

# TEST DATA OF PJA150F-48

Regulated DC Power Supply  
August 30, 2016

Approved by : Yukihiro Takehashi  
Yukihiro Takehashi Design Manager

Prepared by : Atsushi Nishikawa  
Atsushi Nishikawa Design Engineer

**COSEL CO.,LTD.**

## CONTENTS

1.Input Current (by Load Current) . . . . .	1
2.Input Power (by Load Current) . . . . .	2
3.Efficiency (by Input Voltage) . . . . .	3
4.Efficiency (by Load Current) . . . . .	4
5.Power Factor (by Input Voltage) . . . . .	5
6.Power Factor (by Load Current) . . . . .	6
7.Inrush Current . . . . .	7
8.Leakage Current . . . . .	8
9.Line Regulation . . . . .	9
10.Load Regulation . . . . .	10
11.Dynamic Load Response . . . . .	11
12.Ripple Voltage (by Load Current) . . . . .	12
13.Ripple-Noise . . . . .	13
14.Ripple Voltage (by Ambient Temperature) . . . . .	14
15.Ambient Temperature Drift . . . . .	15
16.Output Voltage Accuracy . . . . .	16
17.Time Lapse Drift . . . . .	17
18.Rise and Fall Time . . . . .	18
19.Hold-Up Time . . . . .	19
20.Instantaneous Interruption Compensation . . . . .	20
21.Minimum Input Voltage for Regulated Output Voltage . . . . .	21
22.Overcurrent Protection . . . . .	22
23.Overvoltage Protection . . . . .	23
24.Figure of Testing Circuitry . . . . .	24

(Final Page 25)

# COSEL

Model PJA150F-48

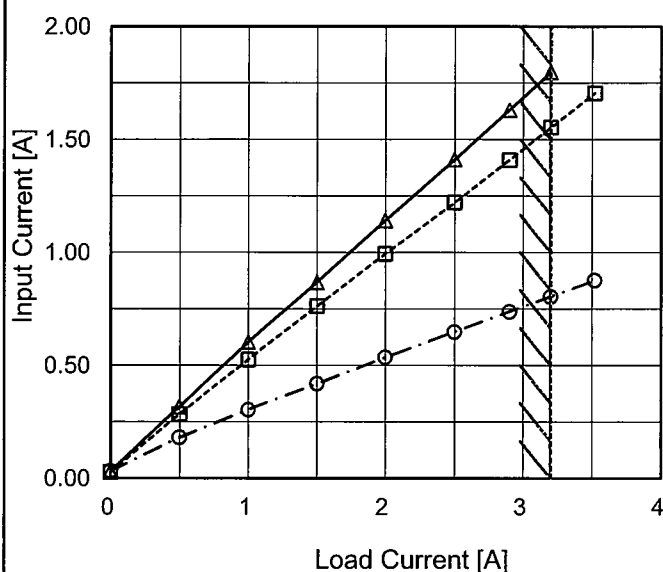
Item Input Current (by Load Current)

Object

Temperature 25°C  
Testing Circuitry Figure A

1.Graph

—△— Input Volt. 100V  
---□--- Input Volt. 115V  
---○--- Input Volt. 230V



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

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0.00	0.030	0.026	0.031
0.50	0.316	0.284	0.181
1.00	0.603	0.525	0.303
1.50	0.868	0.762	0.419
2.00	1.142	0.994	0.536
2.50	1.411	1.221	0.649
2.90	1.631	1.409	0.738
3.20	1.798	1.553	0.805
3.52	-	1.706	0.877
--	-	-	-
--	-	-	-

# COSEL

Model PJA150F-48

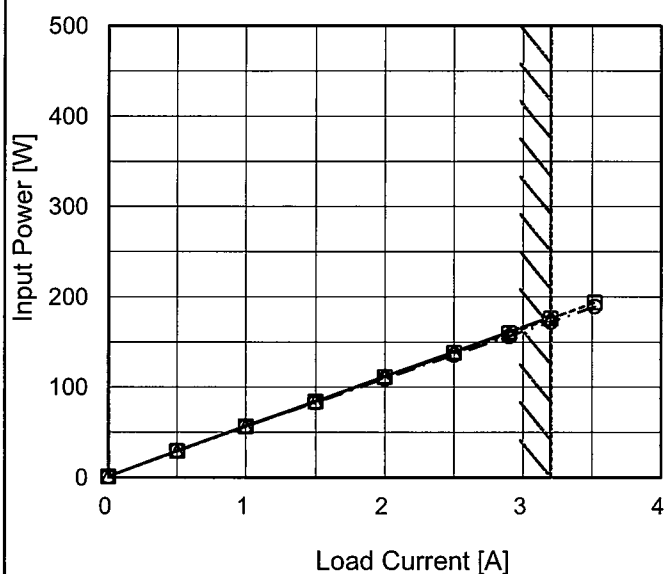
Item Input Power (by Load Current)

Object

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph

—△— Input Volt. 100V  
---□--- Input Volt. 115V  
---○--- Input Volt. 230V



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

## 2. Values

Load Current [A]	Input Power [W]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0.00	1.3	1.1	1.0
0.50	29.4	29.2	29.8
1.00	57.0	56.6	56.6
1.50	84.4	83.8	83.1
2.00	112.1	111.2	109.7
2.50	139.2	137.9	135.8
2.90	161.1	159.6	156.5
3.20	177.9	176.1	172.3
3.52	-	193.8	189.3
--	-	-	-
--	-	-	-

# COSEL

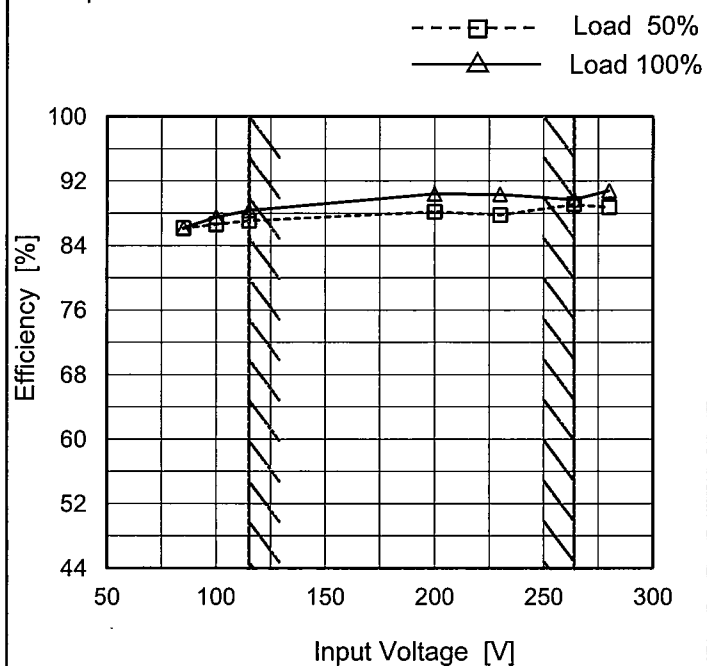
Model PJA150F-48

Item Efficiency (by Input Voltage)

Object

Temperature 25°C  
Testing Circuitry Figure A

## 1.Graph



## 2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
85	86.1	86.2 ※1
100	86.6	87.5 ※2
115	87.1	88.4
200	88.2	90.4
230	87.8	90.4
264	89.1	89.7
280	88.8	90.8
--	-	-
--	-	-

※1: Load 80%

※2: Load 90%

# COSEL

Model PJA150F-48

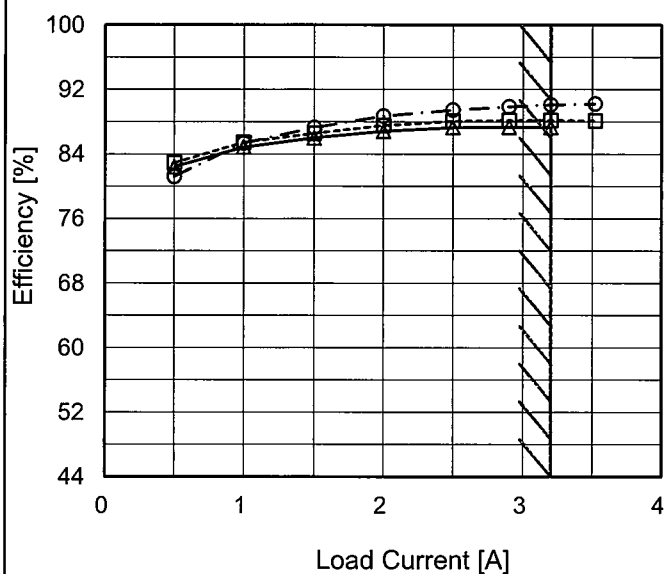
Item Efficiency (by Load Current)

Object

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph

—△— Input Volt. 100V  
---□--- Input Volt. 115V  
---○--- Input Volt. 230V



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

## 2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
0.00	-	-	-
0.50	82.4	82.9	81.2
1.00	84.9	85.4	85.4
1.50	86.0	86.6	87.3
2.00	86.8	87.5	88.7
2.50	87.3	88.1	89.5
2.90	87.4	88.2	89.9
3.20	87.3	88.2	90.1
3.52	-	88.1	90.2
--	-	-	-
--	-	-	-

Model		PJA150F-48																																	
Item		Power Factor (by Input Voltage)																																	
Object																																			
1.Graph		2.Values																																	
<div><div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div><div><div>---</div><div>△</div><div>---</div></div><div>Load 100%</div></div> <p>Note: Slanted line shows the range of the rated input voltage.</p>		<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Power Factor</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>85</td><td>0.987</td><td>0.991 ※1</td></tr><tr><td>100</td><td>0.977</td><td>0.989 ※2</td></tr><tr><td>115</td><td>0.959</td><td>0.987</td></tr><tr><td>200</td><td>0.894</td><td>0.950</td></tr><tr><td>230</td><td>0.868</td><td>0.931</td></tr><tr><td>264</td><td>0.468</td><td>0.574</td></tr><tr><td>280</td><td>0.458</td><td>0.480</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table> <div>※1:Load 80% ※2:Load 90%</div>		Input Voltage [V]	Power Factor		Load 50%	Load 100%	85	0.987	0.991 ※1	100	0.977	0.989 ※2	115	0.959	0.987	200	0.894	0.950	230	0.868	0.931	264	0.468	0.574	280	0.458	0.480	--	-	-	--	-	-
Input Voltage [V]	Power Factor																																		
	Load 50%	Load 100%																																	
85	0.987	0.991 ※1																																	
100	0.977	0.989 ※2																																	
115	0.959	0.987																																	
200	0.894	0.950																																	
230	0.868	0.931																																	
264	0.468	0.574																																	
280	0.458	0.480																																	
--	-	-																																	
--	-	-																																	

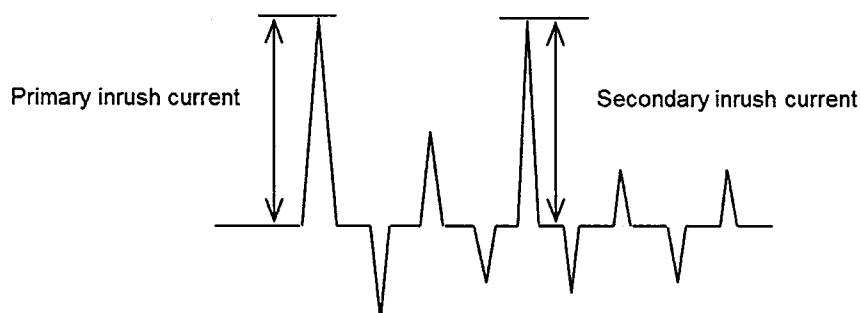
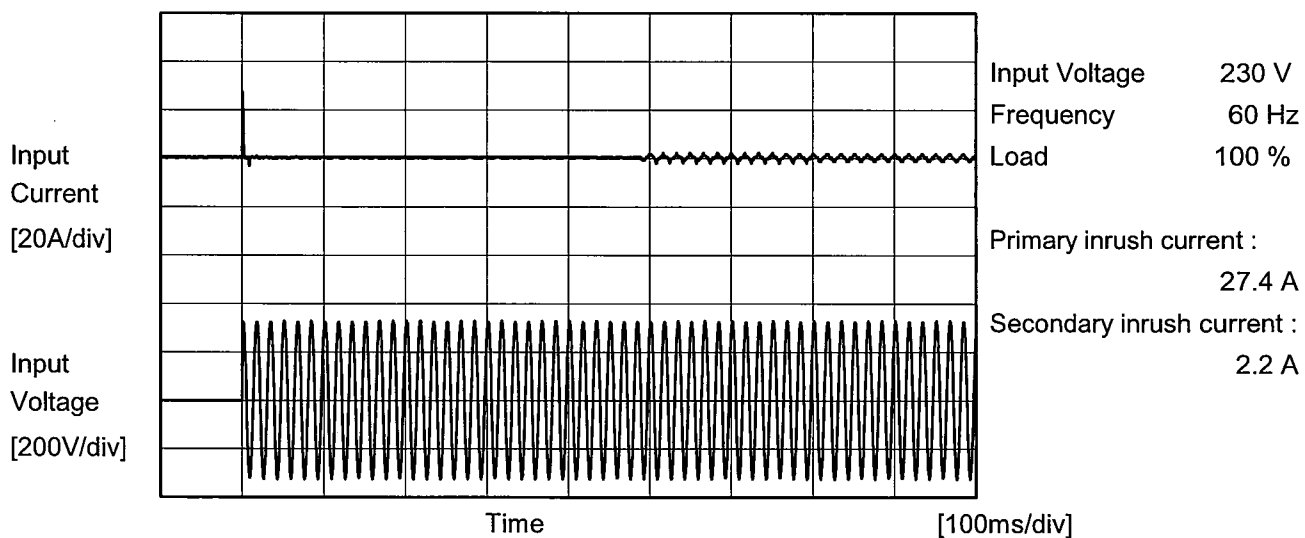
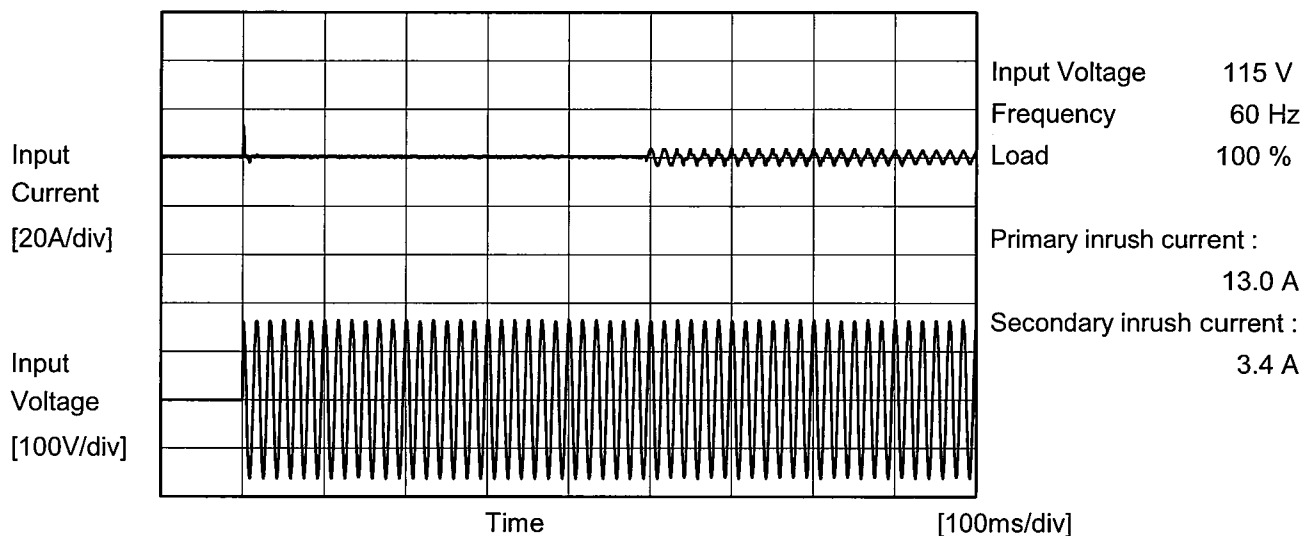
**COSEL**

Model		PJA150F-48		Temperature 25°C																																																				
Item		Power Factor (by Load Current)		Testing Circuitry Figure A																																																				
Object																																																								
1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>- - □ - -</div><div>Input Volt.</div><div>115V</div></div><div><div>- - ○ - -</div><div>Input Volt.</div><div>230V</div></div></div> <div><div>Power Factor</div><div>Load Current [A]</div></div>		2.Values																																																				
		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Power Factor</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 115[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>0.449</td><td>0.368</td><td>0.134</td></tr><tr><td>0.50</td><td>0.929</td><td>0.895</td><td>0.716</td></tr><tr><td>1.00</td><td>0.946</td><td>0.937</td><td>0.811</td></tr><tr><td>1.50</td><td>0.972</td><td>0.957</td><td>0.861</td></tr><tr><td>2.00</td><td>0.982</td><td>0.974</td><td>0.890</td></tr><tr><td>2.50</td><td>0.987</td><td>0.982</td><td>0.910</td></tr><tr><td>2.90</td><td>0.988</td><td>0.985</td><td>0.923</td></tr><tr><td>3.20</td><td>0.990</td><td>0.987</td><td>0.931</td></tr><tr><td>3.52</td><td>-</td><td>0.988</td><td>0.939</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>				Load Current [A]	Power Factor			Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]	0.00	0.449	0.368	0.134	0.50	0.929	0.895	0.716	1.00	0.946	0.937	0.811	1.50	0.972	0.957	0.861	2.00	0.982	0.974	0.890	2.50	0.987	0.982	0.910	2.90	0.988	0.985	0.923	3.20	0.990	0.987	0.931	3.52	-	0.988	0.939	--	-	-	-	--	-	-	-
Load Current [A]	Power Factor																																																							
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]																																																					
0.00	0.449	0.368	0.134																																																					
0.50	0.929	0.895	0.716																																																					
1.00	0.946	0.937	0.811																																																					
1.50	0.972	0.957	0.861																																																					
2.00	0.982	0.974	0.890																																																					
2.50	0.987	0.982	0.910																																																					
2.90	0.988	0.985	0.923																																																					
3.20	0.990	0.987	0.931																																																					
3.52	-	0.988	0.939																																																					
--	-	-	-																																																					
--	-	-	-																																																					
Note: Slanted line shows the range of the rated load current.																																																								



# COSEL

Model	PJA150F-48	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object			



**COSEL**

		Temperature 25°C Testing Circuitry Figure B
Model	PJA150F-48	
Item	Leakage Current	
Object	_____	

## 1.Results

[mA]

Standards		Input Volt.			Note
		100 [V]	115 [V]	240 [V]	
DEN-AN	Both phases	0.20	0.21	0.43	Operation
	One of phases	0.27	0.31	0.69	Stand by
IEC60950-1	Both phases	0.14	0.16	0.44	Operation
	One of phases	0.26	0.30	0.68	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.

# COSEL

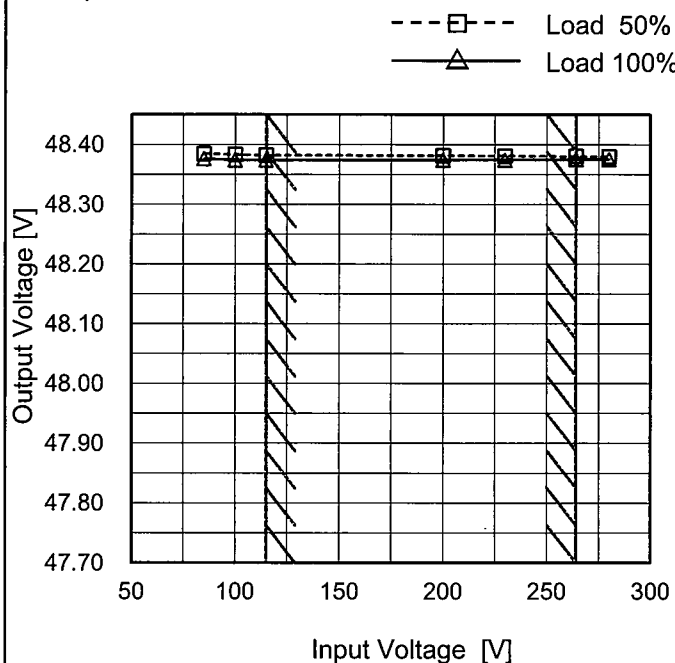
Model PJA150F-48

Item Line Regulation

Object +48V3.2A

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%
85	48.385	48.376 ※1
100	48.383	48.375 ※2
115	48.382	48.374
200	48.381	48.374
230	48.381	48.375
264	48.380	48.375
280	48.380	48.376
--	-	-
--	-	-

※1: Load 80%

※2: Load 90%

# COSEL

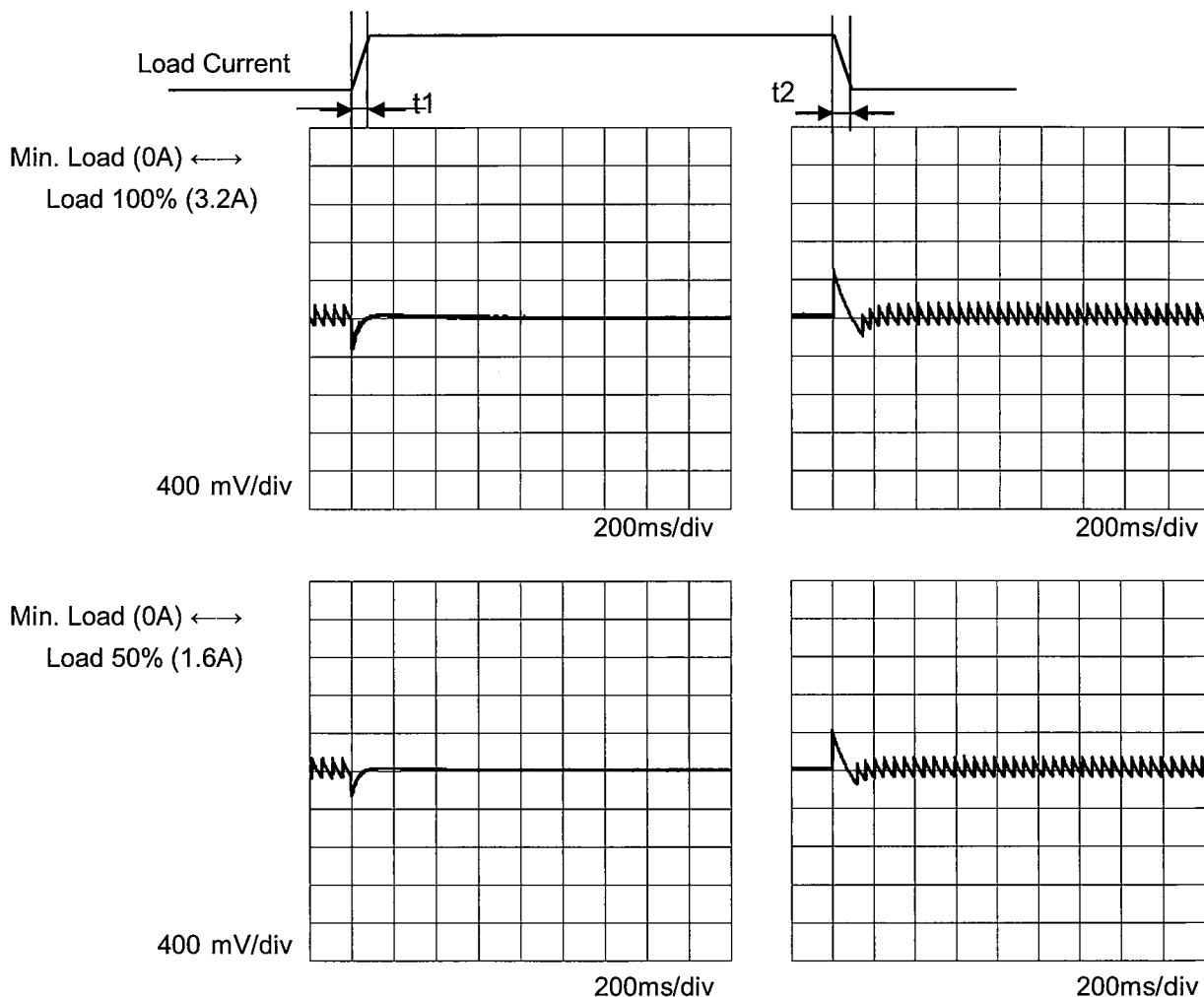
Model		PJA150F-48		Temperature		25°C																																																				
Item		Load Regulation		Testing Circuitry		Figure A																																																				
Object		+48V3.2A																																																								
1.Graph				2.Values																																																						
<div><div><div>—△—</div><div>Input Volt. 100V</div></div><div><div>---□---</div><div>Input Volt. 115V</div></div><div><div>---○---</div><div>Input Volt. 230V</div></div></div> <p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 115[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>48.349</td><td>48.346</td><td>48.325</td></tr><tr><td>0.50</td><td>48.354</td><td>48.352</td><td>48.353</td></tr><tr><td>1.00</td><td>48.350</td><td>48.350</td><td>48.352</td></tr><tr><td>1.50</td><td>48.348</td><td>48.348</td><td>48.349</td></tr><tr><td>2.00</td><td>48.346</td><td>48.347</td><td>48.349</td></tr><tr><td>2.50</td><td>48.345</td><td>48.346</td><td>48.348</td></tr><tr><td>2.90</td><td>48.344</td><td>48.345</td><td>48.347</td></tr><tr><td>3.20</td><td>48.343</td><td>48.344</td><td>48.346</td></tr><tr><td>3.52</td><td>-</td><td>48.344</td><td>48.346</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>				Load Current [A]	Output Voltage [V]			Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]	0.00	48.349	48.346	48.325	0.50	48.354	48.352	48.353	1.00	48.350	48.350	48.352	1.50	48.348	48.348	48.349	2.00	48.346	48.347	48.349	2.50	48.345	48.346	48.348	2.90	48.344	48.345	48.347	3.20	48.343	48.344	48.346	3.52	-	48.344	48.346	--	-	-	-	--	-	-	-
Load Current [A]	Output Voltage [V]																																																									
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]																																																							
0.00	48.349	48.346	48.325																																																							
0.50	48.354	48.352	48.353																																																							
1.00	48.350	48.350	48.352																																																							
1.50	48.348	48.348	48.349																																																							
2.00	48.346	48.347	48.349																																																							
2.50	48.345	48.346	48.348																																																							
2.90	48.344	48.345	48.347																																																							
3.20	48.343	48.344	48.346																																																							
3.52	-	48.344	48.346																																																							
--	-	-	-																																																							
--	-	-	-																																																							



Model	PJA150F-48	Temperature	25° C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+48V3.2A		

Input Volt. 115 V  
Cycle 1000 ms

Response.  $t_1=t_2=50\mu s$ . Typ



# COSEL

Model		PJA150F-48		Temperature 25°C																																							
Item		Ripple Voltage (by Load Current)		Testing Circuitry Figure C																																							
Object		+48V3.2A																																									
1.Graph				2.Values																																							
<div><div><div>—△—</div><div>Input Volt. 115V</div></div><div><div>---○---</div><div>Input Volt. 230V</div></div></div> <p>Ripple Voltage [mV]</p> <p>Load Current [A]</p>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 115 [V]</th><th>Input Volt. 230 [V]</th></tr><tr><td>0.00</td><td>265</td><td>265</td></tr><tr><td>0.50</td><td>25</td><td>25</td></tr><tr><td>1.00</td><td>25</td><td>25</td></tr><tr><td>1.50</td><td>25</td><td>20</td></tr><tr><td>2.00</td><td>20</td><td>20</td></tr><tr><td>2.50</td><td>25</td><td>25</td></tr><tr><td>2.90</td><td>25</td><td>25</td></tr><tr><td>3.20</td><td>30</td><td>30</td></tr><tr><td>3.52</td><td>30</td><td>30</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 115 [V]	Input Volt. 230 [V]	0.00	265	265	0.50	25	25	1.00	25	25	1.50	25	20	2.00	20	20	2.50	25	25	2.90	25	25	3.20	30	30	3.52	30	30	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																										
	Input Volt. 115 [V]	Input Volt. 230 [V]																																									
0.00	265	265																																									
0.50	25	25																																									
1.00	25	25																																									
1.50	25	20																																									
2.00	20	20																																									
2.50	25	25																																									
2.90	25	25																																									
3.20	30	30																																									
3.52	30	30																																									
--	-	-																																									
--	-	-																																									
<p>Measured by 20 MHz Oscilloscope.</p> <p>Ripple Voltage is shown as p-p in the figure below.</p> <p>Note: Slanted line shows the range of the rated load current.</p>																																											
<div><div>T1: Due to AC Input Line</div><div>T2: Due to Switching</div></div> <p>Ripple [mVp-p]</p> <p>T1</p> <p>T2</p>																																											
Fig. Complex Ripple Wave Form																																											

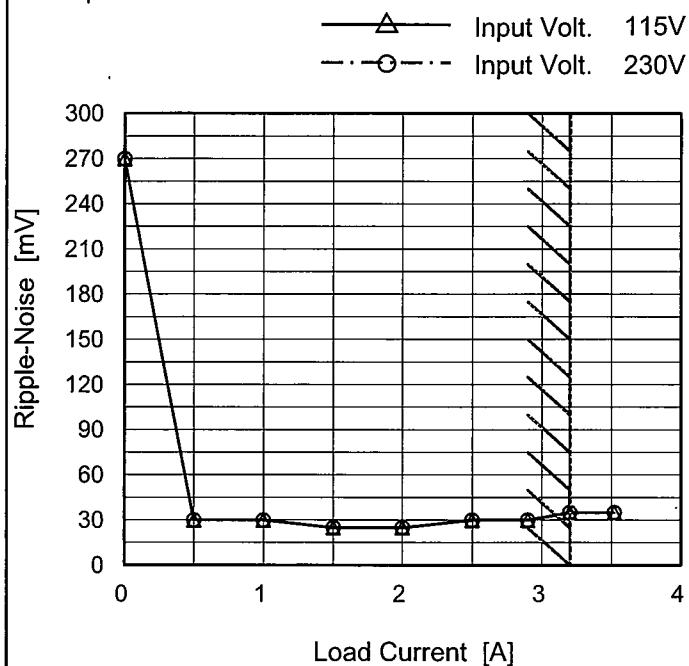
Model PJA150F-48

Item Ripple-Noise

Object +48V3.2A

Temperature 25°C  
Testing Circuitry Figure C

### 1. Graph



Measured by 20 MHz Oscilloscope.

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. 115 [V]	Input Volt. 230 [V]
0.00	270	270
0.50	30	30
1.00	30	30
1.50	25	25
2.00	25	25
2.50	30	30
2.90	30	30
3.20	35	35
3.52	35	35
--	-	-
--	-	-

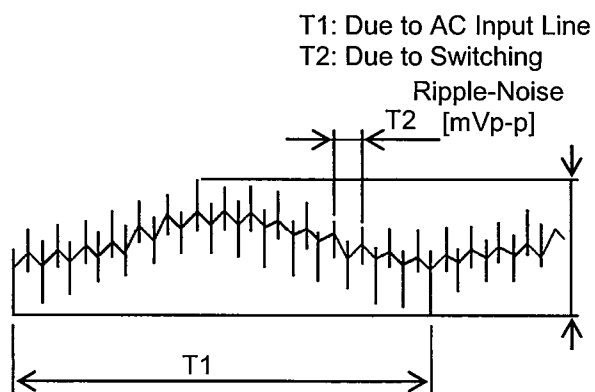
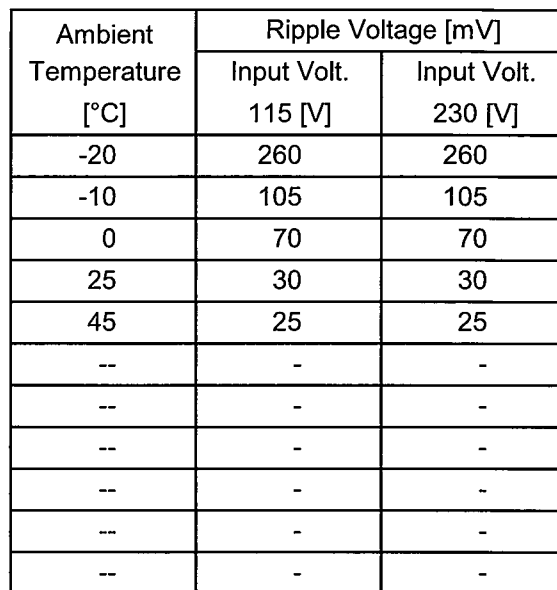


Fig. Complex Ripple Wave Form

### Testing Circuitry Figure C

## 2.Values



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



**COSEL**

Model		PJA150F-48	
Item		Ambient Temperature Drift	
Object		+48V3.2A	
1.Graph		2.Values	

—△—

Input Volt. 100V

---□---

Input Volt. 115V

---○---

Input Volt. 230V

Output Voltage [V]

Ambient Temperature [°C]

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

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]
-20	48.168	48.168	48.171
-10	48.215	48.215	48.217
0	48.260	48.260	48.262
10	48.305	48.305	48.306
20	48.342	48.342	48.343
25	48.346	48.346	48.347
35	48.356	48.356	48.357
45	48.370	48.369	48.370
55	48.398	48.398	48.397
65	48.415	48.414	48.415
--	-	-	-

Note: In case of Input Volt. 100V, Load 90%.  
Other case Load 100%.



Model		PJA150F-48	Testing Circuitry Figure A
Item		Output Voltage Accuracy	
Object		+48V3.2A	

### 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 - 45°C

Input Voltage : 115 - 264V

Load Current : 0.96 - 3.2A

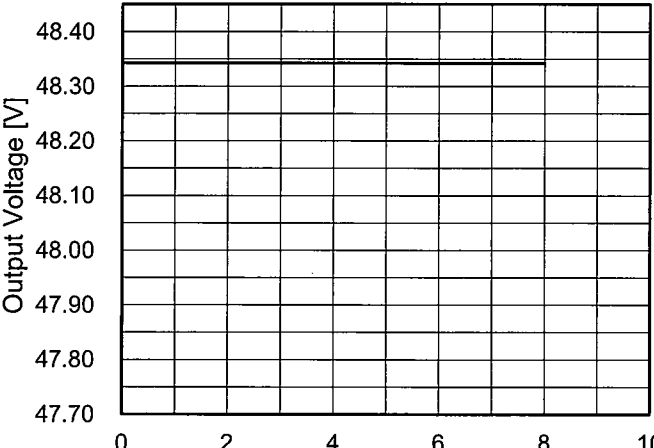
\* Output Voltage Accuracy =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

\* 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	45	230	3.2	48.370	±78	±0.2
Minimum Voltage	-10	115	3.2	48.215		

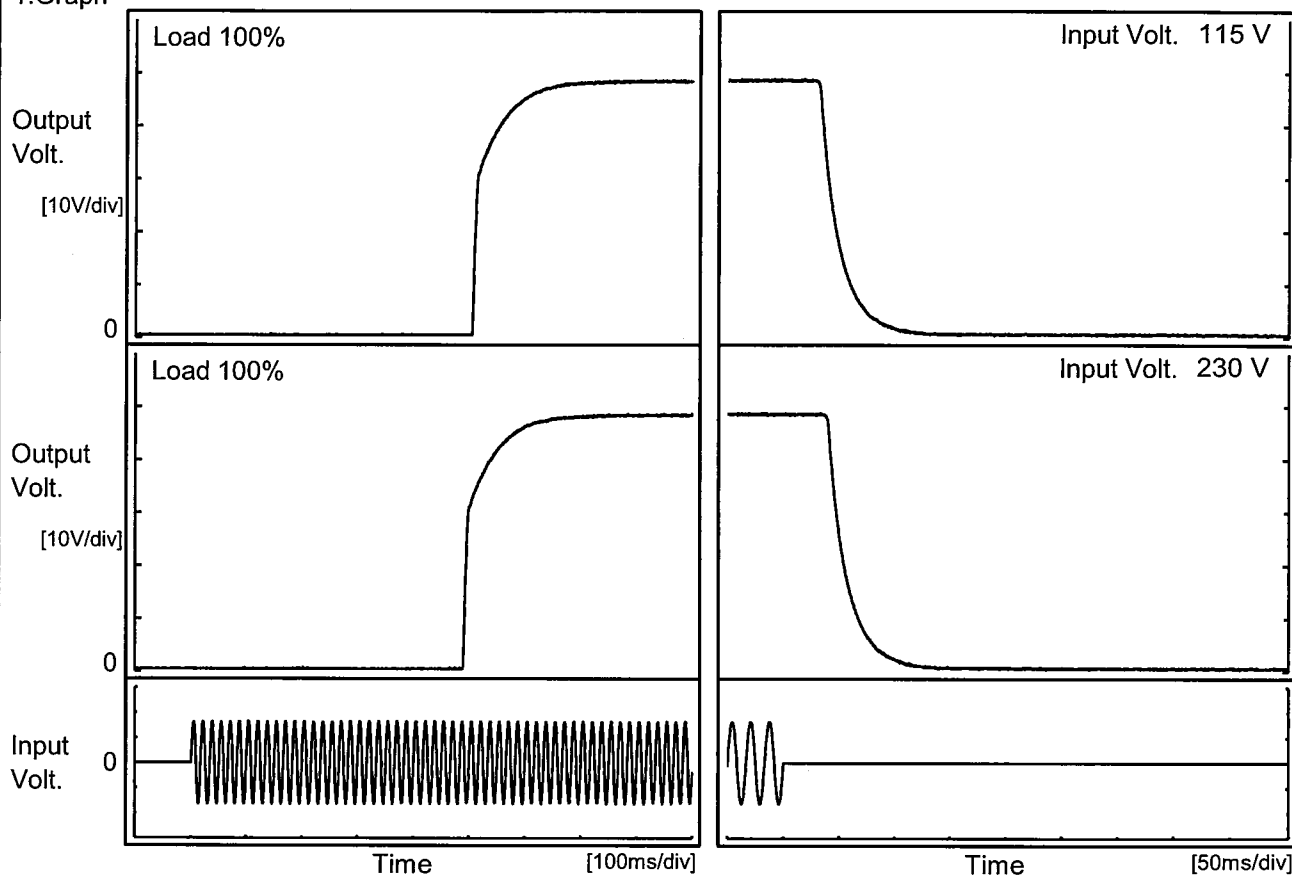


Model	PJA150F-48																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+48V3.2A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 230V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>48.344</td></tr><tr><td>0.5</td><td>48.342</td></tr><tr><td>1.0</td><td>48.342</td></tr><tr><td>2.0</td><td>48.342</td></tr><tr><td>3.0</td><td>48.342</td></tr><tr><td>4.0</td><td>48.342</td></tr><tr><td>5.0</td><td>48.342</td></tr><tr><td>6.0</td><td>48.342</td></tr><tr><td>7.0</td><td>48.342</td></tr><tr><td>8.0</td><td>48.342</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	48.344	0.5	48.342	1.0	48.342	2.0	48.342	3.0	48.342	4.0	48.342	5.0	48.342	6.0	48.342	7.0	48.342	8.0	48.342
Time since start [H]	Output Voltage [V]																								
0.0	48.344																								
0.5	48.342																								
1.0	48.342																								
2.0	48.342																								
3.0	48.342																								
4.0	48.342																								
5.0	48.342																								
6.0	48.342																								
7.0	48.342																								
8.0	48.342																								
* The characteristic of AC115V is equal.																									



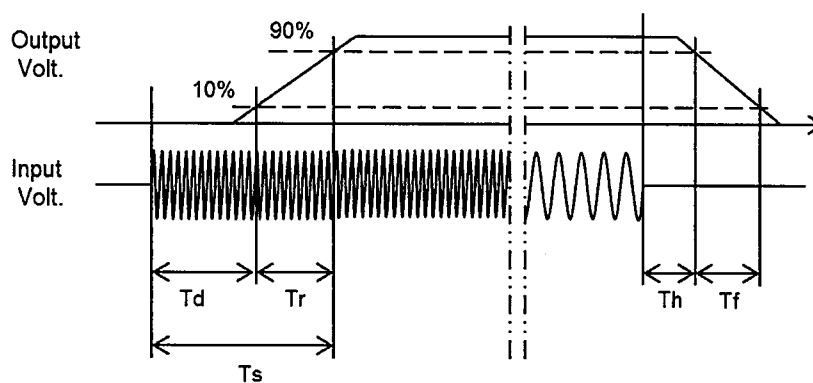
Model	PJA150F-48	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+48V3.2A		

# 1.Graph

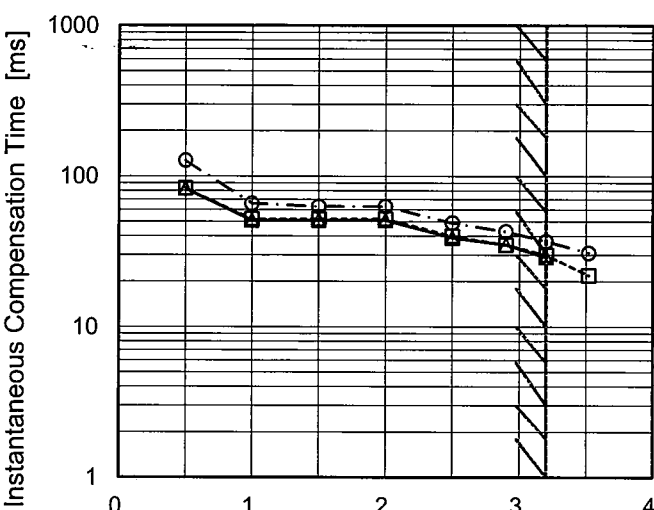


# 2.Values

Input Volt.	Time	Td	Tr	Ts	Th	Tf
115 V		506.5	75.0	581.5	33.8	39.5
230 V		491.0	75.5	566.5	41.0	40.0



Model		PJA150F-48	Temperature 25°C Testing Circuitry Figure A																															
Item		Hold-Up Time																																
Object		+48V3.2A																																
1.Graph			2.Values																															
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>---</div><div>---</div></div><div><div>□</div><div>---</div></div></div><div><div>Load 50%</div></div><div><div>---</div><div>---</div></div><div><div>△</div><div>---</div></div></div> <div><div>Load 100%</div></div> <p>The graph shows Hold-Up Time [ms] on a logarithmic y-axis (1 to 1000) versus Input Voltage [V] on a linear x-axis (50 to 300). Two data series are plotted: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show a relatively constant hold-up time around 80-100 ms for input voltages between 100V and 250V. There are two vertical shaded regions with diagonal lines, one between approximately 115V and 125V, and another between 264V and 280V, representing the rated input voltage range.</p> <table><thead><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Hold-Up Time [ms]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>85</td><td>74</td><td>46 ※1</td></tr><tr><td>100</td><td>75</td><td>42 ※2</td></tr><tr><td>115</td><td>74</td><td>38</td></tr><tr><td>200</td><td>79</td><td>38</td></tr><tr><td>230</td><td>91</td><td>47</td></tr><tr><td>264</td><td>93</td><td>47</td></tr><tr><td>280</td><td>93</td><td>48</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table>				Input Voltage [V]	Hold-Up Time [ms]		Load 50%	Load 100%	85	74	46 ※1	100	75	42 ※2	115	74	38	200	79	38	230	91	47	264	93	47	280	93	48	--	-	-	--	-
Input Voltage [V]	Hold-Up Time [ms]																																	
	Load 50%	Load 100%																																
85	74	46 ※1																																
100	75	42 ※2																																
115	74	38																																
200	79	38																																
230	91	47																																
264	93	47																																
280	93	48																																
--	-	-																																
--	-	-																																
<p>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.</p>			<div>※1:Load 80%</div> <div>※2:Load 90%</div>																															

Model		PJA150F-48		Temperature 25°C																																																				
Item		Instantaneous Interruption Compensation		Testing Circuitry Figure A																																																				
Object		+48V3.2A																																																						
1.Graph		<div><div><div>—△—</div><div>Input Volt. 100V</div></div><div><div>---□---</div><div>Input Volt. 115V</div></div><div><div>---○---</div><div>Input Volt. 230V</div></div></div>  <div>Instantaneous Compensation Time [ms]</div> <div>Load Current [A]</div>		2.Values																																																				
		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [ms]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 115[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.50</td><td>83</td><td>83</td><td>127</td></tr><tr><td>1.00</td><td>51</td><td>52</td><td>66</td></tr><tr><td>1.50</td><td>51</td><td>52</td><td>63</td></tr><tr><td>2.00</td><td>51</td><td>52</td><td>63</td></tr><tr><td>2.50</td><td>39</td><td>40</td><td>49</td></tr><tr><td>2.90</td><td>35</td><td>35</td><td>43</td></tr><tr><td>3.20</td><td>29</td><td>30</td><td>37</td></tr><tr><td>3.52</td><td>-</td><td>22</td><td>31</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>				Load Current [A]	Time [ms]			Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]	0.00	-	-	-	0.50	83	83	127	1.00	51	52	66	1.50	51	52	63	2.00	51	52	63	2.50	39	40	49	2.90	35	35	43	3.20	29	30	37	3.52	-	22	31	--	-	-	-	--	-	-	-
Load Current [A]	Time [ms]																																																							
	Input Volt. 100[V]	Input Volt. 115[V]	Input Volt. 230[V]																																																					
0.00	-	-	-																																																					
0.50	83	83	127																																																					
1.00	51	52	66																																																					
1.50	51	52	63																																																					
2.00	51	52	63																																																					
2.50	39	40	49																																																					
2.90	35	35	43																																																					
3.20	29	30	37																																																					
3.52	-	22	31																																																					
--	-	-	-																																																					
--	-	-	-																																																					
Note: Slanted line shows the range of the rated load current.																																																								

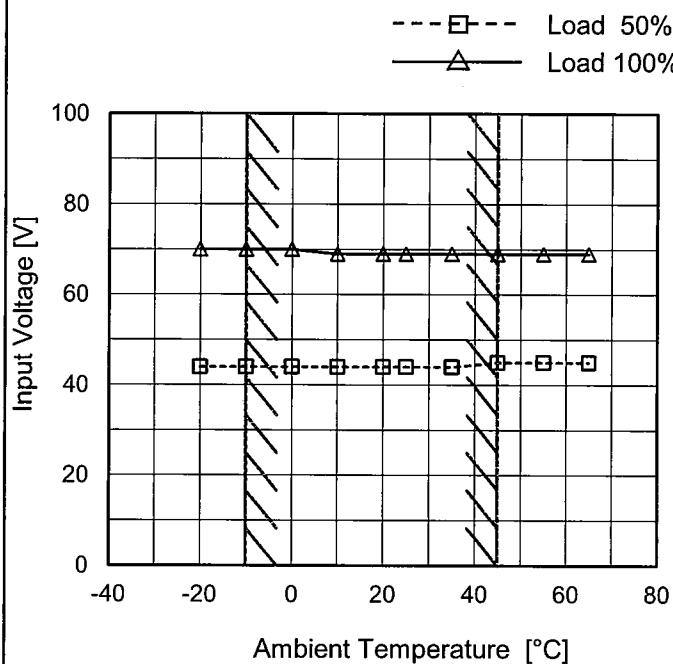
Model PJA150F-48

Item Minimum Input Voltage  
for Regulated Output Voltage

Object +48V3.2A

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	44	70
-10	44	70
0	44	70
10	44	69
20	44	69
25	44	69
35	44	69
45	45	69
55	45	69
65	45	69
--	-	-

Model		PJA150F-48		Temperature 25°C																																													
Item		Overcurrent Protection		Testing Circuitry Figure A																																													
Object		+48V3.2A																																															
1.Graph				2.Values																																													
<div><div><div></div><div>Input Volt. 115V</div></div><div><div></div><div>Input Volt. 230V</div></div></div> <p>Note: Slanted line shows the range of the rated load current.</p> <p>Intermittent operation occurs when the output Voltage is from 20.4V to 0V.</p>				<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="2">Load Current [A]</th></tr><tr><th>Input Volt. 115[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>45.6</td><td>3.88</td><td>3.97</td></tr><tr><td>43.2</td><td>3.83</td><td>3.91</td></tr><tr><td>38.4</td><td>4.07</td><td>4.15</td></tr><tr><td>33.6</td><td>4.27</td><td>4.36</td></tr><tr><td>28.8</td><td>4.41</td><td>4.49</td></tr><tr><td>24.0</td><td>4.56</td><td>4.63</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Output Voltage [V]	Load Current [A]		Input Volt. 115[V]	Input Volt. 230[V]	45.6	3.88	3.97	43.2	3.83	3.91	38.4	4.07	4.15	33.6	4.27	4.36	28.8	4.41	4.49	24.0	4.56	4.63	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
Output Voltage [V]	Load Current [A]																																																
	Input Volt. 115[V]	Input Volt. 230[V]																																															
45.6	3.88	3.97																																															
43.2	3.83	3.91																																															
38.4	4.07	4.15																																															
33.6	4.27	4.36																																															
28.8	4.41	4.49																																															
24.0	4.56	4.63																																															
--	-	-																																															
--	-	-																																															
--	-	-																																															
--	-	-																																															
--	-	-																																															
--	-	-																																															
--	-	-																																															



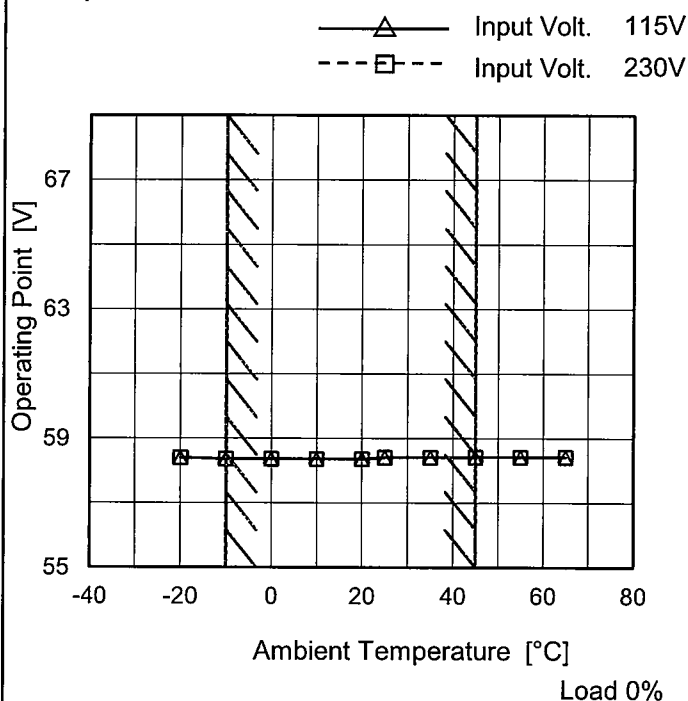
Model PJA150F-48

Item Overvoltage Protection

Object +48V3.2A

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. 115[V]	Input Volt. 230[V]
-20	58.40	58.40
-10	58.36	58.36
0	58.36	58.36
10	58.36	58.36
20	58.36	58.36
25	58.41	58.41
35	58.41	58.41
45	58.42	58.42
55	58.42	58.42
65	58.42	58.42
--	-	-

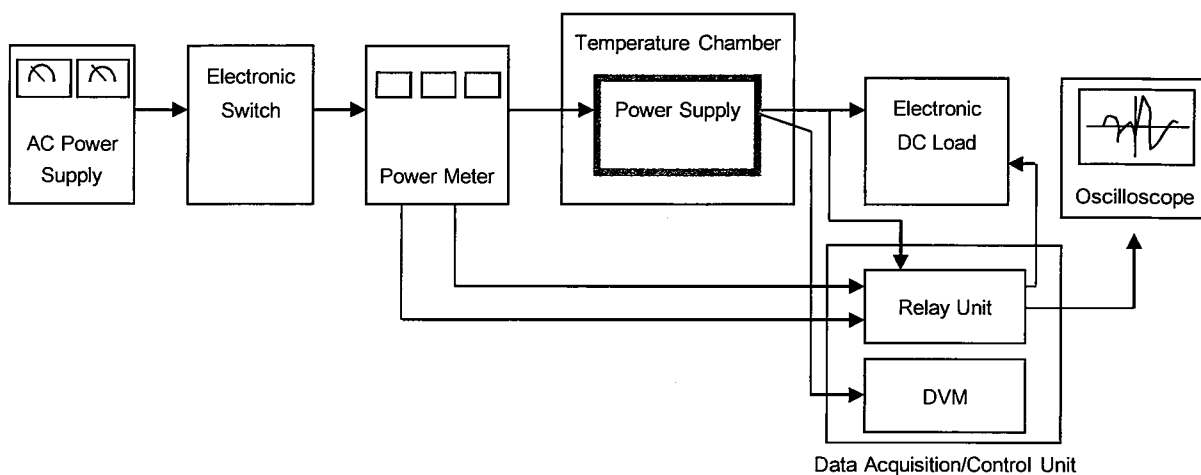


Figure A

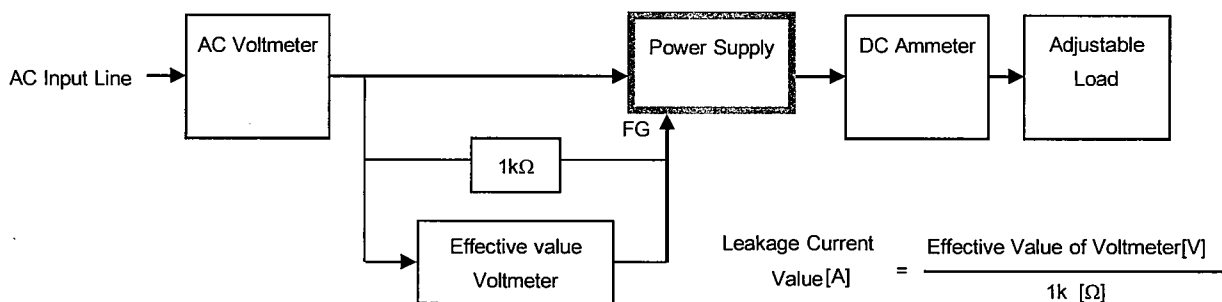


Figure B ( DEN-AN )

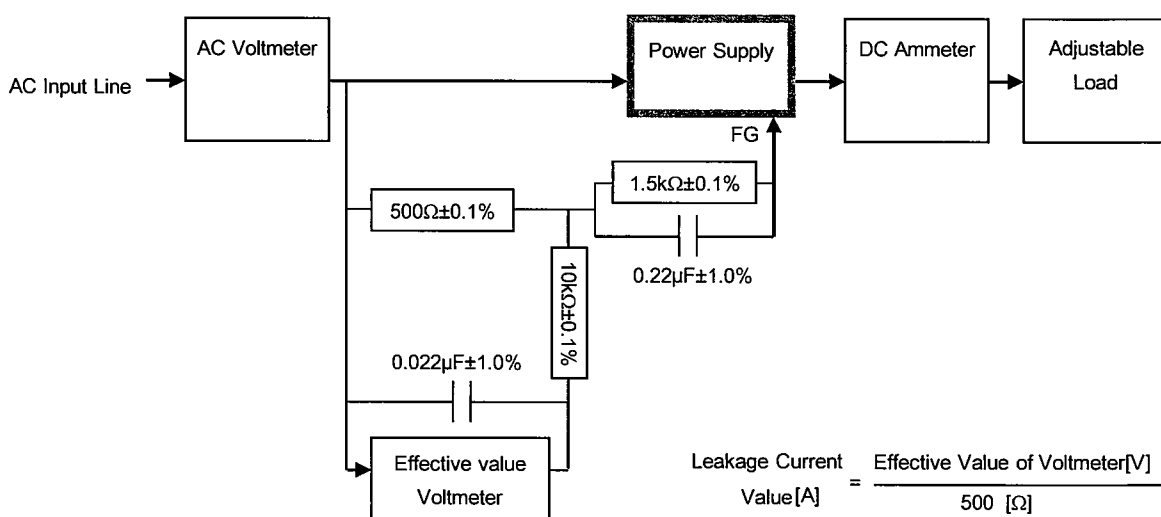


Figure B ( IEC60950-1 )

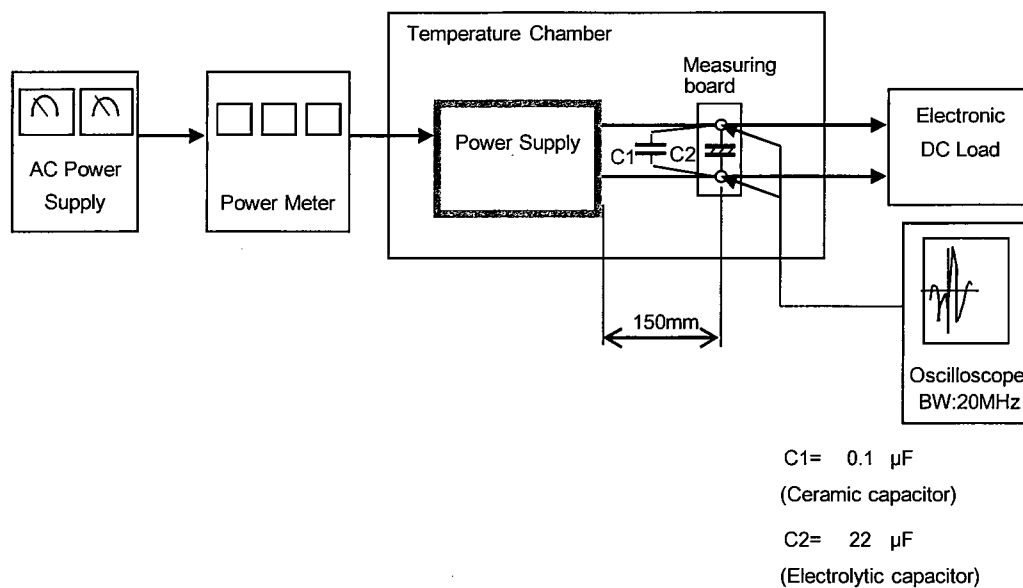


Figure C