COSEL

参考資料

TEST DATA OF FETA2500B-36

Regulated DC Power Supply
August 8, 2013

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COSEL CO.,LTD.

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

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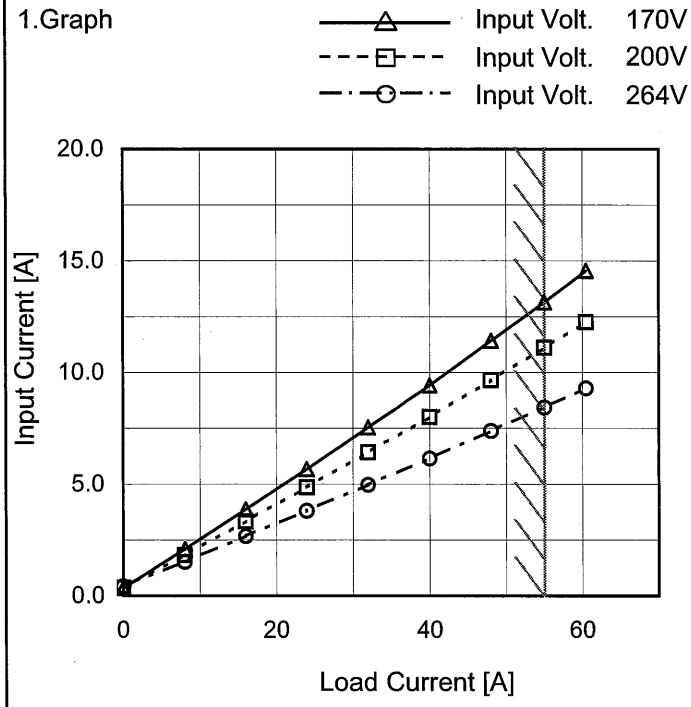

Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	0.310	0.340	0.420
8.0	2.096	1.824	1.516
16.0	3.880	3.339	2.668
24.0	5.680	4.860	3.804
32.0	7.540	6.420	4.970
40.0	9.430	8.010	6.150
48.0	11.420	9.660	7.380
55.0	13.150	11.110	8.440
60.5	14.550	12.260	9.290
--	-	-	-
--	-	-	-

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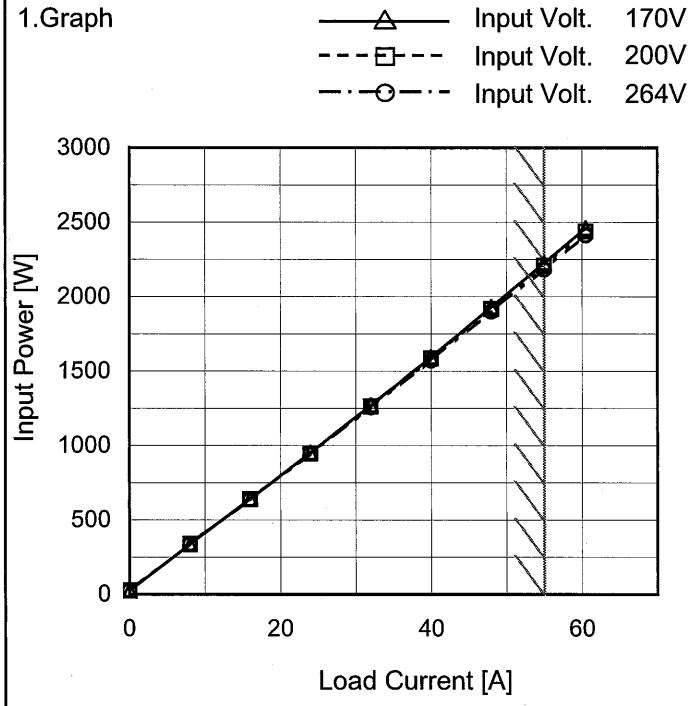
Model	FETA2500B-36
Item	Input Power (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Input Power [W]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	18	19	19
8.0	339	338	338
16.0	643	640	638
24.0	952	947	944
32.0	1271	1264	1256
40.0	1594	1584	1572
48.0	1931	1915	1900
55.0	2227	2206	2184
60.5	2462	2438	2412
--	-	-	-
--	-	-	-

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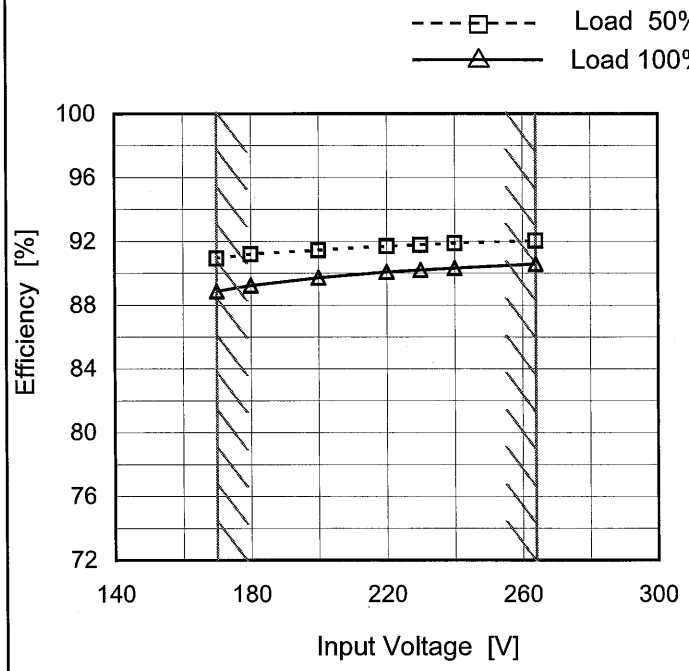
Model	FETA2500B-36
Item	Efficiency (by Input Voltage)
Object	———————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
170	90.9	88.9
180	91.2	89.2
200	91.4	89.7
220	91.7	90.1
230	91.8	90.2
240	91.9	90.3
264	92.0	90.6
--	-	-
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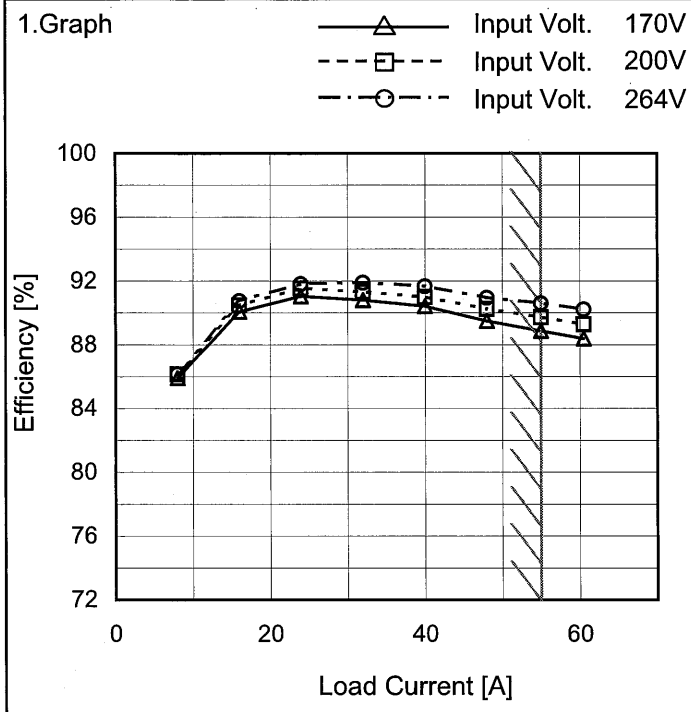
Model	FETA2500B-36
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	-	-	-
8.0	85.9	86.1	86.2
16.0	90.1	90.5	90.8
24.0	91.0	91.5	91.8
32.0	90.8	91.3	91.9
40.0	90.4	91.0	91.7
48.0	89.5	90.2	91.0
55.0	88.9	89.7	90.6
60.5	88.4	89.3	90.2
--	-	-	-
--	-	-	-

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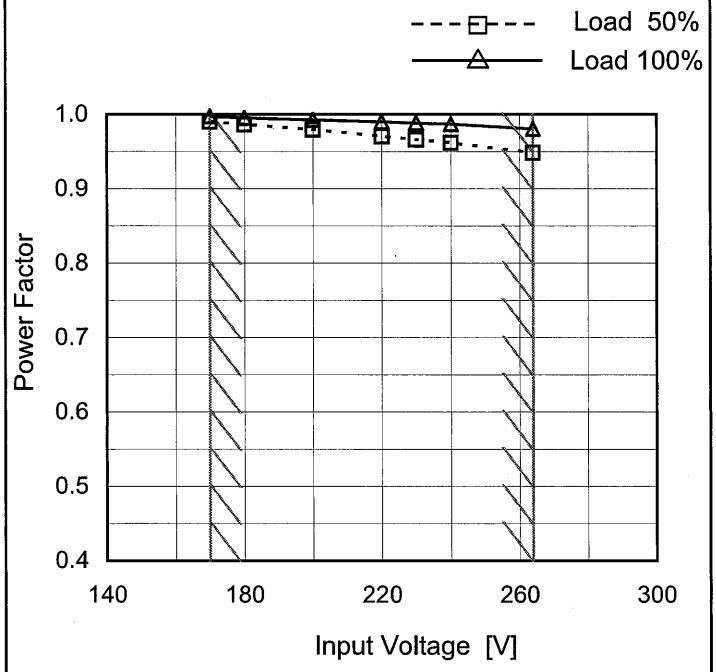
Model	FETA2500B-36
Item	Power Factor (by Input Voltage)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
170	0.990	0.997
180	0.986	0.995
200	0.979	0.993
220	0.970	0.990
230	0.966	0.988
240	0.962	0.987
264	0.948	0.981
--	-	-
--	-	-

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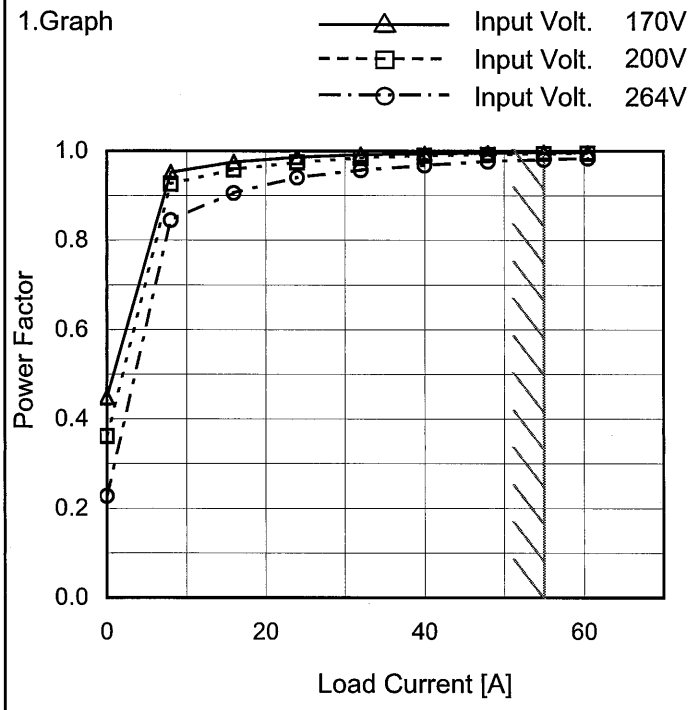
Model	FETA2500B-36
Item	Power Factor (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Power Factor		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	0.345	0.275	0.167
8.0	0.952	0.926	0.845
16.0	0.976	0.958	0.906
24.0	0.987	0.974	0.940
32.0	0.992	0.984	0.957
40.0	0.994	0.989	0.968
48.0	0.995	0.992	0.976
55.0	0.997	0.993	0.980
60.5	0.996	0.994	0.984
--	-	-	-
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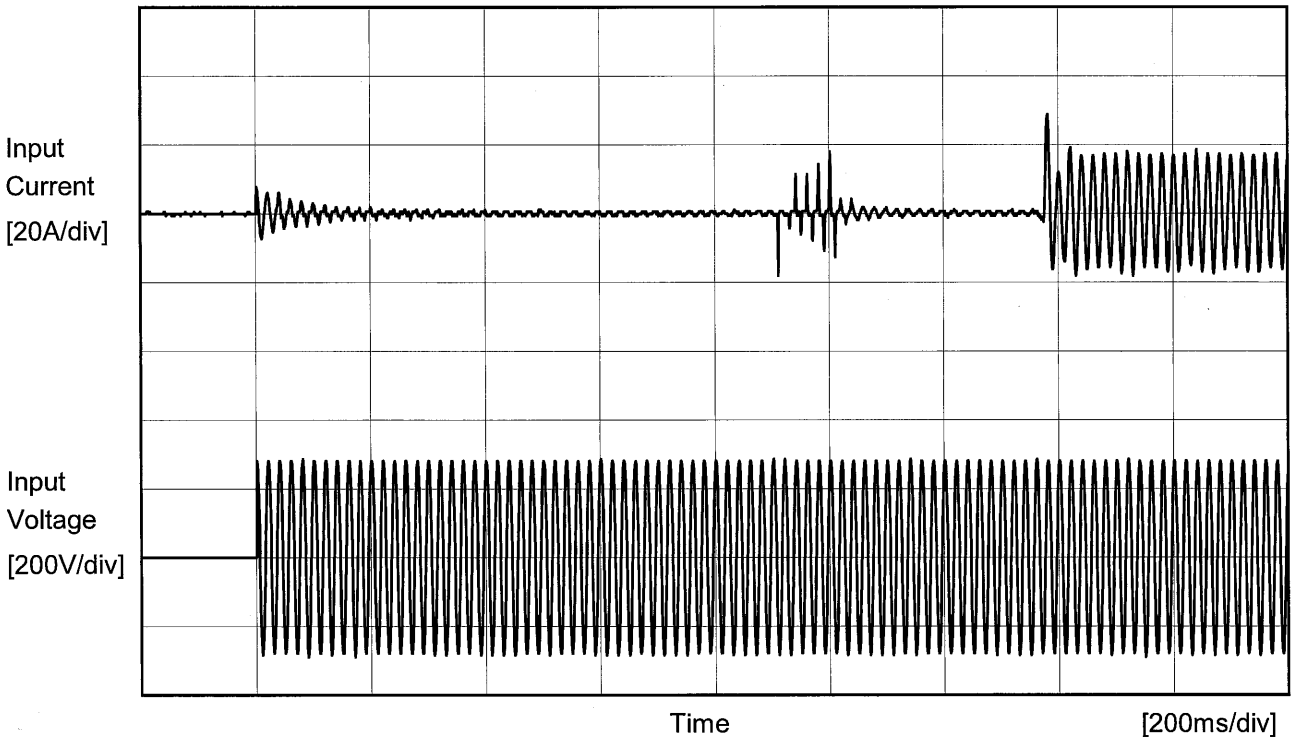
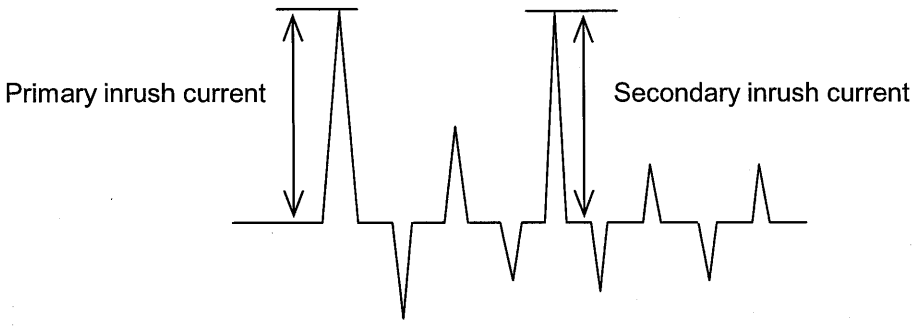
Model	FETA2500B-36
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	200 V
Frequency	50 Hz
Load	100 %
Primary inrush current	7.8 A
Secondary inrush current	28.8 A



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Model	FETA2500B-36	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure B
Object	———————————	

1.Results

[mA]

Standards		Input Volt.			Note
		200 [V]	240 [V]	264 [V]	
DEN-AN	Both phases	-	-	-	Operation
	One of phases	-	-	-	Stand by
IEC60950-1	Both phases	0.61	0.73	0.81	Operation
	One of phases	1.06	1.30	1.43	Stand by

The value for "One of phases" is the reference value only.

2.Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

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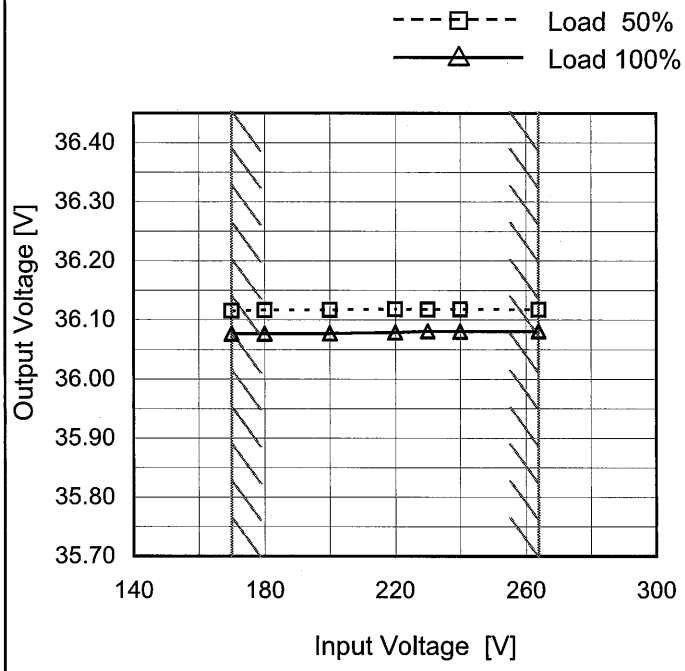
Model	FETA2500B-36
Item	Line Regulation
Object	+36V55A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
170	36.115	36.077
180	36.116	36.077
200	36.117	36.078
220	36.118	36.079
230	36.117	36.081
240	36.118	36.081
264	36.118	36.082
--	-	-
--	-	-

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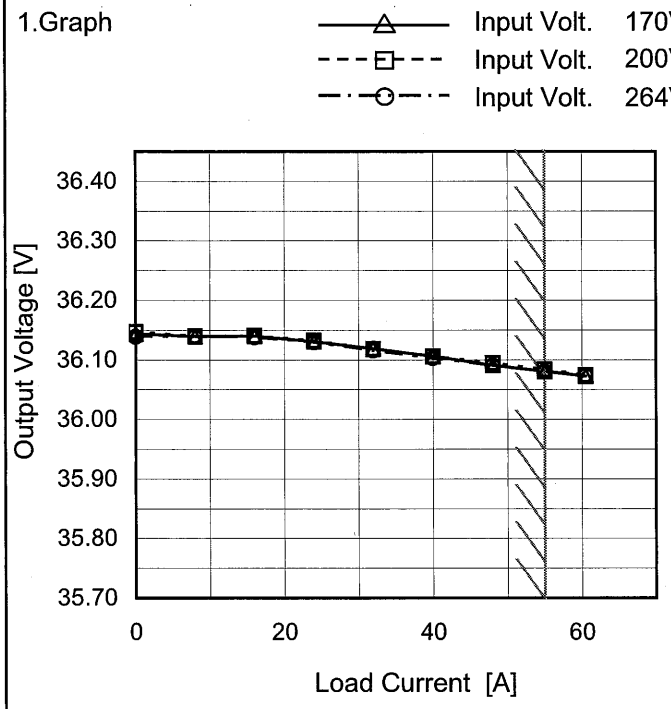
Model	FETA2500B-36
Item	Load Regulation
Object	+36V55A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	36.144	36.147	36.139
8.0	36.140	36.140	36.140
16.0	36.140	36.140	36.138
24.0	36.131	36.132	36.130
32.0	36.119	36.118	36.116
40.0	36.106	36.106	36.103
48.0	36.091	36.094	36.090
55.0	36.081	36.084	36.081
60.5	36.073	36.074	36.074
--	-	-	-
--	-	-	-

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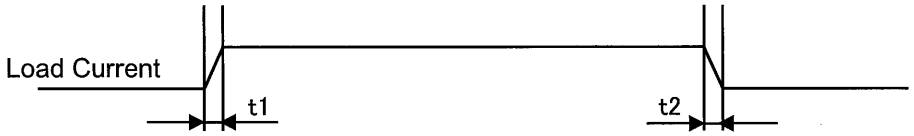
Model	FETA2500B-36
Item	Dynamic Load Response
Object	+36V55A

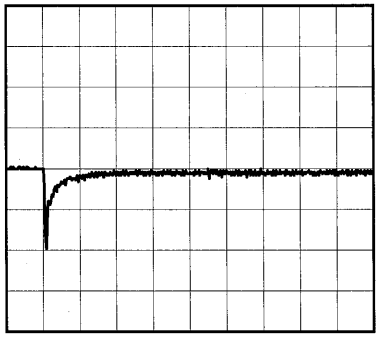
Temperature 25°C
Testing Circuitry Figure A

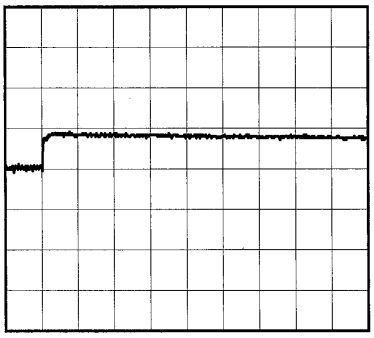
Input Volt. 230 V
Cycle 1000 ms

Response. t1=t2=50μs. Typ

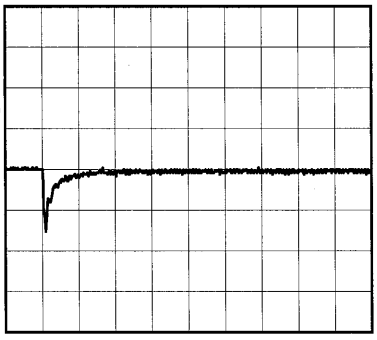


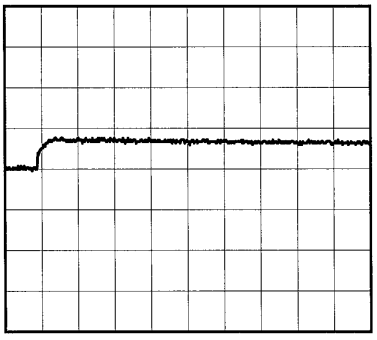
Min. Load (0A) ⟷
Load 100% (55A)





Min. Load (0A) ⟷
Load 50% (27.5A)





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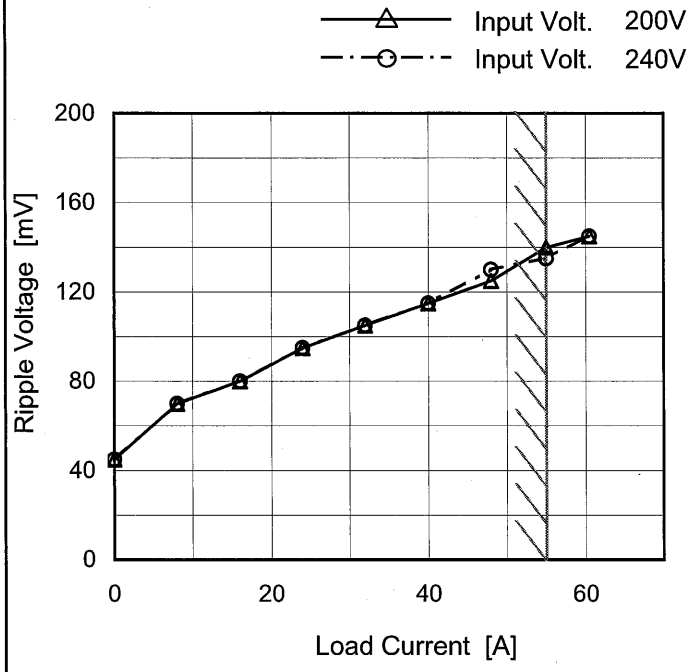
Model	FETA2500B-36
Item	Ripple Voltage (by Load Current)
Object	+36V55A

Temperature 25°C
Testing Circuitry Figure C

1.Graph



Measured by 500 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

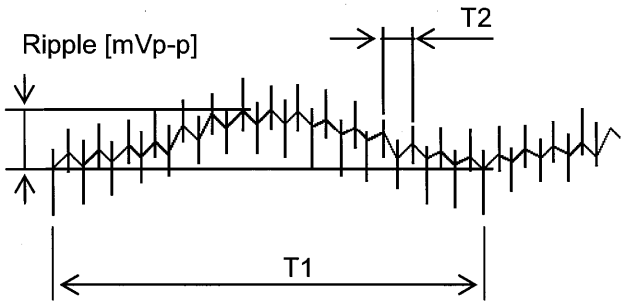


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 200 [V]	Input Volt. 240 [V]
0.0	45	45
8.0	70	70
16.0	80	80
24.0	95	95
32.0	105	105
40.0	115	115
48.0	125	130
55.0	140	135
60.5	145	145
--	-	-
--	-	-

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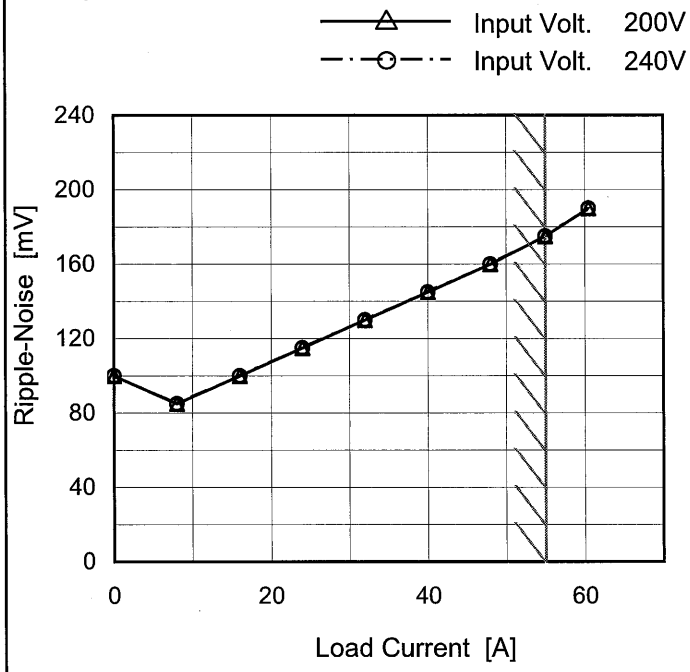
Model	FETA2500B-36
Item	Ripple-Noise
Object	+36V55A

Temperature 25°C
Testing Circuitry Figure C

1.Graph



Measured by 500 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

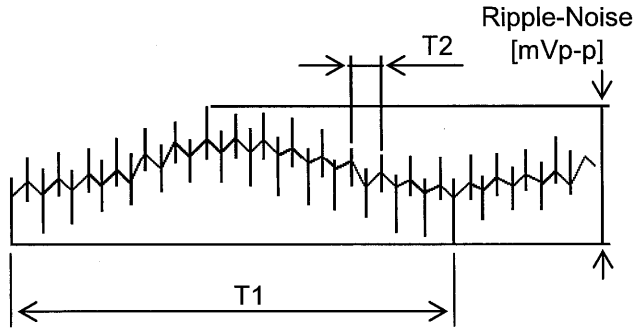


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 200 [V]	Input Volt. 240 [V]
0.0	100	100
8.0	85	85
16.0	100	100
24.0	115	115
32.0	130	130
40.0	145	145
48.0	160	160
55.0	175	175
60.5	190	190
--	-	-
--	-	-

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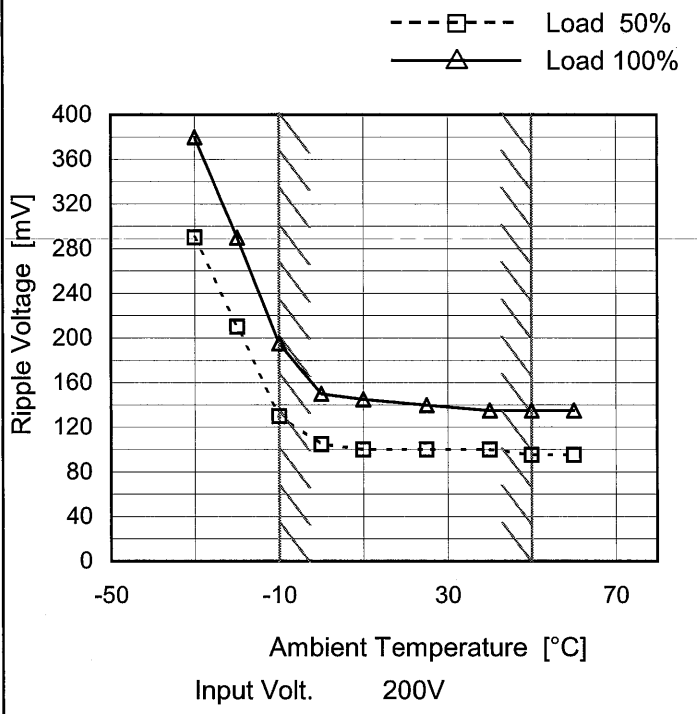
Model	FETA2500B-36
Item	Ripple Voltage (by Ambient Temp.)
Object	+36V55A

Testing Circuitry Figure C

1.Graph



Input Volt. 200V

Measured by 500 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%
-30	290	380
-20	210	290
-10	130	195
0	105	150
10	100	145
25	100	140
40	100	135
50	95	135
60	95	135
--	-	-
--	-	-

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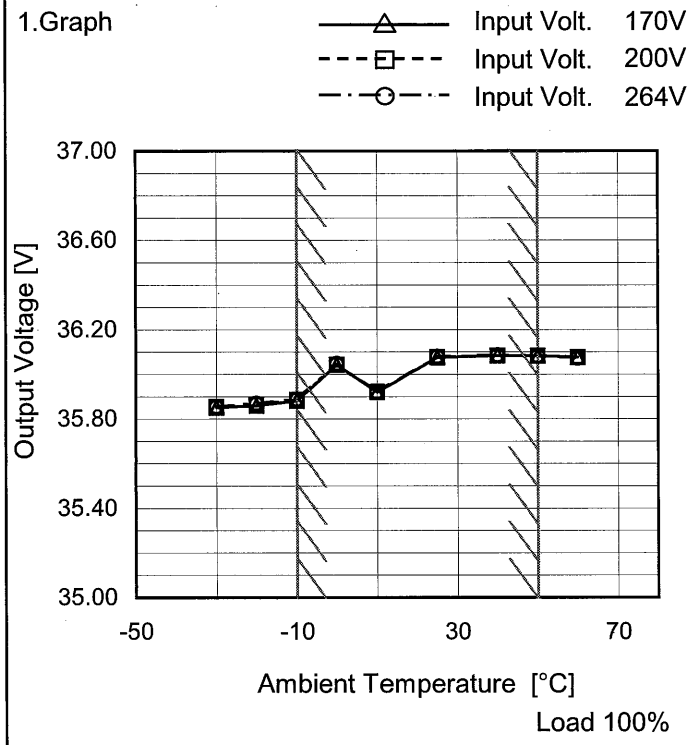
Model	FETA2500B-36
Item	Ambient Temperature Drift
Object	+36V55A

Testing Circuitry Figure A

1.Graph



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

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-30	35.852	35.853	35.854
-20	35.861	35.865	35.869
-10	35.883	35.884	35.888
0	36.043	36.043	36.048
10	35.921	35.921	35.922
25	36.076	36.076	36.079
40	36.084	36.083	36.085
50	36.083	36.082	36.081
60	36.078	36.076	36.073
--	-	-	-
--	-	-	-

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Model	FETA2500B-36	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+36V55A	

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 : 170 - 264V
Load Current : 0 - 55A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - 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	50	200	0	36.149	±133	±0.4
Minimum Voltage	-10	170	55	35.883		

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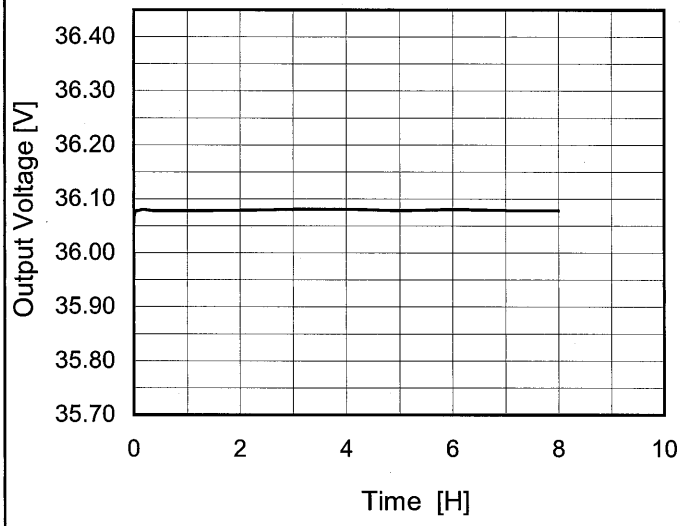
Model	FETA2500B-36
Item	Time Lapse Drift
Object	+36V55A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 200V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	36.058
0.5	36.078
1.0	36.078
2.0	36.079
3.0	36.081
4.0	36.082
5.0	36.078
6.0	36.081
7.0	36.079
8.0	36.079

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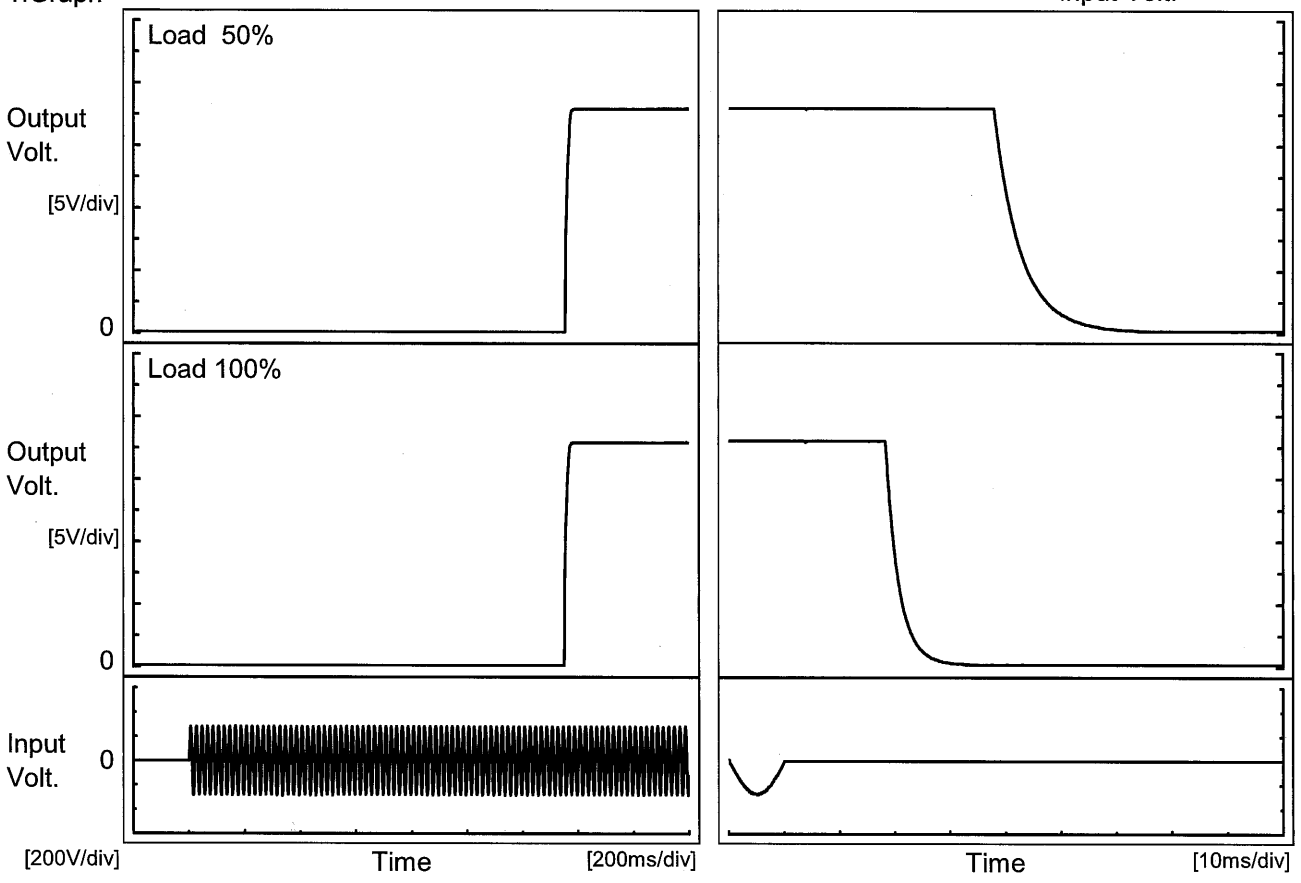
Model	FETA2500B-36
Item	Rise and Fall Time
Object	+36V55A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

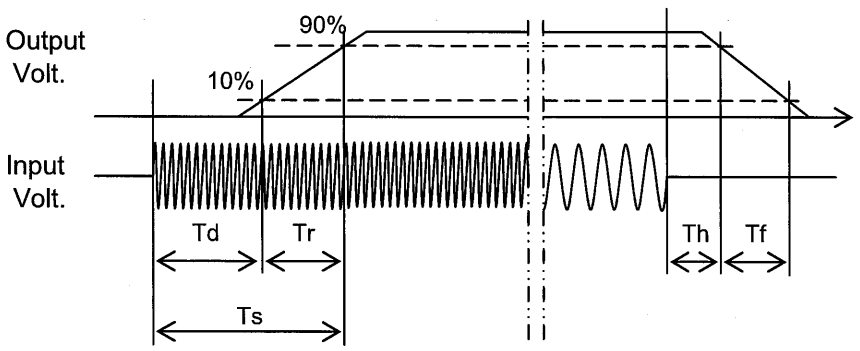
Input Volt. 200 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1356.0	15.0	1371.0	38.3	10.7
100 %	1352.0	14.0	1366.0	18.6	5.3



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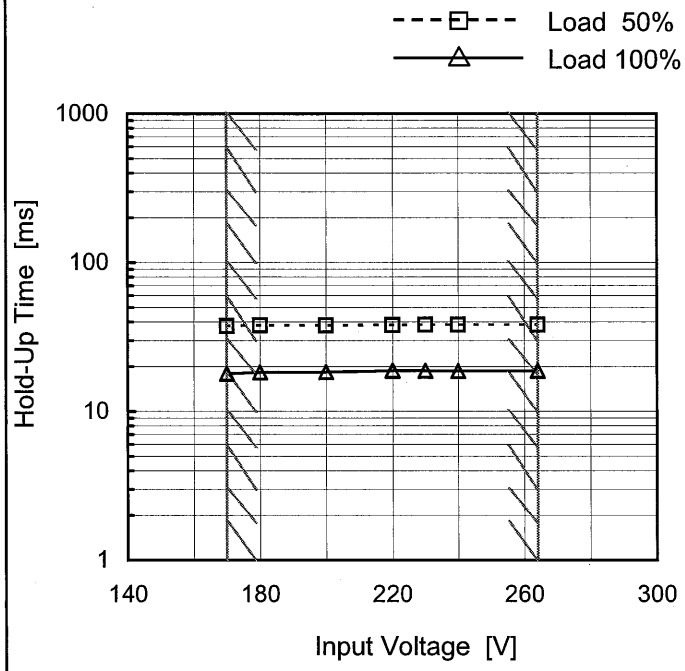
Model	FETA2500B-36
Item	Hold-Up Time
Object	+36V55A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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.

2.Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
170	38	18
180	38	18
200	38	18
220	38	19
230	38	19
240	38	19
264	38	19
--	-	-
--	-	-

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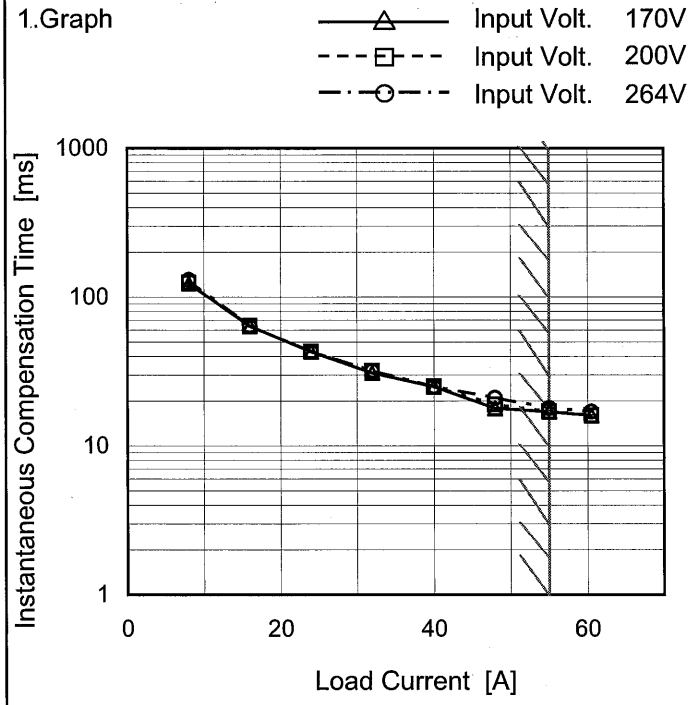
Model	FETA2500B-36
Item	Instantaneous Interruption Compensation
Object	+36V55A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Time [ms] Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	-	-	-
8.0	124	125	131
16.0	64	64	64
24.0	43	43	43
32.0	31	32	32
40.0	25	25	25
48.0	18	19	21
55.0	17	17	18
60.5	16	16	17
--	-	-	-
--	-	-	-

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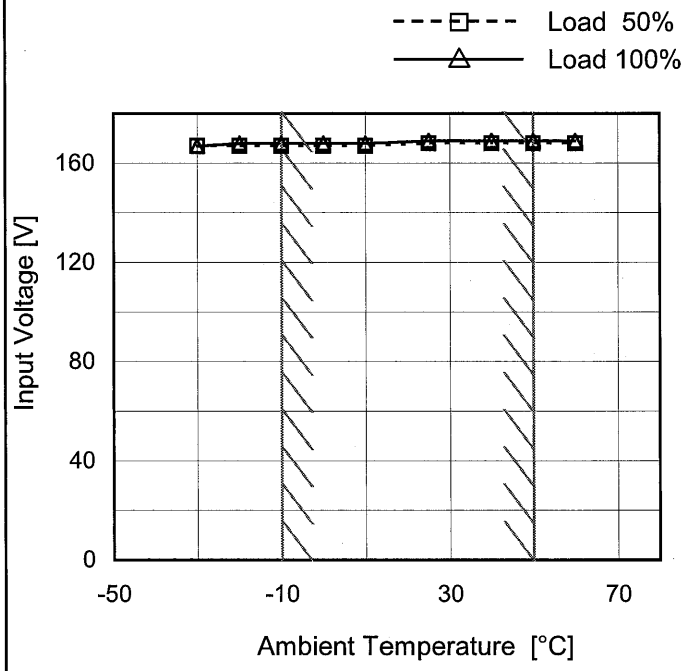
Model	FETA2500B-36
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+36V55A

Testing Circuitry Figure A

1.Graph



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

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-30	167	167
-20	167	168
-10	167	168
0	167	168
10	167	168
25	168	169
40	168	169
50	168	169
60	168	169
--	-	-
--	-	-

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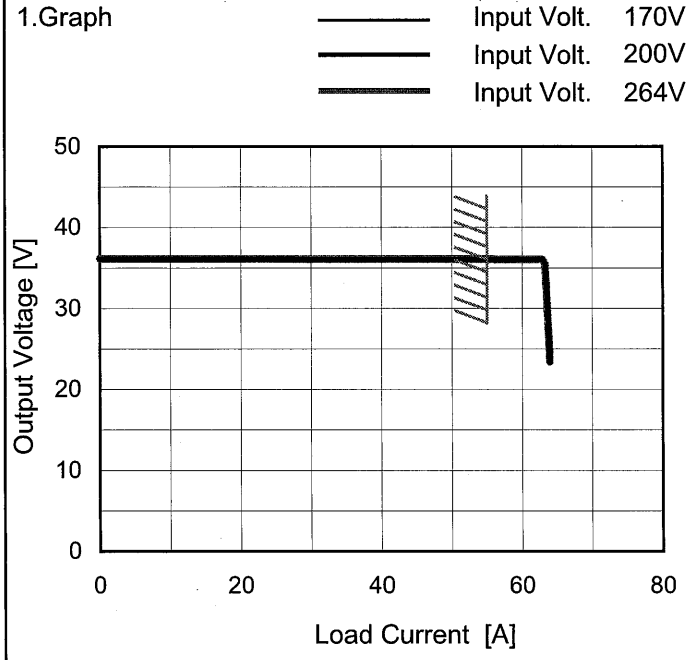
Model	FETA2500B-36
Item	Overcurrent Protection
Object	+36V55A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

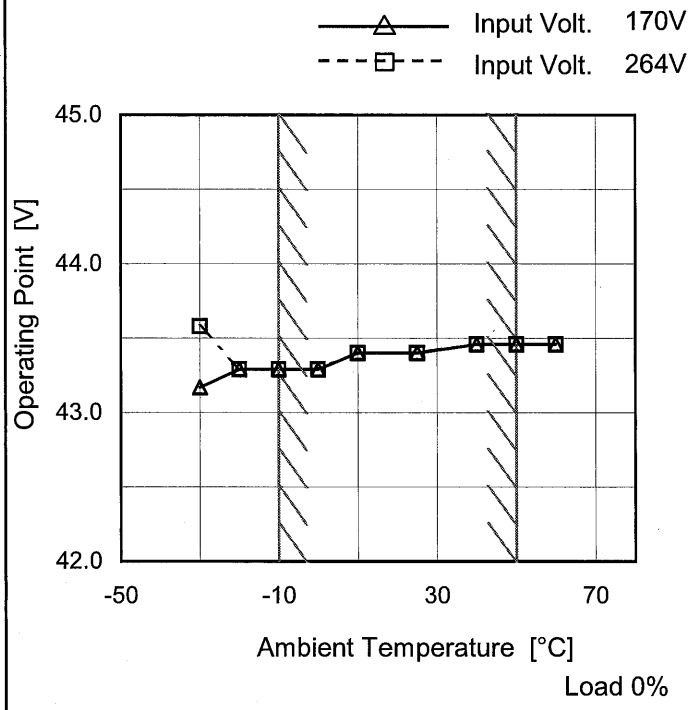
Output Voltage [V]	Load Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
34.2	63.24	63.39	63.37
32.4	63.32	63.47	63.44
28.8	63.55	63.68	63.66
25.2	63.74	63.86	63.86
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	FETA2500B-36
Item	Overvoltage Protection
Object	+36V55A

Testing Circuitry Figure A

1.Graph



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

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 170[V]	Input Volt. 264[V]
-30	43.17	43.58
-20	43.29	43.29
-10	43.29	43.29
0	43.29	43.29
10	43.40	43.40
25	43.40	43.40
40	43.46	43.46
50	43.46	43.46
60	43.46	43.46
--	-	-
--	-	-

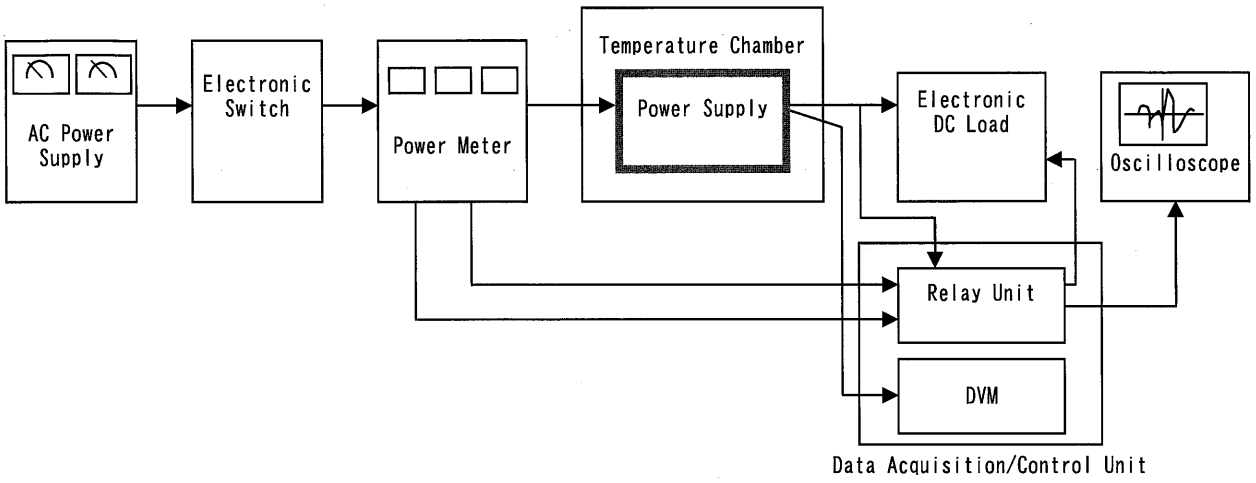


Figure A

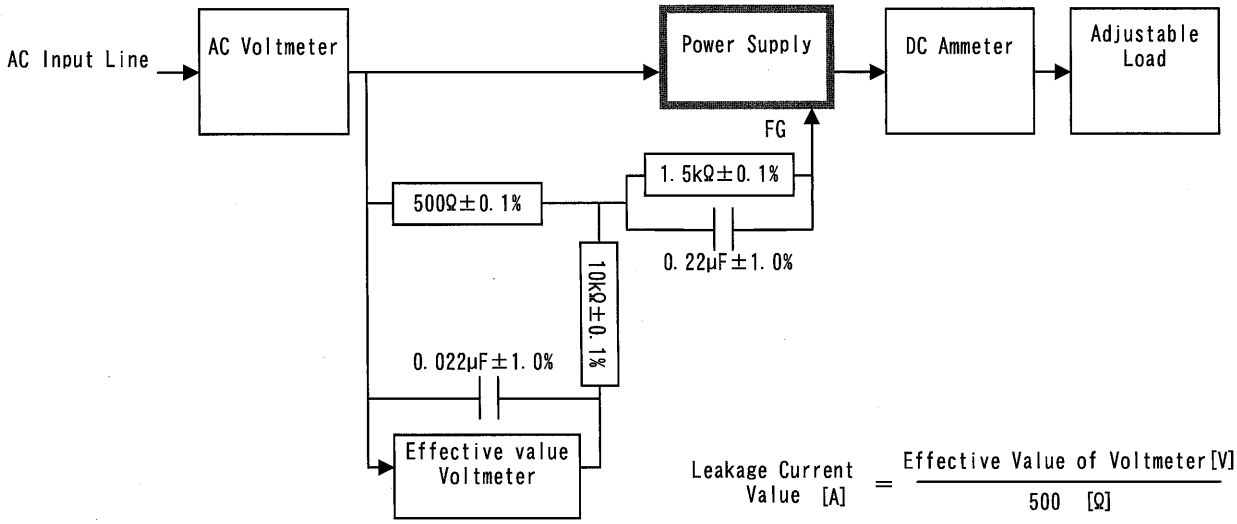


Figure B (IEC60950-1)

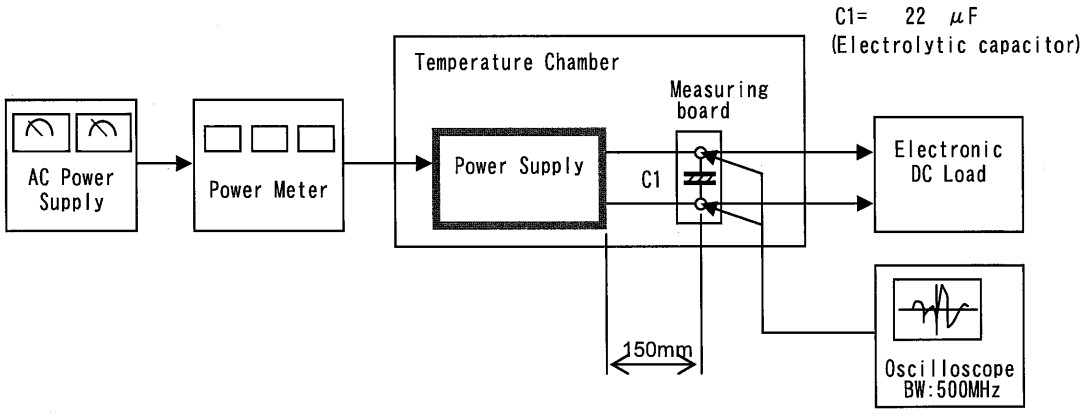


Figure C