COSEL

TEST DATA OF SFS20481R8

Regulated DC Power Supply
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COSEL CO.,LTD.

CONTENTS

(Final Page 19)

BC-3615

COSEL

Model	SFS20481R8
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
8	0.001	0.001	0.001
16	0.001	0.001	0.001
24	0.002	0.002	0.002
33	0.002	0.002	0.002
34	0.013	0.239	0.490
36	0.013	0.229	0.475
40	0.013	0.207	0.420
48	0.013	0.174	0.352
60	0.013	0.142	0.277
70	0.013	0.123	0.239
76	0.014	0.115	0.223
80	0.014	0.110	0.210
--	-	-	-
--	-	-	-
--	-	-	-

BC-3615

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Model	SFS20481R8
Item	Input Current (by Load Current)
Object	

Temperature　　25°C
Testing Circuitry　Figure A

1.Graph

————△———— Input Volt.　36V
– – –□– – –· Input Volt.　48V
—·—○—·— Input Volt.　76V

Load Current [A]

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

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.013	0.013	0.014
1.5	0.092	0.072	0.051
3.0	0.174	0.133	0.089
4.5	0.260	0.196	0.128
6.0	0.349	0.262	0.168
7.5	0.443	0.329	0.210
8.0	0.475	0.352	0.223
8.4	0.501	0.371	0.235
—	-	-	-
—	-	-	-
—	-	-	-

BC-3615

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Model	SFS20481R8
Item	Input Power (by Load Current)
Object	

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

——△—— Input Volt. 36V
- - -☐- - - Input Volt. 48V
—·—○—·— Input Volt. 76V

Load Current [A]

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

2.Values

Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.50	0.64	1.11
1.5	3.35	3.49	3.93
3.0	6.31	6.43	6.87
4.5	9.37	9.44	9.84
6.0	12.56	12.56	12.89
7.5	15.90	15.80	16.00
8.0	17.08	16.88	17.04
8.4	18.02	17.78	17.91
---	-	-	-
---	-	-	-
---	-	-	-

BC-3615

参考資料

CO$EL

Model	SFS20481R8
Item	Efficiency (by Input Voltage)
Object	

Temperature　　25°C
Testing Circuitry　Figure A

1.Graph

--- ⊡ --- Load 50%
—— △ —— Load 100%

Efficiency [%] vs Input Voltage [V]

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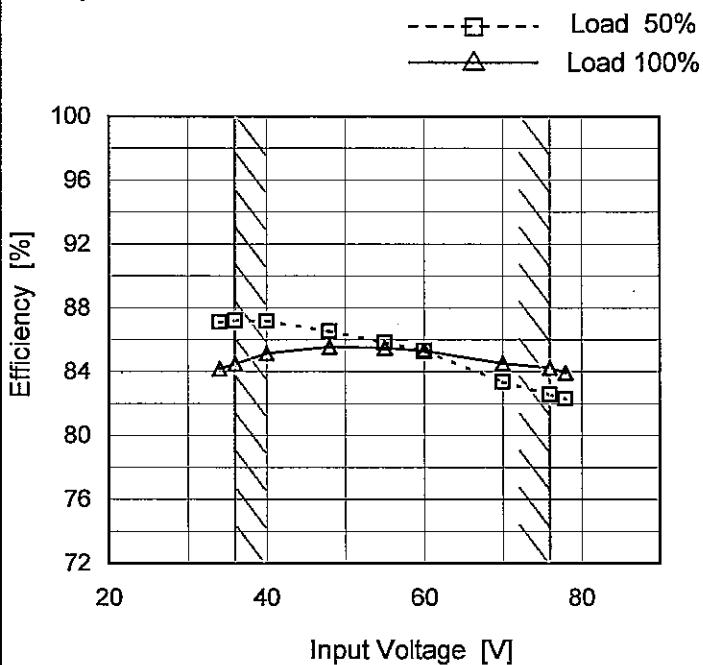
2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
34	87.1	84.2
36	87.2	84.5
40	87.2	85.1
48	86.5	85.6
55	85.8	85.5
60	85.3	85.3
70	83.4	84.5
76	82.6	84.3
78	82.3	83.9

BC-3615

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Model	SFS20481R8
Item	Efficiency (by Load Current)
Object	

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

———△——— Input Volt. 36V
– – –☐– – – Input Volt. 48V
– · –○– · – Input Volt. 76V

Efficiency [%] vs Load Current [A]

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

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	–	–	–
1.5	81.4	78.6	70.1
3.0	86.5	85.3	80.1
4.5	87.3	86.9	83.4
6.0	86.6	86.8	84.3
7.5	85.3	85.9	84.4
8.0	84.5	85.6	84.3
8.4	84.0	85.2	84.0
--	–	–	–
---	–	–	–
--	–	–	–

BC-3615

参考資料

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Model	SFS20481R8
Item	Line Regulation
Object	+1.8V8A
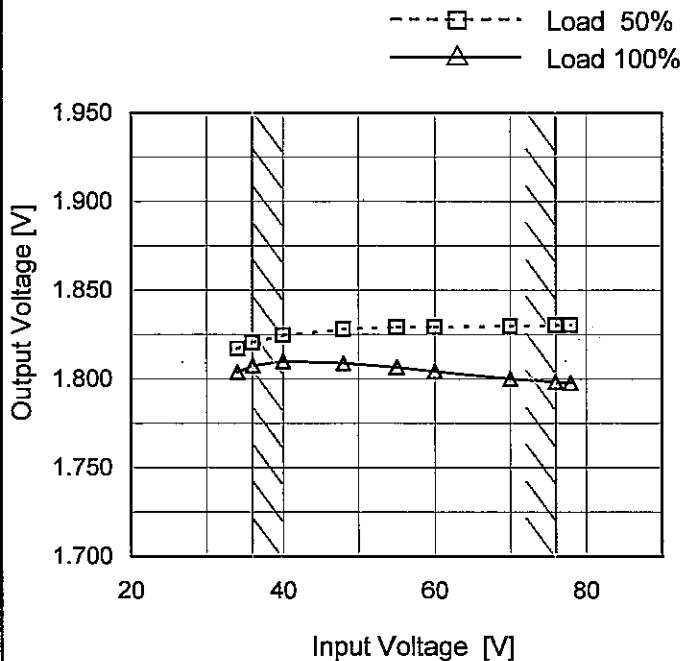
Temperature　　　25°C
Testing Circuitry　Figure A

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%
34	1.817	1.804
36	1.821	1.808
40	1.825	1.810
48	1.828	1.809
55	1.829	1.807
60	1.829	1.804
70	1.830	1.800
76	1.830	1.798
78	1.831	1.798

BC-3615

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Model	SFS20481R8
Item	Load Regulation
Object	+1.8V8A

Temperature   25°C
Testing Circuitry   Figure A

1.Graph
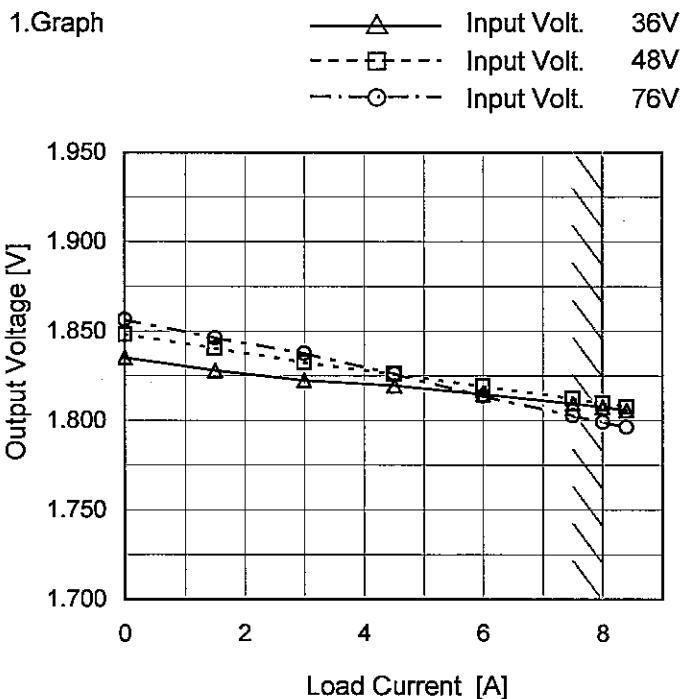
△——— Input Volt.   36V
---⊟--- Input Volt.   48V
—·—○—·— Input Volt.   76V

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	1.835	1.848	1.857
1.5	1.828	1.841	1.846
3.0	1.823	1.833	1.838
4.5	1.820	1.826	1.826
6.0	1.815	1.819	1.814
7.5	1.810	1.812	1.803
8.0	1.808	1.810	1.799
8.4	1.806	1.808	1.796
--	-	-	-
--	-	-	-
--	-	-	-

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

BC-3615

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Model	SFS20481R8
Item	Dynamic Load Response
Object	+1.8V8A

Temperature 25°C
Testing Circuitry Figure A

Input Volt. 48 V
Cycle 1000 mS

Load Current ⎍ 8A / 200 μs

Min. Load (0A) ←→
Load 100% (8A)

100mV/div

200 μs/div   200 μs/div

Min. Load (0A) ←→
Load 50% (4A)

100mV/div

200 μs/div   200 μs/div

Load 50% (4A) ←→
Load 100% (8A)

100mV/div

200 μs/div   200 μs/div

BC-3615
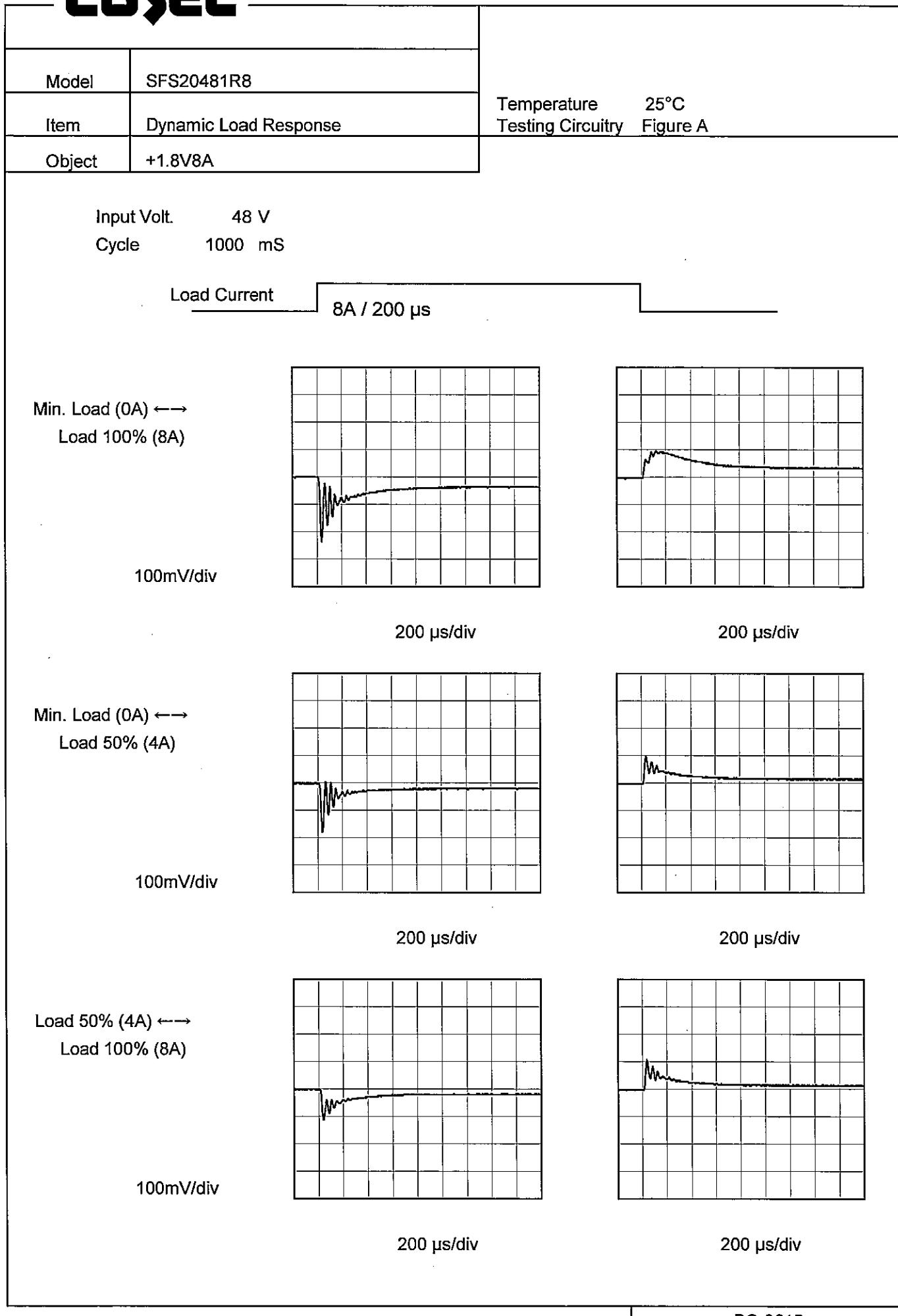
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Model	SFS20481R8
Item	Ripple Voltage (by Load Current)
Object	+1.8V8A

Temperature 25°C
Testing Circuitry Figure C

1.Graph

——△—— Input Volt. 36V
—·-○-·— Input Volt. 76V

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]
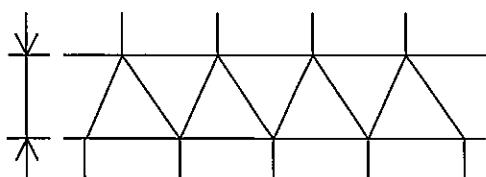
Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	2	2
1.6	2	2
3.2	2	2
4.8	2	2
6.4	2	2
8.0	2	2
8.8	2	2
--	-	-
--	-	-
--	-	-
--	-	-

BC-3615

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Model	SFS20481R8
Item	Ripple-Noise
Object	+1.8V8A

Temperature   25°C
Testing Circuitry   Figure C

1.Graph

— △ — Input Volt. 36V
— ○ — Input Volt. 76V
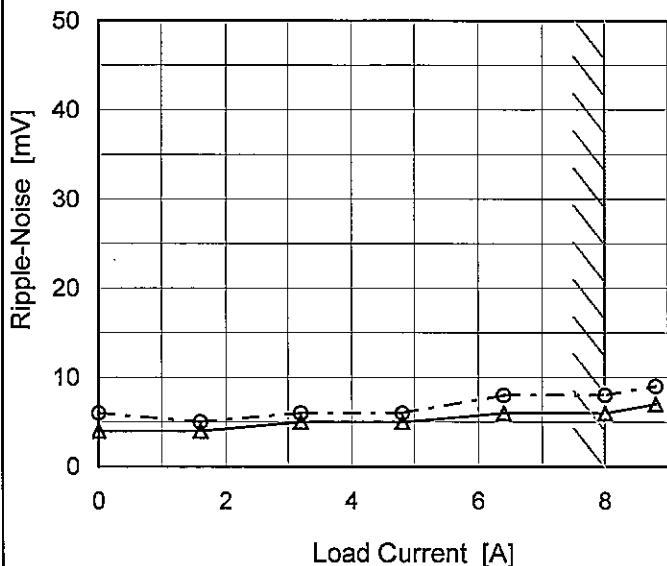
Load Current [A]

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. 36 [V]	Input Volt. 76 [V]
0.0	4	6
1.6	4	5
3.2	5	6
4.8	5	6
6.4	6	8
8.0	6	8
8.8	7	9
--	-	-
--	-	-
--	-	-
--	-	-
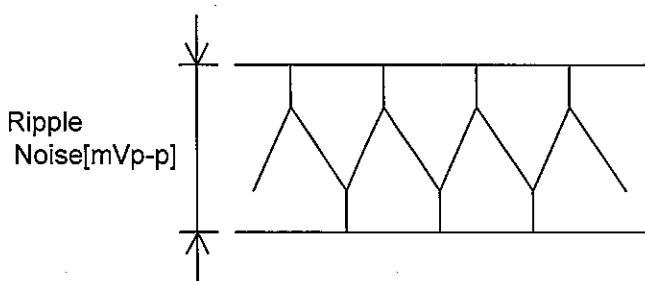
Ripple Noise[mVp-p]

Fig.Complex Ripple Noise Wave Form

BC-3615

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Model	SFS20481R8
Item	Ripple Voltage (by Ambient Temp.)
Object	+1.8V8A

Testing Circuitry   Figure C

1.Graph

- - -□- - - Load 50%
———△——— Load 100%

Ambient Temperature [°C]

Input Volt.   48V
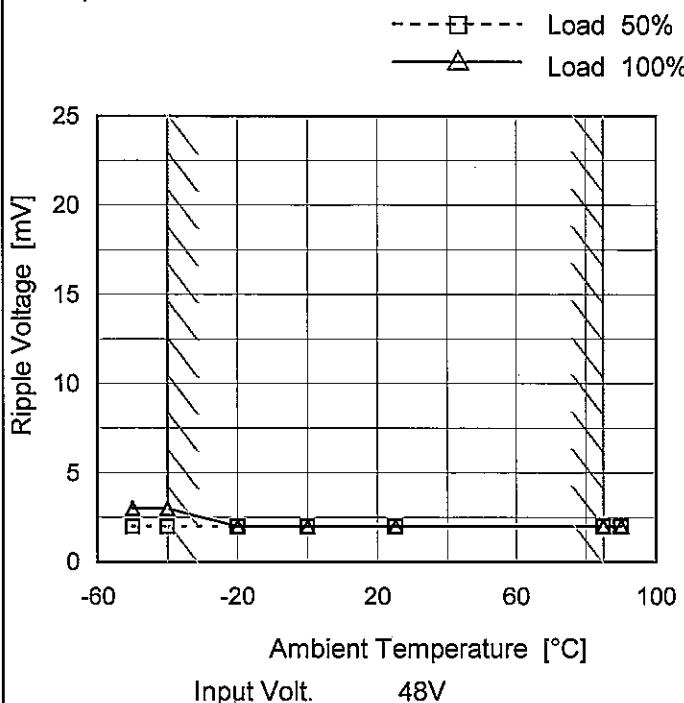
Measured by 100MHz Ossiloscope.
Note: Slanted line shows the range of the rated
       ambient temperature.

2.Values

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

BC-3615

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Model	SFS20481R8
Item	Ambient Temperature Drift
Object	+1.8V8A

Testing Circuitry　Figure A

1.Graph

———△——— Input Volt. 36V
— — —□— — — Input Volt. 48V
—·—○—·— Input Volt. 76V

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

Load 100%

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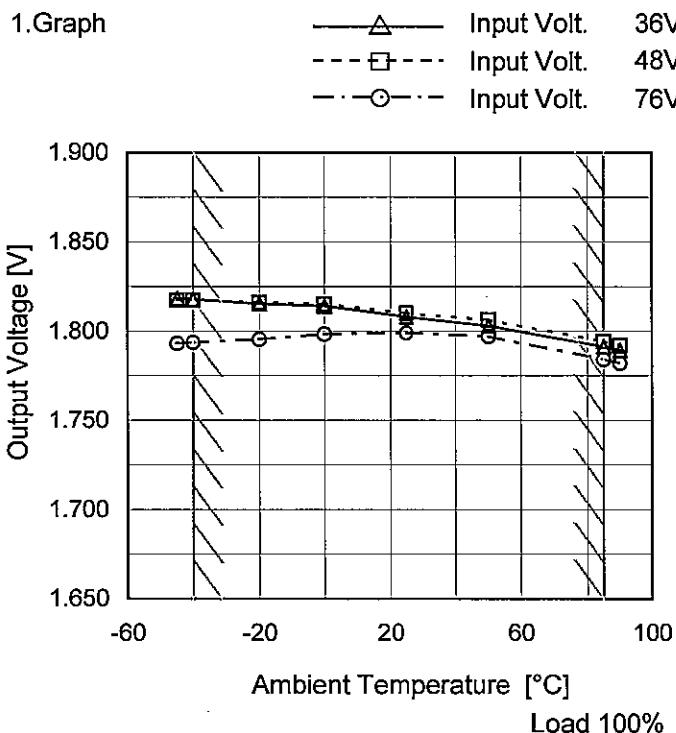
2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-45	1.818	1.817	1.793
-40	1.818	1.817	1.794
-20	1.815	1.816	1.796
0	1.814	1.815	1.798
25	1.808	1.810	1.799
50	1.803	1.806	1.797
85	1.791	1.794	1.784
90	1.789	1.792	1.782
--	-	-	-
--	-	-	-
--	-	-	-

BC-3615

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Model	SFS20481R8
Item	Output Voltage Accuracy
Object	±1.8V8A

Testing Circuitry   Figure A

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 :   36 - 76V

Load Current   :   0 - 8A

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

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

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	85	76	0	1.870	±43	±2.4
Minimum Voltage	85	76	8	1.784		

BC-3615

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Model	SFS20481R8
Item	Time Lapse Drift
Object	+1.8V8A

Temperature   25°C
Testing Circuitry   Figure A

1.Graph
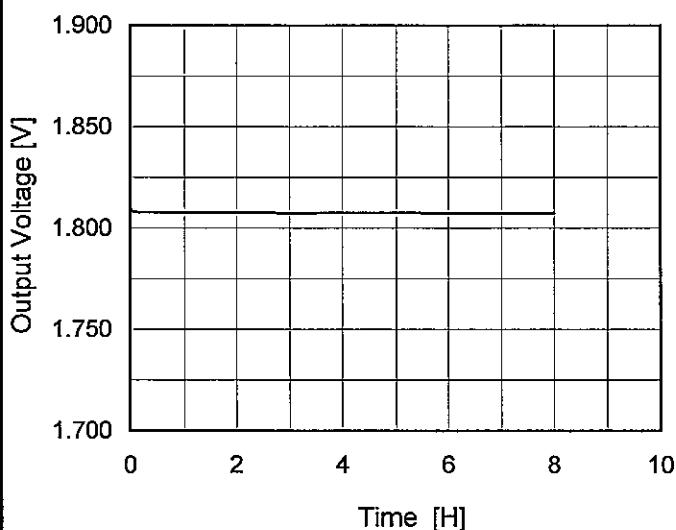
Input Volt.   48V
Load   100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	1.810
0.5	1.808
1.0	1.808
2.0	1.808
3.0	1.808
4.0	1.808
5.0	1.808
6.0	1.808
7.0	1.808
8.0	1.808

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Model	SFS20481R8
Item	Rise and Fall Time
Object	+1.8V8A

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

Input Volt. 36 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   [50mS/div]
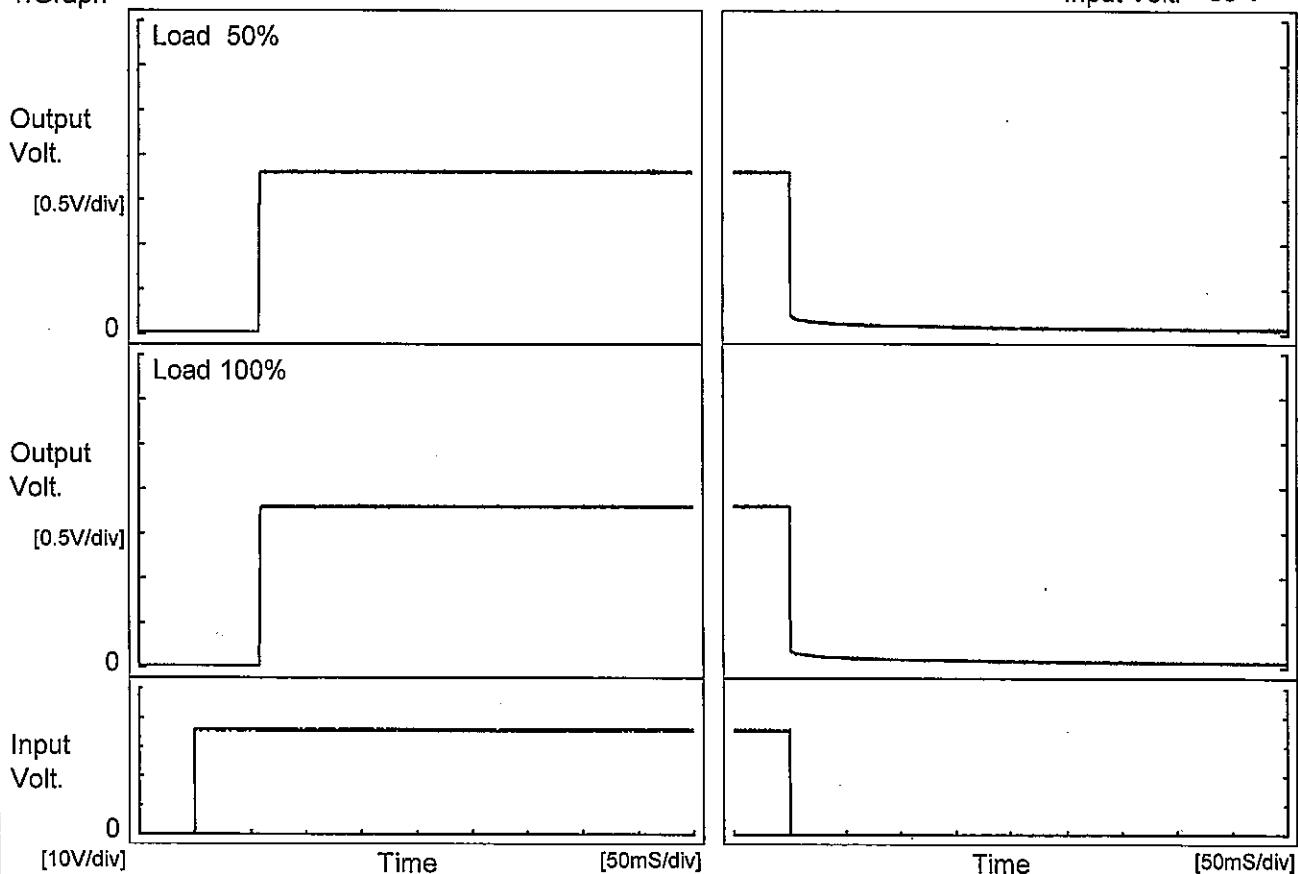
2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	57.8	0.1	57.9	0.3	2.0
100 %	57.8	0.1	57.9	0.3	0.8

Output
Volt.

90%

10%

Input
Volt.

Td   Tr   Th   Tf

Ts

BC-3615

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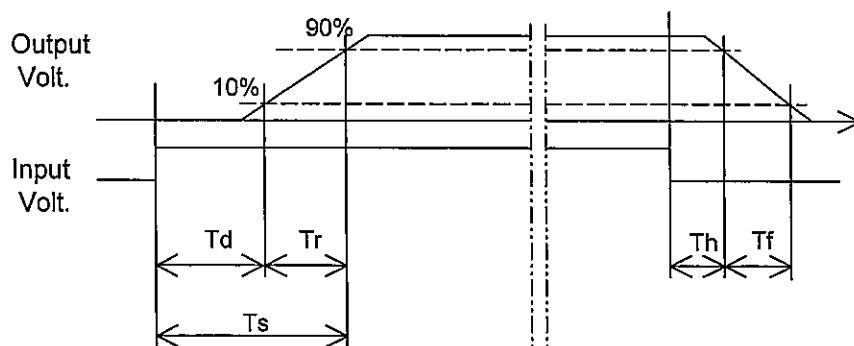
Model	SFS20481R8
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+1.8V8A

Testing Circuitry   Figure A
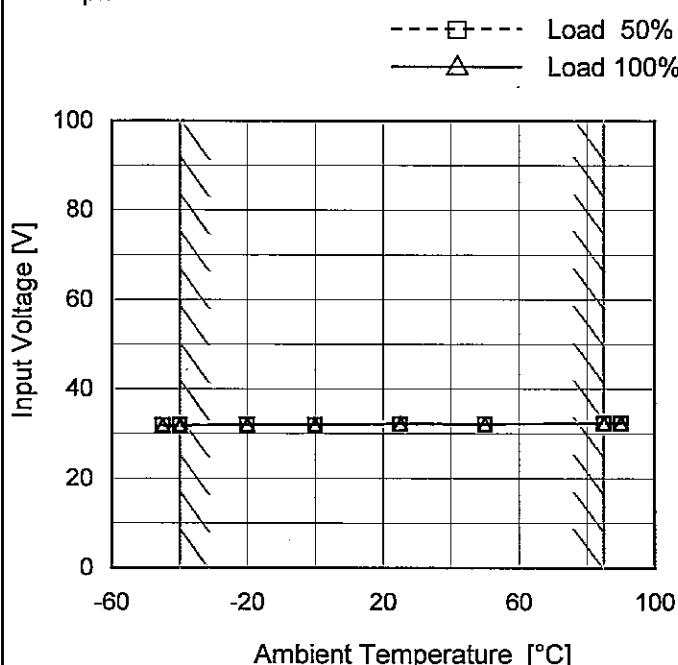
1.Graph

--- ⊟ --- 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%
-45	32.0	31.9
-40	32.0	31.9
-20	32.1	32.1
0	32.0	32.1
25	32.2	32.3
50	32.2	32.3
85	32.4	32.4
90	32.4	32.4
--	-	--
---	-	-
--	-	-

BC-3615

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Model	SFS20481R8
Item	Overcurrent Protection
Object	+1.8V8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

——————— Input Volt. 36V
——————— Input Volt. 48V
——————— Input Volt. 76V
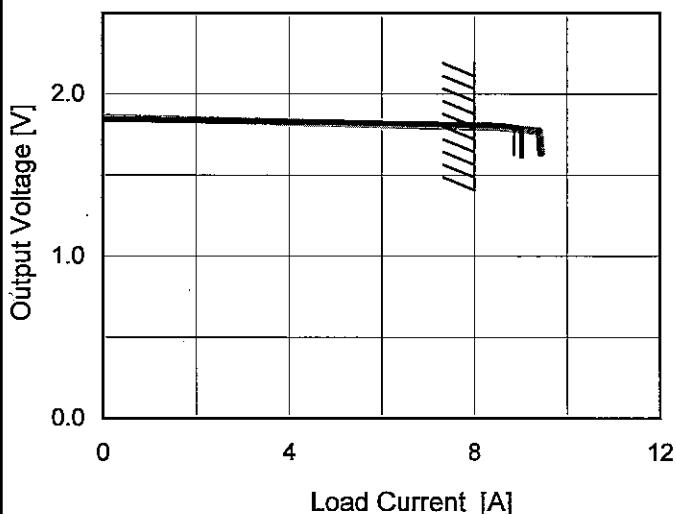
Note: Slanted line shows the range of the rated
load current.

When the output voltage fell to less than 1.62V, the unit
shuts off the output by operating low voltage protection.

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
1.80	8.10	8.11	8.05
1.71	8.86	9.02	9.43
1.62	8.85	9.02	9.45
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-

BC-3615

参考資料

COSEL

Model	SFS20481R8
Item	Overvoltage Protection
Object	+1.8V8A
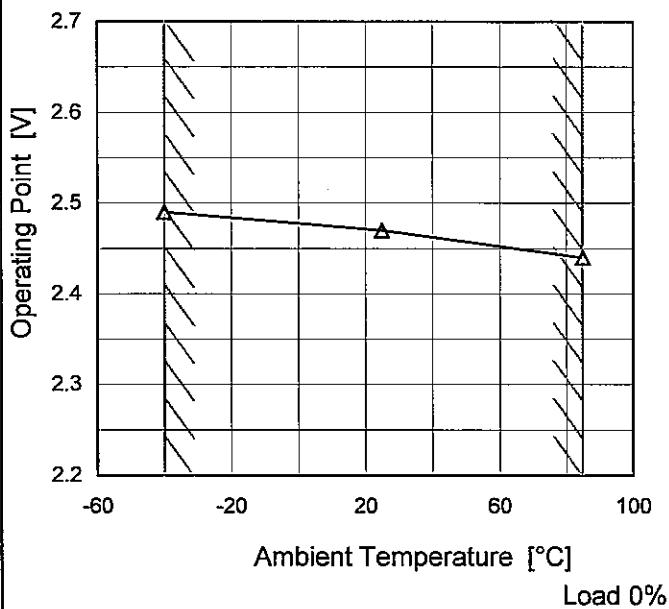
Testing Circuitry   Figure A

1.Graph   ——△—— Input Volt.   48V

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. 48[V]	Input Volt.	Input Volt.
-40	2.49	-	-
25	2.47	-	-
85	2.44	-	-
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-

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DC Power Supply → Electronic Switch → Power Meter → Temperature Chamber [Power Supply] → Electronic DC Load → Oscilloscope

Relay Unit

DVM

Data Acquisition/Control Unit

Figure A

Output Voltage Measurement Point

Input — +Vin | Power Supply | +Vout — Output

-Vin | -Vout

Figure B (General Electric Characteristic)

Input pin | Output pin | Measuring board

+Vin | +Vout

Power Supply

-Vin | -Vout

C1=22μF (Ceramic capacitor)

C1

25mm

1.5m 50Ω Coaxial cable

R=50Ω C=10000pF

R

C

Oscilloscope Bw:100MHz
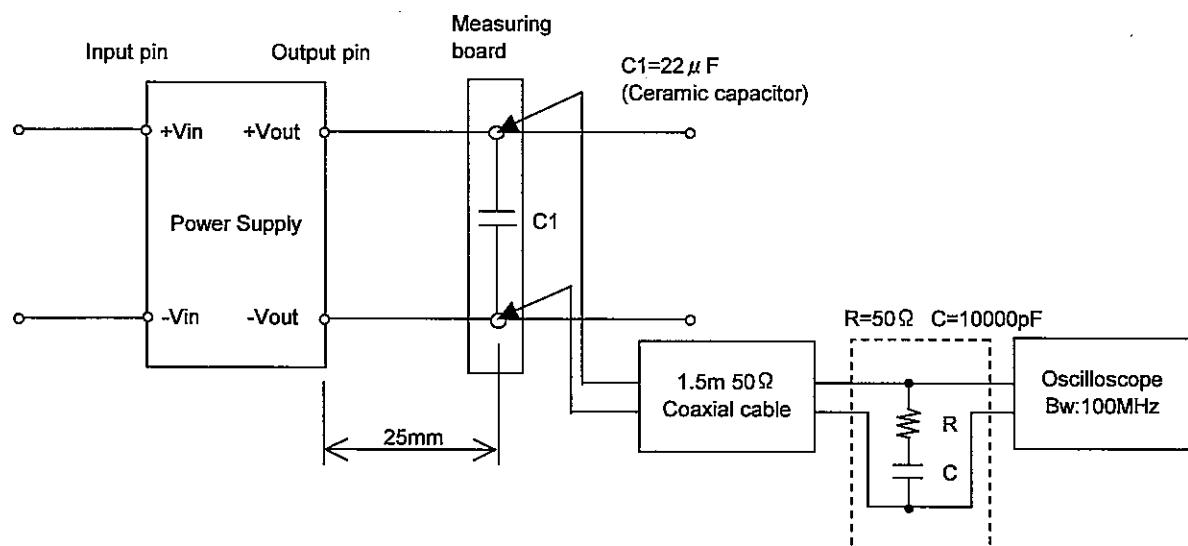
Figure C (Ripple and Ripple noise Characteristic)

BC-3615