COSEL

TEST DATA OF GT2.5-24

Regulated DC Power Supply
July 23, 2010

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Model	GT2.5-24
Item	Input Current (by Load Current)
Object	———————

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

————△———— Input Volt.   90V
— — -⊟- — — Input Volt.   100V
—·—○—·— Input Volt.   110V

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	0.021	0.022	0.022
0.30	0.209	0.214	0.217
0.60	0.363	0.371	0.377
0.90	0.505	0.516	0.524
1.20	0.640	0.652	0.663
1.50	0.768	0.782	0.796
1.65	0.830	0.846	0.860
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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

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Model	GT2.5-24
Item	Input Power (by Load Current)
Object	
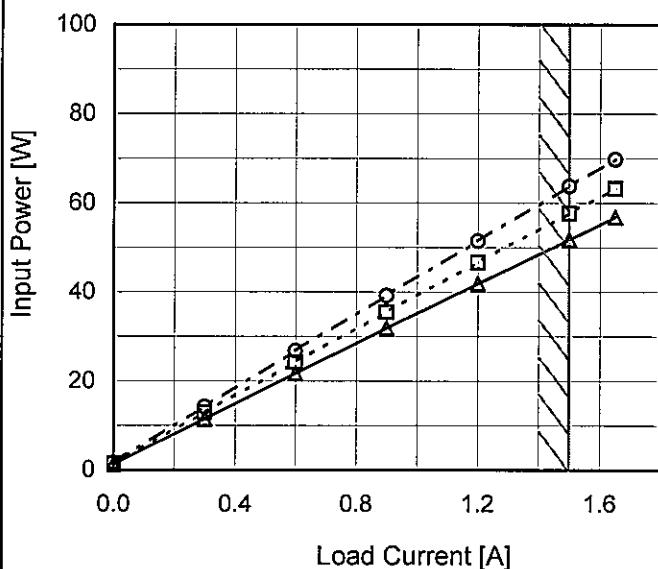
Temperature　　25°C
Testing Circuitry　Figure A

1.Graph

——△—— Input Volt.　90V
– – –⊟– – – Input Volt.　100V
—·–⊖—·– Input Volt.　110V

Input Power [W] vs Load Current [A]

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

2.Values

Load Current [A]	Input Power [W]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	1.26	1.41	1.65
0.30	11.53	12.90	14.25
0.60	21.72	24.20	26.81
0.90	31.90	35.50	39.20
1.20	41.90	46.70	51.50
1.50	51.80	57.70	63.80
1.65	56.80	63.20	69.80
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	GT2.5-24
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.
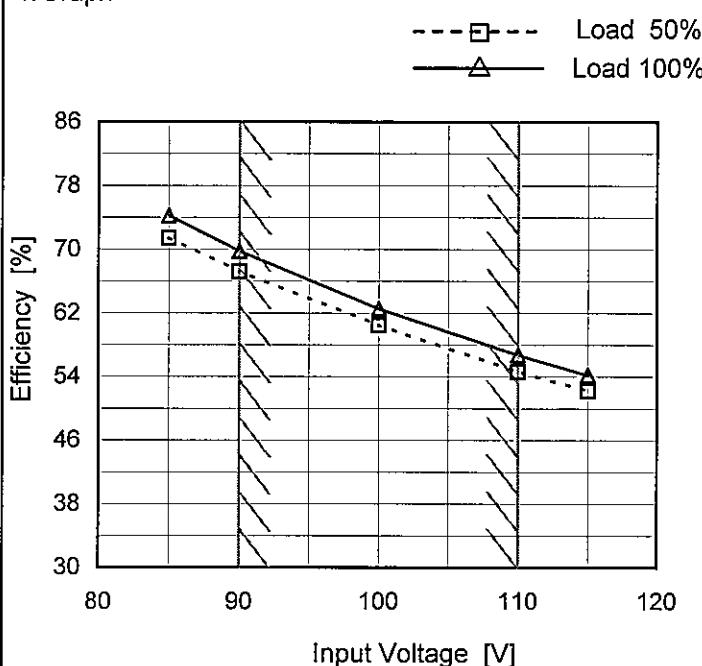
2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
85	71.4	74.3
90	67.2	69.8
100	60.5	62.6
110	54.6	56.8
115	52.2	54.2
--	-	-
--	-	-
--	-	-
--	-	-

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Model	GT2.5-24
Item	Efficiency (by Load Current)
Object	
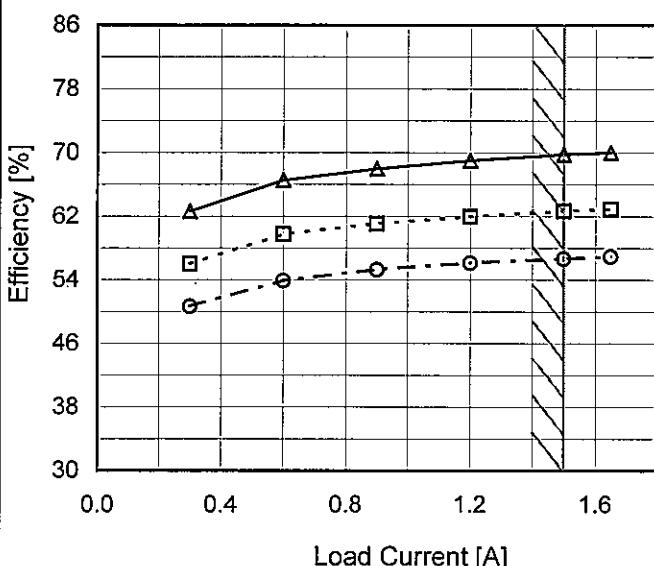
Temperature   25°C
Testing Circuitry   Figure A

1. Graph

——△—— Input Volt.   90V
---□--- Input Volt.   100V
—·—○—·— Input Volt.   110V

Load Current [A]

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

2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	-	-	-
0.30	62.6	56.0	50.7
0.60	66.5	59.7	53.9
0.90	68.0	61.1	55.3
1.20	69.0	61.9	56.2
1.50	69.8	62.7	56.7
1.65	70.0	62.9	57.0
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	GT2.5-24
Item	Power Factor (by Input Voltage)
Object	

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

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


Power Factor vs Input Voltage [V]
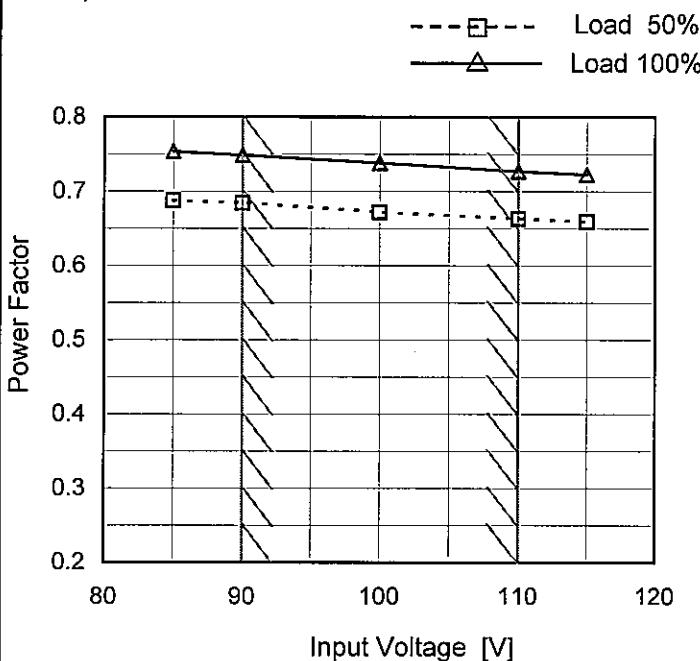
Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
85	0.688	0.754
90	0.684	0.749
100	0.672	0.738
110	0.663	0.727
115	0.659	0.723
---	-	-
--	-	-
--	-	-
--	-	-

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Model	GT2.5-24
Item	Power Factor (by Load Current)
Object	
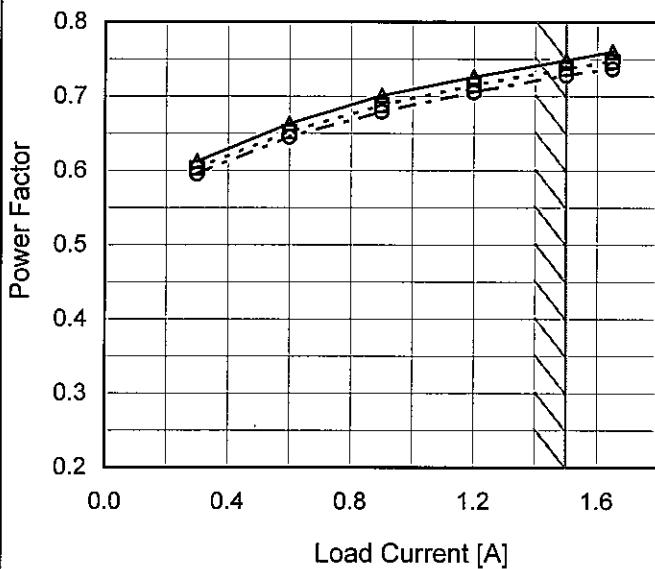
Temperature   25°C
Testing Circuitry   Figure A

1.Graph

————△———— Input Volt.   90V
- - - ☐ - - - Input Volt.   100V
—·—○—·— Input Volt.   110V

Power Factor vs Load Current [A]

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

2.Values

Load Current [A]	Power Factor		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	–	–	–
0.30	0.613	0.603	0.596
0.60	0.663	0.652	0.645
0.90	0.701	0.688	0.679
1.20	0.726	0.715	0.705
1.50	0.749	0.737	0.728
1.65	0.760	0.747	0.737
--	–	–	–
--	–	–	–
--	–	–	–
--	–	–	–

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Model	GT2.5-24
Item	Inrush Current
Object	

Temperature   25°C
Testing Circuitry   Figure A

Input
Current
[10A/div]

Input
Voltage
[100V/div]

Time   [10ms/div]
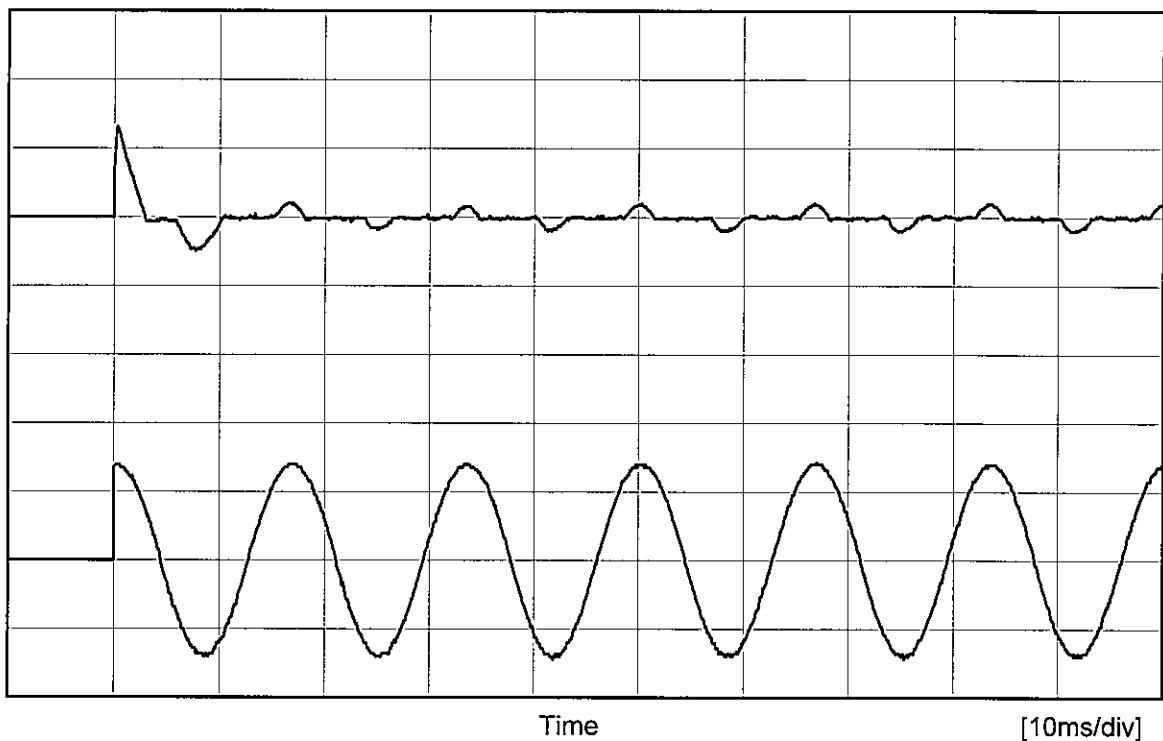
Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	13.3 A

Primary inrush current

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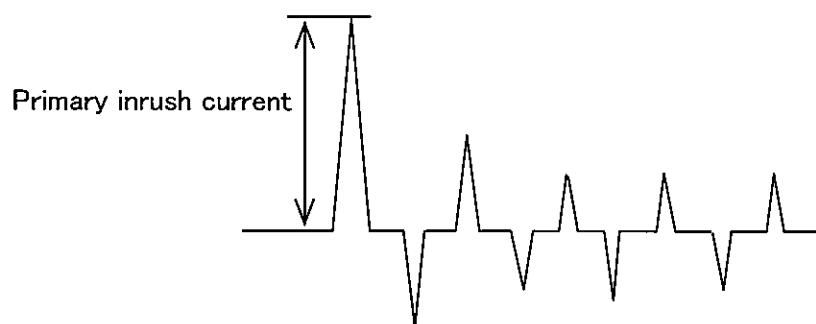
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Model	GT2.5-24
Item	Line Regulation
Object	+24V1.5A
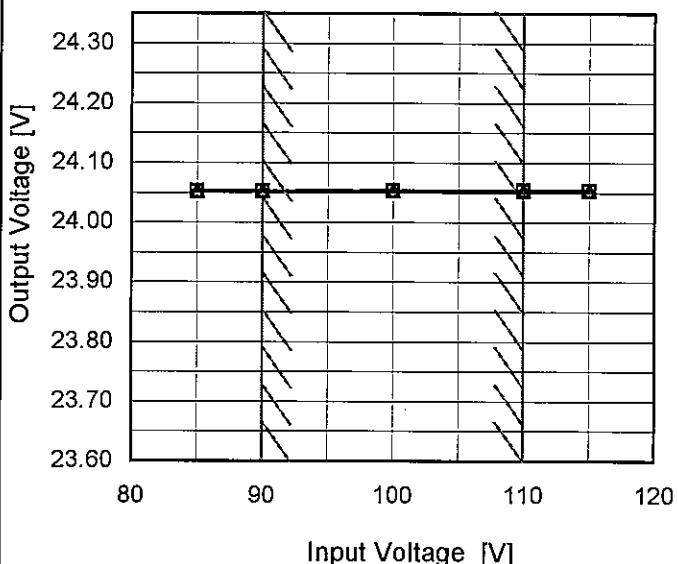
Temperature   25°C
Testing Circuitry   Figure A

1.Graph

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

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	24.053	24.053
90	24.053	24.053
100	24.054	24.054
110	24.054	24.054
115	24.054	24.054
--	-	-
--	-	-
---	-	-
---	-	-

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

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Model	GT2.5-24
Item	Load Regulation
Object	+24V1.5A

Temperature　　25°C
Testing Circuitry　Figure A

1.Graph

```
————△———— Input Volt.   90V
— — —☐— — — Input Volt.   100V
—·—○—·— Input Volt.   110V
```


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

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	24.053	24.054	24.054
0.30	24.053	24.054	24.054
0.60	24.053	24.054	24.054
0.90	24.053	24.054	24.054
1.20	24.053	24.053	24.054
1.50	24.053	24.053	24.053
1.65	24.053	24.053	24.053
--	-	-	-
--	-	-	-
--	-	-	-
--	--	-	-

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Model	GT2.5-24
Item	Dynamic Load Response
Object	+24V1.5A

Temperature	25°C
Testing Circuitry	Figure A

Input Volt.   100 V
Cycle   1000 ms

Load Current

Min. Load (0A) ←→
    Load 100% (1.5A)

100 mV/div

100 µs/div   100 µs/div

Load 50% (0.75A) ←→
    Load 100% (1.5A)

100 mV/div

100 µs/div   100 µs/div

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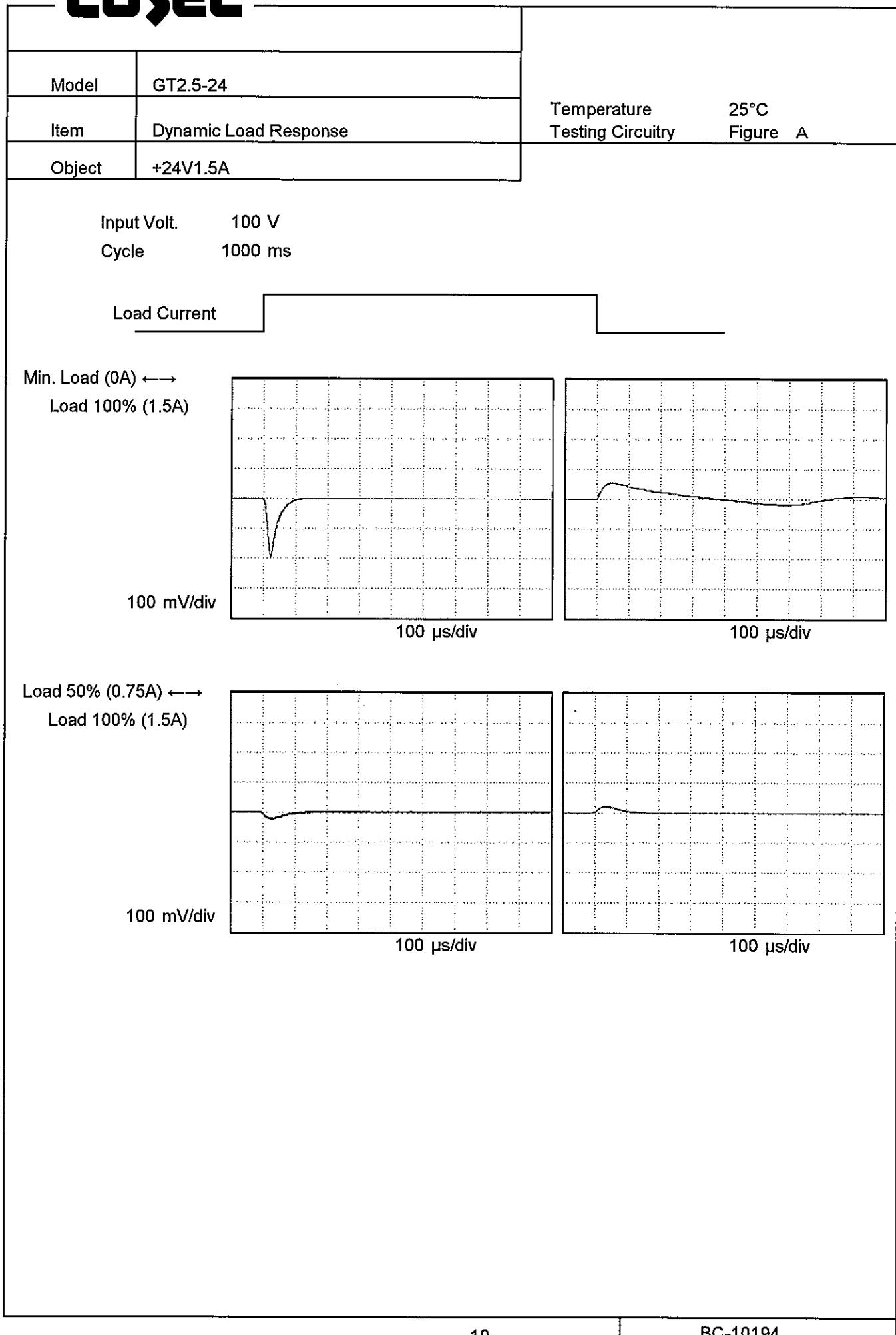
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Model	GT2.5-24
Item	Ripple Voltage (by Load Current)
Object	+24V1.5A
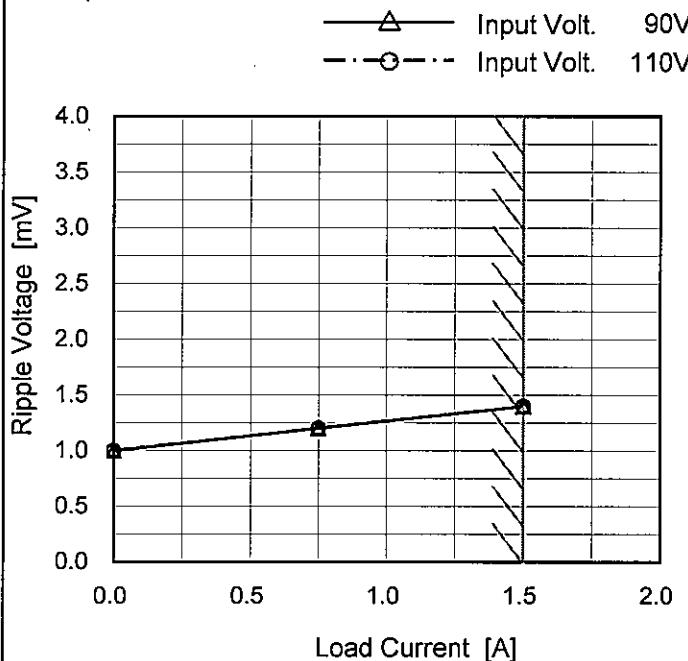
Temperature 25°C
Testing Circuitry Figure A

1.Graph

——△—— Input Volt. 90V
—·—○—·— Input Volt. 110V

Ripple Voltage [mV] vs Load Current [A]

Measured by 20 MHz Oscilloscope.
Note: Slanted line shows the range of the rated
load current.

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 90 [V]	Input Volt. 110 [V]
0.00	1.0	1.0
0.75	1.2	1.2
1.50	1.4	1.4
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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Model	GT2.5-24
Item	Ripple Voltage (by Ambient Temp.)
Object	+24V1.5A
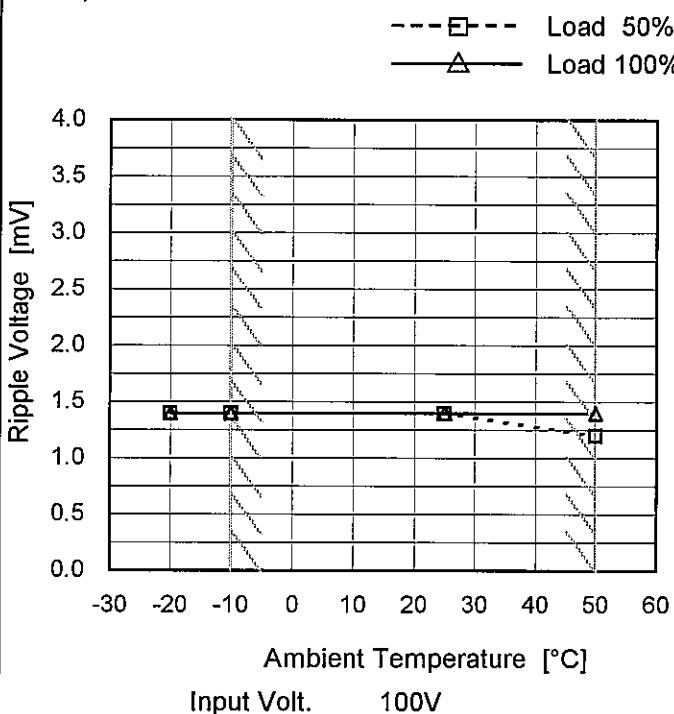
Testing Circuitry   Figure A

1.Graph

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

Ambient Temperature [°C]

Input Volt.   100V

Measured by 20 MHz Oscilloscope.
Note: Slanted line shows the range of the rated
      ambient temperature.

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	1.4	1.4
-10	1.4	1.4
25	1.4	1.4
50	1.2	1.4
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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Model	GT2.5-24
Item	Ambient Temperature Drift
Object	+24V1.5A

Testing Circuitry   Figure A

1.Graph

——△—— Input Volt.   90V
- - -⊟- - - Input Volt.   100V
—·-⊖—·- Input Volt.   110V

Ambient Temperature [°C]

Load 100%

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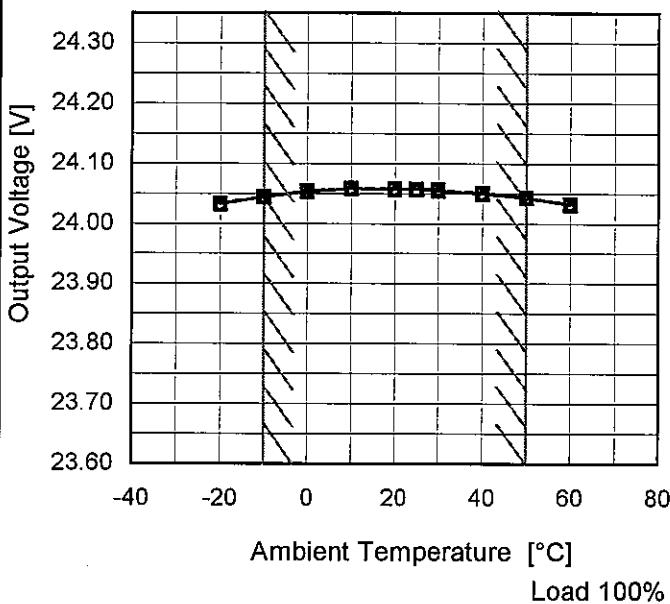
2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
-20	24.032	24.033	24.033
-10	24.044	24.044	24.045
0	24.053	24.054	24.054
10	24.058	24.059	24.059
20	24.057	24.058	24.058
25	24.057	24.057	24.058
30	24.055	24.056	24.056
40	24.050	24.050	24.051
50	24.043	24.043	24.044
60	24.032	24.032	24.032
--	-	-	-

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Model	GT2.5-24

Item	Output Voltage Accuracy

Testing Circuitry   Figure A

Object	+24V1.5A

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   : -10 - 50°C
    Input Voltage : 90 - 110V
    Load Current   : 0 - 1.5A

* 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	10	110	0	24.059	±8	±0.1
Minimum Voltage	50	90	1.5	24.043		

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Model	GT2.5-24
Item	Time Lapse Drift
Object	+24V1.5A

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

Input Volt.   100V
Load   100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	24.041
0.5	24.035
1.0	24.035
2.0	24.035
3.0	24.035
4.0	24.035
5.0	24.035
6.0	24.035
7.0	24.035
8.0	24.035

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Model	GT2.5-24
Item	Rise and Fall Time
Object	+24V1.5A

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

Input Volt. 100 V

Load 50%

Output Volt. [5V/div]

0

Load 100%

Output Volt. [5V/div]

0

Input Volt. 0

[100V/div] Time [50ms/div]

Time [100ms/div]
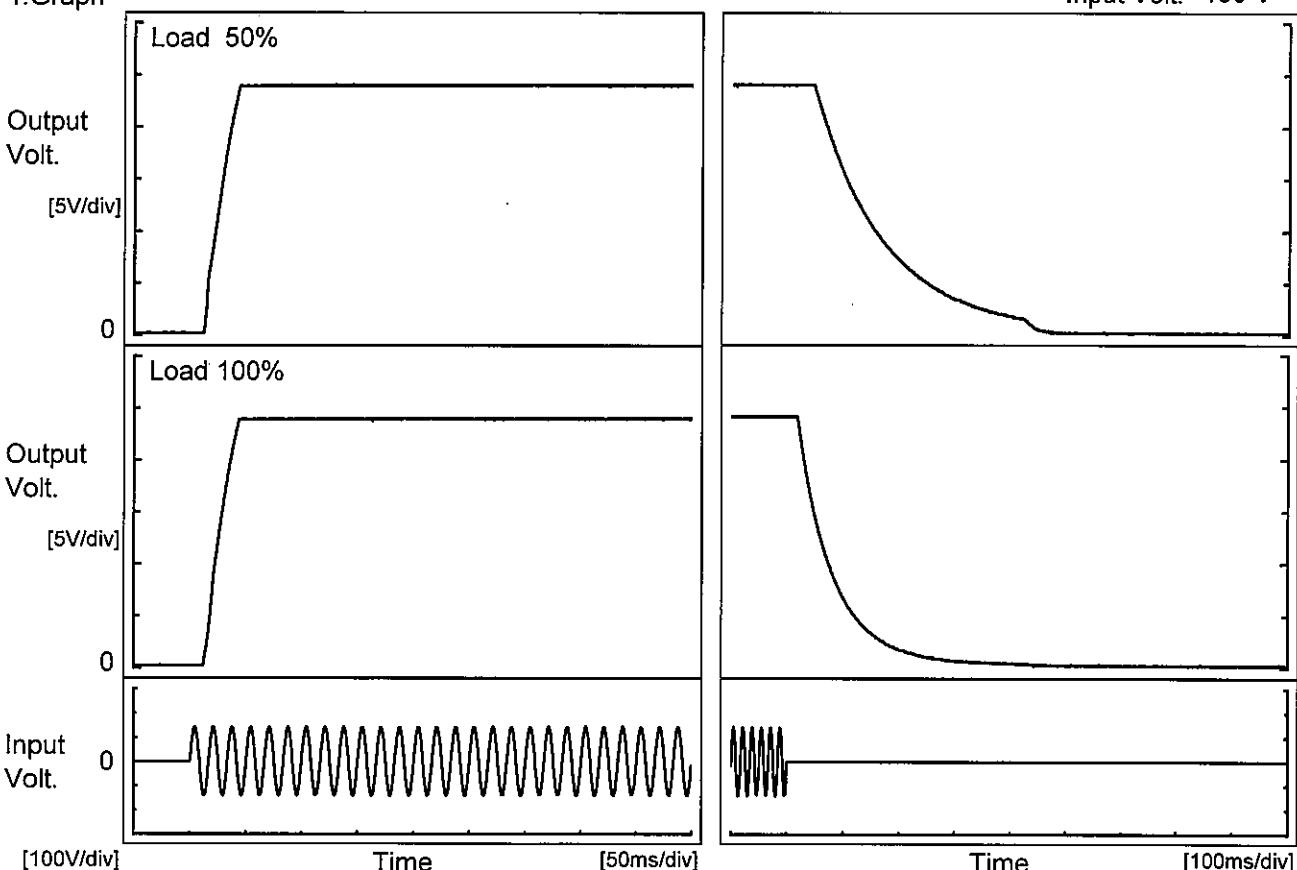
2.Values

[ms]

Load ＼ Time	Td	Tr	Ts	Th	Tf
50 %	14.3	25.3	39.6	58.5	289.5
100 %	15.3	24.3	39.6	24.5	146.0

Output Volt.

90%

10%

Input Volt.

Td Tr

Ts

Th Tf

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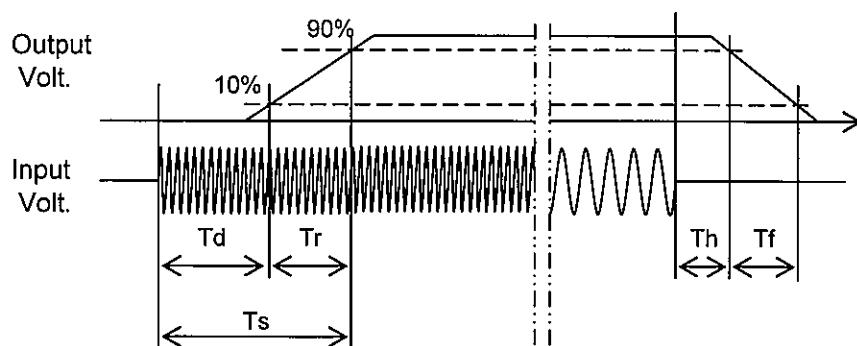
Model	GT2.5-24
Item	Hold-Up Time
Object	+24V1.5A

Temperature   25°C
Testing Circuitry   Figure A

1.Graph
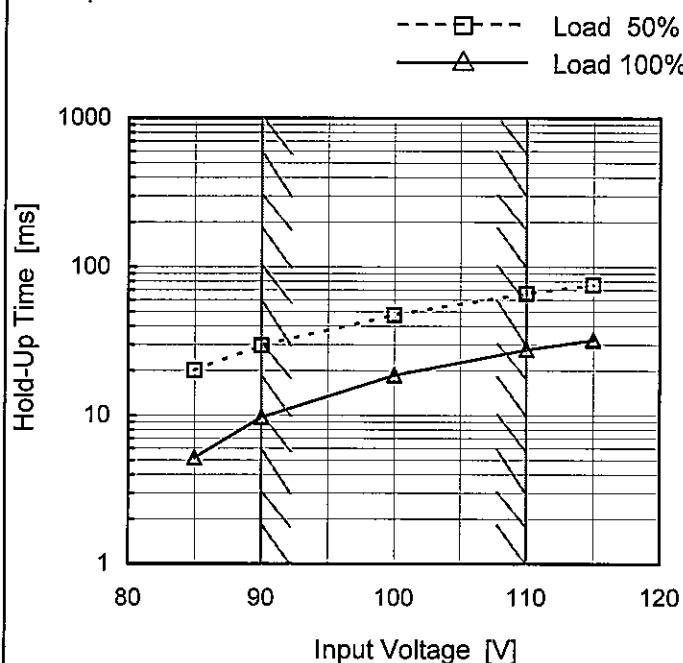
- - -□- - - Load 50%
——△—— Load 100%

2.Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	20	5
90	30	10
100	48	19
110	66	28
115	76	32
--	-	-
--	-	-
--	-	-
--	-	-

This duration covers from Shut-off of input
voltage to the moment when output voltage
descends to the rated range of voltage accuracy.
Note: Slanted line shows the range of the rated
       input voltage.

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Model	GT2.5-24
Item	Instantaneous Interruption Compensation
Object	+24V1.5A
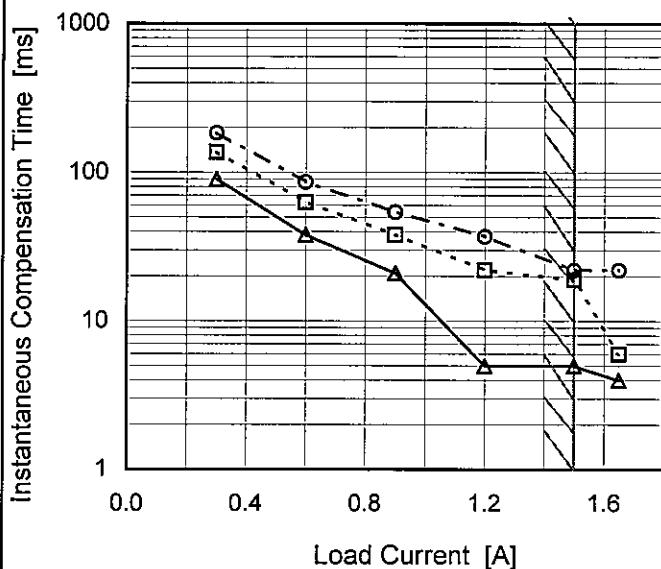
Temperature   25°C
Testing Circuitry   Figure A

1.Graph

——△—— Input Volt.   90V
- - -□- - - Input Volt.   100V
—·—○—·— Input Volt.   110V

Instantaneous Compensation Time [ms] vs **Load Current [A]**

2.Values

Load Current [A]	Time [ms]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	-	-	-
0.30	90	137	184
0.60	38	63	86
0.90	21	38	54
1.20	5	22	37
1.50	5	19	22
1.65	4	6	22
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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

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Model	GT2.5-24
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+24V1.5A
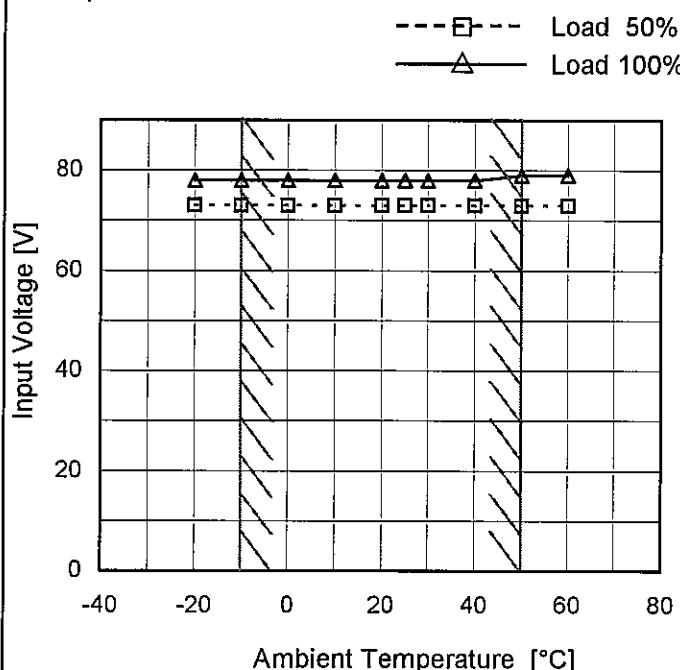
Testing Circuitry   Figure A

1.Graph

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

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

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	73	78
-10	73	78
0	73	78
10	73	78
20	73	78
25	73	78
30	73	78
40	73	78
50	73	79
60	73	79
--	--	-

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Model	GT2.5-24
Item	Overcurrent Protection
Object	+24V1.5A
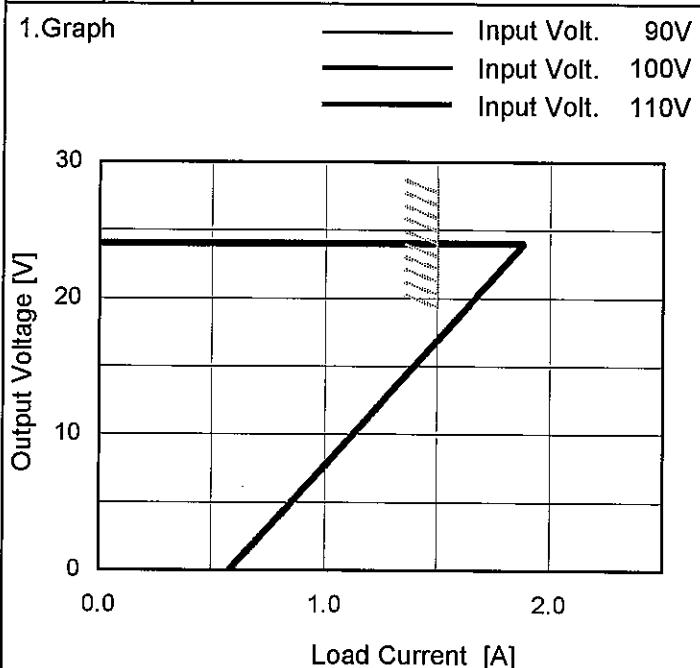
Temperature 25°C
Testing Circuitry Figure A

1.Graph

——————— Input Volt. 90V
——————— Input Volt. 100V
——————— Input Volt. 110V

Load Current [A]

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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
24.0	1.88	1.88	1.88
22.8	1.82	1.82	1.82
21.6	1.76	1.76	1.76
19.2	1.64	1.64	1.64
16.8	1.50	1.50	1.50
14.4	1.37	1.37	1.37
12.0	1.24	1.24	1.24
9.6	1.12	1.12	1.10
7.2	0.98	0.98	0.98
4.8	0.85	0.85	0.85
2.4	0.72	0.72	0.72
0.0	0.58	0.58	0.58

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Figure A

BC-10194