CO$EL

TEST DATA OF SFS30241R2

Regulated DC Power Supply
Dec 28,2004

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COSEL CO.,LTD.

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Model	SFS30241R2
Item	Input Current (by Input Voltage)
Object	————

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

—△— Load 100%
- - -□- - - Load 50%
—·—○—·· Load 0%

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

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
4	0.002	0.002	0.002
8	0.002	0.002	0.002
12	0.003	0.003	0.003
16	0.004	0.004	0.004
17	0.041	0.445	0.881
18	0.038	0.408	0.810
20	0.036	0.368	0.717
24	0.033	0.309	0.602
28	0.032	0.267	0.512
32	0.031	0.236	0.449
36	0.030	0.213	0.407
40	0.030	0.195	0.362
--	-	-	-
---	-	-	-
--	-	-	-

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Model	SFS30241R2
Item	Input Current (by Load Current)
Object	
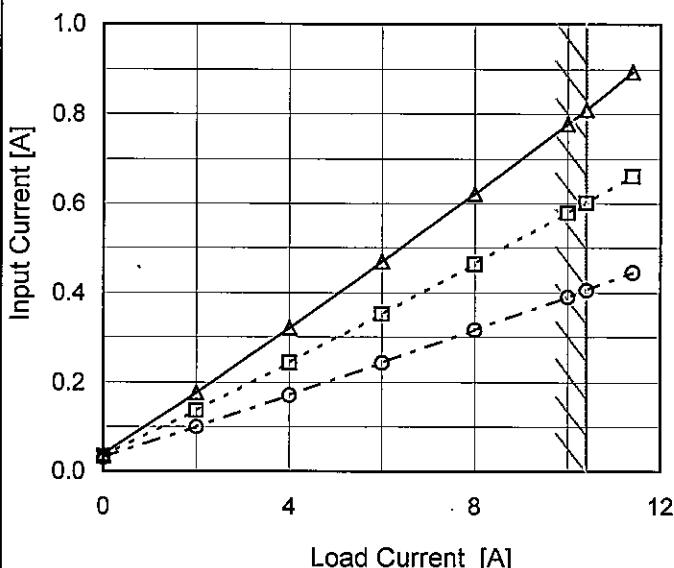
Temperature	25°C
Testing Circuitry	Figure A

1.Graph

——△—— Input Volt. 18V
---☐--- Input Volt. 24V
—·—○—·— Input Volt. 36V

Input Current [A] (y-axis) vs Load Current [A] (x-axis)

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

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	0.038	0.033	0.030
2.0	0.178	0.137	0.100
4.0	0.321	0.244	0.171
6.0	0.470	0.353	0.244
8.0	0.622	0.465	0.317
10.0	0.778	0.579	0.392
10.4	0.810	0.602	0.407
11.4	0.895	0.662	0.446
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SFS30241R2
Item	Input Power (by Load Current)
Object	
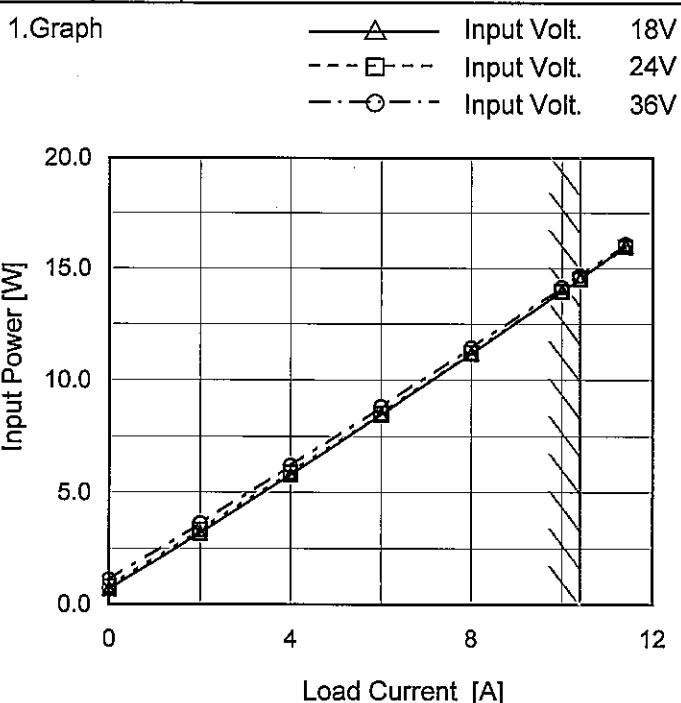
Temperature   25°C
Testing Circuitry   Figure A

1. Graph

— △ —   Input Volt.   18V
- - - ▱ - - -   Input Volt.   24V
— · — ○ — · ·   Input Volt.   36V

Load Current [A]

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

2. Values

Load Current [A]	Input Power [W]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	0.70	0.81	1.12
2.0	3.21	3.33	3.62
4.0	5.80	5.90	6.21
6.0	8.47	8.52	8.81
8.0	11.19	11.23	11.45
10.0	13.97	13.97	14.14
10.4	14.54	14.52	14.67
11.4	16.03	15.97	16.10
---	-	-	-
---	-	-	-
---	-	-	-

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COSEL

Model	SFS30241R2
Item	Efficiency (by Input Voltage)
Object	
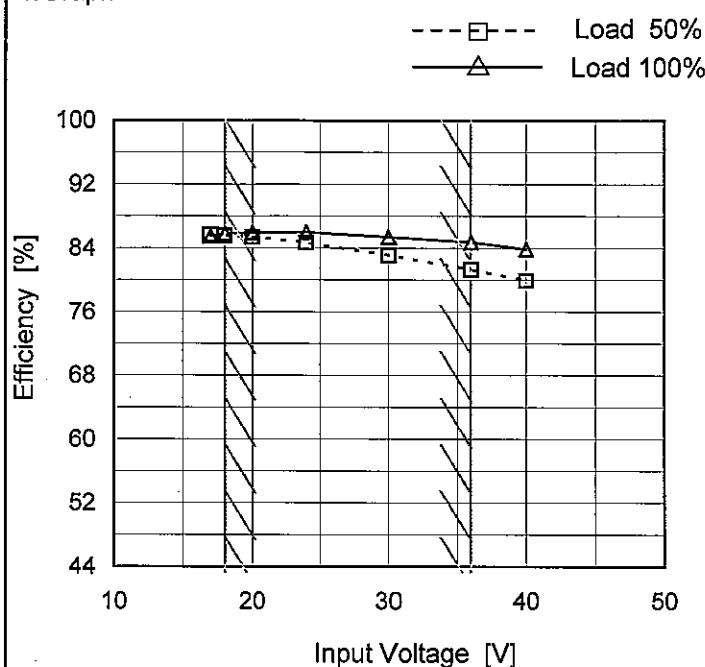
Temperature 25°C
Testing Circuitry Figure A

1.Graph

--- ⊟ --- Load 50%
——— △ ——— Load 100%

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

2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
17	85.7	85.5
18	85.6	85.9
20	85.4	85.9
24	84.7	86.0
30	83.1	85.4
36	81.3	84.7
40	79.9	83.9
--	-	-
--	-	-

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Model	SFS30241R2
Item	Efficiency (by Load Current)
Object	
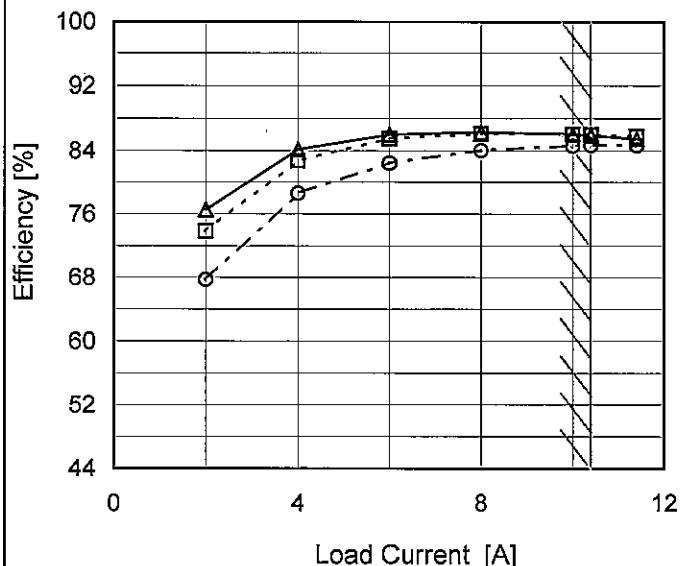
Temperature 25°C
Testing Circuitry Figure A

1.Graph

——△—— Input Volt. 18V
---□--- Input Volt. 24V
—·—○—·· Input Volt. 36V

Load Current [A]

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

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	-	-	-
2.0	76.5	73.9	67.8
4.0	84.2	82.8	78.6
6.0	86.1	85.6	82.5
8.0	86.4	86.1	84.1
10.0	86.1	86.1	84.6
10.4	85.9	86.0	84.7
11.4	85.5	85.8	84.7
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SFS30241R2
Item	Line Regulation
Object	+1.2V10.4A

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

--- ▱ ---   Load 50%
—△—   Load 100%

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

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
17	1.216	1.202
18	1.217	1.202
20	1.218	1.204
24	1.217	1.203
30	1.216	1.201
36	1.214	1.197
40	1.214	1.195
---	-	-
--	--	-

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COSEL

Model	SFS30241R2
Item	Load Regulation
Object	+1.2V10.4A
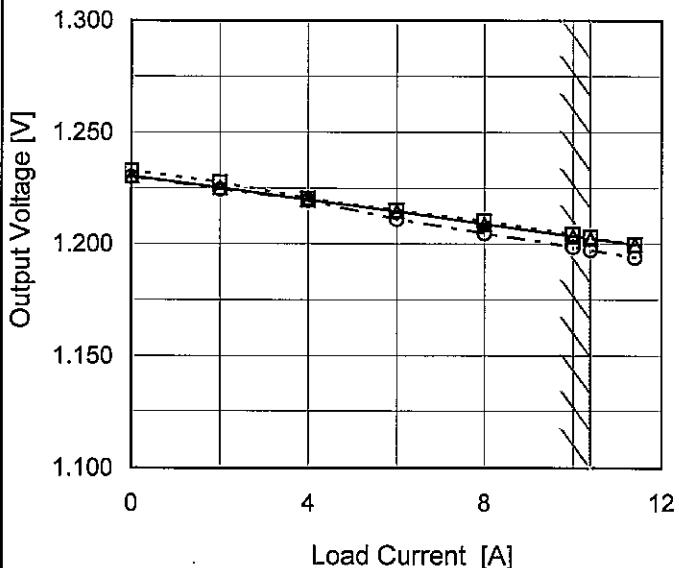
Temperature   25°C
Testing Circuitry   Figure A

1.Graph

— △ —   Input Volt.   18V
---□---   Input Volt.   24V
—·—○—··   Input Volt.   36V

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

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	1.231	1.233	1.230
2.0	1.226	1.228	1.225
4.0	1.220	1.220	1.220
6.0	1.215	1.215	1.211
8.0	1.209	1.210	1.205
10.0	1.204	1.204	1.199
10.4	1.202	1.203	1.197
11.4	1.200	1.200	1.194
---	-	-	-
---	-	-	-
---	-	-	-

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Model	SFS30241R2		
Item	Dynamic Load Response	Temperature	25°C
Object	+1.2V10.4A	Testing Circuitry	Figure A

Input Volt.　　24 V
Cycle　　1000　mS

Load Current　　10.4A / 200 μ sec

Min. Load (0A) ←→
Load 100% (10.4A)

100mV/div
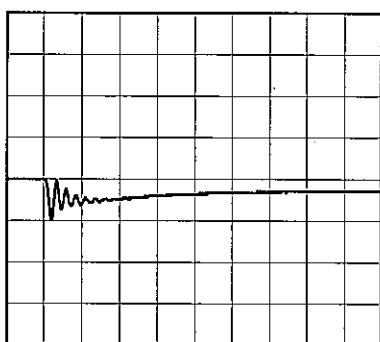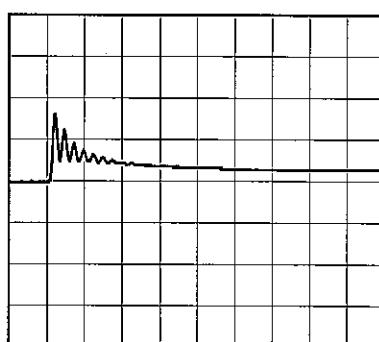
200 μs/div　　　　　　　　200 μs/div

Min. Load (0A) ←→
Load 50% (5.2A)

100mV/div
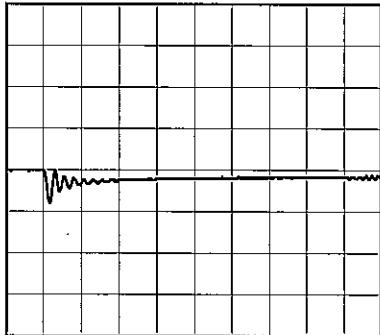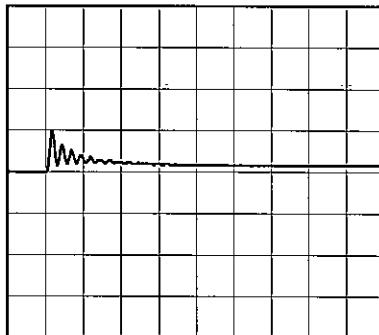
200 μs/div　　　　　　　　200 μs/div

Load 50% (5.2A) ←→
Load 100% (10.4A)

100mV/div

200 μs/div　　　　　　　　200 μs/div

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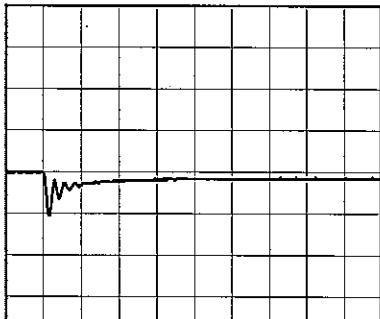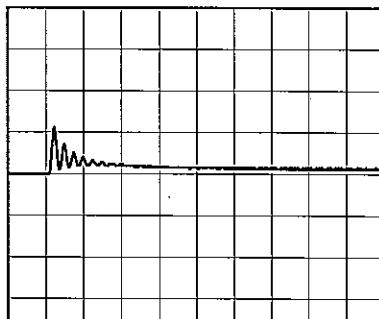
Model	SFS30241R2
Item	Ripple Voltage (by Load Current)
Object	+1.2V10.4A

Temperature   25°C
Testing Circuitry   Figure C

1.Graph

— △ — Input Volt.   18V
—·—○—··— Input Volt.   36V

Ripple Voltage [mV] vs Load Current [A]

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.0	2	3
2.0	2	3
4.0	2	3
6.0	2	3
8.0	2	3
10.4	2	3
11.4	2	3
--	-	-
---	-	-
---	-	-
---	-	-
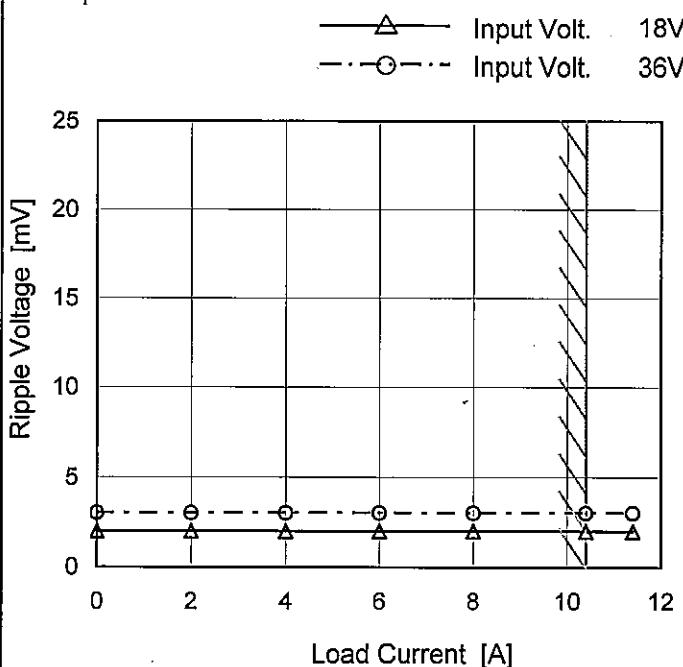
Measured by 100MHz Ossiloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated
          load current.

Ripple [mVp-p]
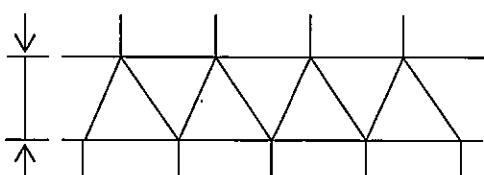
Fig.Complex Ripple Wave Form

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Model	SFS30241R2
Item	Ripple-Noise
Object	+1.2V10.4A

Temperature	25°C
Testing Circuitry	Figure C

1.Graph

—△— Input Volt. 18V
—○— Input Volt. 36V
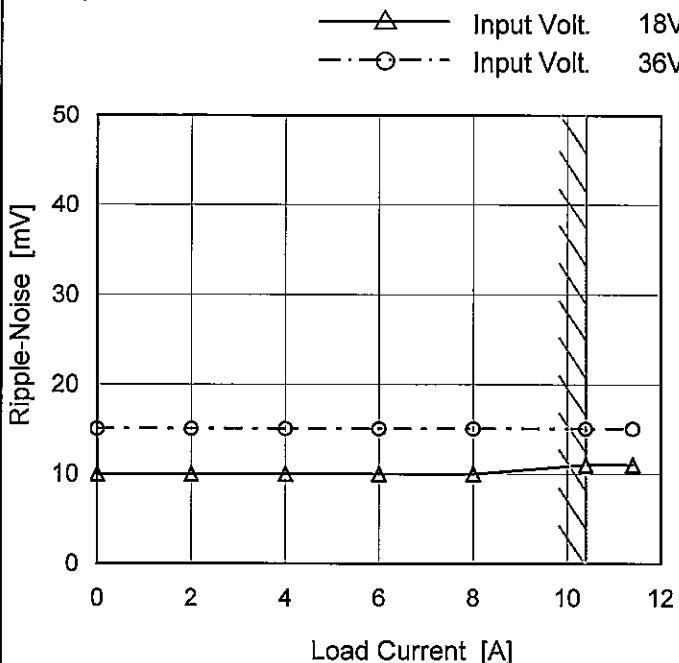
Load Current [A]

Measured by 100MHz Ossiloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated
load current.

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.0	10	15
2.0	10	15
4.0	10	15
6.0	10	15
8.0	10	15
10.4	11	15
11.4	11	15
--	-	-
--	-	-
---	-	-
--	-	-
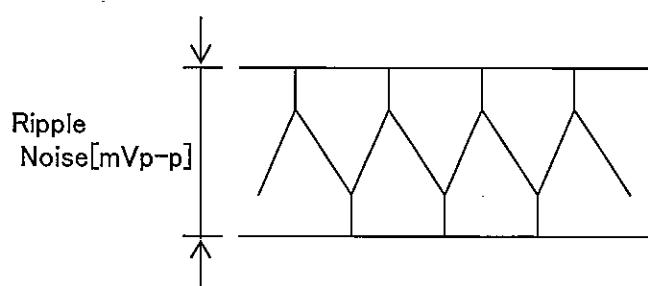
Ripple
Noise[mVp-p]

Fig.Complex Ripple Noise Wave Form

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Model	SFS30241R2
Item	Ripple Voltage (by Ambient Temp.)
Object	+1.2V10.4A

Testing Circuitry   Figure C

1.Graph

- - - ⊟ - - -   Load 50%
———△———   Load 100%

Ambient Temperature [°C]

Input Volt.   24V
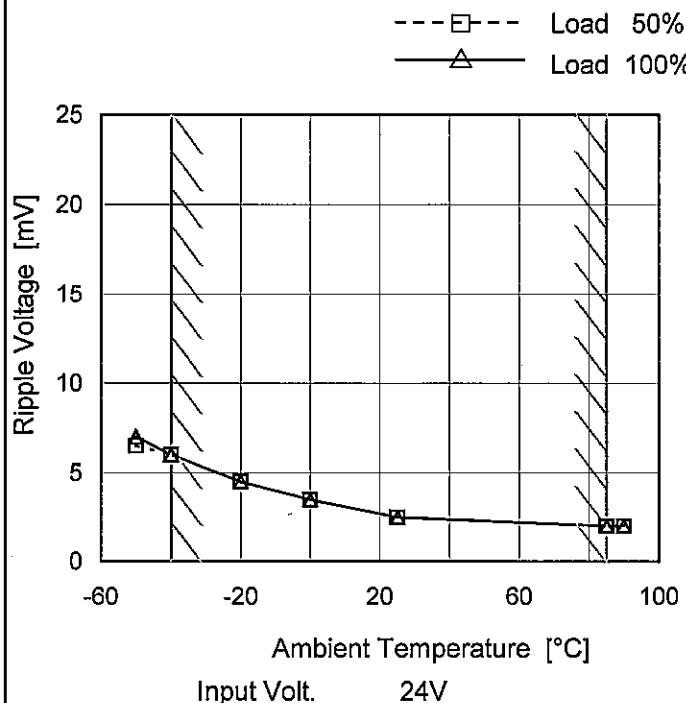
Measured by 100MHz Ossiloscope.
Note: Slanted line shows the range of the rated
ambient temperature.

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	7	7
-40	6	6
-20	5	5
0	4	4
25	3	3
85	2	2
90	2	2
--	-	-
--	-	-
--	-	-
--	-	-

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Model	SFS30241R2
Item	Ambient Temperature Drift
Object	+1.2V10.4A
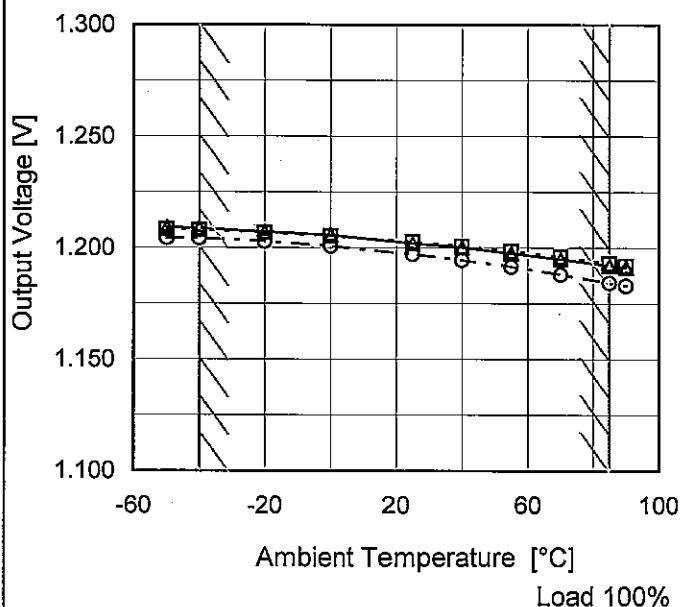
Testing Circuitry   Figure A

1.Graph

————△———— Input Volt.   18V
- - - ⊟ - - - Input Volt.   24V
— · —○— · — Input Volt.   36V

Ambient Temperature [°C]

Load 100%

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

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-50	1.209	1.208	1.204
-40	1.209	1.208	1.204
-20	1.207	1.207	1.203
0	1.206	1.205	1.201
25	1.202	1.203	1.197
40	1.200	1.201	1.195
55	1.198	1.199	1.192
70	1.195	1.196	1.188
85	1.192	1.193	1.184
90	1.191	1.192	1.183
--	-	--	-

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Model	SFS30241R2	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+1.2V10.4A	

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 - 85°C

    Input Voltage : 18 - 36V

    Load Current : 0 - 10.4A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

* Output Voltage Accuracy (Ration) = $\dfrac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}}$ × 100

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	85	24	0	1.236	±26	±2.2
Minimum Voltage	85	36	10.4	1.184		

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Model	SFS30241R2
Item	Time Lapse Drift
Object	+1.2V10.4A

Temperature 25°C
Testing Circuitry Figure A

1. Graph

Input Volt. 24V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	1.205
0.5	1.202
1.0	1.202
2.0	1.202
3.0	1.202
4.0	1.202
5.0	1.202
6.0	1.202
7.0	1.202
8.0	1.202

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COSEL

Model	SFS30241R2
Item	Rise and Fall Time
Object	+1.2V10.4A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

Input Volt. 24 V

Load 50%

Output Volt.
[0.5V/div]

0

Load 100%

Output Volt.
[0.5V/div]

0

Input Volt.

0
[10V/div]

Time [50mS/div]

Time [10mS/div]
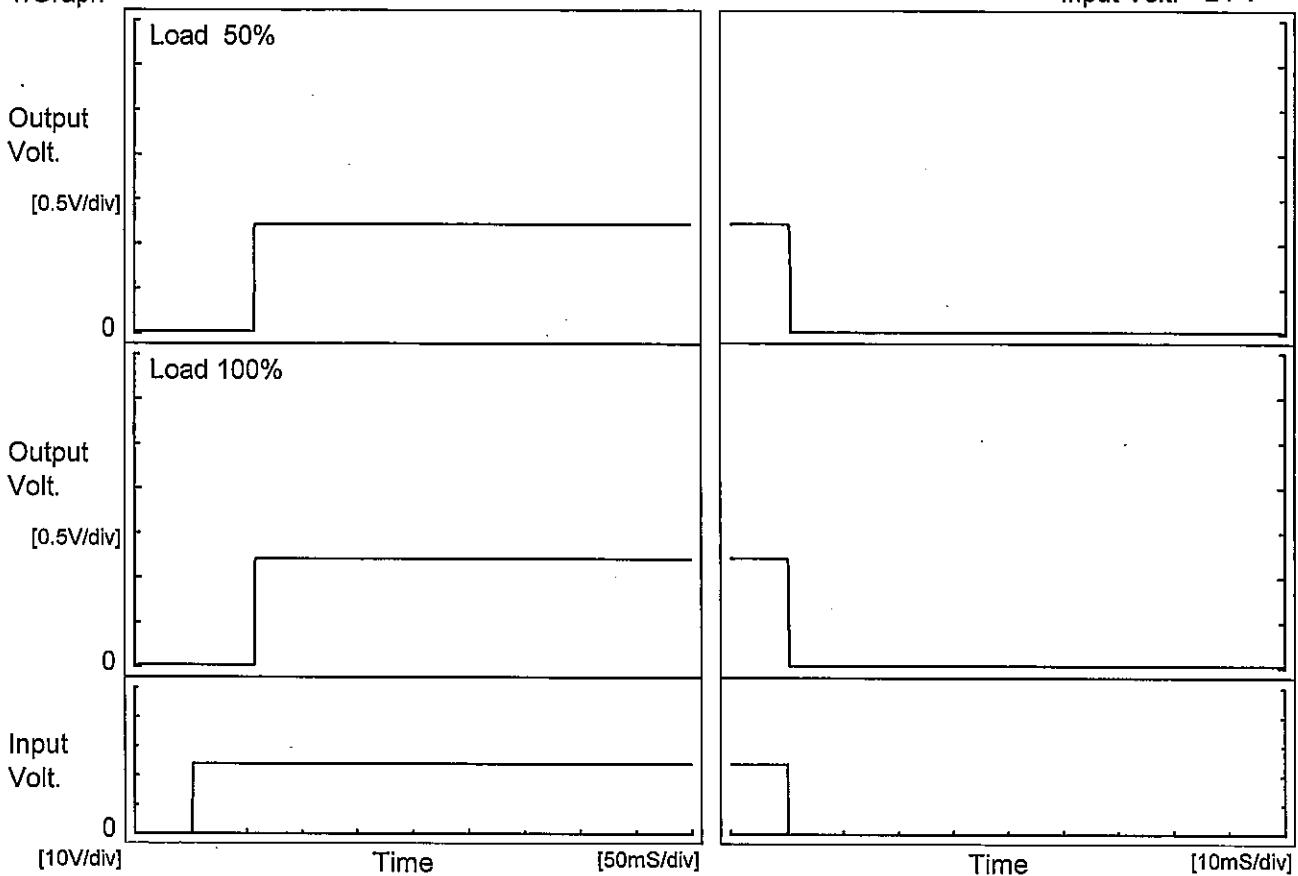
2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	57.0	0.5	57.5	0.4	0.2
100 %	57.0	0.5	57.5	0.2	0.2

Output Volt.
90%
10%
Input Volt.
Td Tr Th Tf
Ts

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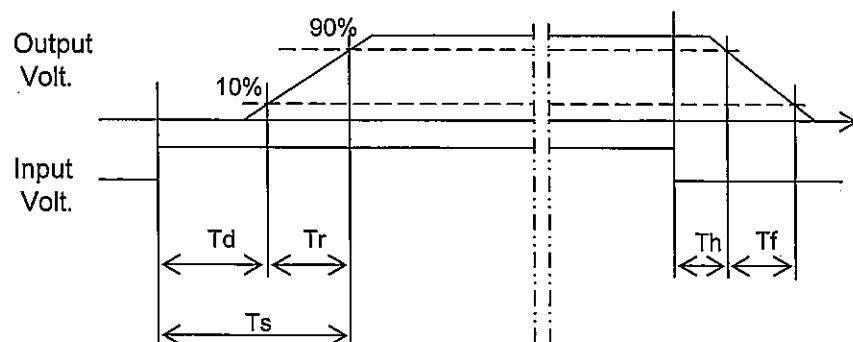
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Model	SFS30241R2
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+1.2V10.4A

Testing Circuitry   Figure A

1.Graph

```
--- ⊟ --    Load  50%
—— △ ——    Load 100%
```


Input Voltage [V] vs Ambient Temperature [°C]

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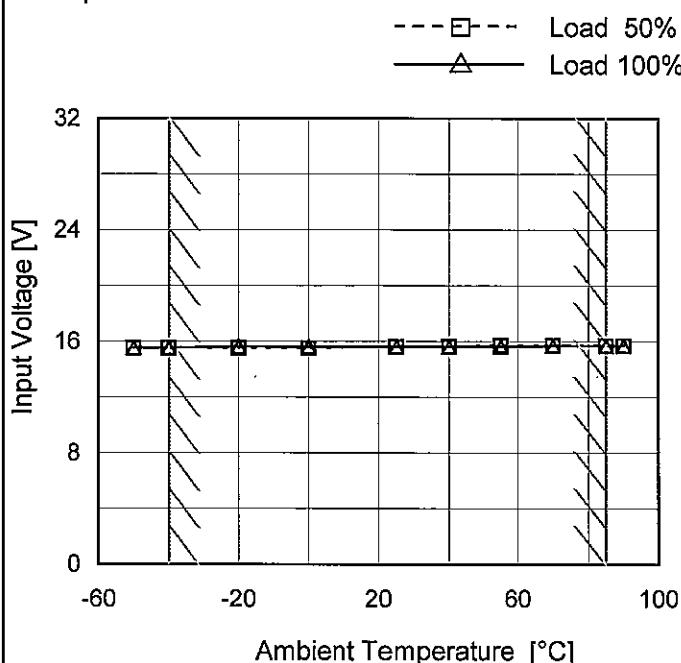
2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-50	15.6	15.6
-40	15.6	15.6
-20	15.6	15.7
0	15.6	15.7
25	15.7	15.7
40	15.7	15.7
55	15.8	15.7
70	15.8	15.8
85	15.8	15.8
90	15.8	15.8
--	-	-

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COSEL

Model	SFS30241R2
Item	Overcurrent Protection
Object	+1.2V10.4A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

——————— Input Volt. 18V
——————— Input Volt. 24V
——————— Input Volt. 36V
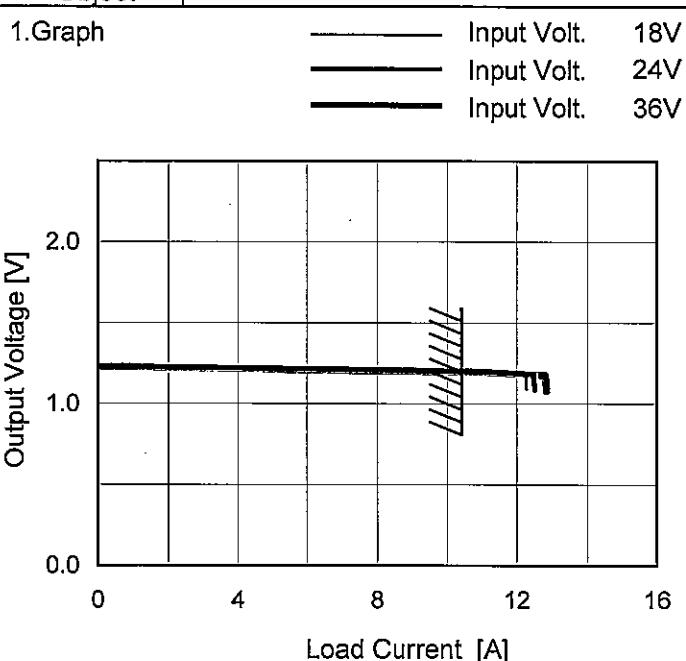
Note: Slanted line shows the range of the rated
load current.

When the output voltage fell to less than 1.08V ,the unit
shuts off the output by operating low voltage protection .

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
1.20	11.61	11.18	11.06
1.14	12.27	12.50	12.82
1.08	12.27	12.50	12.83
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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COSEL

Model	SFS30241R2
Item	Overvoltage Protection
Object	+1.2V10.4A
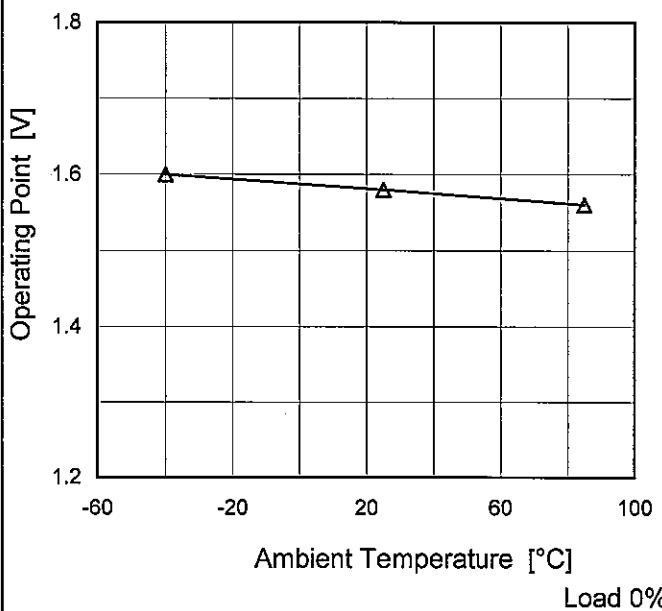
Testing Circuitry　Figure A

1.Graph　　　——△—— Input Volt.　24V

Ambient Temperature [°C]

Load 0%

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

2.Values

| Ambient Temperature [°C]	Operating Point [V]		
	Input Volt. 24[V]	Input Volt.	Input Volt.
-40	1.60	-	-
25	1.58	-	-
85	1.56	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Figure A

Figure B (General Electric Characteristic)
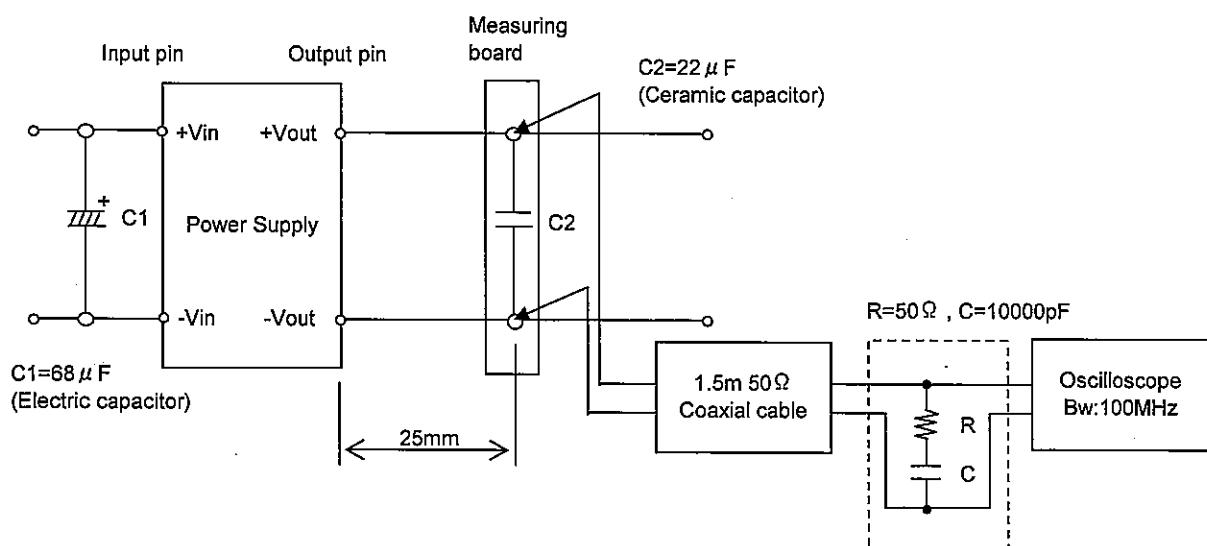
Figure C (Ripple and Ripple noise Characteristic)

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