0	0.922	1.102	1.289	1.393	1.406
-11.4	-	-	-	-	-
-10.8	-	-	-	-	-
-9.6	-	-	-	-	-
-8.4	-	-	-	-	-
-7.2	-	-	-	-	-
-6.0	-	-	-	-	-
-4.8	-	-	-	-	-
-3.6	-	-	-	-	-
-2.4	-	-	-	-	-
-1.2	-	-	-	-	-
0.0	-	-	-	-	-

**+12V: Rated output current**

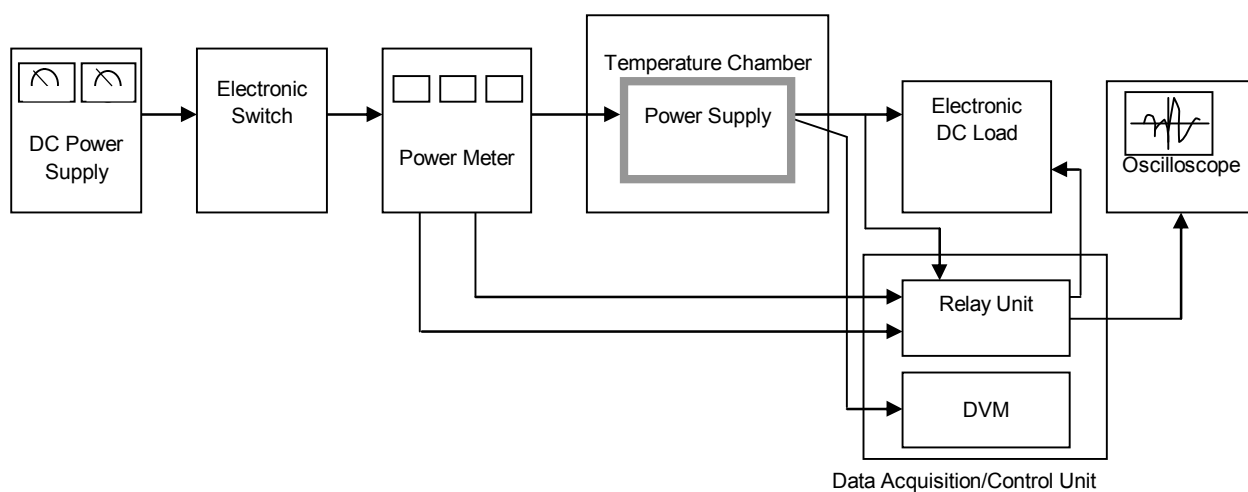


Figure A

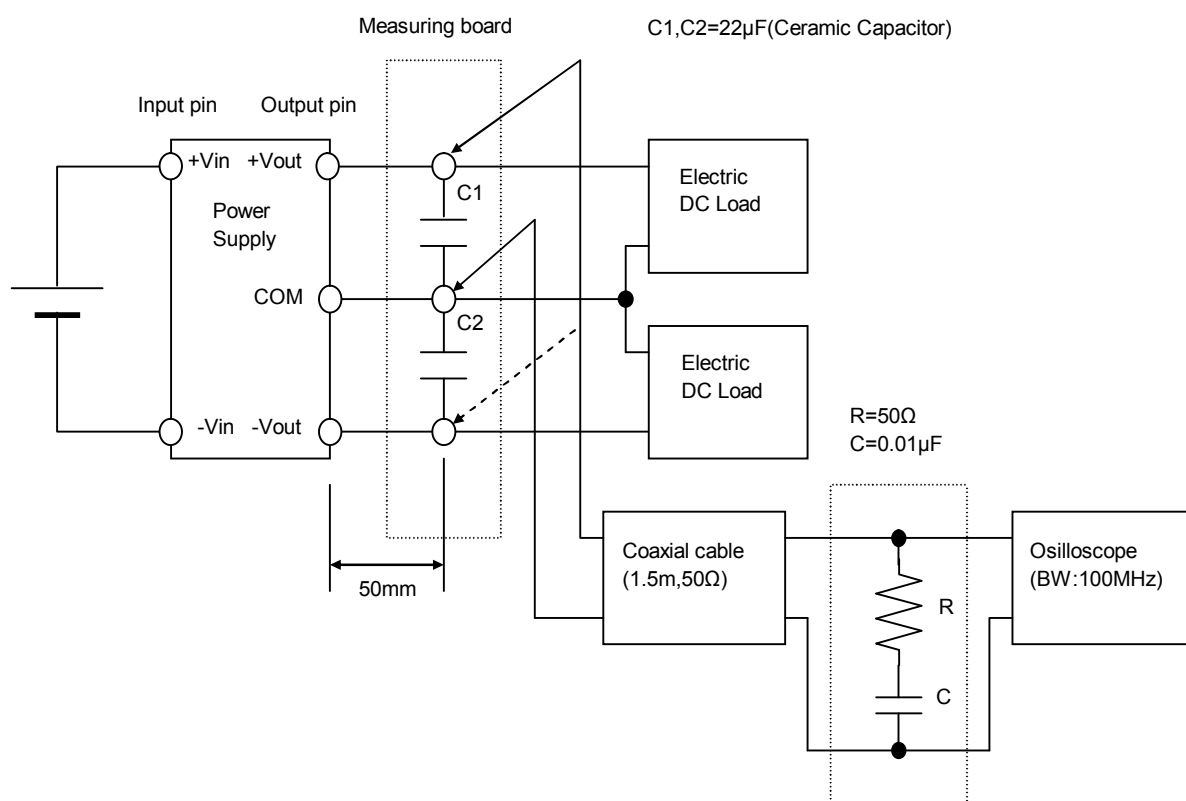


Figure B (Ripple and Ripple noise Characteristic)