



TEST DATA OF SFS15243R3/SFCS15243R3

Regulated DC Power Supply
Jul 20, 2006

Approved by :

A handwritten signature in black ink that reads "I. Yasuda".

Isao Yasuda

Design Manager

Prepared by :

A handwritten signature in black ink that reads "K. Shibutani".

Kenichi Shibutani

Design Engineer

COSEL CO.,LTD.



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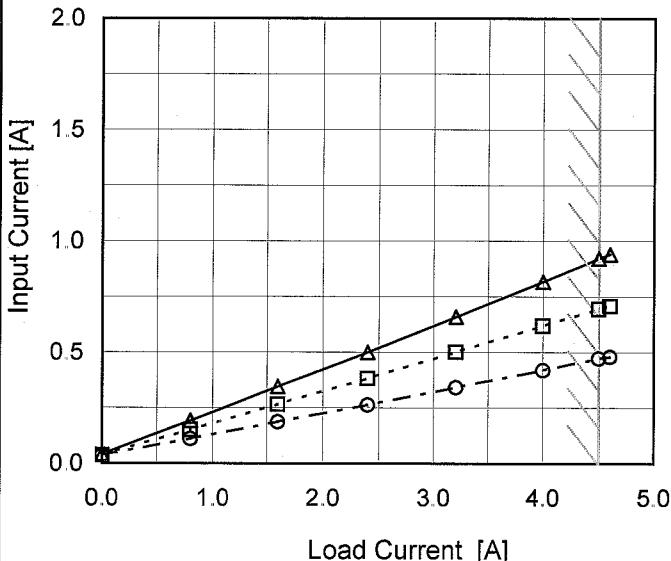
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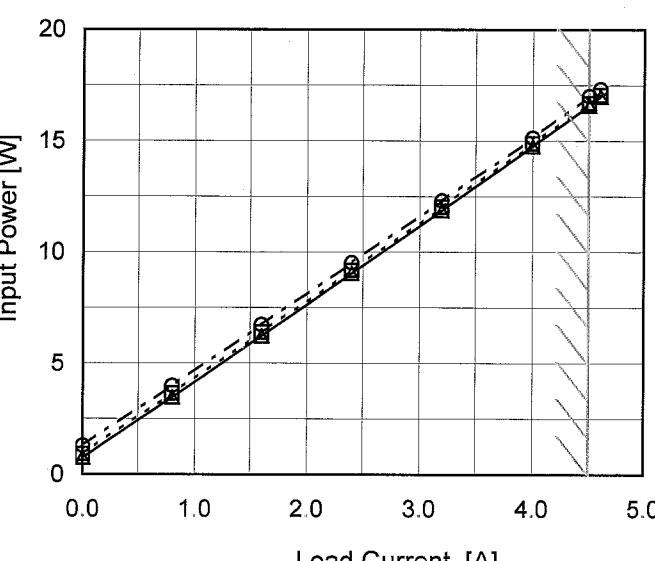


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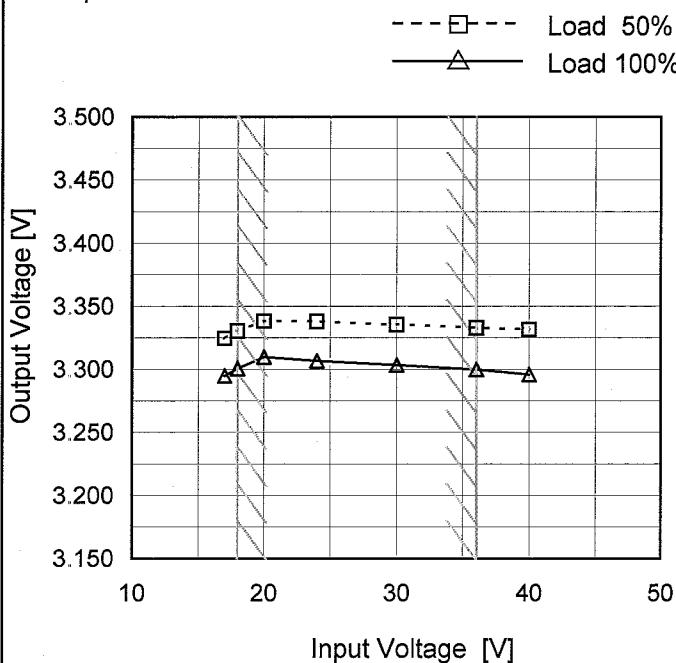
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Model	SFS15243R3/SFCS15243R3
Item	Line Regulation
Object	+3.3V4.5A

1. Graph



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

Temperature 25°C
Testing Circuitry Figure A

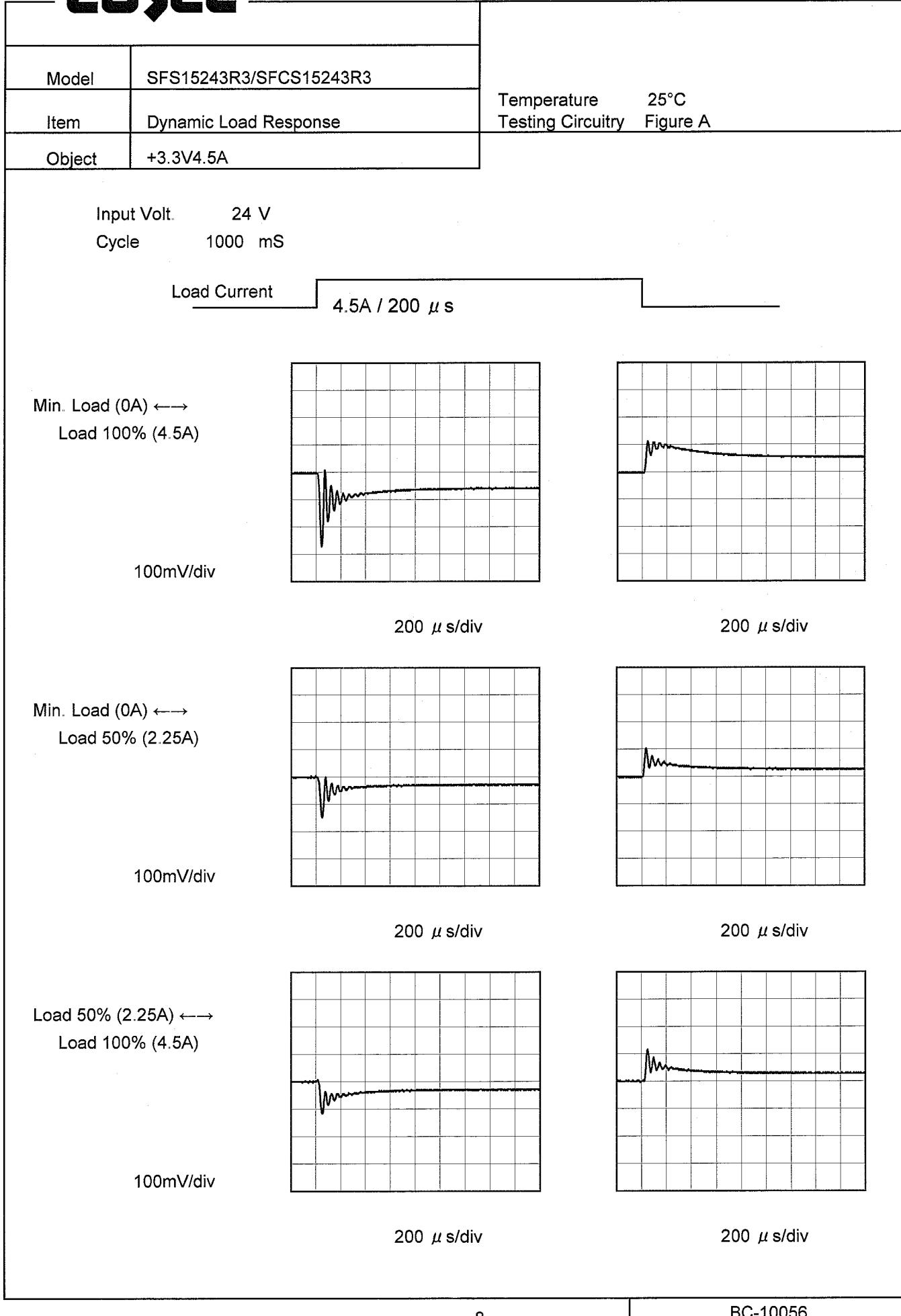
2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
17	3.325	3.295
18	3.330	3.301
20	3.338	3.310
24	3.338	3.307
30	3.336	3.304
36	3.333	3.300
40	3.332	3.296
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<p style="text-align: center;"> —△— Input Volt. 18V ---□--- Input Volt. 24V ---○--- Input Volt. 36V </p> <p>The graph plots Output Voltage [V] on the Y-axis (3.150 to 3.500) against Load Current [A] on the X-axis (0.0 to 5.0). Three data series are shown for input voltages of 18V, 24V, and 36V. The 18V series (triangles) starts at ~3.36V and ends at ~3.29V. The 24V series (squares) starts at ~3.36V and ends at ~3.30V. The 36V series (circles) starts at ~3.36V and ends at ~3.30V. A slanted line connects the end points of each series, representing the rated load current range.</p>																																																						
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COSEL

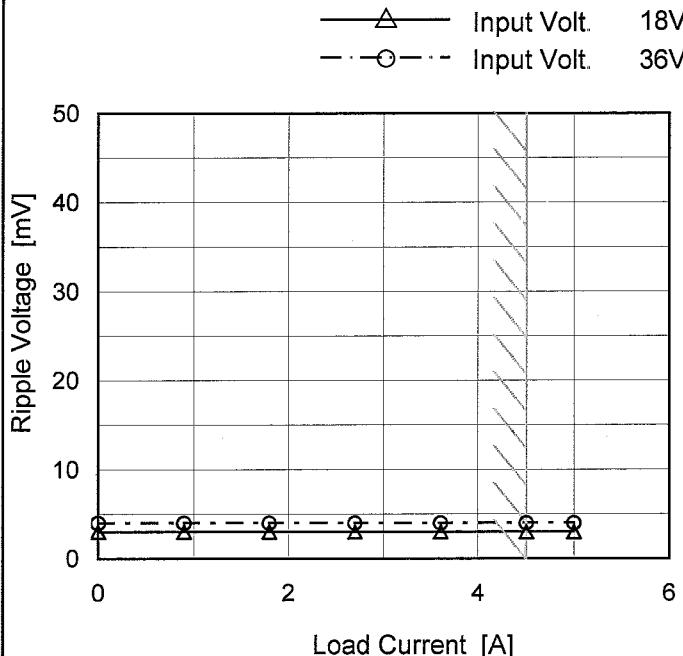


COSEL

Model	SFS15243R3/SFCS15243R3
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Item	Ripple Voltage (by Load Current)
------	----------------------------------

Object	+3.3V4.5A
--------	-----------

1. Graph


Measured by 100 MHz Oscilloscope.

Ripple Voltage is shown as p-p in the figure below.

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

Temperature 25°C
Testing Circuitry Figure C

2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.0	3	4
0.9	3	4
1.8	3	4
2.7	3	4
3.6	3	4
4.5	3	4
5.0	3	4
--	-	-
--	-	-
--	-	-
--	-	-

Ripple [mVp-p]

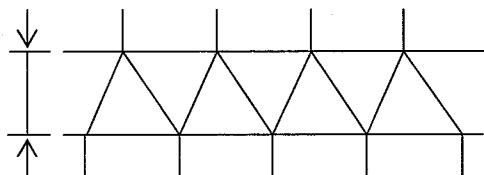


Fig. Complex Ripple Wave Form

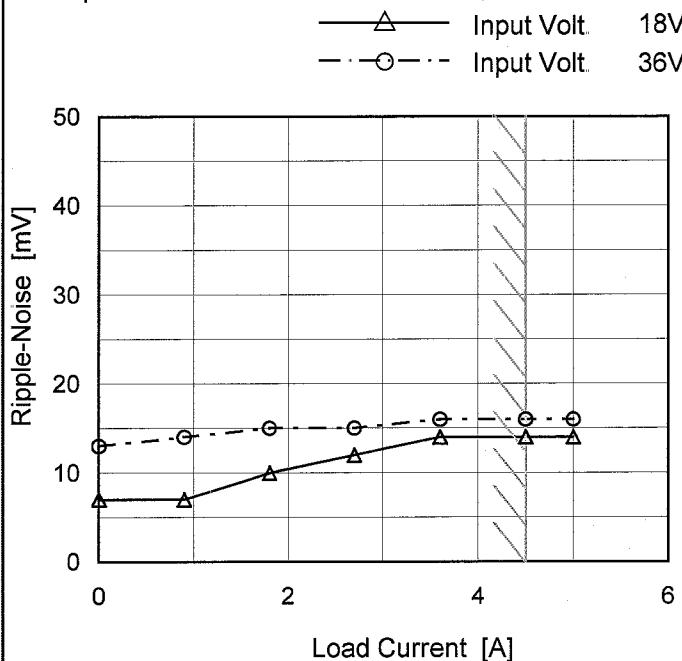
COSEL

Model SFS15243R3/SFCS15243R3

Item Ripple-Noise

Object +3.3V4.5A

1. Graph



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.

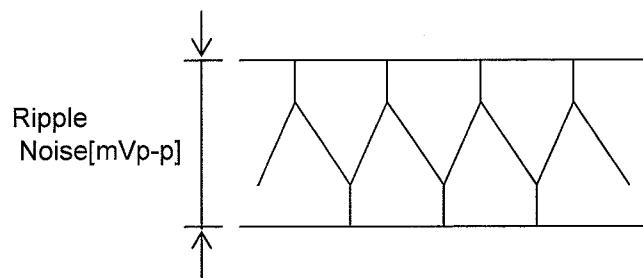


Fig Complex Ripple Noise Wave Form

Temperature 25°C
Testing Circuitry Figure C

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.0	7	13
0.9	7	14
1.8	10	15
2.7	12	15
3.6	14	16
4.5	14	16
5.0	14	16
--	-	-
--	-	-
--	-	-
--	-	-

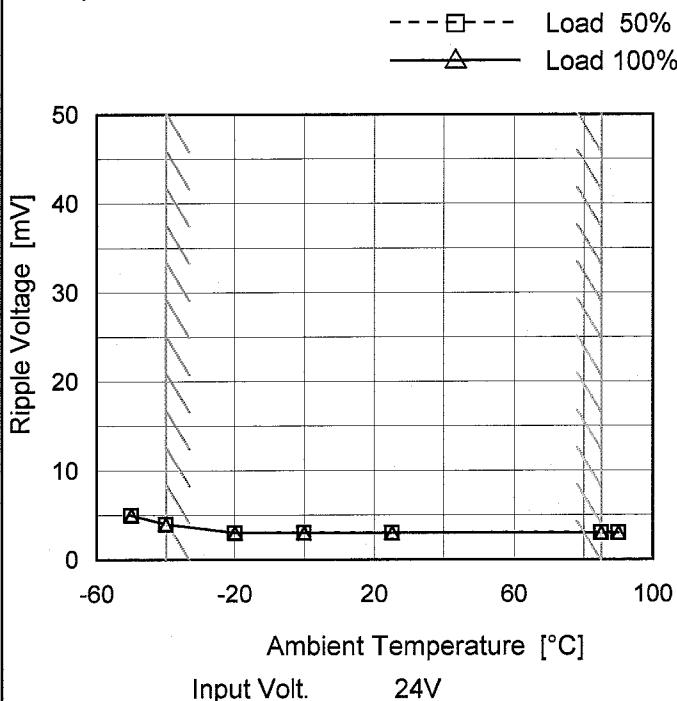
COSEL

Model SFS15243R3/SFCS15243R3

Item Ripple Voltage (by Ambient Temp.)

Object +3.3V4.5A

1. Graph



Measured by 100 MHz Oscilloscope.

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

Testing Circuitry Figure C

2 Values

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



Model	SFS15243R3/SFCS15243R3																																																					
Item	Ambient Temperature Drift																																																					
Object	+3.3V4.5A																																																					
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Note: Slanted line shows the range of the rated ambient temperature.																																																						



Model	SFS15243R3/SFCS15243R3	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+3.3V4.5A	

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 - 4.5A

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

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

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	85	24	0	3.390	±53	±1.6
Minimum Voltage	-40	36	4.5	3.285		

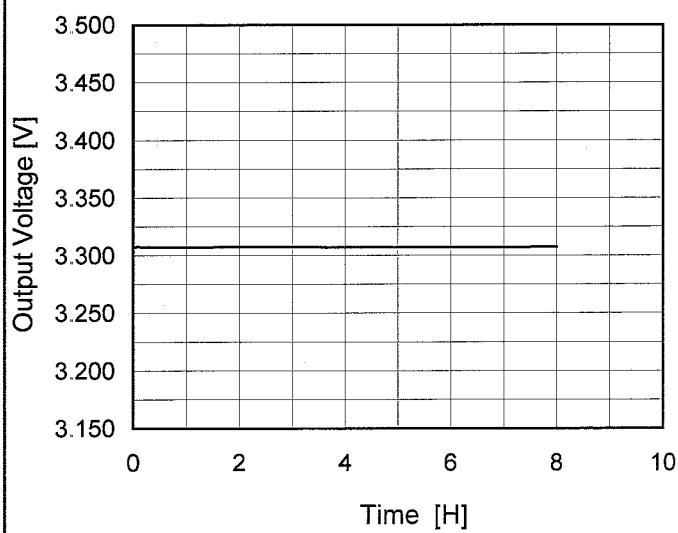
COSEL

Model SFS15243R3/SFCS15243R3

Item Time Lapse Drift

Object +3.3V4.5A

1. Graph



Input Volt 24V
Load 100%

Temperature 25°C
Testing Circuitry Figure A

2. Values

Time since start [H]	Output Voltage [V]
0.0	3.308
0.5	3.307
1.0	3.307
2.0	3.307
3.0	3.307
4.0	3.307
5.0	3.307
6.0	3.307
7.0	3.307
8.0	3.307

COSEL

Model	SFS15243R3/SFCS15243R3	Temperature Testing Circuitry Figure A Object +3.3V4.5A
Item	Rise and Fall Time	
Object	+3.3V4.5A	

1. Graph

Input Volt. 24 V

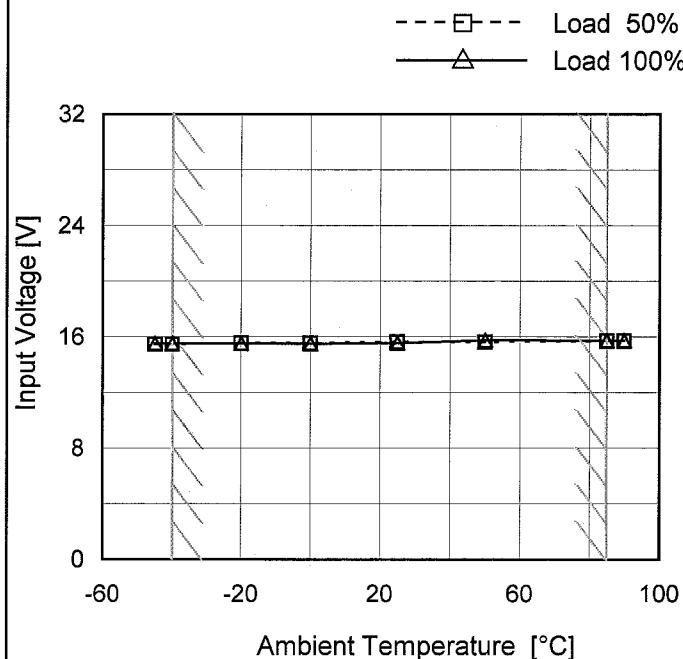
2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[mS]
50 %		58.8	0.3	59.1	0.3	0.5	
100 %		58.8	0.3	59.1	0.3	0.5	

COSEL

Model	SFS15243R3/SFCS15243R3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V4.5A

1. Graph



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

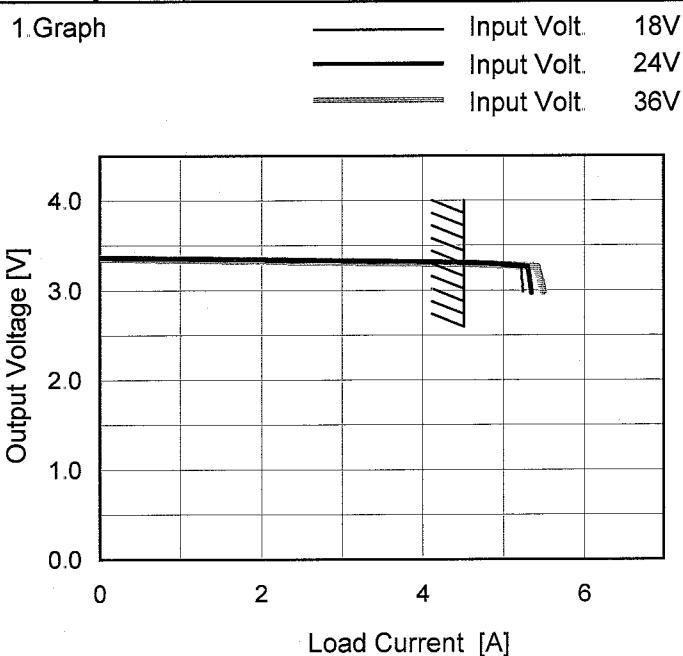
Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-45	15.5	15.6
-40	15.5	15.6
-20	15.6	15.6
0	15.6	15.6
25	15.7	15.6
50	15.7	15.8
85	15.7	15.8
90	15.7	15.8
--	-	-
--	-	-
--	-	-

COSEL

Model	SFS15243R3/SFCS15243R3
Item	Overcurrent Protection
Object	+3.3V4.5A



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

When the output voltage fell to less than 2.97V, the unit shuts off the output by operating low voltage protection.

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]
3.30	4.55	4.55	4.52
3.14	5.23	5.32	5.45
2.97	5.24	5.35	5.49
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
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--	-	-	-
--	-	-	-

COSEL

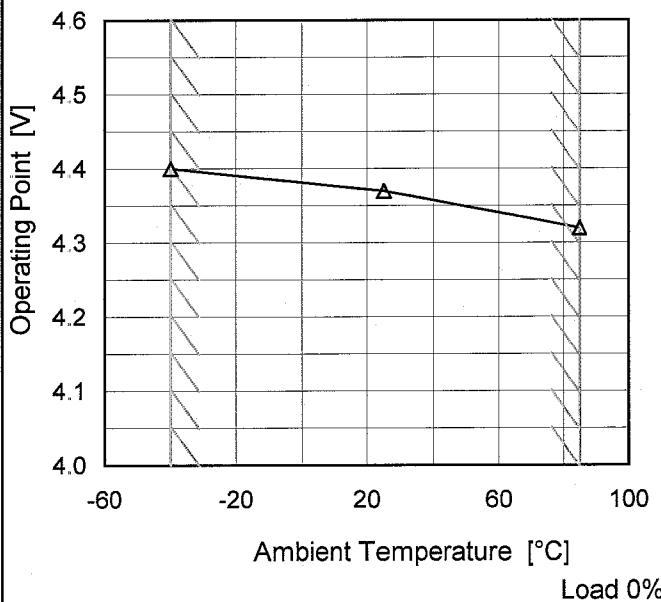
Model SFS15243R3/SFCS15243R3

Item Overvoltage Protection

Object +3.3V4.5A

1.Graph

—△— Input Volt. 24V



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

Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Operating Point [V]		
	Input Volt.	Input Volt.	Input Volt.
-40	4.40	-	-
25	4.37	-	-
85	4.32	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

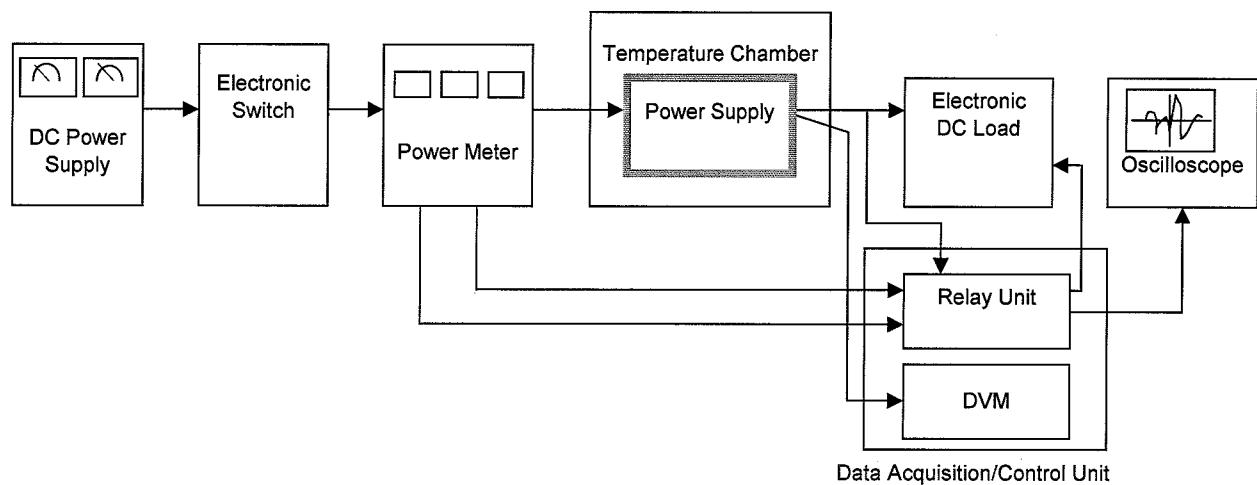


Figure A

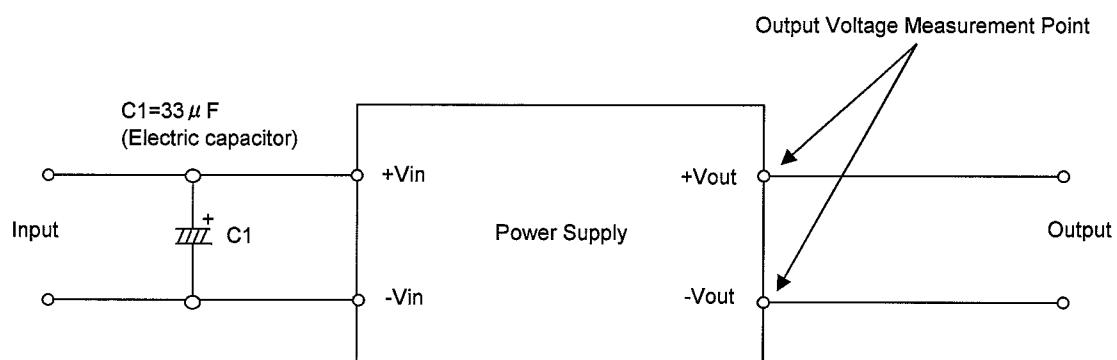


Figure B (General Electric Characteristic)

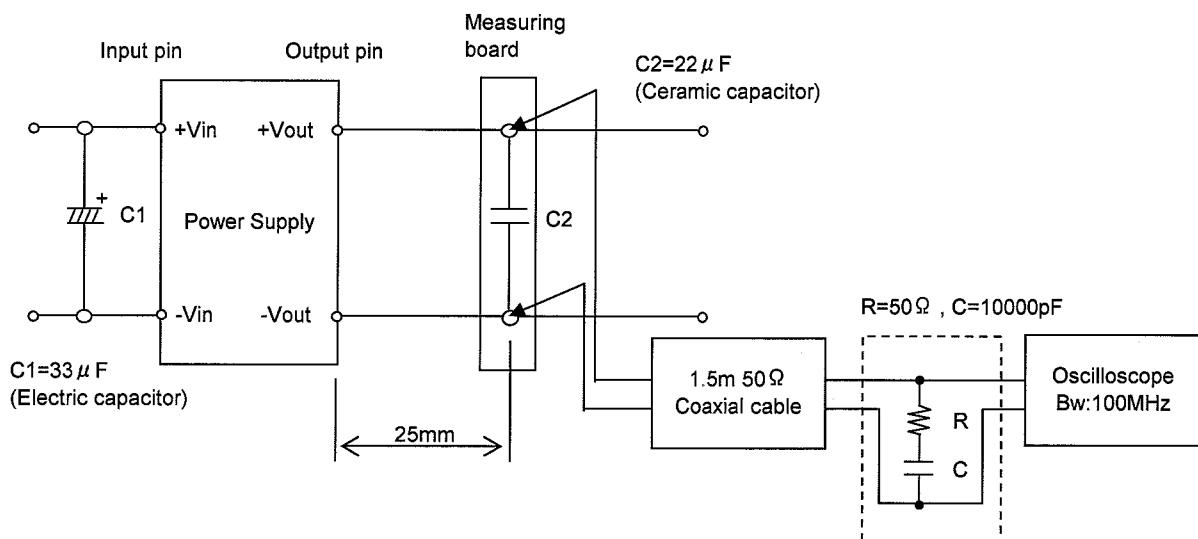


Figure C (Ripple and Ripple noise Characteristic)