COSEL

TEST DATA OF MHFS31212

Regulated DC Power Supply
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COSEL CO.,LTD.

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Model	MHFS31212
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph

——△—— Input Volt. 4.5V
– – –⊟– – – Input Volt. 5V
—··✳··—· Input Volt. 9V
—·—○—··— Input Volt. 12V
— —◇— — Input Volt. 18V

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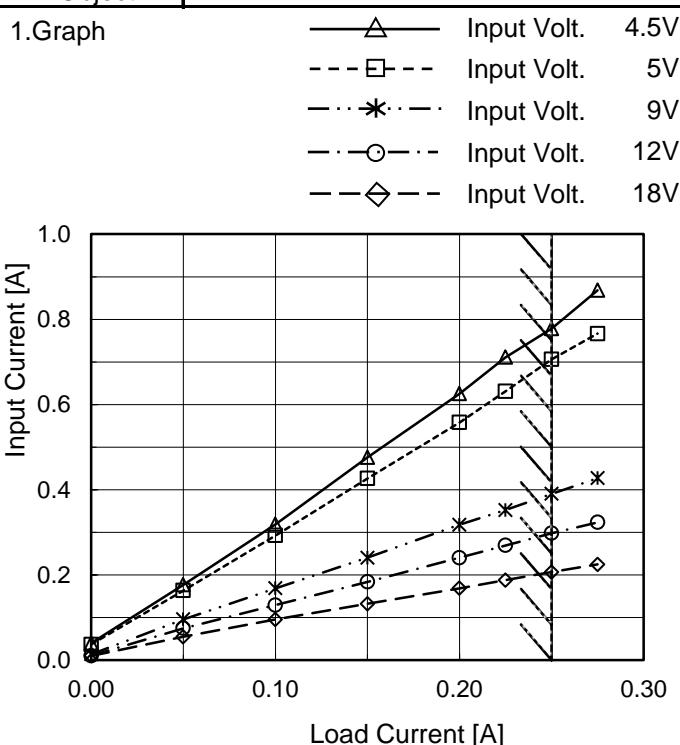
2.Values

Load Current [A]	Input Current [A]				
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.000	0.040	0.037	0.014	0.010	0.010
0.050	0.177	0.163	0.096	0.075	0.055
0.100	0.319	0.293	0.169	0.129	0.096
0.150	0.476	0.426	0.241	0.184	0.132
0.200	0.626	0.558	0.318	0.241	0.169
0.225	0.711	0.632	0.352	0.269	0.188
0.250	0.778	0.706	0.391	0.298	0.207
0.275	0.869	0.767	0.427	0.324	0.225
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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Model	MHFS31212
Item	Efficiency (by Load Current)
Object	———————

Temperature　　25°C
Testing Circuitry　Figure A

1.Graph

	Input Volt.	4.5V
	Input Volt.	5V
	Input Volt.	9V
	Input Volt.	12V
	Input Volt.	18V

2.Values

Load Current [A]

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

Load Current [A]	Efficiency [%]				
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.000	-	-	-	-	-
0.050	72.4	72.1	67.9	65.2	59.4
0.100	80.7	80.6	78.0	76.3	68.8
0.150	82.6	82.5	81.8	80.3	74.7
0.200	83.8	83.9	83.2	82.2	78.0
0.225	83.9	84.2	83.8	82.8	78.9
0.250	84.1	84.4	84.3	83.3	79.8
0.275	84.0	84.5	84.7	83.9	80.8
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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Model	MHFS31212
Item	Line Regulation
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

--- ⊟ --- Load 50%
—△— Load 100%

Output Voltage [V] vs Input Voltage [V]

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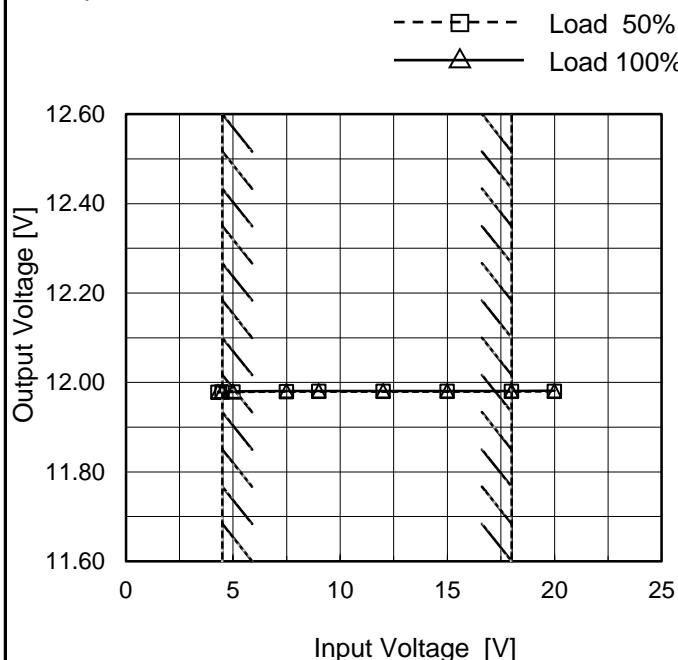
2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
4.3	11.978	11.980
4.5	11.978	11.980
5.0	11.979	11.980
7.5	11.979	11.981
9.0	11.980	11.981
12.0	11.980	11.981
15.0	11.980	11.981
18.0	11.980	11.981
20.0	11.980	11.981

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Model	MHFS31212

Item	Load Regulation

Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

		Input Volt.	4.5V
		Input Volt.	5V
		Input Volt.	9V
		Input Volt.	12V
		Input Volt.	18V

Output Voltage [V] vs Load Current [A]

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

2.Values

Load Current [A]	Output Voltage [V]				
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.000	11.989	11.988	11.988	11.988	11.988
0.050	11.987	11.987	11.986	11.985	11.987
0.100	11.986	11.985	11.985	11.984	11.986
0.150	11.985	11.984	11.983	11.983	11.982
0.200	11.983	11.983	11.982	11.981	11.981
0.225	11.982	11.982	11.982	11.981	11.981
0.250	11.982	11.981	11.981	11.980	11.980
0.275	11.981	11.981	11.981	11.980	11.980
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

Item	Ripple-Noise

Temperature 25°C
Testing Circuitry Figure B

Object	+12V0.25A

1.Graph

Input Voltage 12V
Load 100%

10[mV/div]

1[μs/div]

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Model	MHFS31212
Item	Dynamic Load Response
Object	+12V0.25A

Temperature   25°C
Testing Circuitry   Figure A

Input Volt.   12 V
Cycle   100 ms

t1,t2 = 50 μs

Load Current

t1   t2

Min.Load (0A)←→
Load 100% (0.25A)

200 mV/div

4 ms/div   4 ms/div

Min.Load (0A)←→
Load 50% (0.125A)

200 mV/div

4 ms/div   4 ms/div

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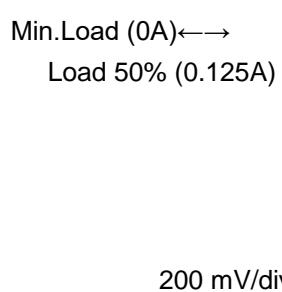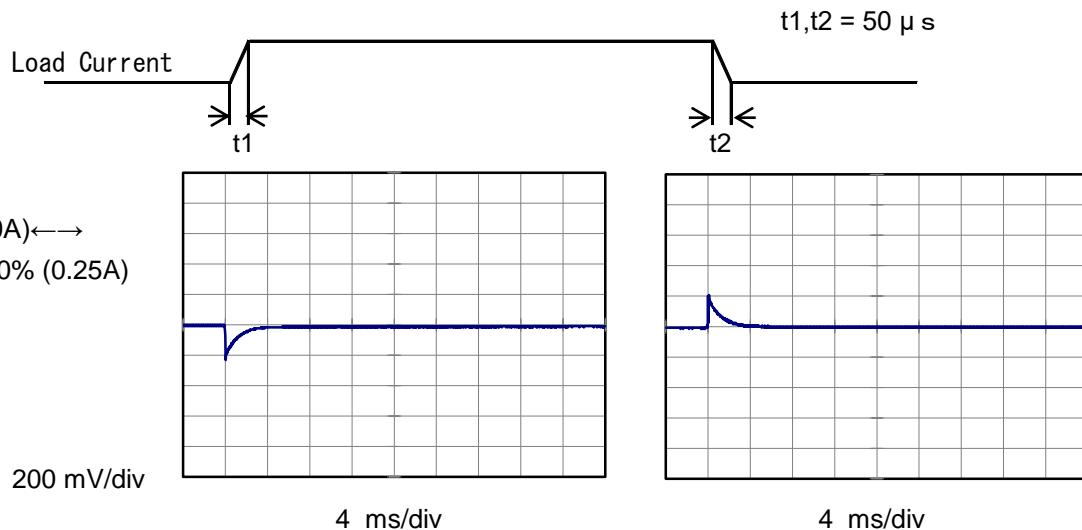
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Model	MHFS31212
Item	Rise and Fall Time
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

Input Volt. 12 V

Load 50%

Output Volt.

[2V/div]

0

Load 100%

Output Volt.

[2V/div]

0

Input Volt.

0

[5V/div]　　　Time　　　[5ms/div]　　　　　Time　　　[5ms/div]
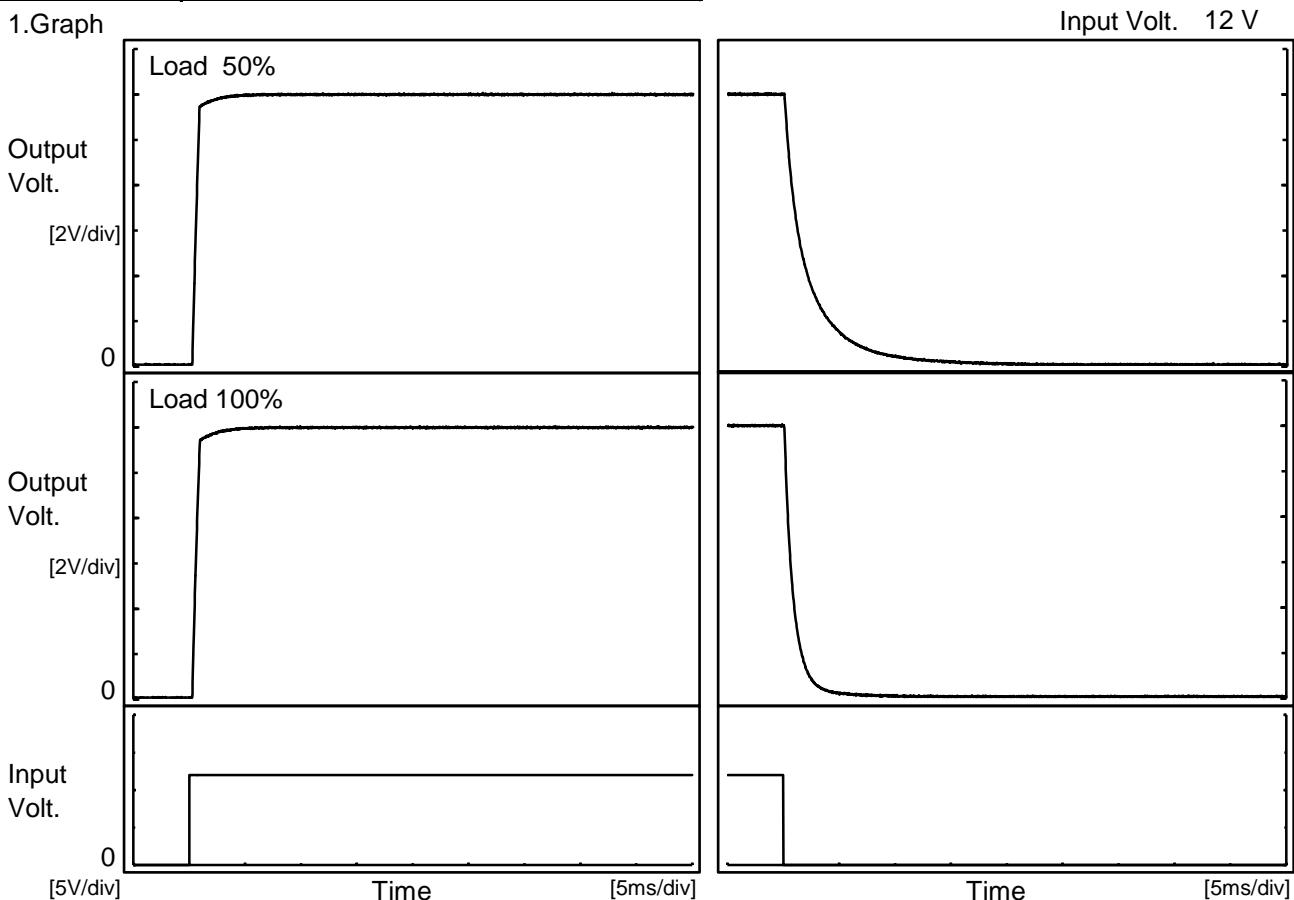
2.Values

[ms]

Load ╲ Time	Td	Tr	Ts	Th	Tf
50 %	0.4	0.6	1.0	0.2	5.3
100 %	0.3	0.6	0.9	0.2	1.9

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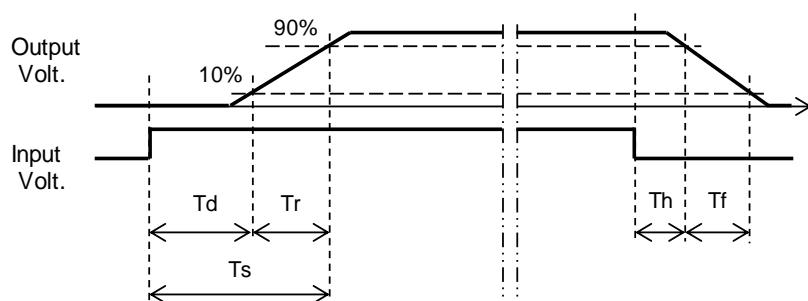
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Model	MHFS31212
Item	Overcurrent Protection
Object	+12V0.25A
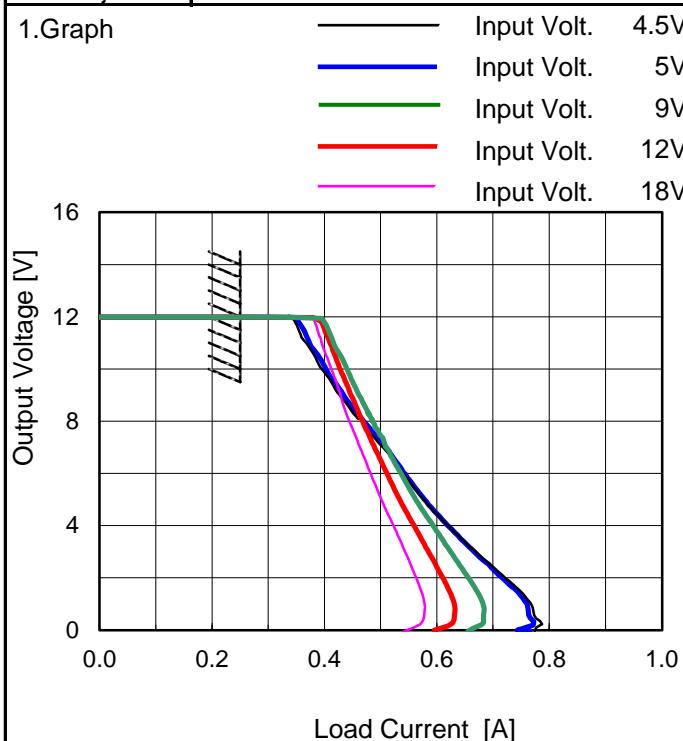
Temperature 25°C
Testing Circuitry Figure A

1.Graph

———	Input Volt. 4.5V
———	Input Volt. 5V
———	Input Volt. 9V
———	Input Volt. 12V
———	Input Volt. 18V

Load Current [A]

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

2.Values

Output Voltage [V]	Load Current [A]				
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
11.4	0.355	0.365	0.409	0.402	0.390
10.8	0.372	0.377	0.419	0.413	0.398
9.6	0.409	0.410	0.448	0.436	0.417
8.4	0.448	0.454	0.471	0.458	0.437
7.2	0.496	0.498	0.504	0.485	0.459
6.0	0.539	0.540	0.536	0.511	0.480
4.8	0.580	0.582	0.568	0.538	0.504
3.6	0.635	0.637	0.604	0.569	0.530
2.4	0.698	0.697	0.641	0.600	0.554
1.2	0.758	0.753	0.677	0.627	0.575
0.0	0.774	0.766	0.655	0.596	0.540
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Model	MHFS31212

Item	Ambient Temperature Drift	Testing Circuitry　Figure A

Object	+12V0.25A

1.Values

Ambient Temperature[°C]	Output Voltage　[V]				
	Input Volt. 4.5V	Input Volt. 5V	Input Volt. 9V	Input Volt. 12V	Input Volt. 18V
-40	11.884	11.885	11.886	11.887	11.888
25	11.976	11.976	11.977	11.978	11.978
75	12.003	12.003	12.004	12.005	12.005

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry　Figure A

Object	+12V0.25A

1.Values

Ambient Temperature[°C]	Input　Voltage　[V]	
	Load　50%	Load　100%
-40	3.6	3.6
25	3.5	3.6
75	3.5	3.6

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Model	MHFS31212
Item	Switching frequency (by Load Current)
Object	+12V0.25A
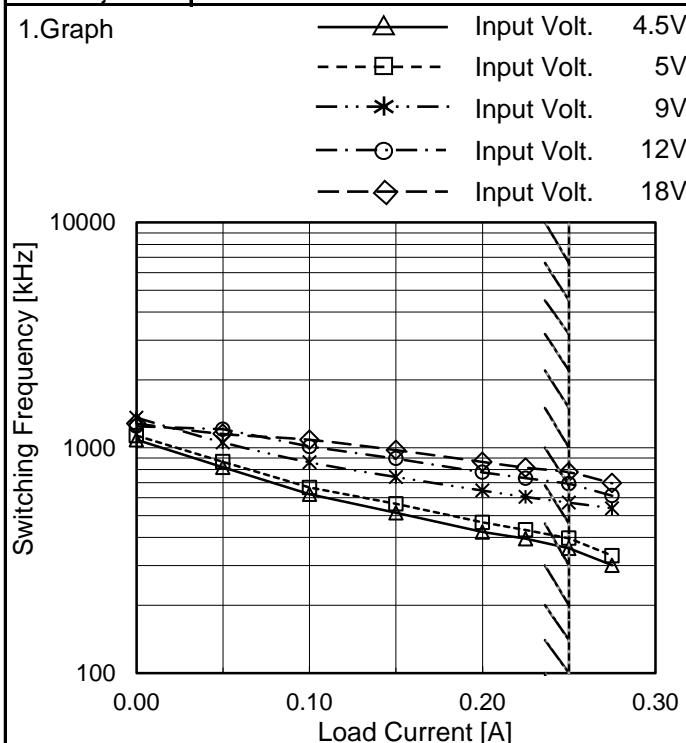
Temperature 25°C
Testing Circuitry Figure A

1.Graph

—△—	Input Volt. 4.5V
- - -⊟- - -	Input Volt. 5V
—··✳··—·	Input Volt. 9V
—·—○—··	Input Volt. 12V
—·—◇—··	Input Volt. 18V

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

When load current is low, MH operates intermittently, so switching frequency would not become constant.

2.Values

Load Current	Switching Frequency [kHz]				
	Input Volt.	Input Volt.	Input Volt.	Input Volt.	Input Volt.
[A]	4.5[V]	5[V]	9[V]	12[V]	18[V]
0.000	1084	1132	1360	1246	1279
0.050	819	867	1056	1208	1152
0.100	622	667	862	1013	1086
0.150	515	563	742	895	977
0.200	423	467	646	778	866
0.225	394	432	605	733	816
0.250	358	396	571	693	778
0.275	301	332	539	613	696
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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Figure A

Figure B