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参考資料

TEST DATA OF FETA7000T-48

Regulated DC Power Supply
June 27, 2017

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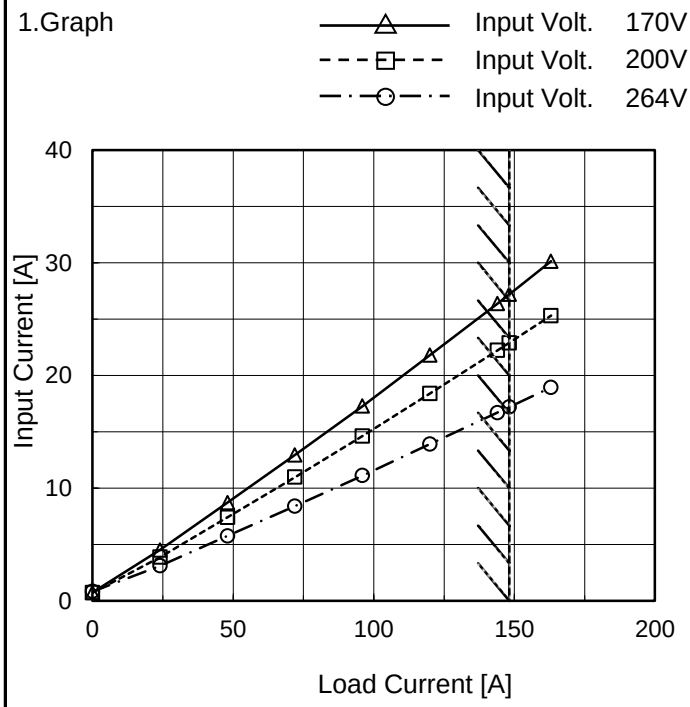
Model	FETA7000T-48
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

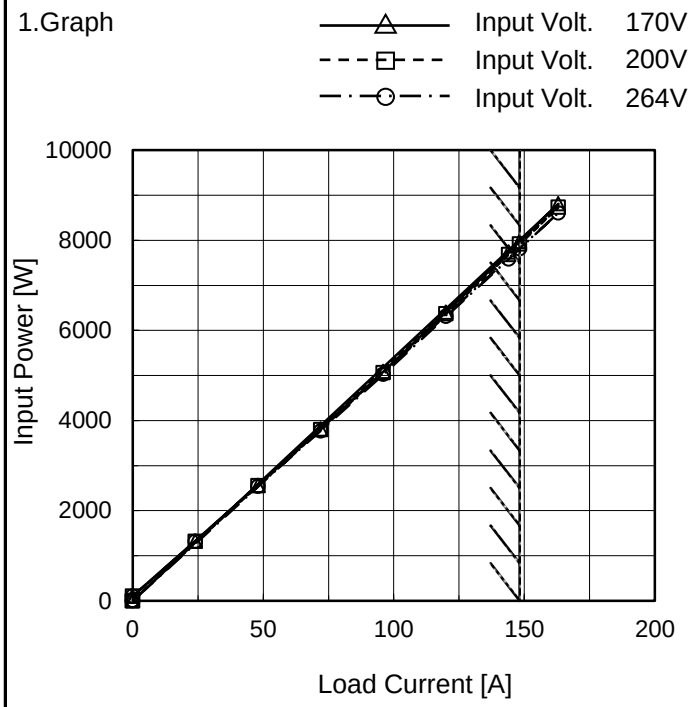
Load Current [A]	Input Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	0.721	0.708	0.826
24.0	4.511	3.861	3.106
48.0	8.718	7.406	5.756
72.0	12.943	10.976	8.399
96.0	17.281	14.621	11.116
120.0	21.814	18.410	13.919
144.0	26.378	22.222	16.701
148.2	27.205	22.892	17.196
163.0	30.146	25.316	18.943
--	-	-	-
--	-	-	-

COSEL

Model	FETA7000T-48
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

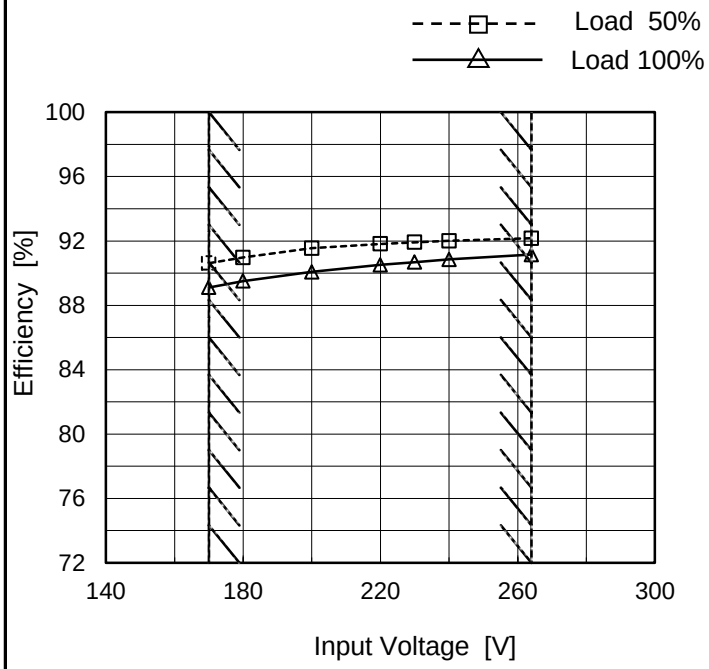
Load Current [A]	Input Power [W]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	103	101	104
24.0	1326	1319	1316
48.0	2563	2552	2541
72.0	3814	3798	3771
96.0	5087	5064	5024
120.0	6404	6369	6309
144.0	7740	7686	7586
148.2	7976	7917	7811
163.0	8812	8738	8609
--	-	-	-
--	-	-	-

COSEL

Model	FETA7000T-48
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	90.6	89.1
180	91.0	89.5
200	91.6	90.1
220	91.8	90.5
230	91.9	90.7
240	92.0	90.9
264	92.2	91.1
--	-	-
--	-	-

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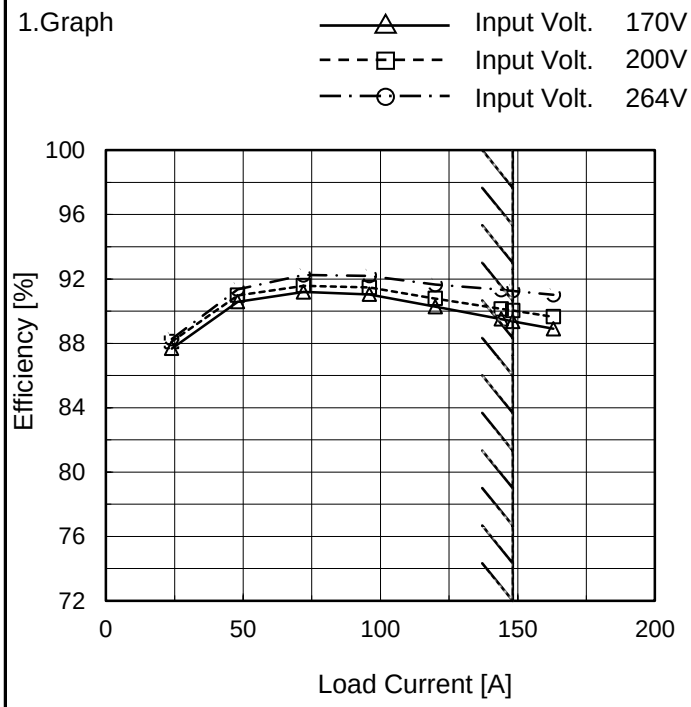
Model	FETA7000T-48
Item	Efficiency (by Load Current)
Object	————————

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	-	-	-
24.0	87.7	88.1	88.3
48.0	90.6	91.0	91.4
72.0	91.2	91.6	92.2
96.0	91.0	91.5	92.2
120.0	90.3	90.8	91.6
144.0	89.5	90.1	91.3
148.2	89.4	90.0	91.3
163.0	88.9	89.6	91.0
--	-	-	-
--	-	-	-

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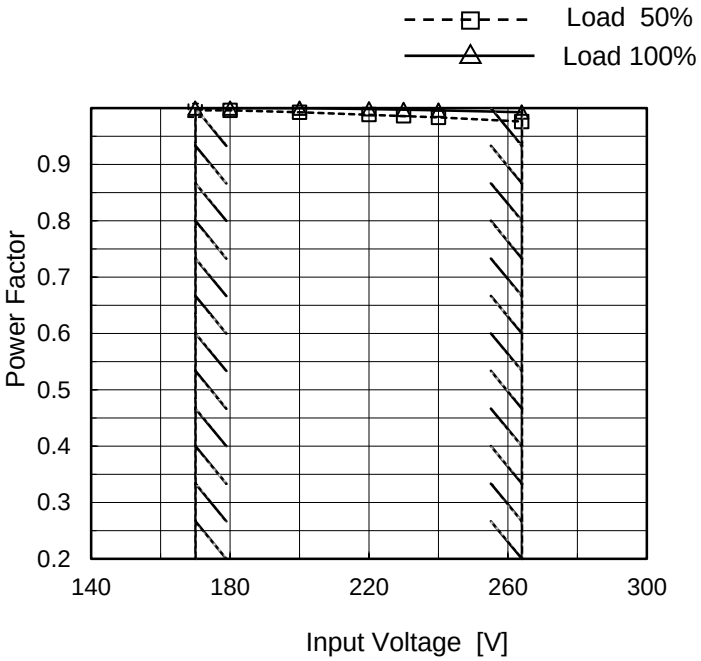
Model	FETA7000T-48
Item	Power Factor (by Input Voltage)
Object	————————

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	0.996	0.999
180	0.996	0.999
200	0.993	0.999
220	0.988	0.999
230	0.986	0.998
240	0.983	0.996
264	0.976	0.993
--	-	-
--	-	-

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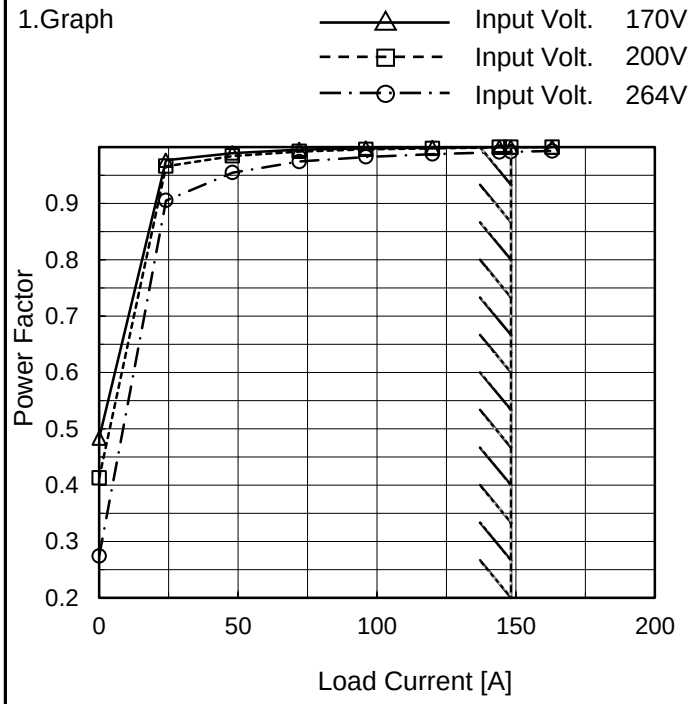
Model	FETA7000T-48
Item	Power Factor (by Load Current)
Object	————————

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	0.483	0.413	0.274
24.0	0.977	0.966	0.905
48.0	0.989	0.985	0.955
72.0	0.996	0.992	0.974
96.0	0.998	0.996	0.983
120.0	0.999	0.998	0.988
144.0	0.999	0.999	0.991
148.2	0.999	0.999	0.992
163.0	0.999	0.999	0.993
--	-	-	-
--	-	-	-

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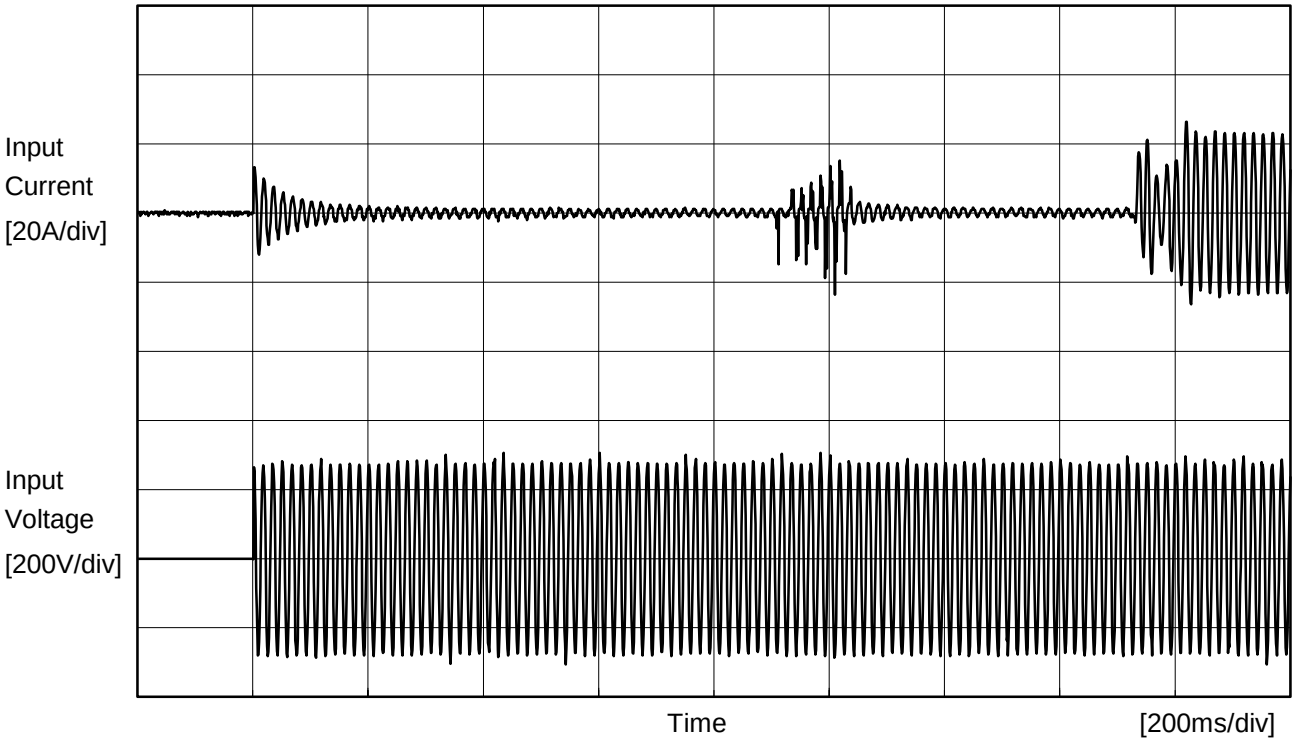
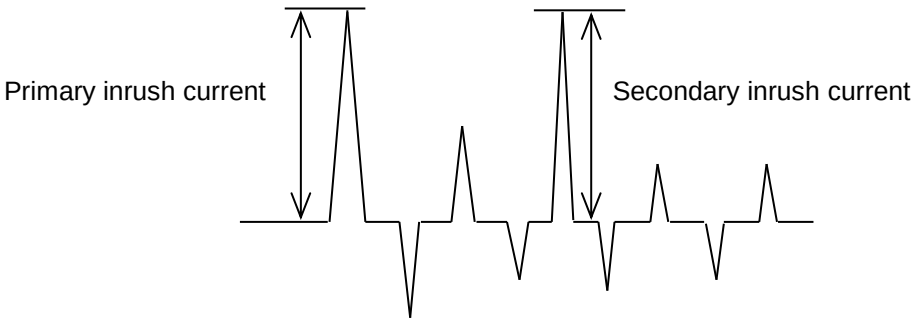
Model	FETA7000T-48
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	200 V
Frequency	50 Hz
Load	100 %
Primary inrush current	13.2 A
Secondary inrush current	26.4 A



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Model	FETA7000T-48	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure B
Object	――――――――――――	

1.Results

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 240 [V]	Input Volt. 264 [V]
(B)IEC60950-1	2.00	2.80	3.10

2.Condition

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

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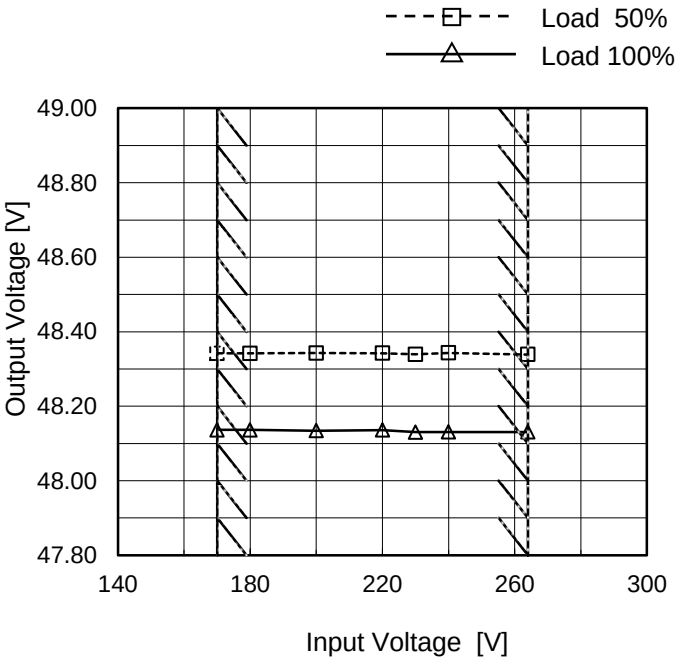
Model	FETA7000T-48
Item	Line Regulation
Object	+48V148.2A

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	48.342	48.136
180	48.342	48.136
200	48.343	48.134
220	48.342	48.136
230	48.339	48.131
240	48.343	48.131
264	48.339	48.131
--	-	-
--	-	-

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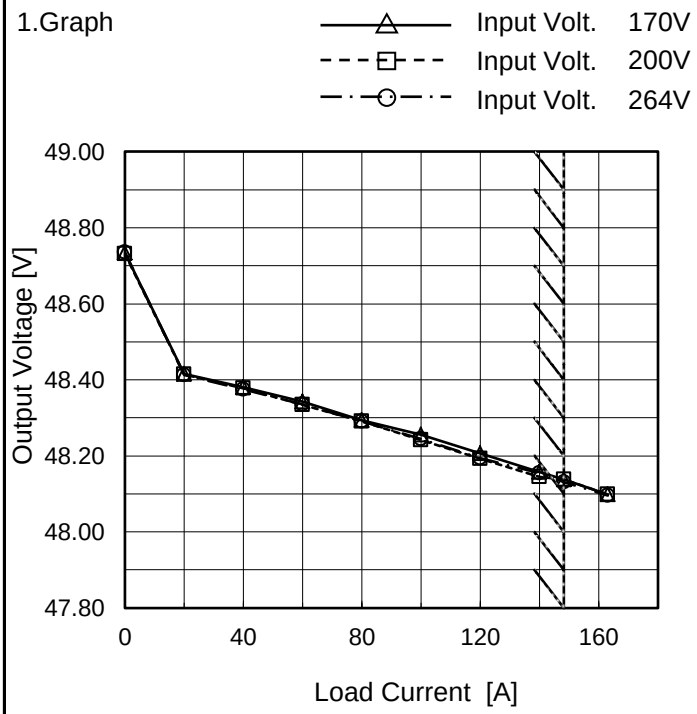
Model	FETA7000T-48
Item	Load Regulation
Object	+48V148.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



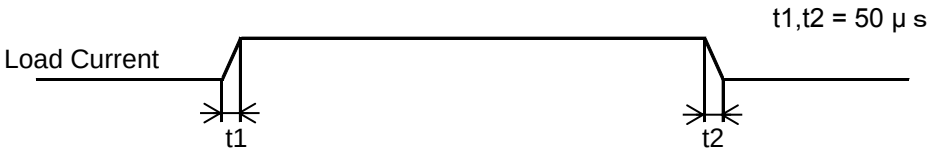
Note: Slanted line shows the range of the rated load current.

2.Values

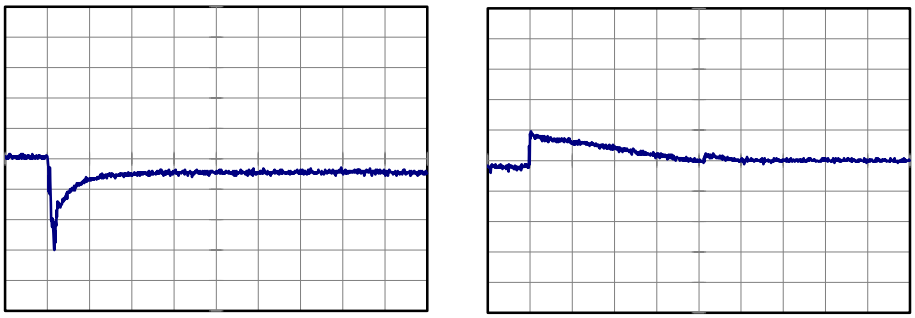
Load Current [A]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	48.734	48.731	48.735
20.0	48.416	48.414	48.413
40.0	48.381	48.377	48.375
60.0	48.342	48.334	48.335
80.0	48.294	48.290	48.290
100.0	48.255	48.241	48.244
120.0	48.206	48.193	48.194
140.0	48.157	48.145	48.154
148.2	48.138	48.138	48.131
163.0	48.098	48.098	48.096
--	-	-	-

Model	FETA7000T-48		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure A
Object	+48V148.2A		

Input Volt. 200 V
Cycle 1000 ms



Min.Load (0A)←→
Load 100% (148.2A)

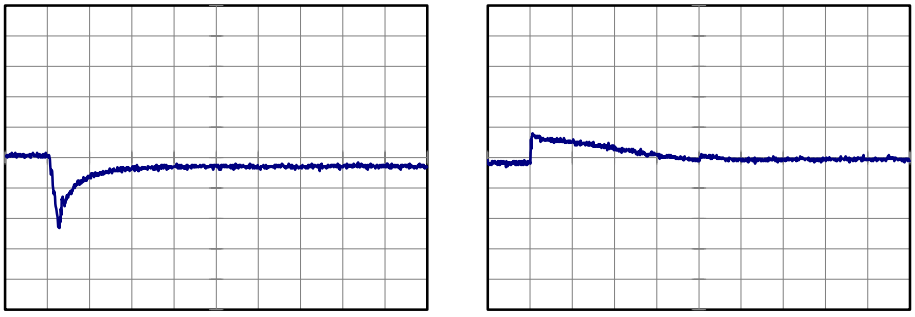


1 V/div

1 ms/div

20 ms/div

Min.Load (0A)←→
Load 50% (74.1A)



1 V/div

1 ms/div

20 ms/div

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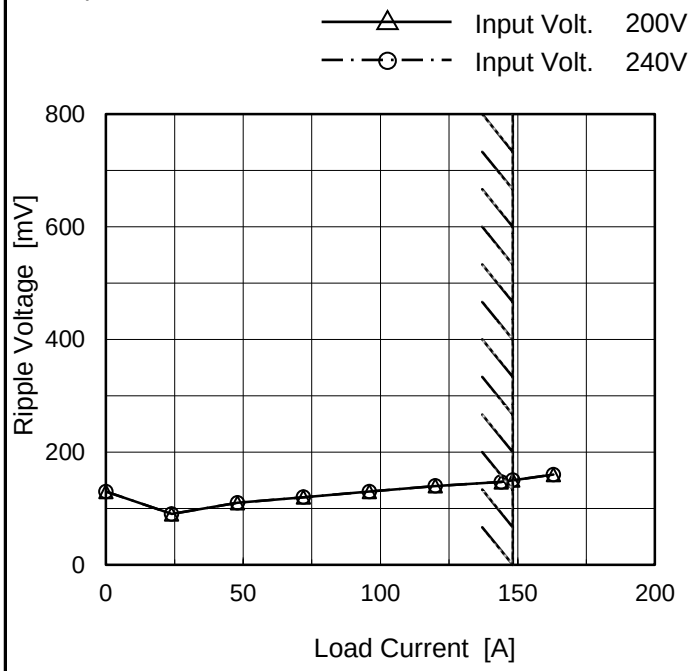
Model	FETA7000T-48
Item	Ripple Voltage (by Load Current)
Object	+48V148.2A

Temperature 25°C
Testing Circuitry Figure B

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.

Ripple [mVp-p]

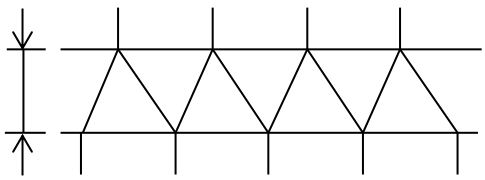


Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 200 [V]	Input Volt. 240 [V]
0.0	130	130
24.0	90	90
48.0	110	110
72.0	120	120
96.0	130	130
120.0	140	140
144.0	147	147
148.2	150	150
163.0	160	160
--	-	-
--	-	-

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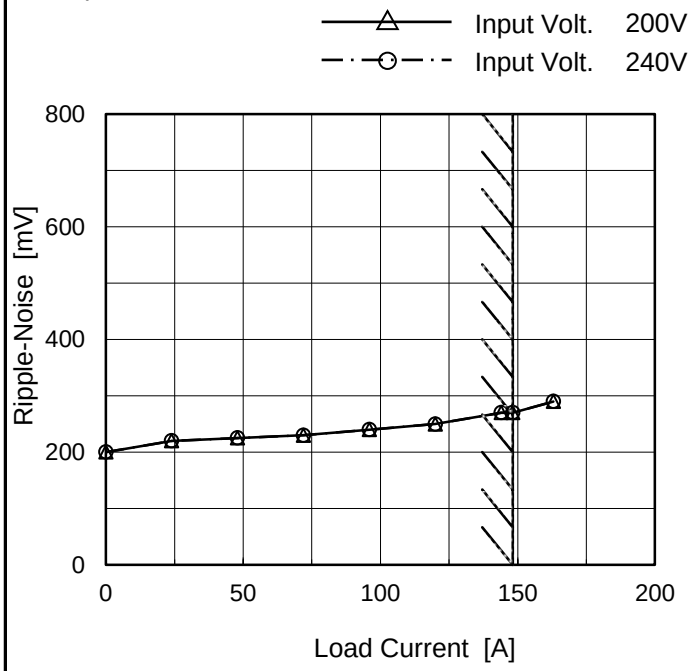
Model	FETA7000T-48
Item	Ripple-Noise
Object	+48V148.2A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



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

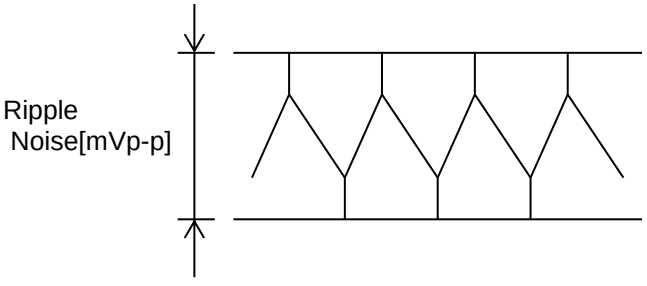


Fig.Complex Ripple Noise Wave Form

2.Values

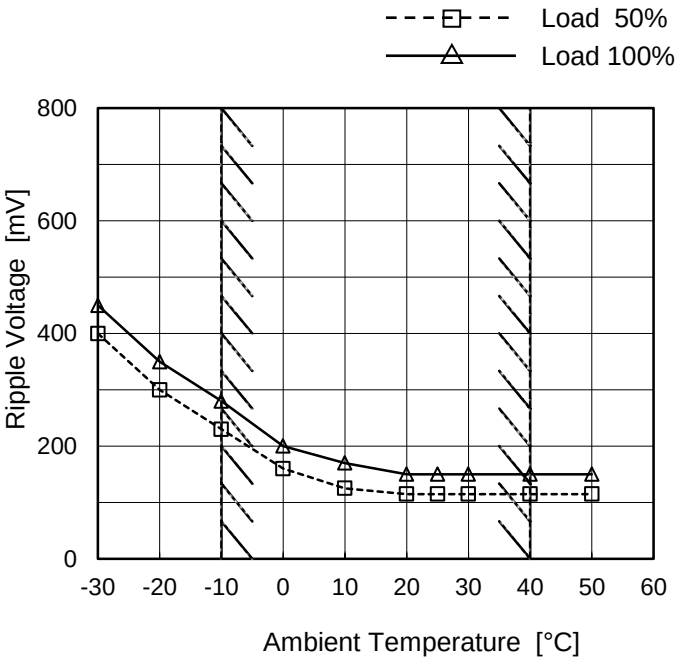
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 200 [V]	Input Volt. 240 [V]
0.0	200	200
24.0	220	220
48.0	225	225
72.0	230	230
96.0	240	240
120.0	250	250
144.0	270	270
148.2	270	270
163.0	290	290
--	-	-
--	-	-

COSEL

Model	FETA7000T-48
Item	Ripple Voltage (by Ambient Temp.)
Object	+48V148.2A

Testing Circuitry Figure A

1.Graph



Input Volt. 200V

Measured by 500 MHz Oscilloscope.

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

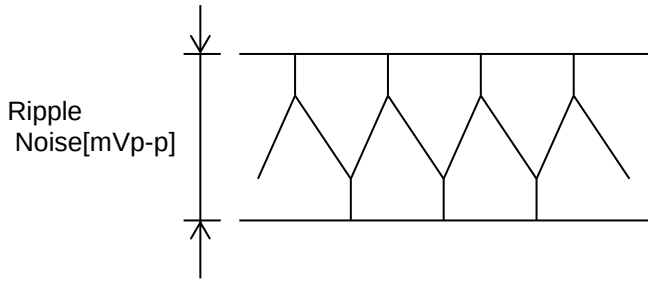


Fig.Complex Ripple Noise Wave Form

2.Values

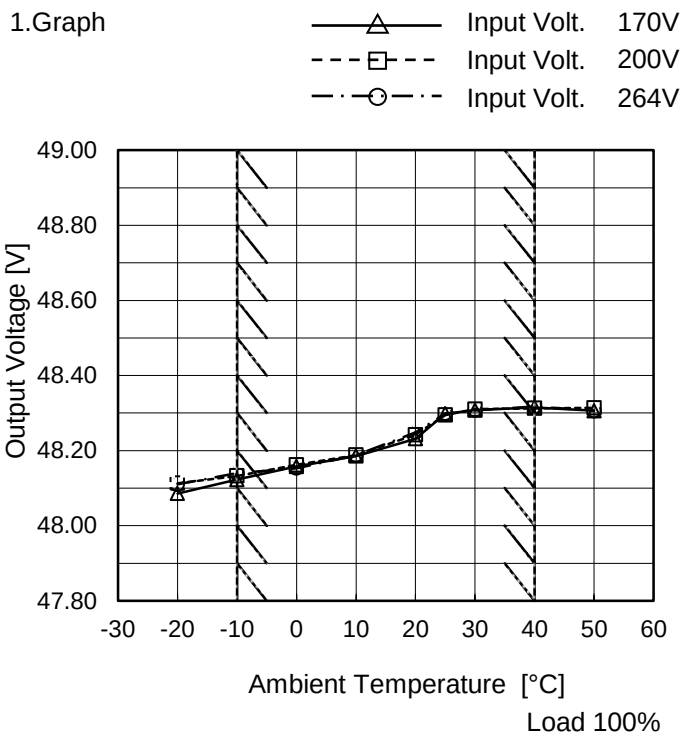
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-30	400	450
-20	300	350
-10	230	280
0	160	200
10	125	170
20	115	150
25	115	150
30	115	150
40	115	150
50	115	150
--	-	-

COSEL

Model	FETA7000T-48
Item	Ambient Temperature Drift
Object	+48V148.2A

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]
-20	48.086	48.113	48.110
-10	48.123	48.133	48.140
0	48.158	48.162	48.153
10	48.185	48.188	48.188
20	48.232	48.242	48.249
25	48.298	48.295	48.299
30	48.308	48.310	48.308
40	48.315	48.313	48.317
50	48.306	48.314	48.306
--	-	-	-
--	-	-	-

Model	FETA7000T-48	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+48V148.2A	

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 - 40°C
Input Voltage : 170 - 264V
Load Current : 0 - 148.2A

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

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

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	40	263.95	0	48.799	±338	±0.7
Minimum Voltage	-10	170.03	148.2	48.123		

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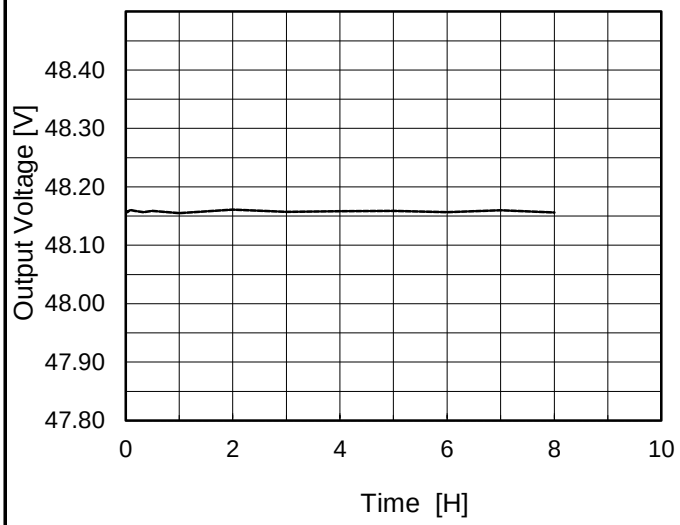
Model	FETA7000T-48
Item	Time Lapse Drift
Object	+48V148.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 200V
Load 100%

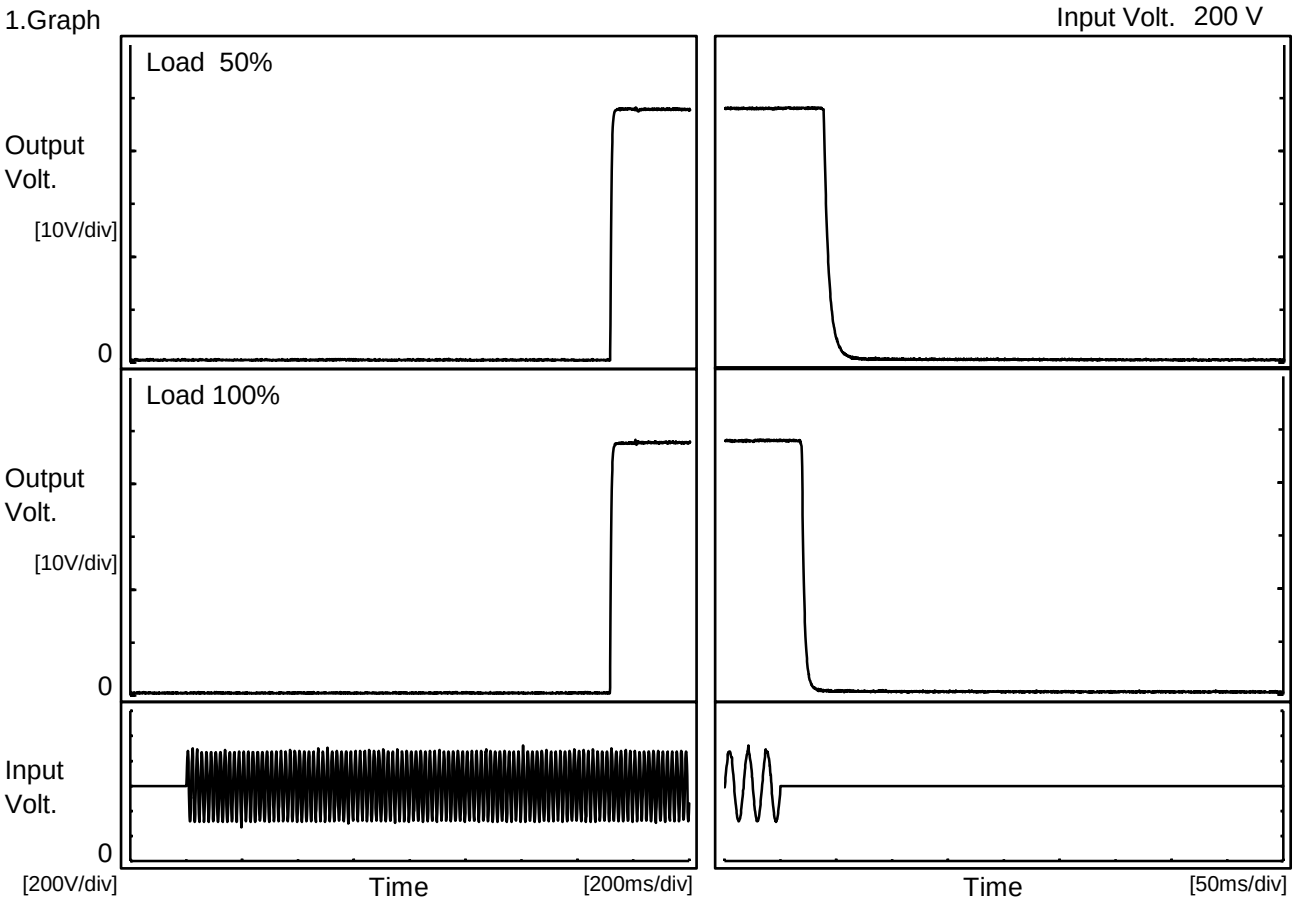
2.Values

Time since start [H]	Output Voltage [V]
0.0	48.157
0.5	48.159
1.0	48.155
2.0	48.161
3.0	48.157
4.0	48.158
5.0	48.159
6.0	48.157
7.0	48.160
8.0	48.156

COSEL

Model	FETA7000T-48	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+48V148.2A	

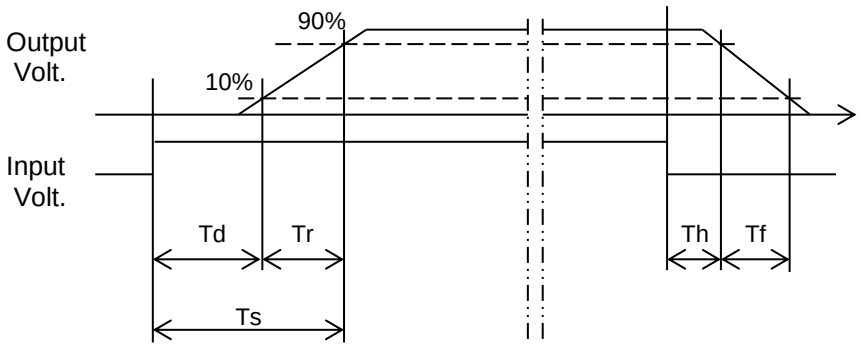
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1516.0	9.0	1525.0	26.0	10.0
100 %	1515.0	9.0	1524.0	15.0	5.0

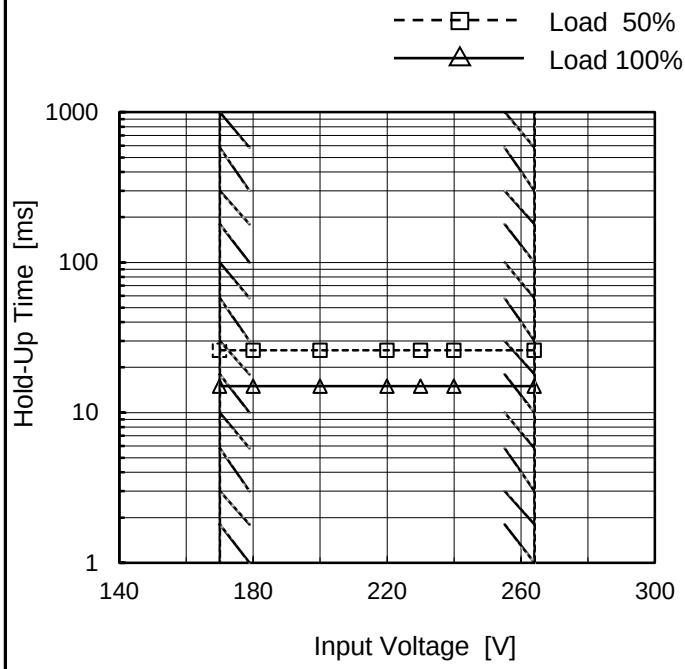


COSEL

Model	FETA7000T-48
Item	Hold-Up Time
Object	+48V148.2A

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

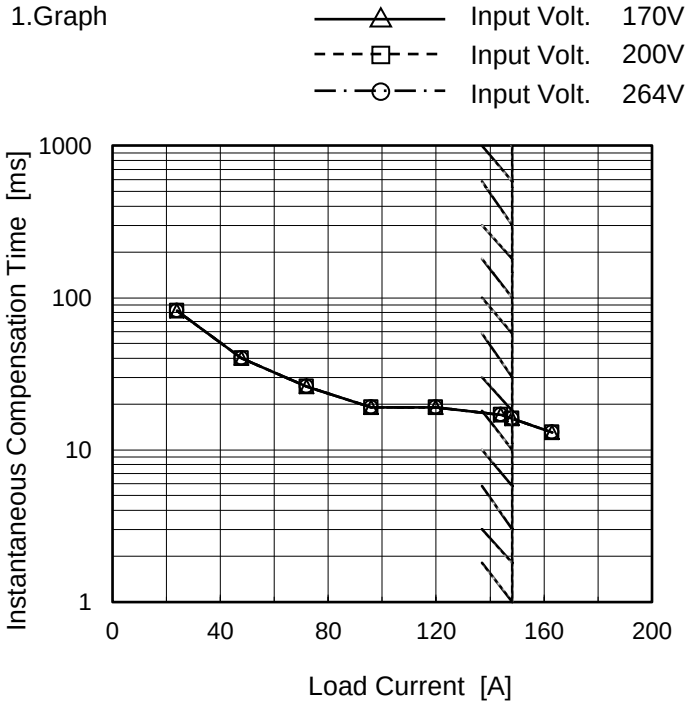
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
170	26	15
180	26	15
200	26	15
220	26	15
230	26	15
240	26	15
264	26	15
--	-	-
--	-	-

COSEL

Model	FETA7000T-48
Item	Instantaneous Interruption Compensation
Object	+48V148.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

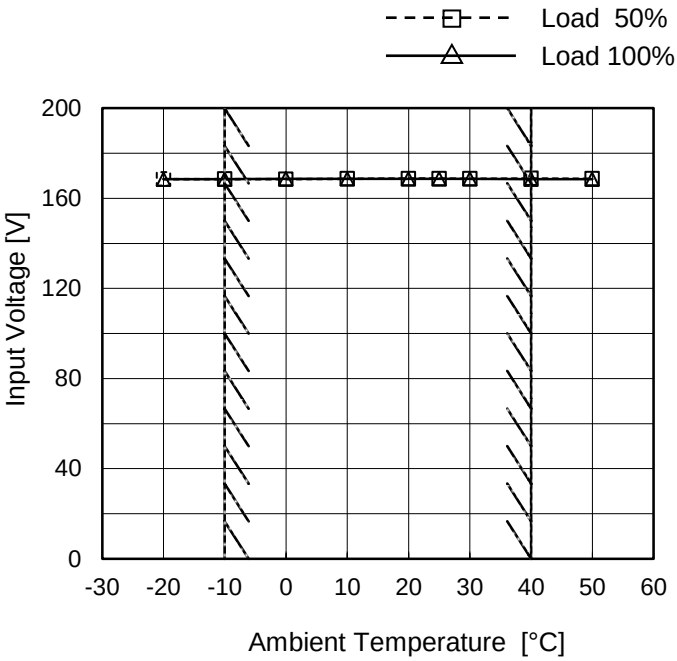
Load Current [A]	Time [ms] Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.0	-	-	-
24.0	82	82	82
48.0	40	40	40
72.0	26	26	26
96.0	19	19	19
120.0	19	19	19
144.0	17	17	17
148.2	16	16	16
163.0	13	13	13
--	-	-	-
--	-	-	-

COSEL

Model	FETA7000T-48
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+48V148.2A

Testing Circuitry Figure A

1.Graph



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

2.Values

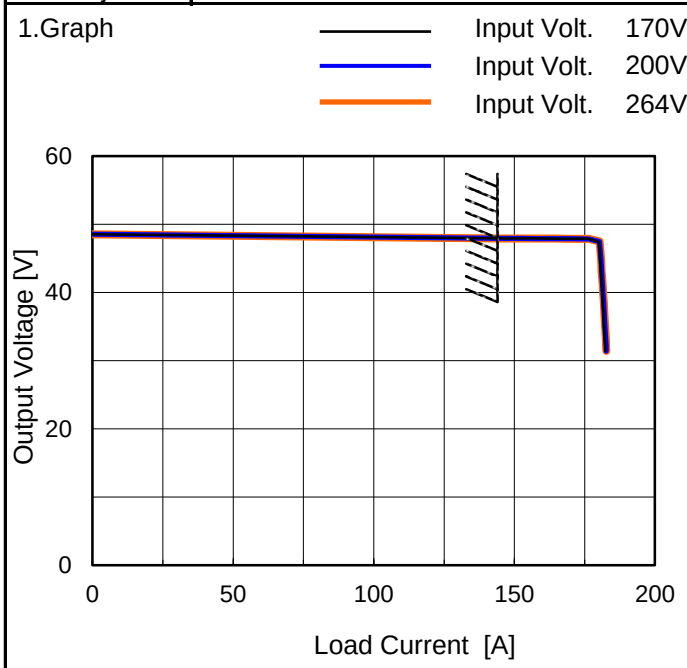
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	169	169
-10	169	169
0	169	169
10	169	169
20	169	169
25	169	169
30	169	169
40	169	169
50	169	169
--	-	-
--	-	-

COSEL

Model	FETA7000T-48
Item	Overcurrent Protection
Object	+48V144A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

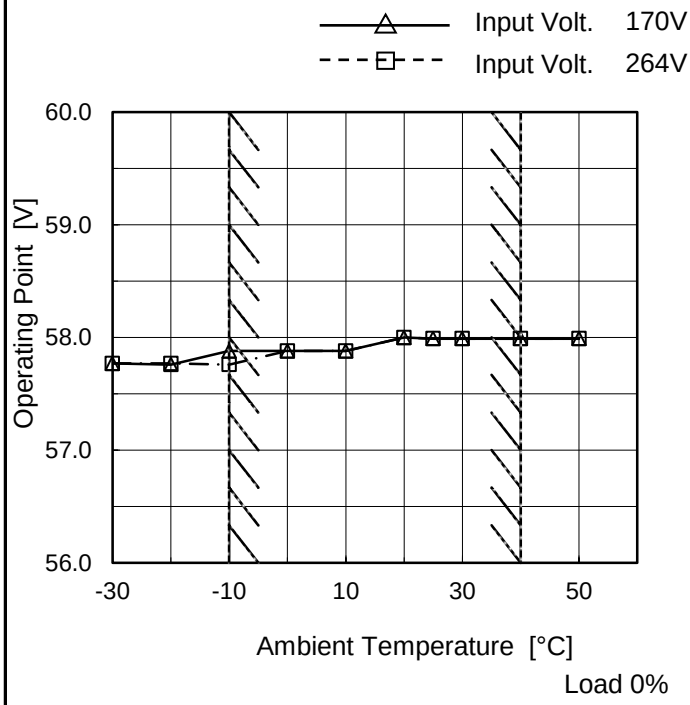
Output Voltage [V]	Load Current [A]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
45.6	180.30	180.30	180.30
43.2	180.60	180.60	180.60
38.4	181.50	181.50	181.50
33.6	182.20	182.20	182.20
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	FETA7000T-48
Item	Overvoltage Protection
Object	+48V148.2A

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	57.77	57.77
-20	57.76	57.77
-10	57.88	57.76
0	57.88	57.88
10	57.88	57.88
20	58.00	58.00
25	57.99	57.99
30	57.99	57.99
40	57.99	57.99
50	57.99	57.99
--	-	-

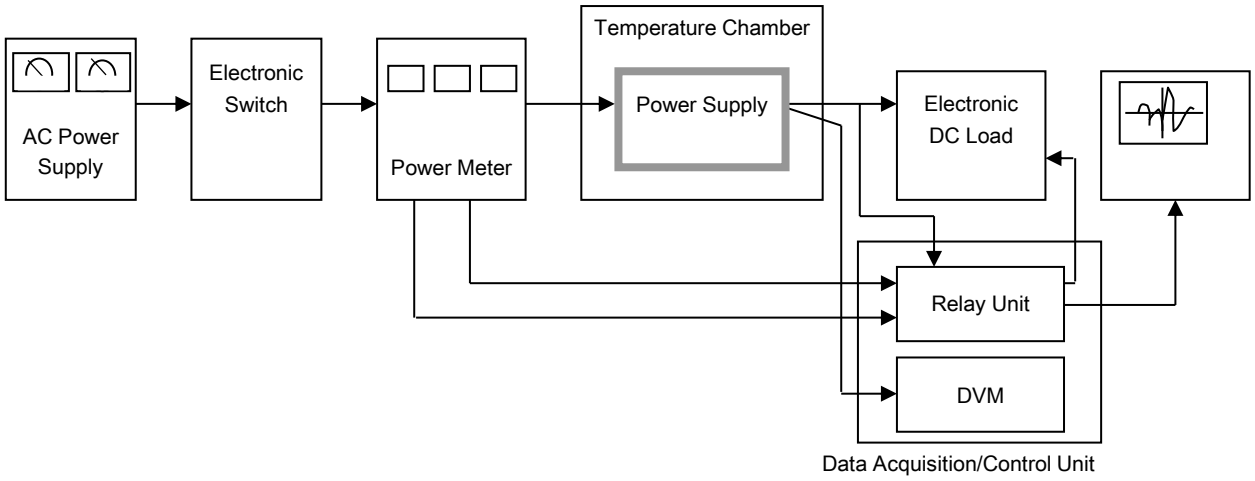


Figure A

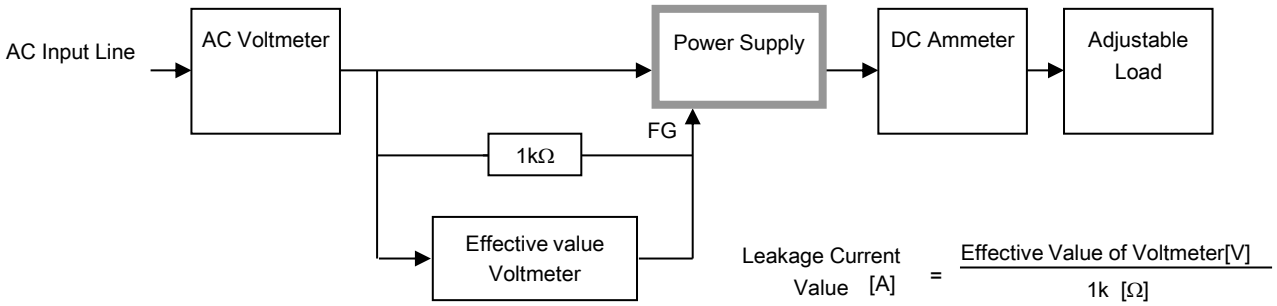


Figure B (DEN-AN)

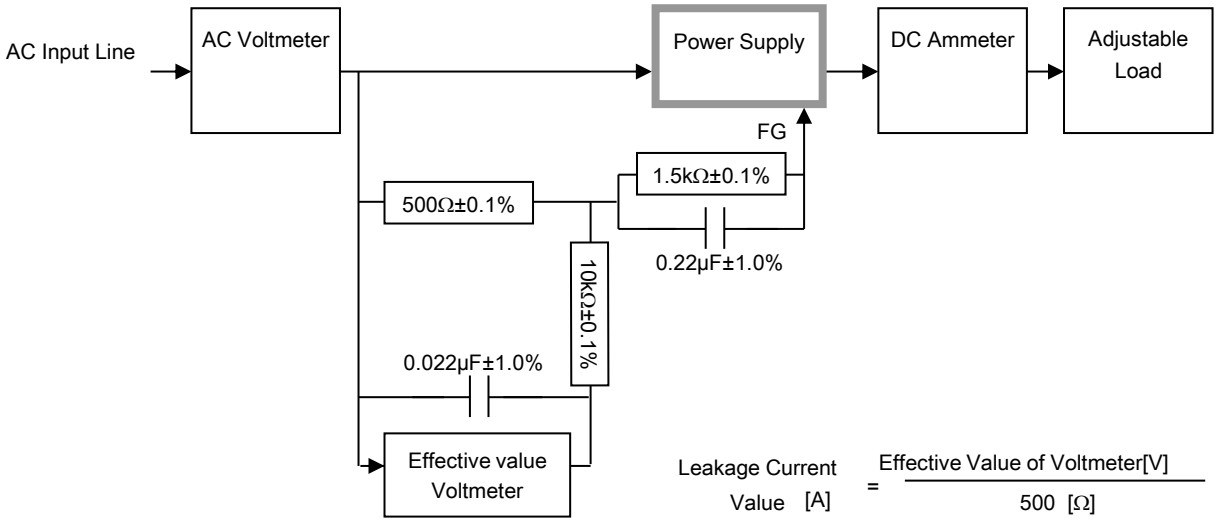


Figure B (IEC60950-1)